



Government of the People's Republic of Bangladesh
Ministry of Communications
Roads and Railways Division

Roads in Bangladesh

The Next Millennium

May 1999

Prepared as Part of the IDC3 Project

“The Ministry of Communications and its Departments must work hard to provide a high quality, safe and cost effective service to the travelling public.

Roads in Bangladesh are such a major business that the efficiency in which the above task is carried out has a direct effect on the National economy. I am sure that Government has many lessons to learn, on the subject of efficiency, from the private sector.

The Institutional Development Component (IDC3) will play an important role in helping the Ministry achieve these objectives”.

A handwritten signature in black ink, appearing to read 'Anwar Hossain', is written over a horizontal line. The signature is stylized and cursive.

Anwar Hossain, MP

Minister of Communications

April 1999

CONTENTS

PART 1 A Vision of the Future

The Goal and Purpose

Vision – Organisation, Staffing, Budgets & Funding, Road Maintenance & Construction, Mechanical Equipment & Ferries, Road Safety.

IDC in a Changing World

PART 2 Roads As A Business

The Scale of the Business – Assets, Income and Expenditure, Number of Staff, Comparison of Performance.

Adding Value – Revenue Collection, Planning and Appraisal, Survey & Design, Construction, Maintenance.

Whole Life Costs

Total Costs – Staff, Equipment.

PART 3 The Way Forward

Ministry of Communications

Bangladesh Road Transport Authority

NRSC and Road Safety

RHD Management

RHD Staffing

Network Management – Planning, Budgets.

Standards and Designs – Standards, Surveys and designs, Outsourcing of Services.

Contracts for Quality

Equipment

Ferries

IDC3 Institutional Initiatives

This document has been produced by the IDC3 Consultants following extensive discussions with the senior staff of the Ministry of Communications, the Bangladesh Road Transport Authority and the Roads and Highways Department. Wherever possible the views of these persons have been taken into account.

The IDC programme commenced in 1994 and is jointly funded by the UK Department for International Development and the Government of Bangladesh. However, the views expressed in this report do not necessarily reflect the policies of the Governments of Bangladesh or the United Kingdom.

A VISION OF THE FUTURE

Goal and Purpose

1.1 The **goal** of the Ministry of Communications and its departments as embodied in the IDC3 Logical Framework is: *“The Ministry of Communications is able to provide the People of Bangladesh with a safe, cost effective well maintained road network”*



1.2 Similarly the purpose of the Ministry of Communications is: *“The Ministry of Communications, together with its departments, has a sustainable capacity to plan, manage and deliver its full range of responsibilities in respect of the main road and bridge network and to be accountable for these duties”*.

1.3 Any Vision of the future for the Ministry of Communications and its departments must imagine an organisation that is capable of fulfilling this **purpose** and **goal**.

1.4 The following is just one of many projections for the future. However if the Ministry of Communications is to meet the needs of the travelling public of

Bangladesh many of the items in this Vision must become reality within the first few years of the Next Millennium.

Vision

Organisation

1.5 The future Ministry of Communications and its departments will be better, stronger organisations. They will be service orientated concentrating on providing a high quality safe service to the travelling public.

Staffing

1.6 Staff will be better trained, proud of their organisation and have a strong *esprit de corps*. Existing Government restrictions on recruitment will dictate future staff numbers and staff will have to concentrate more on the core activities whilst some other functions may be externalised. Professional staff will be encouraged to spend a period on deputation with the private sector. Promotions and postings will be made mainly on merit. Improved remuneration packages will be related to **proven** productivity improvements.



Part 1

A VISION OF THE FUTURE

Budgets & Funding

1.7 The BRTA budget will allow motor vehicle revenue collection to be universally applied with budgets linked to performance. RHD will make wider use of private funding for roads and bridges including the use of a road fund. Maintenance and rehabilitation budgets will be based on the outputs of the HDM system. There should be separate budgets for national/regional Highways and for feeder Roads. The RHD equipment hire pool should be allowed some budgetary flexibility in order to operate on a commercial basis.

Road Maintenance & Construction

1.8 RHD Design Standards and Contract Documents will be developed and fully implemented. Quality will be enforced on all projects, not just foreign aided schemes. A variety of appropriate maintenance systems and procedures will be implemented. Greater use will be made of local consultants for survey, design and supervision. Monitoring and reporting systems will be improved with emphasis on physical progress and quality in addition to financial performance.

Mechanical Equipment & Ferries

1.9 Equipment and Ferries will be operated under a unified management system leading to an improved service to customers. New and rehabilitated equipment will be hired out to contractors on commercial terms. An equipment replacement fund will be established and properly managed

Road Safety

1.10 NRSC will be further developed and strengthened. Road safety education and publicity will be improved. Road safety engineering improvements will be implemented. Road safety and traffic legislation will be enhanced and enforced. All drivers will be tested and have legal licences. There will be a programme to provide institutional development, training & equipment for the traffic police.



IDC in a Changing World

1.11 IDC is essentially about change. In today's fast moving World continual change and improvement is essential if an organisation is to survive and prosper. It is better to anticipate and implement change in a planned structured manner than have it imposed by external forces.

1.12 The IDC project is required to facilitate and advise on change. All changes must then be approved and implemented by the Ministry and its departments. The IDC consultants always work in close co-operation with the relevant Government staff to try and ensure sustainability. The IDC approach to any area of work is first to **demonstrate**, then to **assist** and finally to withdraw direct support and periodically **monitor**.

ROADS AS A BUSINESS

“Given the size and importance of the roads business, it is extraordinary that these agencies keep their accounts on a cash basis, have no balance sheet, and are subject to little market discipline. And yet what is often a country’s largest business is perfectly capable of standing on its own feet.”

Jean Francois Richard, Vice President Finance and Private Sector Development, World Bank.

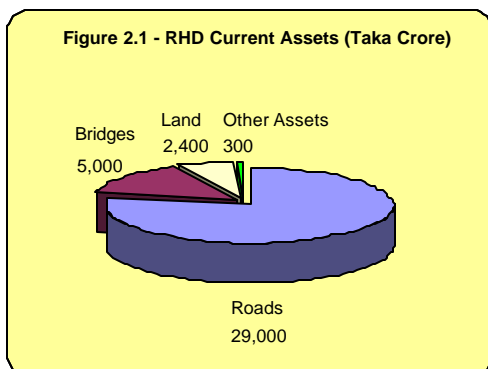
Scale of the Business

2.1 The above quotation is appropriate to roads businesses in many countries including Bangladesh. But how large is the Roads Business in Bangladesh? In measuring the size of a business we normally consider three major factors, **Assets, Income & Expenditure and Number of Staff.**

In relation to roads in Bangladesh most of the assets, expenditure and staff are within the RHD, although BRTA plays an important role in revenue collection.

Assets

2.2 RHD has assets in terms of the value of roads, bridges, land, ferries and equipment and buildings. By far the largest of these is the value of the 20,000 km of road and the 9,000 bridges. The total value of all RHD’s assets are shown in the figure below to be conservatively estimated at Taka 37,000 crore (US\$7,400 million).



2.3 This total value of assets is probably greater than all the private businesses in Bangladesh combined. Maintaining the value of these assets places a great responsibility on the Ministry of Communications and the RHD. Maintaining the roads asset is vital to Bangladesh.

ASSET MANAGEMENT

RHD has the responsibility to maintain one of the largest assets in Bangladesh. Serious economic consequences will result from a lack of maintenance.

Income and Expenditure

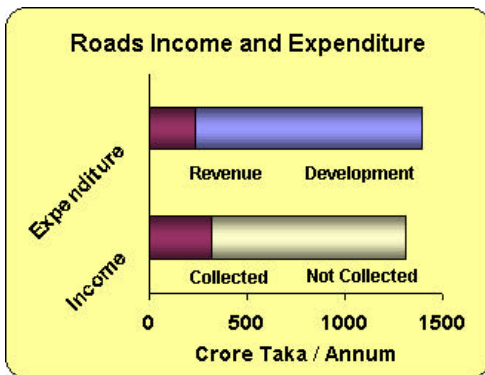
2.4 The roads business receives direct income from road user taxation (collected by the BRTA and the National Board of Revenue) and toll charges on bridges, ferries and roads collected by RHD. These totalled about Taka 400 crore in 1997/98. However only about 80% of this income may be attributed to the RHD road network.

2.5 There are problems with revenue collection and it is estimated that the shortfall in collection for road related taxes is more than Taka 1000 crore per annum. If the roads business was a modern company we would expect this lost revenue to be collected.

Part 2

ROADS AS A BUSINESS

2.6 RHD's expenditure consists of staff, overheads and maintenance under the Revenue budget and investment in new roads, bridges and some major maintenance under the Development budget. The 1998/99 total budget was Taka 1,400 crore (US\$ 280 million) equivalent to 10 per cent of the National Annual Development budget.



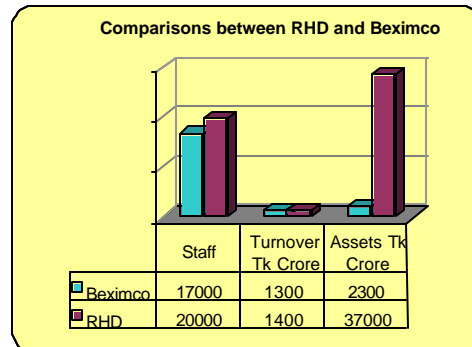
2.7 Currently expenditure on roads is much greater than the revenue collection but this situation could be changed if the collection of road taxes and revenues was improved.

Number of Staff

2.8 RHD currently employs 19,903 staff. However, only 7 per cent of these are Class 1 and 2 degree and diploma level staff. Over half RHD's staff are work charged or master roll casual labourers. The current workforce is not therefore of the right size or profile to manage a modern organisation. There is a need for more skilled trained personnel.

Comparison of Performance

2.9 The previous sections demonstrated that roads are a massive business. The following figure shows a comparison with one of Bangladesh's largest businesses, the Beximco Corporation.



2.10 In terms of turnover and staffing Beximco is comparable to RHD. However, its assets are only one tenth of RHD's. The value of RHD's assets makes the need for modern management even more important than for Beximco.

2.11 The Roads and Highways Department is one of the largest businesses in Bangladesh and plays a vital role in the management of the economy. How the RHD conducts its business has a direct effect on the economic growth of Bangladesh through the transportation costs paid by its customers - the road users. Its customers include the owners of motorised and non-motorised vehicles and all the passengers and pedestrians using the network.

2.12 The efficient operation of RHD on modern business principles is vital to ensure that RHD achieves **value for money**. This will maximise the benefits to society and contribute to development.

EFFICIENT MANAGEMENT

Big businesses require highly skilled management and staff for efficient operation. If they are not efficient the resulting losses can be massive.

Part 2

ROADS AS A BUSINESS

Adding Value

2.13 To survive every business must add value to some product or service. The Ministry of Communications and its departments exist to serve the travelling public and must strive to add value in the provision of transport related services. This section outlines areas where the Ministry can add value.

Revenue Collection

2.14 There is significant evasion of road taxes. Many drivers have forged driving licences, many vehicles do not have fitness or tax certificates and many commercial vehicles do not have the required permits. This evasion of taxes is detrimental to the exchequer and also has serious consequences for road safety. Even if a member of the public wants to pay the required revenues there is a long and tiresome procedure, so many do not bother.

2.15 BRTA are trying to improve the situation but at present their budget is not linked to performance or standards of customer service. BRTA's costs are only about 2% of the revenue they collect and this is therefore one case where trying to save a little may cost a great deal.

Planning and Appraisal

2.16 The planning and appraisal of projects for new construction or for maintenance only costs 2% to 3% of the construction cost but can often save a great deal of money. A proper appraisal may show a project not to be feasible on technical or economic grounds. Without a study a project may get to detailed design or construction before the problems arise and by then money has already been spent.

2.17 The World Bank Highway Development Model (HDM) now being introduced by RHD will produce annual economically prioritised lists of work which can be used to set the budgets. The potential savings to the economy from this improved planning should be enormous.

Survey and Design

2.18 Good quality survey and design of a project may cost from 3% to 5% of the construction cost. If under designed a facility may fail, perhaps with catastrophic consequences. If over designed extra costs are incurred in construction. It is bad practice to economise on surveys & designs.

Construction

2.19 Excessive cost cutting during construction and the neglect of quality may save money today but will leave a legacy of costs for the future. A well constructed facility may cost more than a poorly constructed facility but will be much cheaper over its full lifetime.

“There is hardly anything in the world that some man cannot make a little worse and sell a little cheaper, and the people who consider price only are this man's lawful prey”

John Ruskin. 1819 to 1900

Maintenance

2.20 Maintenance is the most cost effective expenditure as small amounts of money spent on time can protect massive original investments. As a road network nears completion maintenance assumes greater importance and the expenditure on maintenance will then soon outstrip that of new construction. The RHD network,

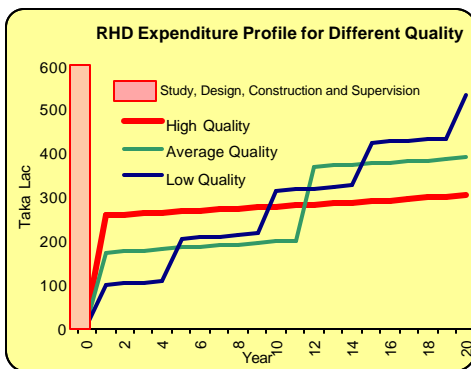
Part 2

ROADS AS A BUSINESS

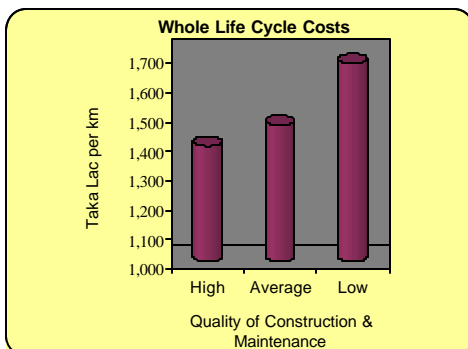
excepting feeder roads, is close to this situation.

Whole Life Costs

2.21 Poor design or construction can lead to future costs which are far greater than the savings at the time of construction. The following figure shows costs over a 20 year life for three standards of initial road construction. The highest initial standard is seen to lead to the lowest total costs.



2.22 Whole life cycle costs also take road user costs into account and these are much lower on roads with a good ride quality. The figure gives whole life cycle costs for three standards of construction and shows the major benefits of good quality construction & timely maintenance.



VALUE FOR MONEY

There is a major difference between the Best Value for Money and the Lowest Cost.

Total Costs

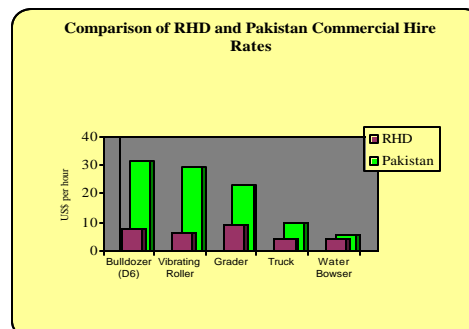
2.23 In assessing cost the immediate expenditures come to mind. However most operations involve other less obvious costs. Proper decision making requires a realistic assessment of total costs. As examples staff and equipment costs are considered below:

Staff

2.24 Salary costs are the obvious staff costs but there are other costs associated with staff. These include items such as pensions, bonuses, housing etc. When these are taken into account the total costs of staff are often more than two or three times the basic salary costs. Even these costs do not give a complete picture of the total costs which might include such items as offices, telephones, transport, support staff etc.

Equipment

2.25 Equipment costs are not just the costs of fuel and driver. Equipment is very expensive and the replacement and overhead costs must be funded from the hire charges. Traditionally RHD hire charges have only represented about 20% of the total cost of the equipment. This is illustrated below in a comparison with commercial rates in Pakistan. Higher charge out rates are necessary to sustain a high quality fleet.



THE WAY FORWARD

Ministry of Communications

The Current Situation

3.1 The Ministry of Communications is responsible to the Minister for all aspects concerning the operations of roads and railways within Bangladesh. In the case of roads the Ministry's jurisdiction includes road construction and maintenance, which are the responsibility of the RHD, and road transport issues, which are the responsibility of the BRTA.

3.2 The Ministry of Communications is mainly concerned with policy issues relating to administration, planning and development whilst the executing departments are responsible for the day to day operations. However in practice there is some overlapping of duties.

3.3 The Ministry has a small staff of about 115 persons of whom 33 are Class 1 officers.

The Way Forward

3.4 An important task for the Ministry is to re-define its tasks to concentrate more on strategic issues in all sectors and spend less time on detailed issues. The development of a long-term strategy plan to cope with future transport demands must be a high priority.

3.5 There is an urgent need for a comprehensive Management Information System (MIS) to assist in planning and management functions.

3.6 The Ministry would benefit from the formation of a Management Team to address these and other issues. IDC3 can assist in this task.

Bangladesh Road Transport Authority

The Current Situation

3.7 The Bangladesh Road Transport Authority (BRTA) is the premier government regulatory agency for the road transport system in the country. At present the main responsibilities are registration of vehicles, licensing of drivers, collection of road users taxes and fees, issuing and renewing vehicle fitness certificates and route permits and negotiations on transport issues.

3.8 Against an expenditure of about 2 crore Taka the revenue earning of BRTA was 106 crore Taka for 1996-97.

3.9 BRTA is a small organisation consisting of a workforce of 264 under the leadership of the Chairman. A number of staff are on secondment from various ministries.

The Way Forward

3.10 There is an opportunity for the Government to maximise revenue collection in the transport sector by linking BRTA's budget to improvements in revenue collection and service standards.

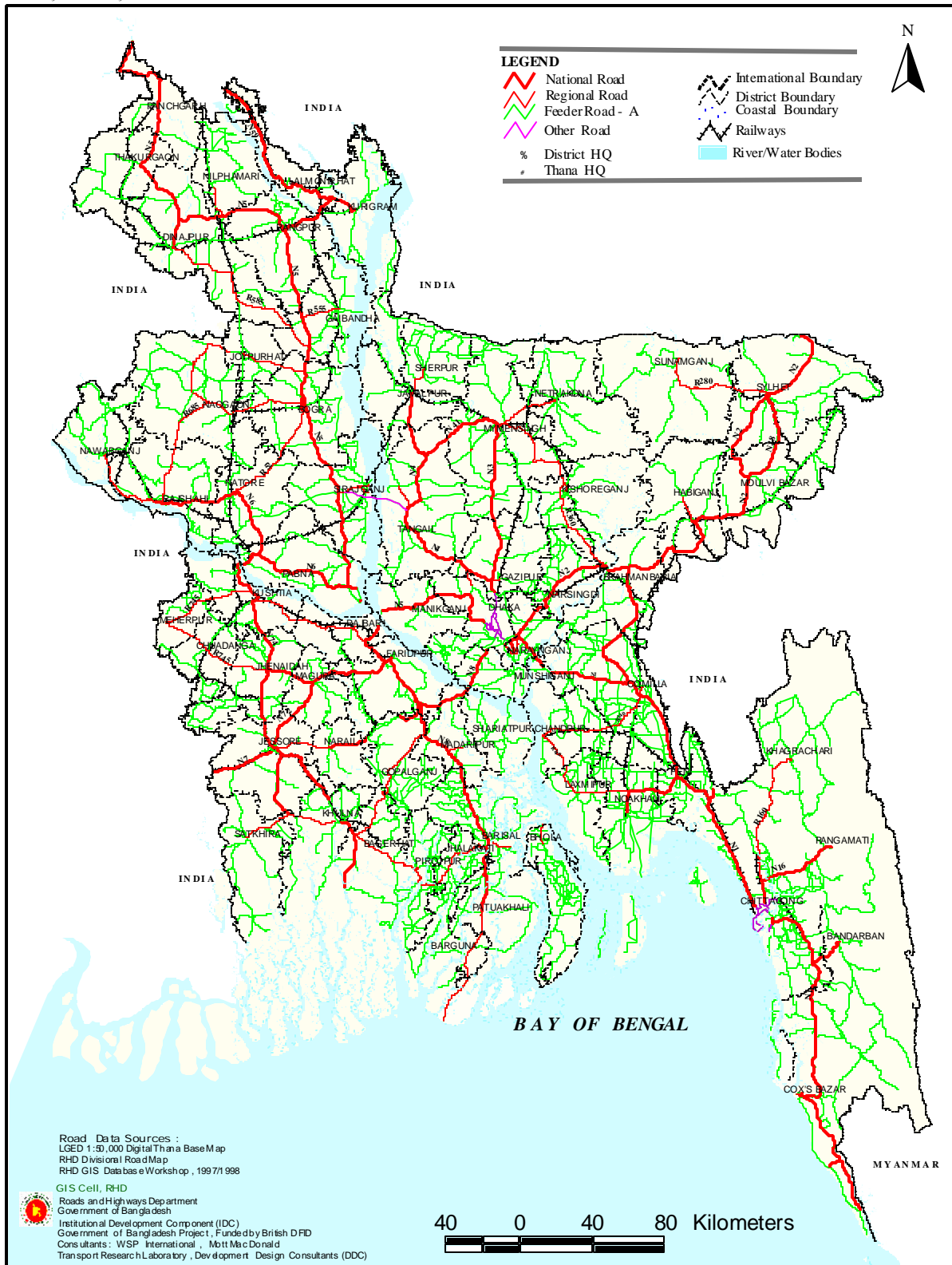
3.11 BRTA is preparing to meet the demands of the next millennium by introducing a number of initiatives. These include improved and modernised licensing, new inspection and testing systems and improved service standards. These will help to provide the motoring public with a first class quality of service.

3.12 IDC3 will assist BRTA in achieving these objectives.

Part 3

THE WAY FORWARD

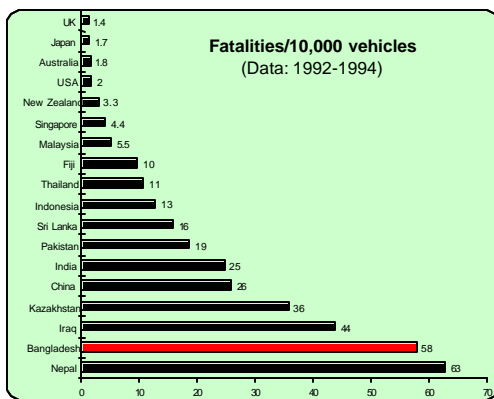
RHD ROAD MAP OF BANGLADESH



NRSC and Road Safety

The Current Situation

3.13 In Bangladesh the reported road accident fatalities have doubled in the last three years. At 58 deaths per 10,000 vehicles, the fatality rate is now one of the highest in the world. This level of road deaths is unacceptably high and can be seen in the comparison chart below to be considerably higher than that of industrialised countries and to be noticeably higher than most of the other developing countries in this part of the world.



3.14 Many of those killed were family breadwinners and many were children. In addition to the pain and suffering caused by these accidents they represent a significant drain on the Bangladesh economy. As well as those killed, many more are seriously injured and will suffer the consequences of their accidents for the rest of their lives.

3.15 There are numerous reasons why there are so many road accidents in Bangladesh. More and more vehicles - are using the roads and between 1971 and 1997 motor vehicles increased steadily from 40,000 to 460,000. This, combined with rapid urbanisation, has seen the road accident casualty and fatality rates rise dramatically. Inadequate treatment of casualties, poor driver discipline, poor road-worthiness of many vehicles, and ineffectual legislation and enforcement practices are just some of the reasons which are regularly cited. Other contributing factors include adverse roadside environments, excessive speeding and the reckless behaviour of some road users.

3.16 It is now accepted that without urgent action accident levels will grow even further. In both social and economic terms these are costs that the country can ill-afford to bear.

3.17 In response to the growing road safety problem the National Road Safety Council was formed in 1995. The NRSC, under the chairmanship of the Minister of Communications and consisting of senior Government officers and representatives of the other key concerned agencies, was assigned the responsibility for formulating national road safety policies with the goal of reducing road traffic accidents.



3.18 To this end, the NRSC, in collaboration with IDC, BRTA, the Police, RHD, LGED and other concerned organisations, developed the National Road Safety Strategic Action Plan. The plan set out a 2-year programme of activities in nine specified road safety sectors.

ACTION PLAN SECTORS

- ◆ National Road Safety Council
- ◆ Accident Data
- ◆ Road Engineering
- ◆ Traffic Legislation
- ◆ Traffic Enforcement
- ◆ Driver Training & Testing
- ◆ Vehicle Safety
- ◆ Education & Publicity
- ◆ Medical Services

3.19 The NRSC has now made successful starts in virtually all the road safety sectors, with, in particular, considerable progress having been achieved in the accident data and road safety engineering sectors. More importantly, this work has served to heighten the awareness of road safety issues amongst both the public and concerned organisations.

The Way Forward

3.20 It is now recognised that the full development of these safety initiatives cannot be achieved by a sub-component of IDC and that what is required is a fully-fledged road safety programme.

3.21 Road safety has institutional implications for all the involved organisations. In particular road safety is fundamental to the operations of the Traffic Police and BRTA and it is considered that significant institutional changes will be required in these organisations in order for

road safety functions to be fully implemented.

3.22 It is also accepted that such a technical assistance requirement would be too large for just a single project and thus a multi-donor co-ordinated programme is planned, with a core project built around NRSC and other components taken up under associated projects.

3.23 The core project should have as its priorities continued support to the NRSC Secretariat together with the responsibility for Education and Publicity activities. Priority components might also include further strengthening of road safety engineering and institutional developments to BRTA and the Traffic Police.

3.24 The proposed road safety programme would require donor support for a range of components which could include; community road safety projects; institutional reform, training and equipment for the Traffic Police; and the design and implementation of road safety schemes.

3.25 IDC3 will continue to build on the road safety foundations provided by IDC2, whilst also preparing the separate road safety programme to commence in 2000.



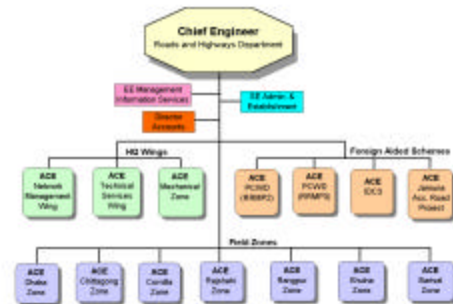
RHD Management

The Current Situation

3.26 The Chief Engineer is the head of the RHD and reports to the Permanent Secretary. He is supported by 14 Additional Chief Engineers (ACE's).

3.27 Following the interim re-organisation of the RHD in mid 1998 the headquarters organisation of the Roads and Highways now consists of two Wings and a Mechanical Zone. There are also 4 Wings that have been set up to manage major foreign aided projects. At the field level the organisation is divided into 7 Zones, 20 Circles, 65 Divisions and 131 Sub-Divisions. A simplified organisation structure for the RHD is shown below:

Organisation Chart of the Roads and Highways Department



3.28 It is considered that this organisation structure has a number of problems in that: There are too many officers reporting directly to the Chief Engineer. Foreign Aided Schemes are operating at the edge of the organisation and are contributing little to the overall development of the Department. The Zones are responsible for carrying out a wide range of tasks which often have conflicting priorities.

The Way Forward

3.29 Under IDC3 a project steering committee chaired by the Permanent Secretary, MoC is being established to deal with strategic issues affecting the Ministry and its departments. A Senior Management Team chaired by the Chief Engineer is also being established within the RHD to oversee planning, management and change issues. Management teams have also recently been established in a number of the Headquarters Wings to deal with the development and implementation of their management plans.

3.30 In late 1998 a draft plan for a macro re-organisation of the Department was prepared. However this plan concentrated on Headquarters matters and does not fully address the field requirements.

3.31 The main aim of a reorganisation for RHD should be for the structure to reflect the different functional requirements and budgetary allocations. There should also be an intention to devolve decision making to the lowest appropriate management level. The present Zonal structure is suitable for routine and minor periodic maintenance operations but is not well suited to machine intensive periodic maintenance or major construction (especially bridges). Neither does the current structure reflect the differing requirements of national/regional highways and feeder roads.

3.32 It is therefore proposed that re-organisation should be one of the early topics to be considered by the IDC3 Steering Committee and the RHD Senior Management Team.

Part 3

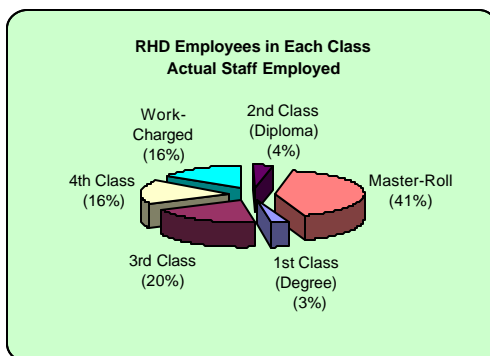
THE WAY FORWARD

RHD Staffing

The Current Situation

3.33 The total number of sanctioned posts within the RHD is 9,297 but there are currently 19,903 staff employed. This major discrepancy is due to the fact that there are 11,305 work charged and master roll employees whose posts are not sanctioned. These figures hide the fact that 681 of the sanctioned posts are unfilled.

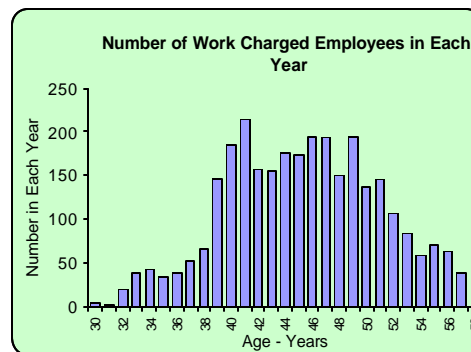
3.34 Of the total sanctioned staff numbers 611 Class 1 and 728 Class 2 officers post are filled. There are 4,049 Class 3 and 3,210 Class 4 staff in post.



3.35 Until recently there was no recruitment of Class 1 officers (engineering cadre) for almost 10 years and this resulted in an age profile with virtually no staff below 35 years of age. With the recent recruitment of 75 assistant engineers this situation has been improved somewhat. During the next 10 years between 10 and 20 officers will retire each year; then about 130 officers will retire in a 3 year period.

3.36 There has been virtually no recruitment in the lower staff grades for the last 10 years and Government has banned all recruitment of master-roll and work charged staff. Hence most employees are now above 40 years old, as shown by the

age profile chart for work charged employees. This means the numbers of staff in lower grades are already reducing, as a result of retirement, and this trend will continue.



3.37 The Department must therefore learn to live with smaller numbers of staff in some grades and re-structure its operations accordingly. With increasing use of technology there is a greater need for more skilled and trained staff.

The Way Forward

3.38 The first priority must be to develop better staff records so that future staff planning can be carried out from a sound knowledge base. There is also a need to determine future staff requirements from a consideration of the key tasks that the RHD will undertake in the future.

3.39 Issues such as continuing professional development and structured training, staff appraisals, systems for posting and promotion should also be considered in order to reflect modern management practices. For example staff postings might be replaced by a system of internal applications for posts thus encouraging greater specialisation.

Network Management

The Current Situation

Planning

3.40 Until recently planning of the RHD annual programmes had to be based on perceived needs rather than on analysis. The RHD now has access to an extensive body of computerised data from surveys. This data can be used with inventory data, to determine the future budgetary needs for maintenance and rehabilitation. At the core of this system is the HDM that provides an economic ranking of options.

RHD ANNUAL DATA COLLECTION

- ◆ **Road & Bridge Conditions**
- ◆ **Road roughness,**
- ◆ **Traffic volumes**
- ◆ **Deflections**

The database system is also linked to GIS mapping that facilitates the production of maps and the location of data.

3.41 These systems are now operational but there are some areas requiring further attention. A priority is to ensure that the road identification system is always used.

ROAD IDENTIFICATION SYSTEM

All roads have been identified and provided with a unique link number and description. It is essential that this system is used for all planning and monitoring purposes. However at present traditional naming systems are often used.

3.42 The value of the RHD planning system was demonstrated when flood damage surveys were carried out at very

short notice in October 1998. A more formal emergency response plan is now being built into the planning system.

Budgets

3.43 Under the old system, requests for the **Revenue Budgets** are generally based on the previous years budget with some allowance for inflation. Some variations occur from year to year to meet specific requirements.

3.44 The **Annual Development Budget** is based on requests for funding from the field Zones and priorities perceived by the Ministry, RHD Headquarters and donors. Development projects are processed through a system established by the Planning Commission.

3.45 An analysis of the 1998-1999 budget indicates that the total expenditure on maintenance was considerably higher than previously reported. However the budget is dispersed across a number of budget heads in the Revenue and ADP budgets. There is also a lack of clarity in the various types of maintenance. It is hoped that in future the budgets will provide separate allocation for each of the major maintenance activities.

MAINTENANCE TYPES

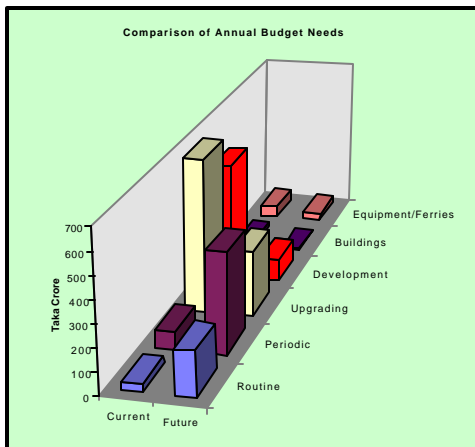
- ◆ **Routine:** small-scale activities that must be carried out frequently.
- ◆ **Periodic:** planned activities that are related to age or condition.
- ◆ **Rehabilitation & Improvement:** work on failed roads & bridges (due to poor construction or lack of maintenance) or improvements to meet increasing demands.
- ◆ **Emergency:** activities that respond to an event caused by unforeseen circumstances.

Part 3

THE WAY FORWARD

3.46 The Revenue Budget is largely expended on Routine and Periodic Maintenance of roads, bridges and buildings. In addition it is used to fund operations and maintain equipment and ferries. The RHD annual Revenue Budget is currently of the order of Taka 250 crore per annum. The ADP Budget, is largely allocated to upgrading, rehabilitation and new development works. Some of these items may be considered as periodic maintenance. The ADP budget is currently of the order of Taka 1,150 crore (US\$230m).

3.47 A rationalised programme would increase expenditure on routine and periodic maintenance whilst the spending on capital works should decrease with time



as should the need for rehabilitation. Capacity expansion projects would still be required. These changes are shown in the figure below.

The Way Forward

3.48 The tools are in place to enable rational planning and budgeting of future maintenance and rehabilitation projects. Establishing procedures to enable this to take place efficiently are a priority.

3.49 Rational planning must include the equitable distribution of funds to all Zones, and allocation of sufficient funds to enable maintenance projects to be undertaken to completion (as opposed to doing a little in a number of places which wastes money).

3.50 The execution of maintenance works should include an expanded periodic maintenance requirement that would create a major new demand for the larger local contractors. It is estimated that on the national and regional highway network, about 700 km of thin overlay or other bitumen surface treatment should be undertaken each year.

PERIODIC MAINTENANCE

About One hundred kilometres of thin overlay or bitumen surface treatment will be required each year in each of the seven Zones. Over a 26 week works period each Zone would have to complete approximately 4 km a week.

3.51 Maintenance practices will have to be upgraded to cope with the increased demand. Contracts for major machine based periodic maintenance (overlays and bitumen surface treatment) will be required for improved National and Regional roads. Periodic maintenance on other roads could remain under small-scale contractors using improved labour-based methods.

3.52 Works programmes must be closely monitored. Reporting should be standardised and acted upon. Reports should highlight physical progress and quality not just financial expenditure.

3.53 Quality of all works must be ensured so that the product fulfils the design criteria and the overall objectives.

Standards and Designs

The Current Situation

Standards

3.54 RHD does not at the present time have formal defined standards for the design of roads and bridges. This is inefficient as standards are revised for most major projects and inconsistencies can occur between projects. It is therefore important that RHD standards are developed, published and enforced.

TYPICAL STANDARDS

- ◆ **Road geometric design standards**
- ◆ **Road pavement design standards**
- ◆ **Road safety standards, including signs and road markings**
- ◆ **Environmental and re-settlement standards**
- ◆ **Bridge Design standards**
- ◆ **Road maintenance standards**

Surveys and Designs

3.55 Except for foreign aided projects surveys and designs are often not given the required attention. There is a particular concern with major bridges. Field divisions are reluctant to spend funds on survey and design and the RHD site investigation teams & design circles are thus required to produce results with insufficient resources. If they are unable to produce designs local consultants may be employed but this is generally seen as a last resort. As discussed in Part-2 it is false economy not to carry out proper surveys and designs.

3.56 There is also a need for the Department to produce design guides and instructions that lay down the methodology by which the various facilities should be designed. A bridge design guide is now in

an advanced state of preparation but other guides should follow.

Outsourcing of Services

3.57 Many highway departments do not carry out surveys or designs in house but contract these items out to the private sector. This has the advantage of allowing these departments to concentrate on their core activities of planning, setting standards, procurement and monitoring. It is also easier to deal with fluctuations in workload if services are contracted out. Separating the design and monitoring roles also provides a safeguard as the department then assumes a design checking function. With increasing numbers on staff within the RHD there is a good case for outsourcing a number of services.

3.58 The outsourcing of services needs to be done in a controlled, organised manner and needs careful thought and planning to be fully successful. The control and monitoring of external services needs skilled and capable RHD staff with a technical knowledge of the subject. In order to develop these skills staff will require training and should be encouraged to spend periods working with local consultants under deputation.

The Way Forward

3.59 The above issues are of particular relevance to the Technical Services Wing and their management plan must include a timetable for the establishment of design standards, design guides and checking procedures. Guidelines on the outsourcing of services also need to be established and implemented.

Contracts for Quality

The Current Situation

3.60 Largely as a result of pressures to expand the road network and the scarcity of funds quality has not played a major role in construction works in Bangladesh. Whilst neglecting quality may give an appearance of rapid progress it is in fact a very wasteful use of funds as discussed in Part-2. There are many excuses put forward for poor quality such as, small inexperienced contractors, shortage of equipment and no testing facilities. Most of these excuses do not stand up to scrutiny as high quality works have been achieved in Bangladesh using the smallest of contractors with the minimum of equipment and only very simple testing facilities.

3.61 Perhaps the greatest obstacle to quality and to the development of local contractors is the tendering system where bidders are required to quote a percentage above or below the estimated total cost based on a Schedule of Rates. This system is generally linked to the use of the outdated Form 2911. Experience has shown that even small contractors prefer a bidding system where they insert their own prices for the unit rates in the bill of quantities (often referred to as a FIDIC type contract). Under covenants with the World Bank form 2911 is to be discontinued for all contracts using Class 'A' and 'B' contractors by 1 July 1999. There appears little reason for its continuing use on other contracts.

3.62 Foreign aided schemes normally use FIDIC type contracts and use foreign and local consultants to design and supervise the works. Most foreign aided schemes operate at the fringes of the Department and do not contribute

significantly to the overall development of the RHD. They do however manage a large percentage of the Development budget whilst involving only a small number of Departmental staff.



The Way Forward

3.63 Quality must become a key issue for all RHD work. Reporting, monitoring and payment systems should require proof of quality for all contracts.

3.64 With the move From 2911 there is an urgent need to finalise standard RHD contract documents for both construction and maintenance works. Many of these documents are already in an advanced state of preparation but need final review and adoption by the RHD and donors.

3.65 Ways of bringing foreign aided schemes closer to the normal RHD operations should be reviewed. RHD systems for the procurement, management and monitoring of consultants and contractors need to be reviewed and revised as appropriate. RHD staff at all levels require more training on this topic.

Part 3

THE WAY FORWARD

Equipment

The Current Situation.

3.66 The RHD Mechanical Zone is responsible for 2,626 items of equipment. Of these items 1,486 are over 20 years old and 1,102 are out of service. The Mechanical Zone currently employs about 1,500 staff of which 219 are either class-1 or class-2 employees.



3.67 The annual revenue budget for equipment is normally about Taka 6 crore (US\$1.2m) although in 1997/98 this was enhanced to Taka 17 crore (US\$3.4m) to enable the purchase of some new items of equipment. The 1998/99 budget is Taka 12 crore (US\$2.4m) for similar reasons. As a result 20 road rollers, 10 soil compactors and 6 mini asphalt plants were recently procured and a further 38 items of compaction equipment have been approved.

3.68 Equipment is maintained through a network of comprising 43 first, 4 second and 3 third line workshops. The first line workshops are under the direct control of the civil engineering field staff.

3.69 Computer systems have recently been installed within the Mechanical Zone. These have significantly improved the management of equipment, ferries, stores and spare parts.

3.70 Currently most mechanical equipment is allocated to field divisions and is under their day to day control. Equipment is hired to RHD contractors at well below commercial rates.

The effective use of machinery, particularly for compaction, is essential for construction of high quality, durable roads.

The Way Forward

3.71 The long-term goal must be for most construction equipment to be in the private sector. However this will take some years to develop. In the interim it is proposed to establish an equipment pool, operated on commercial principles, under the control of the Mechanical Zone. This pool would hire out new and rehabilitated equipment at commercial rates to RHD contractors working under FIDIC type contracts where the contractors are responsible for supply of equipment.

3.72 A Government order is required to prevent the hire of other RHD equipment at the old departmental rates to contractors operating under FIDIC type conditions.

3.73 A rehabilitation programme for 3-wheeled steel rollers will be implemented. These would then be added to the new pool.

3.74 A system of re-cycling hire charges for purchase of new equipment needs to be developed and approved by Government.



Part 3

THE WAY FORWARD

Ferries

The Current Situation

3.75 RHD ferries provide an essential public service in crossing the many unbridged rivers in Bangladesh. A fleet of 161 ferries serve 81 crossings (13 on national highways, 11 on regional highways, and 57 on feeder roads)

3.76 Until recently there has been little investment in ferries and there is now a need to modernise the service with the introduction of more roll on–roll off craft to replace old uneconomic Unifloat and steel catamarans which are in poor condition.

3.77 The annual expenditure on ferry operations is currently about Taka 30 crore (US\$6m) against a revenue from tolls of Taka 14 crore (US\$2.8m). With the recent construction of a number of major bridges toll incomes from ferries has fallen in recent years.

3.78 Ferry operations are currently under the day to day control of the field divisions although tolls are generally collected under a leasing system and the Mechanical Zone is responsible for maintenance.

The Way Forward

3.79 A proposal to put the management and operation of ferries under the control of the Mechanical Zone is under consideration.

3.80 Any new management system must be combined with improved operations, the implementation of service standards and a review of the lessee system.

3.81 A programme to rehabilitate about 35 of the roll on-roll off ferries all between 12 and 20 years old will also be required.



IDC3 Institutional Initiatives

The Current Situation

3.82 IDC is the Institutional Development Component of the Road Rehabilitation and Maintenance Project (RRMP). The UK Department for International Development (DFID) provides funding for IDC and the World Bank provides funding for RRMP, the Government of Bangladesh provides counterpart funding for both projects.

3.83 The IDC programme started in 1994 and the first Phase (IDC1 & IDC2) was completed in December 1998. IDC2 concentrated on the development of a highway planning system in the RHD, staff training and support to road safety through NRSC. The IDC3 project commenced in January 1999 and has a total value of US\$7 million. This represents 1.3% of the US\$528 million cost of the total RRMP3 programme.

The Way Forward

THE REQUIREMENTS OF IDC3

- ◆ **Develop further Ministry and RHD policy and planning capability.**
- ◆ **Improve RHD's organisation and management.**
- ◆ **Develop capacity in the RHD Zones to implement planned maintenance programmes;**
- ◆ **Address major road safety problems and prepare a separate road safety programme.**

3.84 These objectives will be achieved by working in partnership with the Ministry, RHD and BRTA and the support of the donors. IDC has worked in this environment for over 4 years and has developed a level of mutual trust and respect that is essential for a programme of

this nature. This is a strong foundation to build upon and to make the Vision set out at the beginning of this document a reality.

3.85 IDC3 will work with the staff of the target organisations in assessing what is required, what are the available resources, and where to best use these resources in order to deliver the desired outputs at the right time. At each major step in the process, an assessment will be made of the impact of the instituted changes. This assessment will consider whether the emerging strategy is still valid, if further consultant's support is necessary and how best to proceed.

3.86 Training, both formal and informal, will be the backbone of this programme. IDC3 will work within the organisations transferring knowledge at the appropriate levels to the relevant people and helping install systems where required. The recently established RHD Training Centre will play an important role in the continuing development of staff at all grades. This in conjunction with appropriate courses both local and overseas will ensure a fully trained and motivated work force.

3.87 To achieve the objectives will require the commitment, support, resolve and leadership of senior Government managers. The ideas put forward may at times seem radical to some, but as with all modern organisations, changes are inevitable if we are to embrace the challenges of the **Next Millennium**.

“Doing Nothing is Not an Option”

“Governments are primarily engaged in the delivery of public services. Radical changes have occurred in how to design, how to process and finally deliver public services. Public services are tailored to the satisfaction of customers, who are the reason for all the paraphernalia of these services. It is not only the quality of the product but the process by which it is delivered that is receiving increasing attention. Some governments have gone further than that. They have given assurance of the quality and speed of the service delivery on pains of penalty for failure.”

Md. Nurunnabi Chowdhury

Seminar on public administration in Bangladesh

March 1999.

The IDC3 Consultants is a consortium consisting of WSP International, Mott MacDonald and the TRL of the UK and Development Design Consultants of Bangladesh.

e-mail: idcdhaka@bangla.net