

# The Zambia National Roads Board — Its role in road sector management

*Raymond Jhala, Chairman, Zambia National Roads Board*

## BACKGROUND

Zambia is a large country with a relatively small population. Average population density is about 13 people/km<sup>2</sup>. GDP has stayed more or less constant in real terms over the last 10 years at about US\$2.4 billion but GNP per capita has steadily decreased at about 2.3% per annum due mainly to population growth.

The original infrastructure was developed during the first half of the century to access mineral resources in the Copperbelt along what is known locally as the 'line of rail' between Livingstone and Chingola. Later, road and rail systems were extended to open up other parts of the country and establish better communications links with Zambias' neighbours, notably in the north and east.

As the population has grown and new areas opened to agriculture the road network has gradually been extended. The result is that Zambia now has one of the highest lengths of road network per capita in Africa.

Estimates of the total length of the road network (especially the lengths of rural and urban roads) vary from source to source. Table 1 gives an indication of the extent of the network and the institutions responsible for the upkeep of the roads.

Authority	Designation	Lengths (kms)		
		Paved	Unpaved	Total
Roads Department	Trunk	3085	140	3225
	Main	2008	1935	3943
	District	1289	12207	13496
		<b>6382</b>	<b>14282</b>	<b>20664</b>
Local Authorities	Rural		15898	15898
	Urban	700	843	1543
		<b>700</b>	<b>16741</b>	<b>17441</b>
Parks & Wildlife			5162	5162
Other Rural			22483	22483
Totals		<b>7082</b>	<b>58668</b>	<b>65750</b>

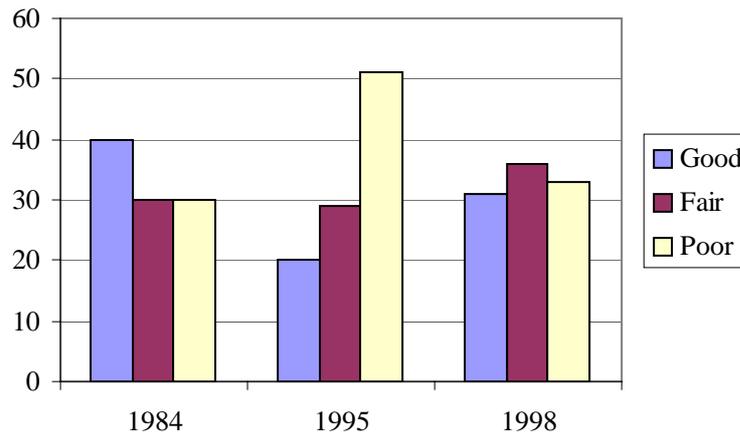
**Table 1: The Zambia Road Network**

The size of the vehicle fleet is estimated to be around 130,000 vehicles. Traffic levels are low, even on the trunk road network. Many trunk roads carry less than 500 vehicles per day.

## DETERIORATION OF THE ROAD NETWORK

Since the boom years of the 1960's Zambia has become poorer and more indebted due to excessive reliance on copper exports and

economic mismanagement. Expenditures on infrastructure maintenance steadily declined until, by the early 1990's just 20% of the paved road network was judged to be in good condition. At that time road maintenance expenditure was only 12% of estimated needs. Allocations continued to decline further through the decade. However, since many roads had become 'unmaintainable' a number of donor funded rehabilitation projects were launched on the more important routes in the mid 1990's. These projects resulted in the improvement in the paved network between 1995 and 1998.



**Figure 1: The condition of the road network**

## INSTITUTIONAL FRAMEWORK

Since the elections in 1991 the government has been implementing an ambitious reform policy in an effort to stimulate the private sector and diversify economic activity away from copper production. The reform process has been extended to the civil service through the Public Sector Reform Programme.

In the Roads Sector the reform process has been supported (and guided) by the World Bank under the Sub-Saharan Transport Programme. Reforms are based on four "Building Blocks":

1. Ownership
  - Involve the private sector
2. Funding
  - Secure sources of funding
  - Introduce a "Fee-for-Service" concept
3. Responsibilities
  - Establish clear lines of responsibilities
4. Management
  - Introduce sound management principles

The result has been:

- The re-establishment of the Road Fund, and
- The creation of a National Roads Board

### **The road fund**

The government re-introduced the Road Fund in 1993. It was established to provide a source of sustainable funding for the **maintenance** of the road network, linking revenue with road use through a levy on fuel. Upgrading and the construction of new roads fall outside the remit of the fund – these activities require funding from other sources (GRZ, donors).

The fuel levy is currently set at 15% of the wholesale fuel price for both diesel and petrol. At the moment it amounts to ZK73 per litre on petrol and ZK68 per litre on diesel. Total revenue in 1998 was about US\$12million. This compares with an estimated annual requirement of between US\$40- US\$50million for the maintenance of the road network.

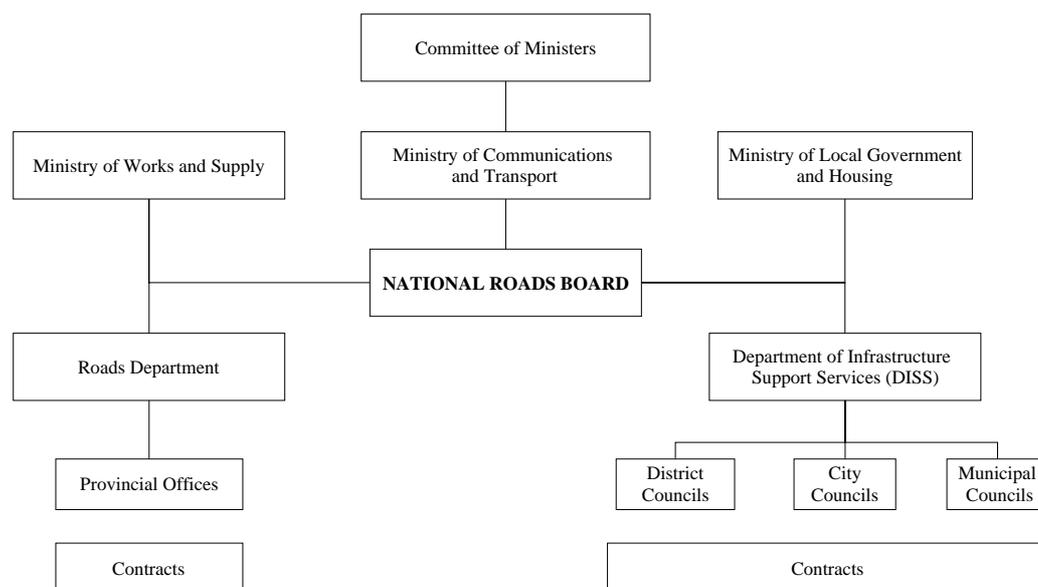
The fuel levy is not paid directly into the Road Fund. The Zambia National Oil Company, who is responsible for purchasing and refining oil products, pays the levy to the Revenue Authority who then passes it to the Ministry of Finance. From there the money is transferred to the Ministry of Transport and Communications who then pay it into the Road Fund account.

There is a commitment to supplement fuel levy money with monies from licence fees, transit charges and weighbridge fines. It is expected that these will add another US\$6million to the Fund. Clearly there is still a wide gap to fill to fully meet road maintenance needs.

Although there is limited scope for increasing the overall fuel price (since fuel in Zambia is already higher than in some neighbouring countries) there may be scope for raising the levy within the existing price structure. It is recognised that the revenue base must be extended in order to meet maintenance needs.

### **The National Roads Board**

The Zambia National Roads Board was set up in 1994, primarily to manage the Road Fund. The Board was created through a Statutory Instrument issued by the Minister to Communications and Transport to the Roads and Road Traffic Act. As such the NRB does not have any Executive Powers. Instead, it has a largely advisory role to MCT and the ministries designated as Highway Authorities for the various classes of roads.



**Figure 2: Institutional structure**

The National Roads Board is responsible for managing the disbursement of the World Bank component of ROADSIP, valued at US\$70million.

### **Role and functions of the NRB**

The primary function of the NRB is the management of the Road Fund. Although officially the NRB exists as an advisory body (reporting to the committee of ministers) in practice it has been given a certain amount of discretion in the allocation of funds.

Because it has no executive powers the NRB is totally dependant on the road agencies (primarily Roads Department and DISS in MLGH) for preparing and implementing work programmes. The NRB does not (legally cannot) enter into contract with contractors. It is not a signatory to any contract.

The role of the NRB is rather in:

- Defining maintenance policy and deciding where and how Road Fund money should be spent;
- monitoring the procurement and implementation process;
- management of the Road Fund

to make sure that road users get maximum benefit and value for money from the money that is spent.

The NRB Secretariat has developed close working relationships with the agencies and, in recognition of the constraints within which all parties are working, tries to be as constructive as possible in helping agencies at each step. The recent strengthening of the secretariat has helped broaden these relationships, particularly at the technical level.

As well as being responsible for the management of the Road Fund, the NRB has been given the task of co-ordinating the Road Sector Investment Programme, or ROADSIP. The NRB was instrumental in helping prepare ROADSIP, which is being supported by the World Bank and other donors.

The management of ROADSIP requires close involvement with a range of institutions responsible for the implementation of the various programme components. The NRB is charged with overall co-ordination and reporting.

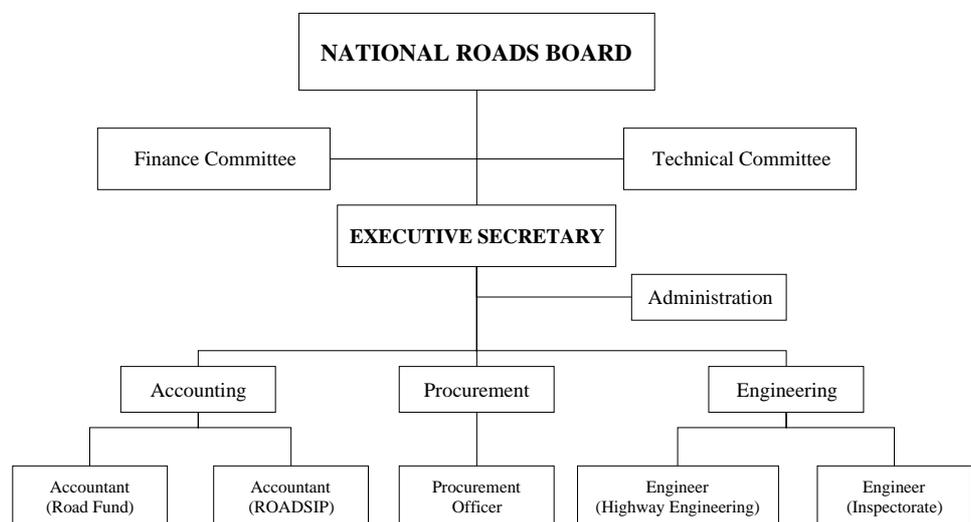
### Composition of the board

A distinguishing feature of the NRB in Zambia is that the Board is dominated by private sector representation. Of the 11 Board members, seven are from the private sector. The four public sector members are ex-officio and are therefore not entitled to vote.

The Board is advised by 2 standing committees:

- a Finance Committee, and
- a Technical Committee.

Each standing committee comprises 6 members, three of whom are drawn from the Board itself. Other members are drawn from ministries and institutions that have road sector interests at either financial or technical level. Technical committees are themselves supported by the NRB Secretariat who advise the members at meetings, providing working papers for discussion, giving background and analysis to the various issues being discussed.



**Figure 3: The NRB Secretariat**

The frequency of Board meetings varies, but members are required to meet at least once every 2 months. In 1998 the Board met a total of 8 times. Finance and Technical committee meetings happen more often – on average every 6 weeks or so.

Recommendations from both committees are passed to the Board for final approval.

### **Size and composition of the secretariat**

Since it was created the intention has always been to keep the NRB as small an organisation as possible. Over the first years of its operation the Secretariat consisted of the Executive Secretary an Accountant and an Administrator. Key staff costs were funded externally. In 1997 the NRB was given authority to hire its own staff and fund salaries from the Road Fund (costs not exceeding 5% of Road Fund revenues).

With time it became clear that certain technical skills were required within the Secretariat to cope with the volume of work (particularly being generated by ROADSIP) and provide a greater depth of advice and guidance to the Board.

Last year the NRB Secretariat was strengthened with the recruitment of a Procurement Co-ordinator (from Zambia National Tender Board) and two Engineers (who head an Engineering Section). In addition a technical assistance contract began in 1998 and consultants are providing a range of support services to the NRB to help strengthen the organisation and meet the demands that ROADSIP is placing upon it.

### **Policy**

Under the Policy guidelines of the Board, 40% of the Road Fund is disbursed for Main, Trunk and District roads, another 40% for maintenance of Feeder roads and the balance 20% for the maintenance of Urban roads in the country. These were adopted in April 1997 by the Councils and the Provincial Road Engineers through Ministry of Local Government and Housing (MLGH) and Ministry of Works and Supply (MWS) respectively.

Under these budget guidelines, priority is given to maintenance of roads in good or fair condition through a contracted maintenance programme. Roads that have recently been rehabilitated are automatically included. Second priority is given for emergency repairs to arterial roads, which are in bad condition but require to be attended to immediately in order to improve accessibility.

Virtually all works are contracted to small and medium sized local contractors through the road agencies.

### **Information dissemination**

Transparency is one of the NRB tenets and great effort is made to ensure those interested parties and stakeholders have ready access to information in as useful a form as possible.

The Road Fund accounts are audited every 6 months and the results published on the NRB website. The website also has pages giving details of the NRB and the programmes that are being funded, both from the Road Fund and through ROADSIP.

The NRB Chairman is a frequently seen on Zambia Television, explaining various aspects of activity in the road sector and

generally championing the need for better maintenance of the road network.

Various publications have been produced to support the ROADSIP programme, including:

- Programme Implementation Manual
- Road Maintenance Manual
- Core Road Network – draft work programme
- Road Sector Investment Programme

A notice board outside the NRB offices gives details of current work programmes, up-coming tenders and other information about NRB activities.

### **THE ROADS SECTOR INVESTMENT PROGRAMME**

The first phase of ROADSIP began in 1998 and is due to be completed by 2002. A second phase is currently being prepared by a working committee led by the NRB.

The strategy adopted for ROADSIP has been to define a ‘core’ network of priority roads on which improvements and maintenance are to be targeted over a 10 year period. It has been recognised that spreading the limited resources available too thinly will have limited impact. Consequently, a network of about 30,000km has been chosen for the programme.

The costs involved in bringing even this ‘core network’ of roads back to a maintainable state, and keeping them in good condition, are considerable. Maintenance costs alone are estimated to be between US\$40million and US\$90million, depending on whether rehabilitation of roads that have reached the end of their useful lives is taken into account.

Road Type	Surface	kms	Annualised Costs (US\$millions)	
			Routine	Periodic
Trunk and Main roads	Paved	5093	5.1	10.9
	Unpaved	2075	1.7	3.6
District roads	Paved	1289	1	2.3
	Unpaved	3711	2.2	5.3
Urban roads	Paved	1022	1	1.8
Feeder roads	Unpaved	16810	6.7	
Total Annualised Costs		30000	<b>17.7</b>	<b>23.9</b>

### **Table 2: Estimated maintenance costs**

The objectives of ROADSIP are to:

- Bring a Core Network of roads into a maintainable condition;

- Improve the network to at least 50% good condition and no more than 10% poor condition;
- Broaden the revenue base for maintenance funding;
- Strengthen technical and managerial capacity of the road authorities;
- Create employment opportunities in the road sector;
- Improve road safety and reduce accidents by at least 20%;
- Improve environmental management in the road sector;
- Improve road transport services in rural areas;
- Develop a framework for the management of community roads;

Various donors are supporting ROADSIP, but nearly half the costs are due to be covered locally as shown in Table

<b>ROADSIP Programme 1997-2001 (US\$ million)</b>						
	1997	1998	1999	2000	2001	Total
Maintenance	22.9	25.1	28.8	32.2	35.9	<b>144.9</b>
Rehabilitation	26.6	40.0	51.0	47.5	64.3	<b>229.4</b>
Technical Assistance	9.1	7.1	4.3	4.7	3.7	<b>28.9</b>
Running Cost (NRB)	1.3	1.5	1.7	1.9	2.1	<b>8.5</b>
<b>Total</b>	<b>59.9</b>	<b>73.7</b>	<b>85.8</b>	<b>86.3</b>	<b>106.0</b>	<b>411.7</b>
<b>Financed by:</b>						
Road Fund	22.9	25.1	28.8	32.2	35.9	<b>144.9</b> 35.2%
GRZ	4.9	6.2	7.2	7.1	9.0	<b>34.4</b> 8.4%
Donors	32.1	42.4	49.8	47.0	61.1	<b>232.4</b> 56.4%
<b>Total</b>	<b>59.9</b>	<b>73.7</b>	<b>85.8</b>	<b>86.3</b>	<b>106.0</b>	<b>411.7</b>

**Table 3: Estimated cost of ROADSIP – 1998 to 2002**

It should be noted that all maintenance is to be funded from the Road Fund. The local funding requirement represents about 44% of the total programme costs.

Most of the funds earmarked for rehabilitation are for major works on the trunk road network, but there are feeder roads components funded by World Bank, EU and DANIDA. All maintenance works are being contracted to small and medium sized local firms.

The World Bank credit contains a component that will support the training of small contractors and consultants through actions co-ordinated by the National Construction Council.

A breakdown of the ROADSIP project components follows:

**IDA (World Bank) US\$70 million**

- Great North Road
- Kitwe and Ndola Urban Roads
- Chingola-Kasumbalesa

- Feeder Roads in Northern, Luapula and Western Provinces
- Periodic maintenance of trunk roads
- Community roads
- Support to NCC and NRSC
- Technical assistance to NRB, MLGH (Feeder and Urban Roads)
- Institutional changes

**European Union US\$70 million**

- Monze-Zimba
- Kabwe-Kapiri Mposhi
- Feeder roads
- Technical assistance to Roads Department

**DANIDA**

- Completion of Kapiri Mposhi-Serenje
- Probable involvement with Lusaka-Mongu Road
- Feeder roads

**Japan**

- Chirundu Bridge

**Germany**

- Livingstone-Shesheke

**Kuwait**

- Lusaka-Mongu (design)

**NORAD**

- Technical assistance to Roads Department

**GRZ**

- Rehabilitation/Upgrading of:
- Lusaka City Roads
- Choma-Namwala
- Mutanda-Kasempa-Zambezi
- Luanshya-Mpongwe
- Nchelenge-Lunchinda
- Kalungwishi Bridge

- Lusaka-Mongu (last section)
- Lundazi-Chama-Muytombe

The Institutional changes being supported under the IDA credit include:

- The creation of an Environment Management Unit in Roads Department to monitor all roadworks contracts.
- The revision of the Roads Act (CAP 464), and
- The revision of Transport Sector Policy.

## **MAINTENANCE CONTRACTING EXPERIENCE**

The Institutional changes that have taken place in road sector management and financing have meant that people have had to adapt to new ways of working. There has been a need to adapt to new procedures. Agencies have become accountable to the NRB for their actions. A new sense of discipline has been imposed which in itself is proving to be a catalyst for change.

The move to contracting out to the private sector and the downsizing resulting from public sector reforms have placed considerable strains on the agencies. All involved in the road sector continue to move along a learning curve that sometimes appears to get steeper rather than flatter but most people agree that the changes that have been made are for the better.

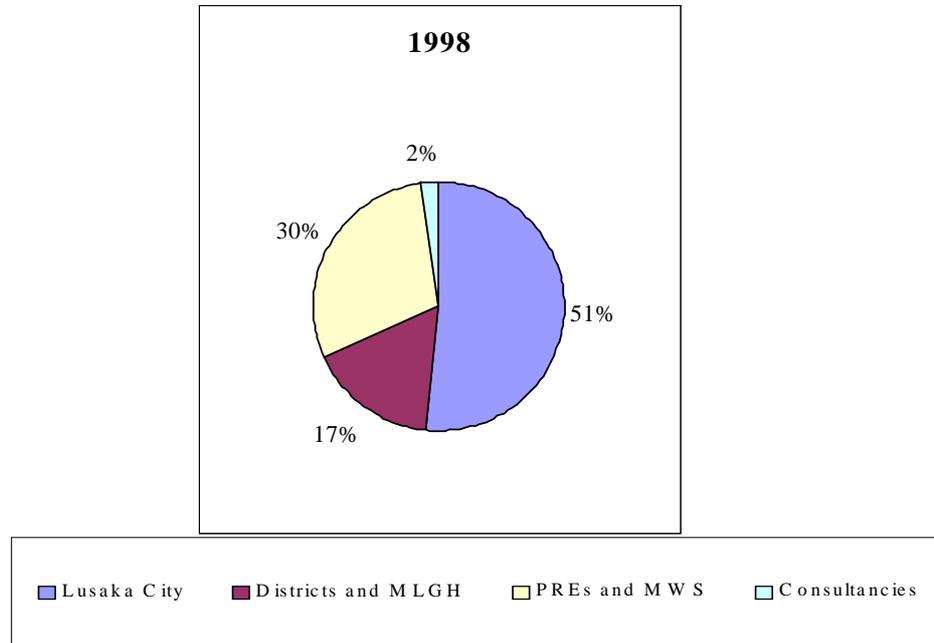
Unfortunately funding of road maintenance has not been as consistent as the NRB would have wished. Since 1997 a large portion of the Road Fund has been utilised for the financing of rehabilitation works in Lusaka City. This has distorted the works programme away from routine maintenance that would normally take first call on the Road Fund. It is hoped that this distortion will be corrected in the near future as the government secures alternative funding for the Lusaka project.

The relative split in funding between agencies and projects is shown in Figure 4.

In the meantime agencies have become frustrated because effort expended in drafting maintenance programmes appears to have been wasted. Contractors who have tendered for works have not been awarded contracts because funds have not been available to finance them. Since consistency in funding is a pre-requisite for capacity development the result has been a slowing of the capacity building process and a growing loss of confidence in the sector.

The experience of maintenance contracting from the 1997/98 programme has highlighted many of the challenges that need to be met in building capacity, both at agency and private sector level. Over 140 contracts were awarded between late 1997 and early 1998, mostly to small contractors for maintenance and emergency repair (accessibility) works. Although most of the larger contracts have now been completed there are many small contracts that

have still not been finished, now in the second quarter of 1999. Some of these are contracts that should have been completed over 12 months ago.



**Figure 4: Road Fund expenditure in 1998**

Some of the problems can be attributed to poor preparation of contract documents by agencies, lack of (or inadequate) supervision etc. But it has also become clear that many contractors (even some of the better-equipped firms) are just not committed to completing their contracts. There appears to be little appreciation of the serious obligations that result from the signing of a contract.

Clearly there is a cultural problem that needs to be addressed by tightening up contract administration and monitoring, so that contractors who are not interested in performing are screened out of future works programmes.

Another problem has been that trained contractors have not been winning contracts because not enough importance has been given to training during tender evaluations.

### **THE WAY FORWARD**

Road agencies are working hard to improve their contract management procedures. The NRB Secretariat is providing assistance to agency staff to help improve contract documentation and train staff in contract administration. Systems are being developed within the NRB to help improve contract monitoring.

The primary role of the NRB in capacity development is to:

- Ensure consistency of funding for road maintenance;

- Ensure that works contracts are packaged so that a range of local contractors can participate in the works programme;
- Ensure that training and previous experience are properly recognised in tender evaluations;
- Monitor contract implementation and contractor/consultant performance;
- Help agencies improve the contracting environment – from contract preparation, through procurement to execution of the works;
- Work constructively with the agencies and the NCC to support private sector development;
- Help build a ‘quality culture’ in which all involved are committed to producing good results and value for money.

The ROADSIP programme offers exciting possibilities for firms with road sector interests. As the network is gradually brought back into maintainable condition there will be an expanding workload for small local contractors, both on maintenance contracts but also through sub-contracts to larger firms. The build-up will be a gradual process, as much needs to be done to improve the skills and resource base of local firms.

Continuity of funding is a prime requirement. The NRB exists to ensure that will happen, but some politicians still need to be convinced of the principle of giving roads in better condition priority for maintenance.