



Sub-Saharan Africa Transport Policy Program  
The World Bank and Economic Commission for Africa



SSATP Working Paper N° 14

# ***African Road Funds***

## ***What Works and Why?***

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**March 1995**

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## FOREWORD

The rehabilitation of road networks and the build up of institutional and financial capacity for their maintenance are the single most important challenges confronting transport planners and policy-makers in Africa. The Road Maintenance Initiative (RMI) has since 1988 undertaken to develop awareness about the importance of road maintenance and has supported country level programs designed to identify the root causes of the problem and to initiate the actions needed to set the management and financing of roads on a sustainable long term footing. The RMI approach is described in the recent World Bank Technical Paper “Management and Financing of Roads: An Agenda for Reform” by Ian Heggie, Principal Infrastructure Economist and RMI Task Manager. The RMI experience will be disseminated through country exchanges and through a series of regional seminars.

One of the key building blocks of the RMI approach is the establishment of a reliable source of finance. Several countries are pursuing this through the introduction of a road tariff (license fees plus a fuel levy) with the proceeds being deposited in a special account of Road Fund to avoid commingling with general tax revenues. An essential feature of the reforms is to put the Road Fund under the authority of a road board with representation of road users and private sector organizations. While the general purpose of such road funds is well understood, the experience shows that their effectiveness and their sustainability depend very much on the specific legal and administrative arrangements under which they operate. The *raison d'être* of the present SSATP Working Paper is to share emerging experience on what works in this important dimension of road sector reform.

Road funds are set up mainly to provide a stable flow of money to support operation and maintenance of roads. This review of experience with road funds in ten African nations details how to design a fund to ensure that it works. Road funds are examined in Benin, Central African Republic, Chad, Ghana, Mozambique, Rwanda, Sierra Leone, South Africa (up to 1988), Tanzania and Zambia. The analysis focuses on objectives, revenue raising, legal status and management, and financial management. Five essential design elements are identified. First, a fund should be fully funded by user fees rather than transfers from tax revenues. Second, the fund should be managed by an independent board comprising representatives of road users groups who are selected by the organizations they represent. Third, the board should be free to set the level of the tariff—based on a fuel levy, license fees and/or bridge and ferry tolls—in response to changing road expenditure needs, currency devaluation and inflation. Fourth, the tariff components should be deposited directly into the road fund; the fuel levy should be collected by fuel companies and, where feasible, other fees should be collected under contract. Fifth, the fund should be managed according to sound commercial principles—with a commercial accounting system, clear disbursement procedures, an independent financial audit and selective technical audit.

The RMI is a component of the Sub-Saharan Africa Transport Policy Program (SSATP) which is a collaborative framework initiated by the World Bank and the ECA to improve the response to key aspects of transport policies and to build up related capacity in Africa. The SSATP is addressed to policy makers and to managers and planners engaged in the task of improving the delivery of transport services. They are also intended to facilitate consensus building among external support agencies.

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## 1. INTRODUCTION

Economists generally criticize road funds on the grounds that they constitute earmarking and hence introduce fiscal inflexibility and undermine the principle of unified budget management, this paper focuses on the operational objections to road funds.<sup>1</sup> The main operational objection to road funds is that they simply do not work. Assuming that a decision has been made to establish a road fund, this review examines how to design a fund to ensure that it works

These usual criticisms rarely go beyond superficial symptoms and make little effort to find out *why* road funds have problems and what might be done to overcome them. Are such problems inherent in *any* road fund, or were ineffective road funds badly designed? The results of the review suggest that road funds can work successfully if some institutional arrangements are made.

This paper reviews experience with the operation of selected African road funds. Although most African road funds suffer from systematic problems, this review identifies examples of best practice and provides guidance on how to design a road fund that works. The paper has mainly been written for a technical audience and is directed toward officials in developing countries, Bank Task Managers, and officials in other development agencies working to improve the operation of road funds. It is also written for consultants involved in setting up new road funds, or restructuring existing ones.

The road funds reviewed in the paper here mainly set up with the objective of providing a stable flow of funds to support operation and maintenance of roads. Some of them were set up to also finance transport studies, road safety programs, road rehabilitation, and new investment. The road funds selected for review are *special accounts*, held either at a Central Bank or at a commercial bank, and derive most of their revenues from road user charges. The revenues paid into these special accounts are usually (but not always) collected under the government's tax-setting powers and may consist of a fuel levy, road user charges and an earmarked portion of other taxes and service fees. The review does not cover road funds which consist of little more than a separate line item in the Ministry of Finance (MOF) accounts, and/or special accounts which derive all their revenues through transfers from the government's general budget (as in South Africa).

The review covers road funds in Benin, Central African Republic, Chad, Ghana, Mozambique, Rwanda (where operations have been suspended by the civil war), Sierra Leone, South Africa (only up to 1988 when the fuel levy was abolished), Tanzania, and Zambia. A companion volume, published as an SSATP Working Paper, provides a detailed description of each road fund (see de Richecour, 1995). The earliest road fund was established in South Africa in 1935, Benin established one in 1984 and Ghana in 1985, and the remainder were established during the late 1980s and early 1990s. Some of these road funds — like those in Benin, Ghana, and South Africa — have been operating for some time and have a wealth of experience to share.

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<sup>1</sup> The pros and cons of earmarking, in the context of a commercialized road sector, are discussed in Heggie, 1995 (b).

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Some offer good examples of best practice, while others provide valuable lessons on important mistakes to avoid.

This review suggests that road funds can work successfully if they deal with four key issues. They must have: (i) clear objectives; (ii) an independent source of revenues mobilized through a road tariff; (iii) arrangements for effectively managing the road fund; and (iv) commercial accounting systems and independent audit arrangements.

## **2. THE REVIEW**

The usual problems cited include: (i) the road user charges are simply not paid into the road fund; (ii) the charges are paid into the road fund, but disbursements continue to be erratic; (iii) road fund revenues do not meet required road maintenance expenditures;<sup>2</sup> (iv) government borrows money from the road fund to finance other government expenditure programs; and (v) instead of being used to finance maintenance, the funds are used to provide counterpart funding for donor-financed rehabilitation programs and to finance road agency overhead, equipment purchases, and staff salaries.

In the context of the above criticisms, the following review addresses four key questions which directly affect the way a road fund operates:

- What are the objectives of the road fund, what is its legal status, where do the revenues come from, and which expenditures does the road fund finance?
- What revenue-raising mechanisms are used, how is the tariff adjusted, what sort of tariff structure is used, are there any exemptions, and how is the revenue collected?
- How is the road fund managed, what is the structure of the road fund board, and how are funds divided between main, urban and rural roads?
- What kind of financial accounting systems are used, how are funds withdrawn from the road fund, how are revenues disbursed to end users, and what kind of auditing is carried out?

Each question is examined below.

### **2.1 Road Fund Objectives**

When responsibility for road financing is delegated to a road fund, the managers of the road fund need to have clear objectives against which they and their constituents can evaluate their performance. There are four major areas where clear objectives are required:

- Is the road fund a bank account managed by the existing road agencies, or is it a separate administrative body?
- Are the funds used to finance routine maintenance, periodic maintenance, new investment, all road expenditures, or a sub-set of such expenditures?

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<sup>2</sup> Required road maintenance expenditures represent the level of spending required to keep the vital road network in a stable long-term condition.

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- Is the road fund entirely financed through road user charges, or does it partly rely on allocations from the government's recurrent and/or development budgets?

### **2.1.1 Status of the Road Fund**

The road funds reviewed in this paper are either: (i) bank accounts managed by *one* road agency (as in Chad and Sierra Leone); (ii) separate bank accounts managed by *several* different road agencies (as in Ghana, Tanzania, and South Africa); or (iii) a separate administrative body set up specifically to manage the funds (as in Benin, Central African Republic, and Zambia). In the first two cases, the road funds are simply bank accounts controlled by the individual road agencies. In the third case, the road fund is a separate legal entity governed by specific legal provisions. It is generally managed by a board, has its own staff, and is required to keep accounts and publish regular reports. The road funds are thus financing mechanisms, not executing agencies. Their function is confined to channeling funds into a bank account held either at the Central Bank (e.g., Ghana and Tanzania) or at a commercial bank (e.g., Chad and Zambia). Planning and programming of road works is generally carried out under the guidance of the Ministry responsible for roads, while execution of road works is invariably carried out by specialized road agencies. The different arrangements are summarized in Box 1.

**Bank Account Managed by One Road Agency.** When one road agency is responsible for managing an entire road network (as in Chad and Sierra Leone), the road fund may be managed by the same road agency. However, when the road fund is managed by the same organization which manages the road network, management tends to become pre-occupied with the immediate day-to-day management of the road network, and management of the road fund receives insufficient attention. That is why it has been suggested that the Sierra Leone Roads Authority should establish a special sub-committee to oversee management of the road fund.

**Bank Accounts Managed by Several Road Agencies.** When several road agencies are entitled to draw from a road fund, the revenues may either be split at the source and managed separately by each road agency (as in Ghana and Tanzania), or managed by one of the road agencies. However, the management of the road fund by one of these agencies (as in South Africa) creates obvious conflicts of interest. Some of these conflicts can be resolved by splitting the revenues at source, paying them into separate bank accounts and leaving the separate road agencies to manage their own allocations (as in Ghana and Tanzania). However, unless the parent ministry has a consistent way of dividing the revenues between the different road agencies, this procedure may result in continual arguments (see Box 1).

**Bank Accounts Managed by a Separate Administrative Body.** Benin, Central African Republic, Mozambique, and Zambia have avoided the above problems by setting up separate administrative bodies to manage their road funds. In the case of Benin and Central African Republic, each road fund was set up as an *Etablissement Public à Caractère Industriel et Commercial*, which is a type of public agency which enjoys more commercial freedom than a regular public enterprise. Although it doesn't work particularly well, the advantage of such an arrangement is that the road fund has its own staff and is able to manage its affairs along regular commercial lines. Zambia and Mozambique have created Roads Board to manage the road fund. The arrangement in Zambia appears to be working quite well, while those in Benin, and Central African Republic have unfortunately resulted in creation of large, expensive agencies with high costs and vague responsibilities (see Box 1). Separate road fund administrations need to be small,

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efficient organizations with clear terms of reference, to ensure that administrative costs are kept to a minimum.

*Box 1: Managing the Road Fund through an Existing Road Agency or a Separate Body*

*Using Existing Road Authorities:*

In **Sierra Leone**, the road fund is a bank account managed by the Sierra Leone Roads Authority (SLRA). The board and Director General therefore manage the road fund and also manage the road network. SLRA decides, as an internal matter, how to divide the road fund revenues between main, urban and rural roads. In the longer term, SLRA may create a board sub-committee to manage the road fund to ensure that financial matters receive sufficient management attention.

In **Ghana**, the road fund is a bank account controlled by the Ministry of Roads and Highways (MRH). The ministry splits the revenues at the source and decides how much to allocate to the Ghana Highway Authority (GHA), Department of Feeder Roads (DFR), and Department of Urban Roads (DUR). The money is simply transferred from the road fund account into the bank accounts of GHA, DFR, and DUR, and they are then responsible for managing the funds, subject to oversight by MRH. There is no consistent procedure for allocating funds between the different road agencies. For example, in 1992 DUR received 21 percent of the revenues, down from 30 percent in 1991 and up from 16 percent in 1990. Annual allocations vary widely and are the subject of continual complaints.

The **Tanzania** road fund also splits revenues at the source. The Ministry of Finance pays 20 percent of the proceeds into a road fund managed by the Prime Minister's Office (which deals with district council roads) and 80 percent into a road fund managed by the Ministry of Works (which deals with main and regional roads). The Central Road board (CRB) oversees the latter road fund. A healthy debate is currently underway regarding these proportions and the board may in due course be invited to advise on the 20:80 formula and whether it should be changed or replaced by a more flexible arrangement.

*Using a Separate Administrative Body:*

**Benin** and Central African Republic have established public utilities to manage their road funds. In Central African Republic, the public utility has a management board which oversees the road fund, a Director responsible for day-to-day operations, and a large staff — as many as 50 to 80 people — organized into several units (accounting, administration, secretarial services, credit management, and personnel). The utility manages the road fund and is also responsible for providing a number of other services to the Ministry of Works. The utility deals with payment of field units, settlement of disputes between contractors and the road agency, and management of staff not working for the road fund. The structure is not particularly satisfactory (e.g., money from the road fund is used to finance activities which have nothing to do with roads) and the multiple objectives confuse staff and divert attention away from the important objective of managing the road fund.

In **Zambia**, the road fund is managed by the National Road board (NRB), which was established with the specific objective of managing the road fund. The board consists of eleven members: five from the public sector (non-voting members) and seven voting members representing road users and other private sector interests. The current Chairman and Vice-Chairman are both from the private sector. The NRB has a small secretariat consisting of a Secretary and up to five engineering and accounting staff. The board participates in the review of the proposed road expenditure program, recommends the level of the road tariff to Ministry of Finance, and allocates the proceeds between the different road agencies (Road Safety Board, main roads, urban district roads, and rural district roads), in consultation with the responsible Ministers.

The review therefore suggests that: (i) road funds are generally financing mechanisms, rather than implementing agencies; (ii) it is not necessarily a good idea to have a road fund



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managed by the same board that manages the road network (there should at least be a sub-committee of the board to manage the road fund); (iii) when there are several road agencies, it is generally better to have the road fund managed by a separate administrative body; and (iv) the management of the road fund should have clear terms of reference and administrative costs should be kept under control.

### ***2.1.2 Sources of Revenues***

The objective of most road funds is to provide an adequate and stable source of finance. The revenues generally come from two main sources: (i) road user charges; and (ii) transfers from the government's general tax revenues. The first source is relatively stable, while the second is highly unstable. Governments in Africa are seriously short of fiscal revenues and, even when willing, cannot provide a stable flow of finance. A road fund which relies on transfers from the government's general revenues will therefore continue to provide an erratic flow of funds. Actual payments will often be less than the budgeted amount. For example, in Benin, as of October 1994, only CFAF 285 million of an agreed budget allocation of CFAF 600 had been paid into the road fund. Similarly, in Chad, the government only deposited CFAF 253 million of an agreed allocation of CFAF 1,700 million into the road fund during 1992/93. Consequently, the road fund in Chad was redesigned in 1994 to ensure that it was fully funded by road users and did not have to rely on any general budget allocations. Partial reliance on general budget financing nearly always creates problems.

Although some transfers from general revenues may be necessary during the early years while road revenues build up, road users will probably have to accept the long-term objective of full cost recovery for roads. This means eventually using the road fund to finance all routine and periodic maintenance, the local currency component of donor-financed rehabilitation programs (together with interest payments and debt service on loans for rehabilitation), and all new investment. Avoiding reliance on general budget support is consistent with the concept of commercialization currently being applied in Africa (Heggie, 1995 (a)), and also provides a level playing field to govern competition between roads, rail, and inland waterways.

The review therefore suggests that a road fund should be designed to (i) avoid reliance on transfers from the government's general revenue budget; and (ii) eventually to achieve full cost recovery for roads.

### ***2.1.3 Which Expenditures to Finance?***

Most road funds were primarily designed to finance maintenance, although some also finance road rehabilitation, road safety, new investment, and other miscellaneous expenditures. For example, the road funds in Mozambique and Tanzania finance road rehabilitation, while the road fund in South Africa also finances new investment. Some road funds furthermore only finance part of the maintenance budget. In Ghana, the road fund was set up to finance part of the periodic maintenance budget, leaving all routine maintenance and the balance of periodic maintenance to be financed from the government's general budget, together with donor grants and loans. Similarly, although the road fund in Benin was set up to finance all road maintenance, it is currently only financing routine maintenance. However, apart from South Africa, most road funds concentrate primarily on maintenance, and are attempting to progressively increase revenues to meet basic maintenance requirements.

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Most countries in Africa accept that they cannot fully finance maintenance of the entire road network. Road networks were over-built during the 1960s and 1970s and a fully funded maintenance program is simply not affordable. Instead, they are attempting to fully maintain a high-priority *core* network (with a view to keeping this in good to fair condition) and are only undertaking spot repairs and emergency maintenance on the remainder of the network (which will remain in poor condition). In Benin, maintenance of some parts of the main network has even been handed over to lower levels of government and local communities. Until countries have built up their road funds and have reached the limits of what is affordable, they will therefore need to: (i) define a high priority core network; (ii) maintain this network in good to fair condition; (iii) only expand the core network when sufficient funds are available to maintain it in good to fair condition; and (iv) only build new roads when funds are available for maintenance.

The general conclusions of this section are thus that:

- maintenance should receive highest priority;
- most countries can only afford to fully maintain a core road network;
- the remainder of the network will either have to be handed over to lower levels of government, or will receive minimal maintenance in the form of spot patching and emergency maintenance;
- new roads should only be built when funds are available for maintenance.

## **2.2 The Road Tariff**

The revenues paid into a road fund — apart from transfers from the government's general revenue budget, and donor grants and loans — are derived from road user charges. To make clear that these are fees, rather than regular taxes, they are normally referred to as the *road tariff*. Since the objective is to charge road users explicitly for operation and maintenance of roads, the tariff needs to be clearly recognizable and capable of being separated from general tax revenues. The key questions which arise when examining how different countries charge for road use are:

- Which revenue-raising mechanisms are used to collect the required revenues?
- How is the road tariff adjusted to meet the required revenue targets?
- What sort of tariff structure is used to mobilize the required revenues?
- Does the tariff provide for any exemptions?

### **2.2.1 Revenue-raising mechanisms**

Revenues paid into a road fund normally come from three main sources, excluding transfers from the government's general tax revenues: (i) a fuel levy, bridge and ferry tolls, and weigh bridge fees; (ii) vehicle license fees; and (iii) international transit fees. Some countries also pay fines from overloaded vehicles into a road fund, on the grounds that the vehicles have damaged the road pavement, and the fines should be applied toward restoring the road pavement (as is done in Zambia). Most of the other taxes and charges paid into the road fund — value-added tax (VAT), registration fees, vehicle inspection fees, and driving license fees — are not really charges for road use and should not be paid into the road fund (see Heggie, 1992). They

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are either general taxes, which are designed to collect general tax revenues, or service fees.<sup>3</sup> Charges under item (i) effectively charge vehicles for *use* of the road network, while those under item (ii) charge them for *access* to the road network. The two charges can therefore be regarded as a two-part tariff. Charges under item (iii) simply charge foreign vehicles for use of the road network.

The fuel levy is the most important charge and usually accounts for over 80 percent of road fund revenues (as in Sierra Leone and Tanzania). It is a fairly good surrogate for a user charge, since it bears a reasonably close relationship to the costs of road use. The fuel levy is usually added to existing excise and sales taxes. Since it tends to be collected alongside, or as part of, sales and excise taxes on fuel, it is important to administer the fuel levy independently to ensure that the revenue does not get confused with the regular taxes applied to transport fuels (see Box 2). It appears best to specify the fuel levy as a discrete charge added to the price of fuel, rather than as a percentage of the price, and to avoid referring to it as a tax. This emphasizes that it is a road tariff and not part of the regular fuel tax. In Mozambique, the fuel levy is called an added *tax* on existing taxes and this makes it difficult to persuade Ministry of Finance that the levy is part of the road tariff and not part of the government's general tax revenues. In the longer term, as a country improves its capacity to administer the road tariff, the fuel levy on diesel may be replaced by a weight-distance charge (see Heggie, 1992).

The general conclusions of this section are thus that: (i) the main revenue-raising mechanisms relate either to road use (fuel levy, bridge and ferry tolls, and weigh bridge fees), or to road access (license fees); (ii) international transit fees, which charge foreign vehicles for use of the road network, should also be paid into the road fund; (iii) it is legitimate to also pay fines for overloading into the road fund; (iv) service fees and general taxes on vehicles and spare parts should not be paid into the road fund; (v) the fuel levy should be specified as a discrete charge added to the price of fuel, rather than as a percentage of the fuel price; and (vi) in the longer term, the fuel levy on diesel might be replaced by a weight-distance charge.

*Box 2: Separating the Fuel Levy from General Taxes*

Ghana and Zambia have clear arrangements for separating the fuel levy from regular fuel taxes. In Ghana, the fuel levy is collected by Ghana National Petroleum Company and is then paid directly into the road fund account at the Central Bank. Likewise, in Zambia, the fuel levy is collected by the fuel companies and then paid directly into the road fund account at a commercial bank. Tanzania also tries to keep the fuel levy separate by calling it the *road toll*. The charge is widely recognized by the public as a specific charge for usage of roads and is accounted for separately in both the Customs and Ministry of Finance accounts.

In contrast, Chad defines the fuel levy as a percentage of the overall taxes on fuel (currently 16 percent). This has several disadvantages. First, the levy is often applied to non-transport fuels and this means it is not really a road user charge (e.g., the levy is also applied to heating oil and kerosene). Second, the revenue generated cannot easily be adjusted to meet the requirements of the road sector without adjusting the percentage earmarked for roads. Increasing the percentage for roads necessitates tightening the rest of the government's budget. And finally, since the fuel levy is not clearly separated from the other taxes applied to fuel, the revenue looks like — and generally is — straightforward earmarking.

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<sup>3</sup> Service fees cover the costs of establishing title to property (to facilitate law enforcement), checking vehicles for mechanical soundness, and monitoring payment of license fees. As such, they are not user charges and should be set to only cover servicing costs.

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### 2.2.2 *The Tariff Structure*

Since the objective of commercialization is to put roads on a fee-for-service basis, the tariff should be set to ensure that each class of vehicle covers its marginal costs (i.e., the charges applied to individual vehicles should never be less than the variable costs they impose on the road network) and that all vehicles collectively cover the total costs of operating and maintaining the road network.

Few, if any, countries in Africa ensure that vehicles cover their marginal costs. Heavy vehicles are nearly always under-charged and license fees on heavy vehicles generally need to be raised or combined with a supplementary heavy-vehicle license fee, to ensure that heavy vehicles pay their way. Some countries compound the under-charging of heavy vehicles, by having a diesel levy which is lower (often very much lower, as in Mozambique) than the levy on gasoline. Since trucks do more damage to the road pavement, the fuel levy on diesel should be at least as high as the levy on gasoline.

Existing vehicle license fees tend to be low and set at minimal levels. To generate the required revenues, these fees need to be raised to about the equivalent of \$75 for a car through \$500 for a bus or medium truck to about \$2,500 for an articulated truck. Or the fees need to be combined with a supplementary heavy vehicle license fee perhaps varying from about \$200 for a light truck through \$1,000 for a heavy truck to \$2,000 for an articulated truck to ensure that the combined fees result in the same \$2,500 fee for an articulated truck. Both Tanzania and Zambia are exploring the idea of introducing a supplementary heavy vehicle license fee. The fee applies to fewer vehicles and should be easier to administer. Furthermore, since license fees in many countries (e.g., Mozambique) are collected at the local government level, introduction of a supplementary license fee avoids the need to interfere with the taxes and charges collected by local government.

Figure 1 shows that several countries in Africa are already well on their way to having a fuel levy of about \$0.10 per liter and this generally produces sufficient revenues to ensure that operation and maintenance of the core road network is fully funded. The fuel levy likewise does not, as yet, make fuel unduly expensive (see Figure 2). Prior to the CFAF devaluation, francophone countries frequently priced diesel at \$0.70 per liter and gasoline at over \$1.00 per liter. Since the devaluation, few countries price diesel at more than \$0.55 per liter or gasoline at more than \$0.70 per liter. Africa now has some of the lowest fuel prices in the world. An \$0.08 to \$0.12 fuel levy would still leave fuel prices in most African countries at acceptable levels. Only in a few countries, like Malawi and Uganda, might the introduction of a high fuel levy need to be accompanied by revision of the underlying fuel tax structure to ensure that the final price of fuel was not unreasonably high.

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The general conclusions of this section are thus that: (i) license fees need to be substantially increased (either directly or by introducing a supplementary heavy vehicle license fee) to ensure that each class of vehicle covers its marginal costs; (ii) the license fees need to be combined with a fuel levy of between \$0.08 to \$0.12 per liter to ensure that all vehicles collectively cover the entire costs of operating and maintaining the core road network; and (iii) since a fuel levy may make fuel unduly expensive in countries like Malawi and Uganda, introduction of the fuel levy may need to be accompanied by a revision of the underlying fuel tax structure.

### ***2.2.3 Adjustments to the Tariff***

Whatever the level of the road tariff, it usually needs to be adjusted regularly to compensate for inflation, devaluation of the currency, and changing road expenditure requirements. It is surprising how few road funds have any systematic arrangements for varying the road tariff, other than through government tax setting procedures which were not designed to deal with user fees. These procedures are time consuming and usually involve seeking agreement for tariff changes from a wide range of ministries which have nothing to do with roads. For example, in Mozambique the fuel levy is set by the Council of Ministers, based on recommendations from MOF and the Price Commission. When changes are eventually approved, they furthermore tend to reflect the government's overall revenue requirements, rather than the specific needs of the road sector. For example, in Benin, the diesel levy remained constant at CFAF 14 per liter from 1988 to 1994, in spite of growing road expenditure requirements. When the CFAF was devalued in January 1994, the government wished to keep pump prices stable and the diesel levy was consequently reduced from CFAF 14 per liter to CFAF 4.4 per liter.

Only two countries have attempted to introduce arrangements to systematically adjust vehicle license fees and the fuel levy. Tanzania and Zambia have both introduced procedures whereby their respective road boards review propose road expenditure programs, decide whether they are affordable, and then recommend to MOF the license fees and the fuel levy required to finance the approved expenditure program (see section 2.3.1). These arrangements will hopefully evolve to the point where MOF sets the framework within which tariff decisions are made, as in the case of other parastatals, and then leaves the road boards to take their own tariff decisions within that framework.

There are fewer problems with international transit fees, since they are usually specified in foreign exchange. For example, the fees used throughout the SATCC region are specified in US dollars and are only payable in hard currency. The fees are adjusted from time to time, but only through international agreement.

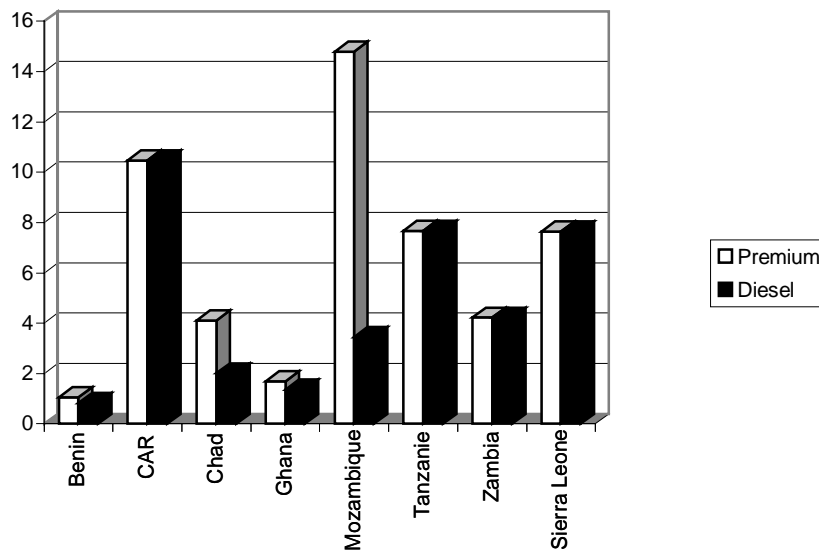
The main conclusions of this section are thus that: (i) there should be agreed procedures for adjusting the road tariff to compensate for inflation, devaluation of the currency and changing road expenditure requirements; and (ii) international transit fees should be specified in foreign exchange and are payable in hard currency.

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### 2.2.4 Exemptions

Chad clearly states in its legislation that road user charges are not regular taxes and that tax exemptions are not applicable<sup>4</sup>. Likewise, Ghana and Tanzania have established the correct principle that *all* road users should pay the fuel levy. Unfortunately, many other countries exempt vehicles owned by government departments, and those owned by the military and the police. Diplomatic vehicles may also be exempted, or diplomatic missions may claim exemption on grounds that the fuel levy is a tax and that they are tax-exempt. None of these exemptions is justifiable. All vehicles impose measurable costs on the road network and, when some vehicles do not pay the road tariff, somebody else has to pay. When the government wishes to continue an exemption (e.g., for diplomatic vehicles), government should cover the costs by making an explicit payment to ensure that other road users do not have to cross-subsidize such users.

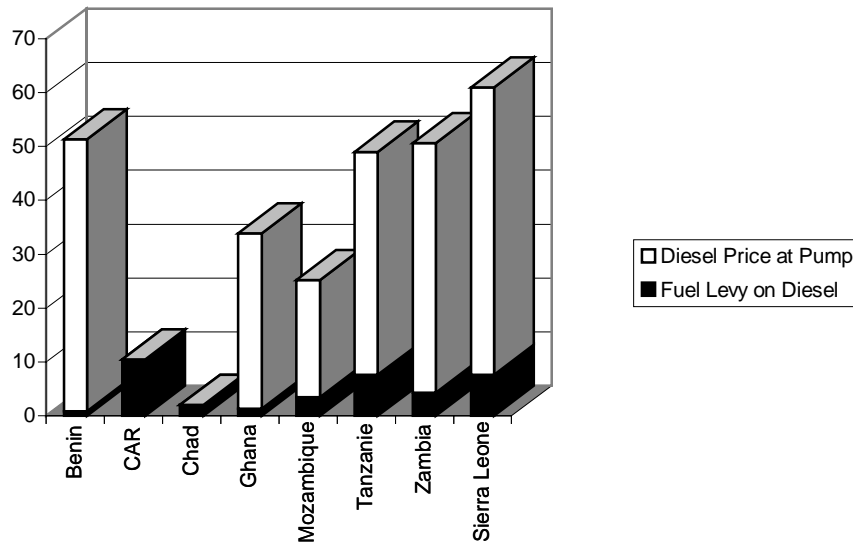
Figure 1: Comparison of Fuel Levy on Premium and Diesel



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<sup>4</sup> "Les droits d'usage des routes et la redevance sur l'affrètement routier ne présentent pas de caractère fiscal. Leurs redevables ne peuvent bénéficier des exonérations et des abattements prévus en matière d'impôts et de taxes."

Figur 2: Figure Levy and Price at Pump of Diesel



source: RMI Country Coordinators and World Bank task managers

There are cases where exemptions are justified. For example, several countries exempt non-road users from the diesel levy. The same rarely applies to gasoline, since gasoline is almost entirely used for transport purposes. Such exemptions have to be simple and easy to administer to prevent undue evasion and avoidance. Legitimate fuel levy exemptions are currently granted in Central African Republic (where river transport and power production are exempted), in Chad (where the national power company "Société Tchadienne d'Energie Electrique" is exempted), in Ghana (where the fishing industry is exempted), and in Sierra Leone (where the mining industry is exempted). Mozambique does not offer exemptions, but sets aside 20 percent of the diesel levy to compensate agriculture for having to pay the diesel levy. These exemptions should be extended to all countries with fuel levies. Among other things, the exemptions emphasize that the fuel levy is a road user charge and not simply another tax.

The conclusions of this section are thus that: (i) all normal road users should pay the road tariff; (ii) when government decides to continue an exemption (e.g., for diplomatic vehicles), it should cover the costs by making an explicit payment to cover these costs; and (iii) where feasible, non-road users should be exempted from paying the fuel levy.

### 2.2.5 Collection of Tariff Revenues

The main objective in revenue collection is to ensure that the revenues assigned to the road fund are collected efficiently; do not suffer from high levels of evasion, avoidance, and leakage (see Bahl, 1992); and are not diverted to support other government spending programs.

Since fuel levy is the most important part of the road tariff, it deserves the most attention. It does not suffer from much evasion, avoidance, or leakage, but does tend to get diverted to support other spending programs. It is generally collected under one of the following two arrangements:

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- (i) It is either collected by the Customs and/or Ministry of Finance, and then is moved through their bank accounts before being deposited into the road fund (as in Benin, Mozambique, Sierra Leone and Tanzania).
  - (ii) It is collected by the oil companies which directly deposit the revenues into the road fund (as in Central African Republic, Ghana, Rwanda, and Zambia).

The first system does not work well. The problems start when the fuel levy is deposited into the Customs and/or Ministry of Finance bank account. It is not that the Customs or Ministry of Finance are incompetent, but simply that countries using this system do not have an explicit agency agreement and do not separate collection of the fuel levy from the collection of other taxes. This causes two problems. First, it introduces unnecessary delays. For example, in Tanzania, the funds are deposited by Customs into their deposit account, are transferred to their current account, are transferred to the Ministry of Finance current account, and only then are transferred to the road fund account. Although MOF has recently streamlined the process, it used to take two to three months to get money from the point of collection into the road fund.

The same is true in Benin. It used to take two months to get funds transferred from the oil companies and into the road fund. Now that funds also have to pass through the Ministry of Finance account, transit times have increased to nearly five months. Second, MOF almost invariably withholds some of the revenues. For example, in Benin, the road fund didn't receive any revenues from the fuel levy between January and May 1994. In Mozambique, only half the revenues collected through the fuel levy were actually paid into the road fund during 1993. Similarly, in Sierra Leone during 1993, although the oil companies continued paying the fuel levy, all payments into the road fund were suspended (the money was diverted and used for other purposes). The first option is therefore unsatisfactory and should be avoided if at all possible.

The second option is working reasonably well in several countries. In Ghana, the Ghana National Petroleum Company collects the fuel levy on a monthly basis and pays it directly into the road fund account at the Central Bank, while in Zambia the individual oil companies pay the fuel levy every 10 days directly into the road fund account at a commercial bank. This procedure ensures a steady flow of funds. It only breaks down when the oil companies stop paying the fuel levy. This usually only happens when government is in arrears on its own payments to the oil companies for fuel consumed by government (as happened in Central African Republic). It is hoped that a strong and influential road fund board will be able to persuade the oil companies to continue paying the fuel levy into the road fund, even under such difficult conditions (see section 2.3).

Whatever method is chosen, it is desirable to collect the fuel levy on the basis of product supplies, when fuel leaves the bonded warehouse (as in Ghana and Tanzania), rather than on sale of products (as in Mozambique). This makes it easier to monitor the quantity of fuel subject to the fuel levy. It also makes it more difficult for the oil companies to withhold payment of the fuel levy on the grounds that the government has not paid its bills. Without payment of all taxes and levies, the fuel cannot be taken out of bonded storage. However, fuel companies facing cash flow problems may find it difficult to pay the fuel levy before the product is sold. In such cases, there may be no alternative but to allow the fuel companies to pay in arrears.

Collection of elements of the road tariff tends to suffer from high levels of evasion and leakage. Some countries are therefore starting to collect license fees, bridge and ferry tolls, and international transit fees under contract. In Chad, the collection of ferry and bridge tolls has been contracted to the private sector for a three-year period. In Benin and Mozambique, bridge tolls



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are collected under contract. However, since the revenues in Mozambique are then deposited into the Ministry of Finance account, the money does not flow regularly into the road fund. Tanzania and Zambia are currently examining the possibility of collecting license fees or a supplementary heavy vehicle license fee under contract with the private sector.

Efforts are also being made to collect international transit fees on a contractual basis. Collection under contract is almost a necessity with international transit fees. They are paid in foreign exchange and this has led to widespread evasion and leakage, with over 50 percent of the revenues usually disappearing before the funds reach MOF or the road fund. Mozambique is in the process of contracting the collection of such fees to a commercial bank, Zambia is well advanced on preparation of a scheme for having them collected under contract, and Tanzania is about to study ways of doing the same (see Box 3).

The main conclusions of this section are thus: (i) have the fuel levy collected on an agency basis by the oil companies and have the revenues deposited directly into the road fund; (ii) collect the fuel levy on the basis of product supplies when fuel leaves the bonded warehouse, rather than on sale of products; and (iii) where feasible, have all license fees, bridge and ferry tolls, and international transit fees collected under contract and deposited directly into the road fund.

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*Box 3: Collecting International Transit Fees Under Contract*

A recent report prepared by the PTA Secretariat and the SATCC Technical Unit has recommended that international transit fees should, in the future, be paid by coupon. At present, they are paid in cash and many staff manning the border posts refuse to accept anything other than hard currency. Not only is this a security risk for drivers who must carry large sums of money in hard currency, there is ample evidence of widespread evasion and leakage. In Tanzania the treasury only receives about \$150,000 of the estimated \$3.0 million that should be collected annually in transit fees. International vehicles stopped at weighbridges in Zambia are frequently found without receipts showing payment of transit fees (the driver uses part of the funds to pay off staff at the border post and then pockets the rest) and the actual collections remitted to the Ministry of Finance are well below their potential. In Zambia, collections fell sharply when responsibility for collecting international transit fees was transferred from British Petroleum (who collected them under contract) to the Customs Department.

To deal with this problem, the Federation of Regional Road Freight Associations, which includes representatives of the transport industries in Lesotho, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia, and Zimbabwe, has resolved that a coupon system should be implemented in the region. The basic elements of the scheme are as follows:

- All transit fees should in the future be paid by coupon. Coupons are printed in bank note quality — with watermarks and other security devices — and collecting agencies are issued equipment to detect counterfeits.
- Coupons will be issued through regional transporter associations who have indicated willingness to purchase quantities in bulk and distribute them to their members.
- Coupons consist of three parts which are used as follows: (i) the stub is retained by the issuing authority; (ii) part II is retained by the collecting agency at the border (usually a commercial bank which has branches at all border posts); and (iii) part III is retained by the transporter as proof of payment and will be canceled on exit by the collecting agency as proof of payment (to ensure that vehicles which do not pay on entry do so on exit).
- The payment cycle involves four main steps: (i) the transporter purchases the coupons for cash; (ii) driver hands the coupons to the collecting agency at the border post; (iii) the collection agency returns the coupons to the issuing authority; and (iv) the issuing authority transfers the funds used to purchase the coupons into the road fund.
- The issuing authority is expected to charge a 5 percent commission for its services, and it is expected that the commercial bank collecting coupons at the border will do the same. The cost of printing a three year supply of coupons is estimated at \$200,000, and this will be financed through a commercial bank loan to be repaid from revenues over three years.

Annual revenues for Zambia alone are expected to exceed \$1.8 million gross, or \$1.6 million net of coupon printing and administration costs.

### **2.3 The Road Fund, Road Board, and Road Agencies**

The key issues here are to ensure that the large sums of money associated with a fully funded road maintenance program are managed effectively. The key questions which arise with regard to managing the road fund are:

- How are the road funds managed and what role do road users play in such arrangements?
- When there is a road fund board, how is it structured?
- How are funds allocated between the different road agencies entitled to draw from the road fund?

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### 2.3.1 Management of the Road Fund

Almost all road funds, except those in Chad and Ghana, have a board which oversees management of funds. The government in Ghana is furthermore currently considering ways of establishing a board to manage their road fund. Management boards generally delegate day-to-day management of the road fund to a Director or Executive Secretary, who is expected to be accountable to the board for the way the funds are managed (as in Central African Republic and Zambia). The board generally has an *executive* role although, as in Tanzania, the board may simply *advise* the responsible minister "on matters pertaining to the management and financing of roads [including] operation of the Road Fund." Zambia has the most unusual arrangement. The board has been constituted as an advisory board, but nevertheless manages the road fund in an executive capacity.

Lack of managerial independence can create serious problems for a road fund. It can lead to unauthorized borrowing from the road fund, or to diversion of funds to support other public programs. For example, in Central African Republic during 1993, the government borrowed CFAF 340 million from the road fund to pay civil service salaries, and used the road fund to pay for the Ministry of Works administration expenses and fuel and equipment used by the Ministry of Works. The boards best able to resist raids on a road fund appear to be those which include strong representation by road users. After all, they are the people who pay the road tariff, and that have a strong interest in protecting the revenues and controlling the way the money is spent. The road board in Zambia has been particularly effective in ensuring that it receives all the revenues due to it, including funds that MOF had initially diverted and spent on other programs and has also successfully resisted attempts by ministers to charge unauthorized expenses against the road fund.

To be effective, the board needs to have clear terms of reference, should be insulated from abuse of the political process, and should be able to command the active support of road users. The National Road board in Zambia has some of the clearest terms of reference (see Box 4). Their responsibilities cover recommending the road tariff, allocating funds to each road agency, providing advice on setting standards and classifying roads, and advising on the creation of highway authorities which act as executing agencies for the work funded by the roads fund. One of the most important functions of the boards in Tanzania and Zambia is to recommend an appropriate level for the road tariff. They review the proposed road expenditure plan, decide how much is affordable, and recommend the level of the road tariff to MOF for inclusion in the budget statement.

A road board can thus provide an important mechanism for winning public support for more road spending. For example, a recent memo from the Ministry of Works in Tanzania to MOF stated, "Since the Board contains delegates from the Chamber of Commerce, Roads Association, Automobile Association and Institution of Engineers, it is expected that their endorsement [of the proposed tariff increase] would ensure minimal opposition from the general public. Indeed, as part of their function on the Board, they will be requested to inform their members of the reasons for the proposals and the Board's support for them." This is a particularly important function, since it helps to defuse the usual negative press associated with increases in price and provides a formal way of assuring the road-using public that they are getting value-for-money. The road board in Zambia has gone even further. It has recently issued a press supplement on the work of the road board, has started a weekly radio program to focus public attention on the need for sound road maintenance policies, and is planning a regular series of press statements to explain how money from the road fund is being used.

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*Box 4: Functions of the Zambia National Road board:*

The National Roads Board was established through Statutory Instrument on 24 February 1994 under the Roads and Road Traffic Act. The order defines the functions of the Board as follows:

- (i) To administer and manage the Road Fund;
- (ii) To prepare and publish audited annual accounts of the Road Fund;
- (iii) To recommend to the ministers (for Communications and Transport, Works and Supply and Local government and Housing)<sup>5</sup> additional fuel levies and other road user charges as required;
- (iv) To recommend projects for donor funding to the ministers;
- (v) To allocate resources for road maintenance and rehabilitation for various classes of roads as may be determined by the ministers;
- (vi) To recommend funding for the development of new roads;
- (vii) To provide guidance and technical assistance to various road agencies;
- (viii) To receive and consider reports from road agencies on their activities and prepare quarterly and consolidated annual reports;
- (ix) To review design standards and classification of roads and traffic signs for approval by the ministers;
- (x) To prepare and review terms of reference and guidelines for the various road authorities and budget guidelines;
- (xi) To recommend to the ministers the granting of highway authorityship to any person or institution;
- (xii) To review from time to time the status of road agencies and recommend appropriate action to the ministers, and make recommendations in relation to the siting of buildings on roadsides.

The conclusions from this section are thus that: (i) sound management requires a strong, independent, road fund board which includes representatives of road users; (ii) the board needs to have clear terms of reference and should be insulated from abuse of the political process; and (iii) the board can play an important part in winning public support for more road spending.

### ***2.3.2 Structure of the Road Board***

Most road boards in Africa consist of seven to thirteen members, and the most representative boards typically include representatives from the chambers of commerce, road transport industry, farmer organizations, and engineering professions (as in Benin<sup>6</sup>, Sierra Leone, South Africa, Tanzania, and Zambia). The board in Zambia has a noteworthy composition (see Box 5). The unusual features are that: (i) seven out of the eleven board members represent road users and other private sector interests; (ii) representatives of government ministries can participate in discussions but have no vote; and (iii) the board chooses its own Chairman and Vice Chairman.

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<sup>5</sup> The Minister of Energy & Water Development was subsequently added to the Committee of Ministers to be advised by the Board.

<sup>6</sup> The road fund board in Benin only includes two representatives from the private sector.

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*Box 5: Composition of the Zambia National Road Board:*

- The board consists of five *ex officio* members representing government ministries (Finance, Works & Supplies, Transport & Communications, Local Government, and National Commission for Development Planning) and seven members representing the private sector (Chamber of Commerce, road transport industry, Automobile Association, farmers, Institute of Engineers, Institute of Transport, and Copperbelt University). All board members are nominated by the organizations they represent,
- The board elects its own chairperson and vice chairperson (both currently from the private sector),
- Ex officio members participate in board discussions, but have no vote,
- The Board may have a core staff of up to five persons to deal with finance, planning, and inspection or auditing.

The people appointed to the board must have a constituency. Private sector representatives must be able to command the strong support of road users, and government representatives must command the support of the Permanent Secretary. They must be able to act as spokesmen for their organizations, to speak authoritatively on their behalf, and to enlist their support when needed. Private sector members tend to be most effective when they are selected by the organizations they represent. This is the case regarding the private sector members in Tanzania and Zambia, while the private sector in South Africa is at least consulted in an attempt to find acceptable nominees. The same considerations apply to civil servants on the board. They must be able to reflect the views of the Permanent Secretary and this generally means that they have to hold a position no lower than that of Director. The notice announcing the Central Road board in Tanzania specifically states that civil service members shall not be appointed at lower than Director level. It is also important that board members be paid adequate allowances. Otherwise they are unlikely to spend sufficient time on the business of the board.

The selection of Chairman is also important. The board is more likely to command public support if the chairman is seen to be a person of standing, who is willing and able to act in the national interest. This is compromised when the chairman is also the director of roads (as in Mozambique and South Africa). No matter how competent and impartial the director may be, his dual role as chairman and director of roads raises concerns that the board may simply be a pressure group acting on behalf of the roads department. It is better to separate these two functions and have an independent chairman, as in Sierra Leone and Tanzania (where the Chairmen are people of great standing) or Zambia (where both the Chairman and Vice Chairman are elected by the board).<sup>7</sup>

Finally, there are a number of issues concerning the Director of the road fund. The Director is meant to be accountable to the board for the way the funds are managed. The board should therefore be involved in selecting the Director to ensure he is independent and there is mutual trust between the Director and the board. This rarely happens and the Director is generally nominated by the minister responsible for roads and this often creates a conflict of interest. For example, in Benin and Central African Republic, the Director is appointed by the Council of Ministers on the advice of the Minister of Public Works. In Mozambique, the Director is appointed by the Director of Roads, while in Chad (where there is no road fund board) the Director is also the Director of Roads. It is far better to have the Director appointed by the board,

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<sup>7</sup> They are currently and respectively the representative from the Chartered Institute of Transport and the Automobile Association.

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as happens in Zambia, or to have the board at least involved in the selection process, as has been suggested in Ghana.

The conclusions from this section are that it is best to ensure that: (i) board members are nominated by the organizations they represent; (ii) the board has an independent chairman of standing (ideally elected by the board); and (iii) the Director of the road fund is either selected by the board or that the board is at least consulted about the appointment.

### ***2.3.3 Allocating Funds between Different Road Agencies***

When more than one road agency is entitled to draw from a road fund, the road fund board has to allocate funds between the different road agencies. This needs to be done in a fair and transparent manner to ensure that priorities are consistent and the allocations do not lead to interminable arguments. Unfortunately, few road funds use clear and objective criteria to allocate funds between the different road agencies.

Both **Ghana** and **Tanzania** divide funds at the source between the different road authorities (see Box 1). Ghana like Tanzania, initially allocated 80 percent of the revenues for main and regional roads and 20 percent for urban and rural district roads. But Ghana changes the formula when the Department of Urban Roads was established. The new formula currently allocates about 50 percent for trunk roads, 30 percent for rural roads, and 20 percent for urban roads. The proportions vary considerably from year to year. For example, the allocation for urban roads has varied from a high of 30 percent to a low of 16 percent over the past ten years. Although the allocation process has some merit, in that it ensures that each road agency gets a reasonable share of the revenues, it is somewhat not adjusted to real needs and the actual allocations are subject to a great deal of criticism.

Although **Tanzania** divides funds at source and allocates 20 percent of the revenues for district roads, it has recently attempted to develop a more consistent method of allocating these funds between the seventeen urban and eighty-four rural district councils (see Box 6). The method is based on a simple formula which includes population density, road density, and stage of development. The formula is fairly robust, has been designed to operate with poor data, and has been accepted by the districts as a reasonable way of allocating the funds.

**Zambia** uses a more pragmatic approach to the allocation of funds between main, urban, and rural roads (see Box 6). It accepts that allocations are likely to vary from year to year, depending on growth of traffic and condition of the road network. The board therefore makes a tentative allocation to guide preparation of annual maintenance programs, but only decides on the actual allocations once it has been able to review the programs put forward by the various road agencies.

**South Africa** probably has the best developed system for allocating funds (see Box 6). It uses standard unit rates for each routine and periodic maintenance activity, classified by type of road surface and volume of traffic. These rates are then multiplied by the length of maintainable road under the jurisdiction of each road agency (the core network) to arrive at the total maintenance budget required by each agency. The allocations are then adjusted to reflect weather

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Box 6: Procedures for Allocating Funds between Different Road Agencies

In **Zambia**, the National Road board allocates funds on the following basis:

- On an annual basis, it prepares an estimate of expected revenues, based on current charges and likely increases during the year. The year in question coincides with the government's fiscal year.
- In consultation with the Committee of Ministers, the available resources are then tentatively subdivided into separate allocations for roads managed by the Roads Department (under the Ministry of Works & Supplies), those managed by urban district councils (under the Ministry of Local Government and Housing), and those managed by rural district councils also (under the Ministry of Local Government and Housing). Funds for urban roads are allocated on the basis of a block-grant formula which still has to be agreed upon by the Committee of Ministers.
- The road agencies, knowing their tentative allocations from the road fund, prepare their annual maintenance programs and the *approved* programs, which determine the final allocations from the road fund, then define which items qualify for financing through the road fund (with the Ministry of Local Government and Housing preparing the programs on behalf of district councils).
- The board, as manager of the road fund, then disburses funds to finance the approved expenditure programs.
- Finally, at the end of each quarter, and also on an annual basis, the board conducts an audit to establish, among other things, that funds have been used in accordance with the above approval process.

In **Tanzania**, the Prime Minister's Office (PMO) administers the 20 percent of the road fund set aside for district roads and the task of the PMO is to decide how to allocate this money to individual districts in an efficient and equitable manner. Previous attempts to allocate these funds, using general guidelines issued by the PMO, were not satisfactory. Key weaknesses were that: (i) three-quarters of the funds went to urban district councils (they simply prepared better road programs), (ii) about one-quarter of the rural districts received no funds at all, and (iii) there was no consistency in the amounts allocated to individual districts (some received a fraction of what they asked for, while others received all or more than they asked for). The PMO therefore decided to develop a formula-based allocation system for which reasonable data were available and which would be: (i) based on needs; (ii) simple; (iii) transparent; and (iv) fair. A major consideration was a lack of accurate data. This meant the system not only had to satisfy the above criteria, but also had to be robust. The formula which determines the allocation index contains three elements:

$$\text{Index} = \text{population density} + \text{road density} + \text{PMO rank}.$$

Population density is there to measure trip generation rates, while road density is primarily a separation parameter to differentiate between urban and rural districts. The PMO rank, which is a grading system used to decide budget subventions, grades districts according to their stage of development. It thus measures the level of commercial activity.

**South Africa** has a well developed system for allocating funds between different road schemes and different road authorities. Economic criteria are used for all schemes involving rehabilitation, improvement, and new investment, while maintenance funds are allocated using maintenance unit rates. The latter distinguish between different road types (depending on volume of traffic), divide routine and periodic maintenance into separate maintenance activities, make an allowance for differences in rainfall (and hence maintenance requirements), and also deal explicitly with the impact of restricted funding levels. The Department of Transport hopes to eventually replace this method with a maintenance management system enabling each road agency to base its maintenance requests on objectively measured road conditions.

conditions and restricted funding levels. The method is currently being improved to enable the standard rates to be replaced by figures based on actual road conditions.

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Although the above procedures improve the allocation process and make it more objective, the final allocations always involve a great deal of judgment. Transparent methods nevertheless help to ensure that all road agencies get sufficient funds to meet basic maintenance needs and encourage them to compete for additional resources at the margin. The only qualification is that weaker road agencies (e.g., rural district councils) generally need technical assistance to ensure they can prepare maintenance programs of the same standard as the larger road agencies.

The conclusions of this section are thus that: (i) it is advisable to split funds at the source, even though the allocations may be a little arbitrary, to ensure that each road agency gets a reasonable share of the revenues; (ii) the allocations should be flexible and capable of being periodically adjusted to reflect changing volumes of traffic and road network conditions; and (iii) formula-based allocation methods probably offer the most transparent and objective way of allocating funds.

## **2.4 Financial Management Systems**

The road fund needs to have suitable financial management systems. The road fund is not simply a bank account into which government deposits general tax revenues, but the income account of a commercialized road sector. As such, it therefore needs to be managed according to sound commercial principles. The key questions which arise when selecting such systems are:

- What kind of financial accounting systems are used and what sort of standard financial statements do they produce?
- What procedures are used to withdraw money out of the road fund?
- What sort of disbursement procedures are used to ensure that funds are only disbursed against approved expenditure programs?
- What kind of technical and financial audit procedures are used to ensure that funds are spent only on approved expenditure programs and that the work is done according to specification.

### ***2.4.1 Accounting Systems***

Few road funds use commercial accounting systems. Most simply keep their accounts on a cash basis and produce financial statements which consist of little more than book-keeping entries. They record cash in and cash out. This is not very informative and does nothing to improve management of funds or to strengthen financial discipline. The accounting systems used to manage a road fund should at least be able to show: (i) where funds have been allocated; and (ii) the costs of managing the road fund.

The accounting system in Sierra Leone, which covers the entire Road Authority and not just the road fund, attempts to deal with many of the above issues. The Authority keeps detailed cost accounts and also prepares an income and expenditure statement, a balance sheet, and a cash flow statement. The accounting system thus provides a complete picture of the way funds are used. The output from the system comes in the form of monthly reports, which are submitted to the Director General, together with quarterly reports which are submitted to the board. These procedures go a long way toward ensuring that resources are used efficiently.



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The road fund in Central African Republic has a well developed double-entry accounting system. Since 1985, it has simultaneously recorded both incoming yearly revenues due from the oil company and outgoing yearly debts owed by the fund. Since the accounting system is computerized, management can thus keep track of income statements, balance sheets, and cash-flow statements and have up-to-date financial accounts constantly at its disposal. Commitments are thereby strictly controlled by budgets. Furthermore, since all the elements needed to conduct a financial analysis of the road fund are readily available, management is under considerable pressure to manage the funds efficiently and, in spite of political pressure, the Director is able to manage the road fund on a commercial basis.

The conclusions of this section are that a road fund should: (i) use a double entry accounting system; (ii) computerize the accounts to ensure they are kept constantly up to date; (iii) introduce commitment procedures to ensure that commitments do not exceed revenues; and (iv) produce regular reports which show income, expenditures, and the costs of administering the road fund.

#### **2.4.2 *Withdrawal Procedures***

Having cumbersome procedures for drawing money out of the road fund also creates problems. Unless the procedures are clear, widely accepted and enforceable, the flow of funds will be erratic. For example, in Ghana, withdrawals of agreed upon sums have to be authorized by the Accountant General on joint instructions from the Ministry of Roads and Highways and the Ministry of Finance. This frequently results in protracted delays. Similar delays were experienced in Tanzania during the early days of the road fund. These delays have now been overcome and funds are now deposited monthly into the accounts of the Ministry of Works and the Prime Minister's Office (which is the ministry responsible for rural roads), without having to wait for the MOF to nominally sign off on each transfer.

Zambia has one of the most novel withdrawal procedures. Each withdrawal requires two signatures, one drawn from each of the two panels of authorized signatories (panel A and panel B). Panel A includes: the Chairman and Vice-Chairman of the road board, and the Executive Secretary of the road board, while panel B includes: the Accountant of the road board, and the Principal and Senior Accountants from the Ministry of Communications and Transport. Since officials from the road board can sign off on any withdrawals from the road fund, delays are virtually non-existent.

#### **2.4.3 *Disbursement Procedures***

Disbursement procedures are rarely satisfactory. There are two possible procedures: (i) payment is made for measured outputs; or (ii) payment is made for measured inputs (work done by force account).

When payment is made on *outputs*, the work is generally done under contract. Disbursement is then made against tendered contracts and adjudicated through the government tender process, after certification that the work has been completed and carried out according to the specifications set out in the contract. This procedure is used in Zambia. In such cases, technical control of works (certification) can be readily delegated to consultants. In Chad all work is carried out under contract and technical control of works is supposed to be done by

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private consultants. In Mozambique, where the work is carried out by government contractors, disbursements are certified by provincial inspectors employed by the road fund (see Box 7).

When the work is done by force account, payments are generally made for the supply of *inputs* like fuel, materials and wages. There are three basic disbursement procedures: (i) the road fund advances money to the road agency and later on accepts invoices showing how the money was spent; (ii) the road fund pays after submission of invoices relating to completed work; or (iii) the road fund only pays against invoices for completed work after certification that the materials were actually delivered and used for approved road works. The first method is used in Benin, while the second is used in Central African Republic (see Box 7). Both methods are fraught with difficulty and open to widespread fraud. There is no guarantee that the materials have actually been delivered to site or if they are delivered, that they were used to carry out approved road works. The only way to check on such work, is through an independent technical audit (see section 2.4.4). The road fund in Zambia is proposing to use the third method. Indeed, it has already turned down requests to finance materials for force account work, on the grounds that insufficient evidence had been submitted to show that materials had been delivered to a site and used to undertake approved maintenance work. Certification furthermore needs to be done by someone who can act in a fiduciary capacity. In this connection, a local consultant who is a registered engineer or a member of the local Institute of Engineers, will usually suffice.

*Box 7: Examples of Disbursement Procedures:*

**Central African Republic** does not have a satisfactory disbursement procedure for force account work. The approved force account budget is first divided into major cost headings such as staff salaries, materials, and fuel. Disbursements are then made against these cost headings on submission of invoices showing that expenditures have been incurred under these headings. No payments are made for any supplementary work, unless it has been explicitly added to the approved budget. However, since technical control of work is carried out by the Auditor General's Office and not by consultants, there is no guarantee that the wages, materials, and fuel financed by the road fund have been used for road works.

**Mozambique** has a well designed disbursement system, although it is not always followed in practice. The road fund's approved budget is divided into: (i) projects involving major works; and (ii) maintenance programs, by region, established in terms of type of road, type of maintenance required, and total cost of the work. Each task is written up in the form of a contract and one of the provincial inspectors, who works for the road fund, is designated as the controller for each contract. The controller is stationed where the work takes place and is responsible for administering the contract, supervising the contractor, and certifying payments. Each month, the contractor submits a statement of work completed, together with supporting evidence, including a description of the work performed, equipment used, number and type of staff who performed the work, units of measurement, quantity of work completed during the month, and contract prices. Within 15 days of receiving the invoice, the controller is expected to inspect the work, verify its quality, certify the invoice for payment, and forward it to the provincial accountant for payment.

The conclusions of this section are thus that: (i) the most satisfactory disbursement procedures are those where funds are disbursed against tendered contracts, adjudicated through the government tender process, after certification that the work has been completed according to the specification; (ii) when work is done by force account, the road fund should only pay against invoices for completed work after certification that the materials were actually delivered and used to carry out approved road works; and (iii) certification needs to be done by a registered engineer or a member of the local Institute of Engineers.

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#### **2.4.4 Auditing Arrangements**

The accounts and other financial statements of a road fund need to be audited to ensure that: (i) all the money attributable to the road fund has been collected and paid into the road fund; and (ii) funds disbursed from the road fund were spent on the programs for which they were allocated.

Some road funds have their accounts audited by the Auditor General. However, when a road fund operates a commercial accounting system, the Auditor General is not really qualified to audit the accounts. In such cases, and to guarantee independence, it is better to have the accounts of the road fund audited by independent private sector auditors (as in Central African Republic, Sierra Leone, and Zambia). Mozambique has also begun to have the road fund audited by independent private sector auditors (see Box 8).

The accounts and other financial records of the Sierra Leone Road Authority are audited every year by independent auditors appointed by the road board with the approval of the Auditor General. The audit report is forwarded to the minister and is then included in the Annual Report of the Authority which the Minister lays before Parliament. For the past three years, Central African Republic has followed a similar procedure, and the auditor's report has been used to improve valuation of assets, depreciation provisions, and provisions for replacements. It has also clarified the rules governing the way revenues are entered into the accounts, bank assets are accounted for, and the way assets are depreciated. Several other road funds are audited by external auditors. Tanzania has recently agreed to have the accounts of the road fund audited by the Tanzania Audit Corporation (an agency which audits the accounts of parastatals), the legislation establishing the road fund in Chad requires an independent audit, and the road fund in Ghana is also subject to an independent audit. However, the audit in Ghana is only designed to certify that all contributions to the road fund have been received and that withdrawals have been used exclusively to finance payments to contractors and to the mobile maintenance units operated by the Ghana Highway Authority.

The conclusion from this section is thus that the accounts of the road fund should be audited annually by independent auditors.

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*Box 8: Terms of Reference for the Audit of the Mozambique Road Fund*

*Objective:*

The main purpose of the audit is to ensure that the income of the road fund from all sources is accurate and complete, and that the payments made are properly supported and are consistent with expenditures allowed for by the relevant road fund legislation in force. A further purpose of the audit is to ensure that the accounting procedures, internal control procedures, and records and accounts of the road fund are adequate. The auditor will be expected to use international auditing standards as Mozambique has not adopted auditing standards.

*Scope of the Audit:*

The auditor will carry out an audit of the various sources of income of the road fund to determine their accuracy and completeness. The Administrative Council of the road fund is particularly interested to determine that the actual receipts of the road fund from the three main sources of income represent a complete and proper calculation of the income which should accrue to the road fund based on the relevant road fund legislation in force. It is envisaged that this audit work will include examining the records of third parties which are responsible for collecting monies at the many points of origin of the three main sources of income. Such third parties include Petromoc, Customs Authorities, and Toll Bridge Officials.

The auditor will carry out an audit of the payments of the road fund to determine that the payments made are supported by adequate documentation and are in accordance with the purposes for expenditure as allowed for in the relevant road fund legislation in force. It is envisaged that this audit work will include examining the records of the road fund at the provincial level. In this regard it is considered that field trips to the Provinces are essential.

The auditor will carry out an audit of transactions and balances of the various bank accounts maintained by the road fund.

The auditor will review the accounting and internal control procedures in operation at the road fund to determine their adequacy.

The auditor will undertake a review of the accounts, files, records, and reports of the road fund to determine their accuracy.

*Reports:*

The auditor will prepare a short-form report for the Administrative Council of the road fund which will give an opinion of the accuracy of the financial records and the completeness of income of the road fund, and will include brief comments on any shortcomings. The auditor will also include comments indicating any degree to which he was unable to follow the auditing standards which he had adopted for his work.

The auditor will also prepare a long-form report or management letter which will inform the Administrative Council of the road fund of: (i) the standards and procedures which the auditor used in the audit; and (ii) details of strengthening needed in accounting and financial management systems and practices and in internal control procedures.

*Source:* John Roome

### **3. RECOMMENDATIONS**

Most of the road funds reviewed in this paper have certain characteristics derived from the size of the country, the type of governmental system employed, and the current emphasis on decentralization of responsibilities to local government. That is why Tanzania set up two road funds (one to finance main and regional roads and one to finance district roads), while other countries have only chosen to establish one road fund. Central African Republic and Benin likewise chose to establish the road fund as a separate legal body in a manner consistent with

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arrangements used by other public agencies in these countries. Similarly, countries with centralized systems of government like Sierra Leone usually choose to have their road funds managed by the centralized road agency, while decentralized systems of government like Tanzania and Zambia have to develop transparent procedures for allocating funds between the different road agencies entitled to draw from the road fund.

However, although country differences have an important effect on the design of a road fund, there are also a number of important technical and financial issues which determine whether the road fund will work. Some are essential design elements, while others are simply desirable and contribute to sound operation of the road fund. Both groups of design elements are summarized below.

The *essential design elements* are as follows:

- (i) The road fund should not have to rely on transfers from the government's general tax revenues to cover operation and maintenance of the core road network. Even though it may take several years to reach the required level, the basic expenditures to be financed through the road fund should be fully funded by road users.
- (ii) The road fund should be managed by an independent board which includes representatives of road users nominated by the organizations they represent. The board should have a Chairman of standing, a strong secretariat, and clear terms of reference. The director, who is usually responsible for day-to-day management of the road fund, should either be appointed by the board, or the board should at least be consulted about the appointment.
- (iii) The board should recommend the level of the road tariff (fuel levy, license fees, and bridge and ferry tolls) to ensure it is regularly adjusted to deal with inflation, devaluation of the currency, and changing road expenditures requirements. The board will initially make its recommendations to the Ministry of Finance, but should eventually have freedom to set its own tariff within guidelines laid down by Ministry of Finance (as happens with other public enterprises).
- (iv) The fuel levy should be collected by the fuel companies and deposited directly into the road fund. Where feasible, license fees, bridge and ferry tolls, and international transit fees, should also be collected under contract and deposited directly into the road fund.
- (v) The road fund should be managed according to sound commercial principles. It should use a commercial accounting system, have clear disbursement procedures (ideally only disbursing funds for tendered contracts following certification that the work has been completed according to specification), and funds disbursed should be subject to an independent financial audit and a selective technical audit.

Once the above framework is in place, operation of the road fund can be improved by adopting the following, *less essential*, design elements:

- (vi) It must be ensured that the road fund has clear objectives. They should define: (a) which expenditures qualify for financing through the road fund (does it cover maintenance only, or do other expenditures also qualify); (b) its role vis-à-vis financing of main, urban and rural roads; (c) sources of revenues; (d) management structure; and (e) the parent ministry and the relationship between the board and the ministry.
- (vii) The objectives should generally attach highest priority to maintenance, which should be fully funded by the road fund. The long-term objective should be to also cover road rehabilitation and new construction to ensure the road sector becomes financially self sufficient.

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- (viii) The only charges which should be paid into the road fund include: (a) fuel levy, bridge and ferry tolls, and international transit fees (charges for use of the road network); and (b) vehicle license fees (charges for access to the road network). These constitute the road tariff and are the only legitimate charges which should be deposited into the road fund. Other taxes (such as fuel taxes, import duties, and sales taxes), which are invariably designated to collect general tax revenues, should not be paid into the road fund.
  - (ix) The road tariff should be set to ensure that each class of vehicle covers its marginal costs and that all vehicles collectively cover the total costs of operating and maintaining the road network. Exemptions should only apply to non-road users to ensure they do not have to pay the diesel levy. All other exemptions should be discouraged, since the road tariff is a user charge and tax exemptions should not apply.

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