**University of Birmingham (UK)**
**Senior Road Executives Programme**
**Road Financing & Road Fund Management**
**Birmingham, 26-30 April 2004**

# Road Funds in Latin America


by

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**ABSTRACT**

The extensive road networks of Latin America and the Caribbean, valued at over 350 billion US$, show alarming signs of neglect and decay. More than 30 billion US $ are being wasted annually due to the absence of adequate road maintenance. Individual countries in the region are losing between 1% and 3% of their annual GNP due to an unnecessary increase in vehicle operating costs and loss of road asset value alone.

The prevailing financial and institution system of road maintenance has been clearly identified to be at the root of the problem. In most of these countries an adequate flow of funds cannot be secured by the general budgeting financing procedure. In addition, the rules and regulations of the public administrative system do not allow for an effective and efficient management of road maintenance. As it is unlikely that under the prevailing system substantial and sustainable improvements can be made a new approach is necessary to eradicate this problem.

As a consequence, several of the countries in Latin America and the Caribbean have started to put road maintenance on a fee-for-service basis and to transfer road maintenance management from a "government ministry environment" to a "company environment", which seems to be better suited in the long-run to keep roads in good condition. As a result, a new generation of road maintenance funds has been created in El Salvador, Costa Rica, Guatemala, Honduras, Nicaragua and four states of Brazil, Mato Grosso, Mato Grosso do Sul, Paraná, and Goiás. The article discusses the principles for creating sustainable road maintenance funds in general, as well as the approach taken by each of the different countries involved.

## 1. INTRODUCTION

In Latin America roads have been the backbone of passenger and freight transport for the last 50 years. Since then, road networks have been growing rapidly. Several years ago the rate of expansion started to slow down and the road networks began to age fast. Scarce resources, especially in the 80's, have contributed to an ever-decreasing amount of money allocated to road maintenance. Towards the end of the decade several countries in the region spent less than **20%** of the amounts necessary to maintain their road networks in adequate conditions. In the early 90's funding levels for the road sector slightly improved, but funds were and still are mainly used for road rehabilitation[1] and only a little is being spent for the more cost effective routine and periodic maintenance[2] activities. Nowadays, to raise funds for road rehabilitation is much easier than for road maintenance, due to the fact that loans to finance rehabilitation are (still) readily available from international donors, while funding for road maintenance is subject to the political debate in parliament and is normally losing ground to other politically more attractive issues. Generally between 2% and 3% of the new investment value of the road network is required for routine and periodic maintenance alone. Unfortunately, even today, **countries in the region are spending normally between 20% and 50% of the funding required for adequate road maintenance only**. In addition, these already insufficient funds often are being used inefficiently in a poor state. **Normally, only 1/3 of the paved main road network is in good, 1/3 in regular and 1/3 in poor condition. Unpaved roads are in even worse shape**. Road conditions naturally vary from country to country. These appalling figures were true 10 years ago and still hold true today, despite the huge amounts poured into road rehabilitation during recent years. Past efforts to improve the level of financing for road maintenance have either failed or were not sustained. Equally unsuccessful were most of the countless efforts, mainly financed by multilateral or bilateral donors, to improve the performance of the public road administrations in the region.

The lesson to be learned is clear. Only approaching the financing and management of road maintenance can make substantial improvements of road conditions in a completely different way. Instead of trying to solve the many **apparent problems** frequently put forward such as:

- inadequate planning and technical execution of road maintenance
- lack of maintenance equipment in working condition
- lack of motivation of maintenance staff
- low qualifications of staff
- and many others,

it is necessary to tackle the **two underlying causes**, namely the **present financial and the present institutional system** of road maintenance**.**

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**Cause number 1:**
**Experiences clearly reveal that in nearly all developing and most developed countries as well, it is impossible to secure an adequate and stable flow of funds for road maintenance through general government budget financing procedures, especially if their allocation depends on the annual political budget debate.**

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Road maintenance is politically unattractive; new road construction, road rehabilitation, social or education programs are more "visible" and produce more political prestige. In addition, lack of maintenance culture and little understanding of the economic consequences of poor maintenance even by

[1] Rehabilitation of paved roads is defined as selective repair and strengthening of the pavement or shoulder after partial demolition of the existing structure.

[2] Periodic maintenance is defined as surface treatment or surface renewal including regravelling

those in charge of roads make it even more difficult to raise sufficient maintenance funds. Only very few countries in the world, such as Japan and some European countries have proven to be able to assign sufficient resources to road maintenance on a sustained basis. These are rather exceptions to the rule and cannot be taken as examples for the functioning of financing road maintenance through general taxes. Some countries, also in Latin America, used to finance road construction, rehabilitation and maintenance through **earmarked taxes**, especially on fuels used by motor vehicles. **None** of these funds could be sustained on a long-term basis. The main problem has been that governments regard these funds as "government funds" which they can (and do) utilize for other purposes, especially in times of crises, which often continue "indefinitely".

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**Cause number 2:**
**Rules and regulations of the public administrative system do not allow for an effective and efficient management of road maintenance, in spite of the good will of many public employees responsible for road maintenance.**

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In Latin America and the Caribbean, government departments mainly carry out the management of road infrastructure. While most of the actual construction, rehabilitation and some of the maintenance of roads is being contracted out, the planning, contracting, supervision and most of the road maintenance works are still being undertaken by these government departments themselves, who face the typical problems of all public administrations, such as overstaffing, lack of discipline and control, lack of incentives and disincentives, and corruption.

In order to **improve effectiveness and efficiency** of road maintenance, e.g.

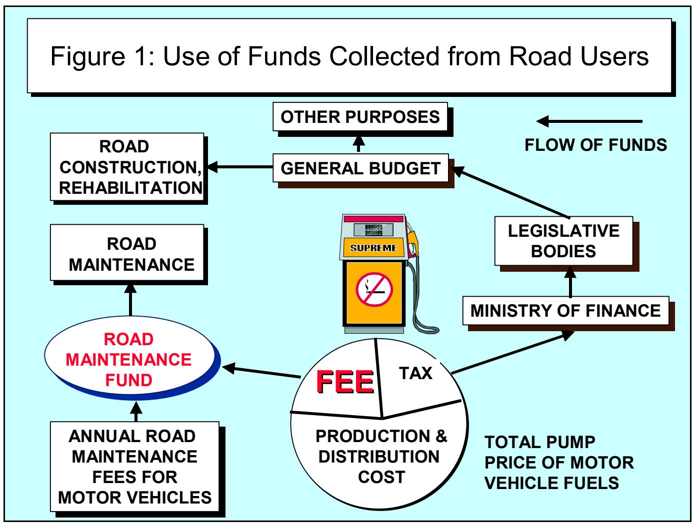
- guarantee an adequate long-term maintenance of the road network at a reasonable cost,
- optimize the cost-benefit relationship of the road transport system, and
- minimize damage to the environment,

on a **sustainable** basis, it is paramount to **reform the financing, the institutional set-up, and the management** of road maintenance with the **active participation of the direct and indirect road users**. Any reform that does not tackle **all** these issues will face a high risk of failure.

## 2. FINANCIAL REFORM OF ROAD MAINTENANCE

The best way to secure an adequate and stable flow of funds is to **charge road users a road maintenance tariff in exchange for the services of maintaining roads** and not to rely on taxes. In most countries the financing of road maintenance through taxes has never worked satisfactorily and it would be at best dangerously misleading to assume that this will change for the better in the future. Road maintenance can be treated as a public service similar to water supply, telephone and electricity services, where the user pays for the services received. To be able to do so, the following conditions must be met: the road user pays in relation to road usage, the one who pays should receive adequate road maintenance services, and somebody not using the road system should not pay. In addition to these criteria the charging system should be easy and inexpensive to administer and difficult to evade. The system that best suits these criteria is an electronic tolling system covering the whole road network. Each vehicle can thus be charged individually according to its usage of any particular road. Unfortunately, this system is not readily available yet and will not be implemented on a comprehensive scale in most of the developing countries in the near future. For the time being, a **shadow toll system** is recommended, which mainly uses the consumption of motor fuels on roads as a "service meter" and reflects usage of roads fairly well [3]. This implies a service charge or road maintenance tariff to be levied and collected together with the sale of motor fuels. The only disadvantage of charging this tariff together with the sale of motor fuels is psychological, as most people consider anything charged together with motor fuels as "another tax"[4] to finance general government expenses and not necessarily the provision of road maintenance services. Therefore, it is extremely important to identify and clearly mark this charge as **road maintenance tariff** and to collect the receipts into a **separate fund**, independent of any government, departmental or municipal funds and make sure that the proceeds are used for road maintenance only.

This way the pump price of motor fuel will continue to contain a tax element to finance general government budget expenses, one of which will be construction and rehabilitation of roads, and a road maintenance tariff to be paid into a separate Road Maintenance Fund to be spent exclusively on road maintenance (see figure 1).




Since motor fuels are being consumed on all roads it is also fair that all roads; e.g. interurban, urban and rural roads should participate in receiving funds from the Road Maintenance Fund. The question remains to what extent maintenance costs should be reimbursed by the Fund. This issue is especially relevant for roads with very low traffic, as the road maintenance tariff "collected" on these roads is far below the funds required for maintaining them. Most likely, the Road Maintenance Fund will have to contribute to these costs in a somewhat higher proportion than the contribution of the road maintenance tariffs collected from the motor fuels consumed on these roads. The actual amounts could be tied to a number of criteria or simply to a flat rate per kilometer. Fixing these amounts could be part of the decision process within the Fund where the road users have a stake.

Since one of the conditions of a tariff is that only road users should pay for the road maintenance services, the issue of **diesel not used on roads** remains to be resolved. There are several options to deal with this problem. One possibility is to chemically differentiate between the two diesels by coloring the one, which is not to be used in road vehicles. This method is being used in many developed countries and requires either a good control system or very disciplined road users. Another possibility is to give a rebate equivalent to the amount of the road maintenance tariff to those not using the diesel in

[3] Only heavy vehicles are an exception and require an additional charge to compensate for the greater usage of roads due to relatively higher axle loads. In New Zealand and in some of the States of the United States of America weight-distance charges are applied to heavy vehicles. As these charges are difficult to administer and fairly easy to evade in the absence of a strict control system, they are not recommended for use in most of the developing countries.

[4] Economists from the Ministry of Finance often argue that this is an earmarking of taxes. To make it clear: There is a very clear cut distinction between taxes and service charges. Taxes are defined by law, do not bear a direct relation ship between source and destination of funds, and are collected by governments. Service charges are directly related to the services provided, cover their cost, and are collected by the entity which provides the services. Principally taxes are to finance public services which do not generate sufficient income to finance themselves, like basic education and health services, public administration or defense. In contrast. road maintenance services can very well be financed through user charges.

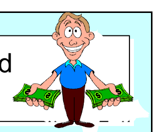
road vehicles. This is fairly easy to handle in the case of power stations and others using big quantities of diesel, while it is almost impossible to administer for small-scale users like farmers. In this case other methods of compensation could be applied like assigning more maintenance funds to farm roads than justified under normal road maintenance cost allocation systems for these roads.

How much is normally required to cover the maintenance cost of a country's road network? Based on the analysis of various developing countries in Latin America, between **7 and 9 US cents per liter of motor fuel would be required to cover the costs of maintaining the entire road network of a country**, if motor fuels were the only source of road maintenance funding and these roads were in maintainable conditions. For most countries this means that large sections of their road networks will require rehabilitation first, before they would be eligible to receive funds from the Road Maintenance Fund. If additional road maintenance tariffs for heavy vehicles are being applied, the tariffs to be raised in connection with motor fuels could be reduced accordingly.

An often-asked question regarding road tariffs is **why not use the conventional toll collection system to pay for road maintenance?** Unfortunately, conventional toll collection costs are fairly high. Only for roads with more than 1500 vehicles per day do these costs stay within a reasonable range of **10% - 30%** of the tolls collected, depending on the level of tolls and the number of vehicles per day. Therefore, this system is economically viable for a small percentage of roads only, less than 5% of all roads in Latin America, and cannot solve the financing of road maintenance for a country's whole road network. Tolls could contribute to recover road maintenance costs, but due to the conflict of "double charging" (tolls plus road maintenance tariffs) they are not recommended for this purpose. Tolls on toll roads should preferably be used to recover construction or rehabilitation costs while maintenance cost should be reimbursed by the Road Maintenance Fund.

It might be difficult to convince road users to pay an additional road maintenance tariff, because they will argue that the government already receives enough funds from taxes on motor fuels, motor vehicles, licensing fees, etc. to cover the cost of road construction, rehabilitation and maintenance. Probably equally difficult might be to persuade governments to renounce part of "their" taxes and thus leave room for levying road maintenance tariffs so that the pump price of motor fuels will not be affected. The fact is that road users presently face the consequences of poor road maintenance in the form of higher vehicle operating costs. **Investing 1/3 of the additional vehicle operating costs now spent on bad roads in road maintenance, would save the road user the other 2/3** (see figure 2). Most road users are not aware of these facts. Knowing what they could save by paying a road maintenance tariff, most road users would be willing to pay, even if this would mean paying in addition to what they pay already in the form of fuel taxes and other road vehicle related taxes, but **only** if they can be sure that the funds raised through tariffs will be used for road maintenance only. On the other hand, governments very often are willing to decrease fuel taxes by the amount actually used for road maintenance when the responsibility for the funding of road maintenance shifts to the Road Maintenance Fund.

Figure 2: Road Users Save by Paying Road User Charges **(Example Honduras)**



| | Passenger car | Heavy truck |
|---|---|---|
| Vehicle operating costs in US$ driving on 100km of bad roads | 14 | 63,5 |
| Vehicle operating costs in US$ driving on 100km of good roads | 10,5 | 51,7 |
| Savings in vehicle operating cost in US$ on 100km of roads | 3,5 | 11,8 |
| Equivalent road user charges in US$ for driving 100km | -1,0 | -3,6 |
| Resulting savings in US$ on 100km of roads | 2,5 | 8,2 |

Vehicle operating cost on asphalt concrete roads in hilly terrain (July of 1995 )

## 3. INSTITUTIONAL REFORM OF ROAD MAINTENANCE

**In order to assure an effective and efficient management of road maintenance it is recommended to create an institution to safeguard the public interest in keeping roads in good condition, and to transfer the responsibility of road maintenance from the public to the private sector.**

How can we safeguard public interest in preserving roads in good condition? Presently, in most of the developing world, public road administrations and the respective ministries are responsible for keeping the road networks in good condition. But hardly anybody in those institutions cares whether this is done well or not. None of them has to face any real consequences of not preserving roads in good condition. Often they don't even know the conditions of the roads under their jurisdiction, even less so they know the asset value of these roads (which is often the biggest or one of the biggest assets governments are responsible for) or whether the asset value is increasing or decreasing. Any commercial enterprise neglecting its assets as governments do would be out of business soon. The ones who actually have to bear the consequences of poor road maintenance are the road users. Therefore, they are the ones who have a direct interest in maintaining roads in good condition and therefore should have a more **direct control** of overseeing road maintenance spending. One way of achieving such control is to create a **Road Maintenance Board**, a public institution with complete financial, administrative and technical **autonomy** and **with active road user participation**. Depending on the size of a country, there might be either subsidiary or independent local Road Maintenance Boards for the different categories of roads and or road administration districts. The principal attributions of such road boards should be:

- to propose the levels of road maintenance tariffs,
- to administer and manage the Road Maintenance Fund,
- to contract the planning, execution and supervision of road maintenance,
- to safeguard the investments made in roads, and
- to inform the public periodically on the effectiveness and efficiency of road maintenance spending.

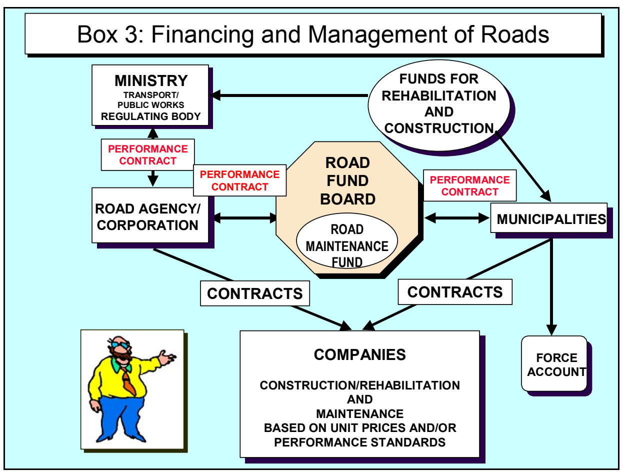
Road Boards exist in various countries around the world, either with executive functions such as in New Zealand (Dunlop 1996), Zambia (Jhala 1995), and Honduras or advisory functions as in Japan, Tanzania (Heggie and Vickers 1998), and Guatemala. Based upon the positive and negative experience gained from road boards/funds worldwide, certain design criteria can be established which might help to create **sustainable** Road Maintenance Boards/Funds, namely:

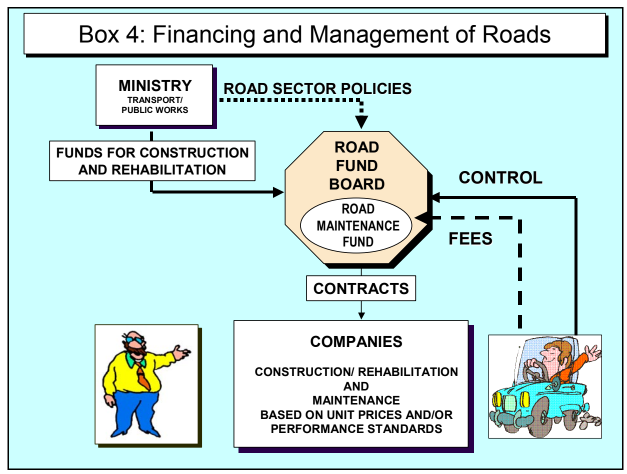
- The directors of the Board should very well **represent the relevant interest groups**, especially road users,
- the Board should be **autonomous with a firm legal basis**, and
- the **tariffs should well reflect the usage of roads**, should be adjustable according to needs, be collected by the Board and deposited into a Road Maintenance Fund account, and should be used primarily for road maintenance (routine and periodic maintenance including strengthening of pavements and regravelling).

In order to be effective the Road Maintenance Board/Fund has to channel and control funds to other agencies, corporations or companies for planning, executing and supervising road maintenance works. Depending on the structure of the road administration in a specific country, there are several possibilities of how the Road Maintenance Board can operate. The principal decision to be taken by an executive Board is whether or not it is going to contract out work directly or whether it wants to make use of an existing road administration or agency. The more effective and efficient these organizations are, the more likely they will be given a major role to play. If there exists an efficient road agency or corporation a performance contract between the agency and the Board might be the best choice (see figure 3), and in the case of a road administration the Board might decide to contract out maintenance works directly, while making use of the planning and contract preparation skills of the existing road administration.

One ultimate administrative structure could be the Road Maintenance Board contracting all road maintenance to Road Maintenance Management Companies in charge of maintaining roads to a certain standard in a specific area on a long-term basis (see figure 4). For smaller countries, having one National Road Maintenance Board might be sufficient; for bigger countries, creating Provincial and Municipal Boards as well might be the better solution.

One question still remains: Who is going to contract and pay for road construction, rehabilitation and major improvements? As long as government bodies are receiving motor fuel taxes, it seems fair that they should continue to finance these works and either contract them directly or let the Road Maintenance Board(s) contract the work on their behalf. The second solution would have the advantage that it might better ensure that quality of road design and construction suits road maintenance needs.




## 4. THE REFORM PROCESS

To change the present financing of road maintenance from a tax to a “fee-for-service” basis is a fairly new approach too and requires the support of a wide base of road users as well as the approval of the government and the politicians in control of the legislative bodies. The easiest way to convince somebody to change something is to clearly demonstrate to him the advantages he would receive from doing so. This doesn’t seem to be too difficult in this case, because the road users finally will save more on vehicle operating cost than they will have to spend on road maintenance tariffs, and the government and ultimately the taxpayers will have to spend less on future road rehabilitation as well. Experiences reveal that road users very often are willing to pay more if they can be assured that the proceeds will go to road maintenance only.

The best way to ensure public support is to give road users a control over where and how to spend the road user levies collected by the Road Maintenance Fund. A few but influential people might lose from introducing the new charging system. These are mainly politicians who used or still are abusing the present system to favor political or personal friends, which certainly will be more difficult to do in a more transparent system controlled by road users. Therefore, **awareness building, orientation and organization of the direct and indirect road users are essential for implementing such reform**. Typical groups to involve in this process are, for example, passenger and freight transport organizations, automobile associations, farmers associations, chambers of commerce and industry, and road associations.

**Box 1. Membership and Characteristics of Some Road Fund Boards in Latin America**

**Road Maintenance Fund of Honduras**

- The Board has executive functions and consists of 7 members: three ministers or vice ministers (Transport and Public Works, Finance, and Economy), the Director of Roads of the Ministry of Transport and Public Works, one representative of the Association of Municipalities, and three from the private sector (Chamber of Commerce, Association of Transport Enterprises, and College of Engineers).
- The Minister of Transport and Public Works is chairman of the Board and appoints the representatives of the private sector upon nomination by the organizations they represent.
- The Board contracts out all execution and supervision of road maintenance to the private sector and uses the Ministry of Transport and Works for planning purposes.

**Road Maintenance Fund of Guatemala**

- The Board has some executive functions and consists of 6 members: two ministers or vice ministers (Transport/Public Works and Finance), the Director of Roads of the Ministry of Transport and Public Works, one representative from the Road Transport Association, one representative of the Chamber of the Construction Industry, and one representative of the Chamber of Agriculture.
- The Minister of Transport and Public Works is chairman of the Board and appoints the representatives of the private sector upon nomination by the organizations they represent.
- The Board contracts out all execution and supervision of road maintenance to the private sector.

**Road Maintenance Fund of the State of Paraná (Brazil)**

- The Board has executive functions and consists of 16 members: three Secretaries of State (Transport/Infrastructure, Industry/Commerce, and Agriculture), Director General of Public Works, one representative from Parliament, one representative from the municipalities, and ten representatives from the private sector (Agricultural Federation, Federation of Industries, Federation of Freight Transport Enterprises, Federation of Passenger Transport Enterprises, Chamber of Commerce, Transport Syndicate, Syndicate of Transport Related Services, Federation of Agricultural Workers, Syndicate of Freight Transport Enterprises, and a road user selected by the Consumer Protection Agency).
- The Chairman of the Board is the Secretary of Transport.
- The Board contracts out all execution and supervision of road maintenance to the private sector

Often the question arises whether or not to include the financing of **road rehabilitation** in such a financial scheme as well. This depends on whether the users are willing to pay for rehabilitation too. They might argue that road rehabilitation is necessary only because the government did not maintain the roads in the first place, and thus will be reluctant to pay in form of user fees. As long as governments find enough funds or are pressed by the road users to do so, the road users might succeed with this line of argument. If public administrations are neither able nor willing to mobilize enough resources of their own, external credit organizations like the World Bank or Regional Banks might step in to assist in financing road rehabilitation (which they presently still do), or the road users will have to allow for road rehabilitation costs to be covered by road maintenance tariffs. Since many countries are faced with a high percentage of their road system being in poor condition, requiring rehabilitation first, before regular maintenance can take place, it might be necessary for some of them to temporarily include financing of road rehabilitation in this financing scheme as well. This of course will be reflected in the **tariff levels**, which for inflationary reasons **should rise only gradually, to allow for a parallel saving in vehicle operating cost.**

**For the road maintenance reform to take shape in Latin America and the Caribbean the reform concept developed by ECLAC was instrumental**. The development of this concept and its dissemination in the whole region as well as a favorable reform climate made various countries susceptible to engage in such a reform. In 1993 the International Road Federation, the UN Economic Commission for Latin America and the Caribbean, the World Bank and the Pan American Institute of Highways joined forces in promoting regional and national seminars on improving the highway system in Latin America and the Caribbean under the name PROVIAL. The financial and institutional reform of road maintenance played and still plays a major role in_all of these seminars. After several countries expressed their interest in embarking on such a reform, in 1994 the International Road Federation and the German Agency for Technical Cooperation initiated a project to assist these countries in creating Roads Maintenance Funds and contracting out road maintenance by performance standards.

So far El Salvador, Costa Rica, Guatemala, Honduras, Nicaragua, and four states in Brazil have created a Road Maintenance Board that oversees a Road Maintenance Fund. **Each country is faced with a different situation and is therefore shaping its very unique solution to the problem, but all are more or less following the basic principles that govern the reform.**

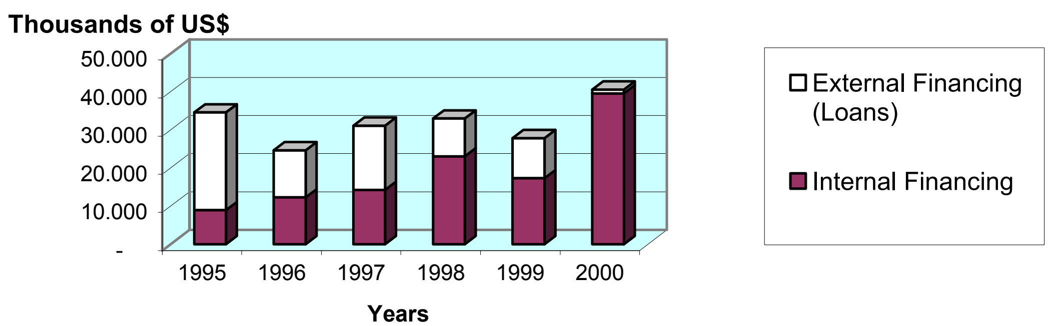
In **Honduras** the legislation to create the Road Maintenance Fund was passed in 1993. The Board that consists of four representatives from the central government, one representative from the municipalities and three representatives from the direct and indirect road users is supervising the fund. The principal financial source of the fund is a levy on motor vehicle fuels in the form of a dedicated tax. The Road Maintenance Fund is responsible for the routine and periodic maintenance of the official road network, excluding urban and municipal roads. Up to 10% of the funds can be disbursed for road rehabilitation works. All works as well as services have to be contracted out to the private sector. In addition, to avoid creating another bureaucracy, the administrative cost of the fund has been restricted to 2.5% of its annual budget. Presently, the Road Maintenance Fund has 38 staff members, including support staff.

Unfortunately, the law that was created by an outgoing government stipulated that all proceeds from taxes related to road transport, such as fuel taxes, import duties on motor vehicles, licensing fees, etc. have to form part of the income of the fund. This was unacceptable to the new government. In addition, these proceeds would have supplied twice the amount of funds needed for road maintenance. Only in the year 1999 was the issue solved by an amendment to the existing law, stipulating that only a specific portion of the fuel tax be dedicated to the fund.

Actual operation of the Road Maintenance Fund started in January 2000. Since then the financing of road maintenance has been stabilized and is done almost exclusively through the Road Maintenance Fund (see Box 3). From 2001 to 2009 the projected income of the fund will increase from 60 to

84 Million US$ in year 2000 dollars. The road network maintained by the Road Maintenance Fund will go up from 5743 km in 2001 to cover the whole road network of 14602 km in 2009.

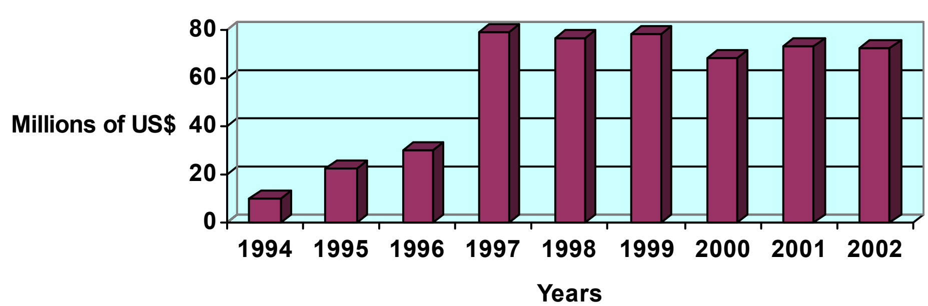
**Figure 5: Sources of Funds for Road Maintenance in Honduras**




In late 1996 **Guatemala** passed a law increasing the taxes on motor fuel, dedicating this increase and part of the existing fuel taxes to a special fund to be disbursed exclusively for road maintenance and improvement. The body governing this fund was created by government decree in early 1997. Three members of its Board are government officials and three members are from the private sector. As in the case of Honduras all works and services have to be contracted out to the private sector, and the administrative cost of the Fund has been limited to 2% of its annual turnover. The original intent by the Minister of Transport to create an autonomous Road Maintenance Fund had to be abandoned, as it required a 2/3 majority of parliament for its approval, which the government was unable to secure.

With the introduction of the Road Maintenance Fund the funds spent on road maintenance jumped from 29.5 million US$ in 1996 to 72.6 million US$ in 2002 (see Figure 6).

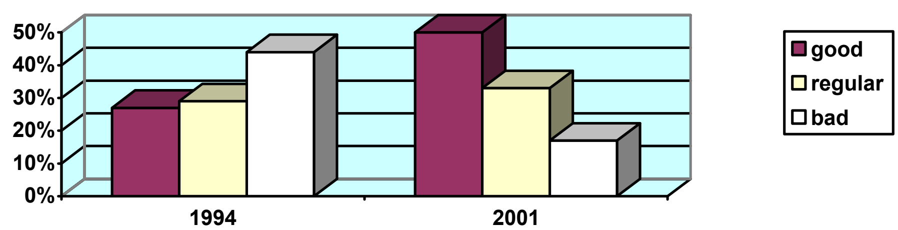
**Figure 6: Financial Resources Spent on Road Maintenance in Guatemala**




While in 1994 only 11% of the road network of 11100 kilometers received maintenance services, road maintenance coverage increased to 49% of 14340 kilometers of roads in 1999. Priority was given to paved roads that received almost 100% coverage. The condition of the paved roads has improved substantially since 1997 (see Figure 7). This was partially due to the road rehabilitation projects funded by the government and external lending agencies.

Until the end of 1999, the Road Maintenance Fund has worked very effectively, creating a very favorable perception among the general public. Most notable was the disappearance of potholes, which frequently have annoyed road users. In 2000 a new government assumed power and performance dropped considerably due to political influence.

**Figure 7: Road Conditions of the Paved Roads in Guatemala in the Years 1994 and 1998**




**Costa Rica** created its National Road Fund in mid 1998, which is mainly funded by a levy on fuel. The fund takes care of the maintenance, rehabilitation and improvement of the national road network. Priority in funding has to be given to routine and periodic maintenance. The Board has three members coming from the central government (all from the Ministry of Public Works and Transport), one member representing the municipalities, and three members from the private sector. The private sector representatives are nominated by their respective organizations. As in the cases of Honduras and Guatemala, the fund is obliged to contract out all works and services to the private sector. Unfortunately, the fund has to abide by the government rules concerning wages and letting of contracts, which might have negative effects on its efficiency.

During the first few years the National Road fund did not receive the full amount it should have received according to the road fund law. The Ministry of Finance was withholding more than 30% of the funds until the year 2000. This once more underlines the necessity for funds to be deposited directly into a road fund account instead of being channeled through the Ministry of Finance.

In order to improve the financial base of the national road fund as well as dedicating funds to a Municipal Road Fund the government of Costa Rica passed a new law in July 2001 assigning 30% of fuel taxes to the road sector out of which 75% going to the national roads and 25% to the municipal roads. For 2003 the total amount to be collected for the two road funds is estimated at an equivalent of 130 million US$. The municipalities are receiving funds based on a formula that includes the length of their network and their development factor and are required to match funds.

In June 2000, **Nicaragua** passed a law creating its Road Maintenance Fund, an autonomous body governed by a Board. The Board has two members representing the government, one representing the local governments, and three representing direct and indirect road users (see Box 1 on page 8). The Road Maintenance Fund is responsible for the periodic and routine maintenance of the national road network that includes a major part of the rural roads in Nicaragua. Up to 10% of the fund's annual budget can be spent on minor rehabilitation works.

As in the other three countries mentioned above, all works and services will have to be contracted out to the private sector. Besides having internal audits, the fund will be audited annually by an independent auditor. In addition, it is planned to regularly inform the road users about the performance of the fund.

In order to gain public support, the government had undertaken an extensive public awareness campaign prior to creating the Road Maintenance Fund and had decided not to increase the fuel price at the initial stage of the fund. To provide initial funding, part of the existing fuel taxes was supposed to be transformed into a dedicated fuel tax. Unfortunately, the Minister of Finance objected strongly, leaving the financing of the Road Maintenance Fund to the normal budget process. This clearly puts the financing into jeopardy, taking into account the history of resource allocation to road maintenance by the government of Nicaragua.

Small-scale road maintenance enterprise working for the Road Maintenance Fund in Guatemala (FONDO VIAL).

**El Salvador** created its Road Maintenance Fund in November 2000. It is an autonomous body supervised by a Board having two members from the central government, three members representing the indirect road users, and two members representing the direct road users.

The Road Maintenance Fund is responsible for maintaining the national road network. After parliament refused to grant a fuel levy to finance the fund when it was created, a fuel levy of 20 US cents was finally written into law in November 2001.

In **Brazil** four states have created autonomous Road Funds, the State of **Mato Grosso** in June 1999, the State of **Mato Grosso do Sul** in March 2000, the State of **Paraná** in December 2000, and **Goiás** in January 2001.

The Road Funds in the State of Mato Grosso and Mato Grosso do Sul have similar characteristics. Both have Boards with a majority of members coming from the public sector, are financing the Road Fund through a levy on motor vehicle fuels and agricultural goods, and are responsible for construction, rehabilitation and maintenance of roads. Since both states are predominantly agricultural, and still need to expand their road networks, it was felt necessary to include road construction and rehabilitation as well, and to broaden the financial base of the Road Fund through levies on agricultural goods.

The Road Fund in the State of Paraná actually is a genuine road maintenance fund. Funding is exclusively provided by a levy on motor vehicle fuels. The Board consists of two representatives of the state government, one representative of the parliament, one representative of the municipalities, and ten representatives of the direct and indirect road users.

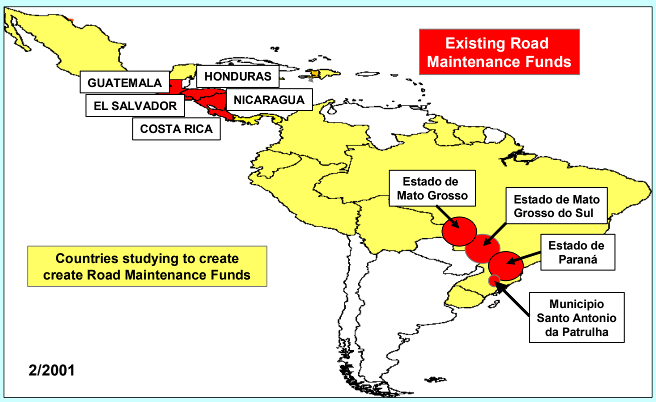
In the State of Goiás the Road Fund is being financed by the vehicle licensing fees, concentrates on road maintenance, and the majority of its Board members are from the private sector.

Funding is going **directly** into the accounts of the Road Funds, except for the State of Goiás, where the funds are still channeled through the Ministry of Finance.

Several other states in Brazil are in the process of creating similar Road Funds.

On the Federal level the parliament has emended the constitution to allow for the dedication of part of the fuel taxes for transport purposes in December 2001. The corresponding law has been passed at the same time but is still waiting to be regulated. The major amount of the approximately 3 billion US Dollar of dedicated fuel taxes will most likely go to the road sector. As a preliminary measure, 120 million US Dollar have been assigned to the federal states for road maintenance in January 2004.

Figure 8: Road Maintenance Funds in Latin America




Other countries such as **Brazil at the federal level, Ecuador, and Mexico** are discussing the creation of Road Maintenance Funds, but are still far from reaching a consensus (see Figure 8). In **Peru** and **Colombia** initial progress towards establishing a road maintenance fund has suffered major setbacks as governments and priorities have changed. Nevertheless, the urgency to reform the present ineffective and inefficient system of maintaining roads in these countries is mounting, increasing pressure to reform the financing and management of their road maintenance.

**Table 1: Characteristics of Road Funds in Latin America**

| **Country Date of creation** | **Main sources on income** | **Fuel levy in US cents per liter** | **% of fuel levy of total income** | **Composition of Board** Public-parliament-privat |
|---|---|---|---|---|
| **Costa Rica 4/1998** | Fuel levy | 7.5 – 4.3<br>25% for local road fund | 95% | 4 - 0 - 3 |
| **Guatemala 2/1997** | Fuel levy | 3.1 – 3.1 | 100% | 3 - 0 - 3 |
| **Honduras 1/1999** | Fuel levy | 8.2 – 2.6 | 100% | 4 - 0 - 3 |
| **Estade de Mato Grosso do Sul 8/1999** | Fuel levy and taxes on agricultural goods | 0.4 – 0.8 | 50% | 5 - 1 - 2 |
| **Estado de Mato Grosso 3/2000** | Fuel levy and taxes on agricultural goods | 1.5 – 1.5 | 17% | 7 - 0 - 0 |
| **Nicaragua 6/2000** | Federal budget* | --- | --- | 3 - 0 - 3 |
| **El Salvador 11/2000** | Fuel levy | 5.3 – 5.3 | 100% | 2 - 0 - 5 |
| **Estado de Paraná ,12/2000** | Fuel levy | 0.4 –0.8 | 100% | 6 - 1 - 9 |
| **Estado de Goiás, 1/2001** | Vehicle licensing fee | --- | --- | 3 - 1 - 6 |

In June 2003, the Committee of Road Funds in Central America has been formed as subcommittee of the Committee of Transport Ministers of Central America. This will enhance the exchange of information between the road funds in Central America and will contribute to the stability and long-term survival of these funds.

A similar initiative is being planned for the road funds in Brazil.

## 5. LESSONS LEARNED

Since all of the road maintenance funds in Latin America have started operating fairly recently, it is far too early to judge their performance or long-term sustainability. Nevertheless, some lessons can be learned from the process of creating these Funds.

1. A broad **consensus among all stakeholders** is an essential prerequisite for creating a road maintenance fund. In order to arrive at such a consensus it is necessary:
    - to create a **forum for discussion** by holding a series of seminars with the different levels of government, political parties and organizations representing direct and indirect road users such as Trucking Associations, Bus Operator Associations, Automobile Associations, Farmers Associations, and Chambers of Commerce and Industry;
    - to clearly demonstrate what **economic consequences** poor road maintenance brings to everybody involved. Generally, neither the government nor the road users are aware of the enormous economic consequences they face due to the lack of proper road maintenance;
    - to present a **concept of how to reform the financing and management of road maintenance on a long term basis**, which is attractive to the government and to the road users as well. In order to get the road users, who will have to foot the bill, to agree, it is essential to give them a certain control over the funds to make sure that the money will be spent effectively and efficiently; and
    - to **keep the public informed** by means of a media campaign, including TV and radio spots as well as newspaper articles, not only prior to creating a road maintenance fund but also during its operation.

2. It seems to be easier and faster to create Road Maintenance Funds in **smaller countries** with poor road conditions than in bigger countries with better roads. While the countries in Central America were fairly quick to create such funds, countries such as Brazil, Colombia or Peru have many more difficulties in coming to a consensus.

3. To use dedicated fuel taxes to finance the Road Maintenance Fund can put the sustainability of the Fund at severe risk, especially if the funds are collected by the Ministry of Finance. In 1998, the government of Guatemala had to fight off an initiative of the parliamentary opposition to use the fuel tax dedicated to the Road Maintenance Fund for education. Since dedicated taxes form part of the general budget, governments and legislators often consider them as resources that easily can be reassigned to serve other purposes. This changes if the road user charges are **legally defined as user fees**. In addition, as long as funds are passing through the Ministry of Finance, there is always the danger that funds will be diverted, even if this is against the law, as has happened in Costa Rica.

4. As the creation of an autonomous road fund and the establishment of a fuel levy require the **passing of new laws** and an increase in fuel prices, governments and parliaments often are reluctant to act swiftly, especially when new elections are coming up. Therefore, the best strategy seems to be to pass the respective law(s) during the early days of a new administration, but to achieve a broad consensus among all major stakeholders during the preceding period, as was the case in Guatemala, Costa Rica, and El Salvador.

5. As raising fuel prices is always a politically sensitive issue, **increases due to the fuel levy should be gradual** and in line with the savings in vehicle operating costs due to improvements in the conditions of the road network in order not to produce inflationary effects. To ease the burden on road users in the beginning, it is even more advisable to transform a portion of the existing fuel taxes into a fuel levy for road maintenance, as was the case in Guatemala. Road users often argue that they already pay enough fuel taxes and that the government should dedicate at least a portion of these taxes to road maintenance on a permanent basis.

Whether the Road Maintenance Funds that have been established already or are in the process of being created in Latin America will survive in the long run remains to be seen. The more a Road Maintenance Fund follows the principles that help to make it sustainable, the more are its chances of survival. But it is also dependent on the **environment** in which it operates. Therefore, **the political, economic and social stability of a country, as well as a well-established culture of citizen participation in public and communal affairs, are essential for long-term survival**. And it is the operating environment in many countries in Latin America that seems to pose the greatest challenge for the existing and future Road Maintenance Funds in this region.

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