The key concept emerging from the Africa Road Maintenance Initiative is commercialization: bring roads into the market place, put them on a fee-for-service basis, and manage them like any other business enterprise.

Road transport is now the dominant form of transport in Sub-Saharan Africa. It carries 80 to 90 percent of the region's passenger and freight transport and provides the only form of access to most rural communities. To handle this traffic, African countries expanded their road networks considerably during the 1960s and 1970s. By the end of the 1980s, there were therefore nearly two million km of roads in Sub-Saharan Africa. These roads are some of the region's largest assets, with replacement costs amounting, to nearly S150 billion.

THE PRESENT CRISIS

However, in spite of their importance, most roads in Africa are poorly managed and badly maintained. Almost without exception, they are managed by bureaucratic government roads departments. African countries have furthermore spent far too little on routine and periodic maintenance during the past 20 years and, as a result, nearly a third of the $150 billion invested in roads has been eroded through lack of maintenance. ¹/ Africa has been living off its assets. To restore only those roads that are economically justified and to prevent further deterioration will require annual expenditures over the next ten years of at least $1.5 billion (World Bank, 1991, p. 23).
The economic costs of poor road maintenance are borne primarily by road users. When a road is not maintained-and is allowed to deteriorate from good to poor condition-each dollar saved on road maintenance increases vehicle operating costs by $2 to $3.² Far from saving money, cutting back on road maintenance raises the net costs to the economy as a whole. It is estimated that the extra costs of insufficient maintenance in Africa amount to about $1.2 billion per year or 0.85 percent of regional GDP (World Bank, 1991, p. 9). About 75 percent of these costs are in the form of scarce foreign exchange. It is no wonder that road user organizations, particularly those in Tanzania, Zambia, and Zimbabwe, have expressed a willingness to pay for road maintenance provided the money is spent on roads and the work is done efficiently.

THE ROAD MAINTENANCE INITIATIVE (RMI)

The RMI, launched by the United Nations Economic Commission for Africa and the World Bank, has spent the past six years working with African countries to identify the underlying causes of poor road maintenance policies and to develop an agenda for reforming them. The program is administered by the World Bank and financed by the governments of Denmark, Finland, France, Germany, Norway, Sweden, Switzerland, and the European Union. The initial phase of the RMI program used regional seminars to raise awareness of the need for sound road maintenance policies and to identify why current policies were ineffective and unsustainable. The second phase then moved on to country initiatives in nine target countries: Cameroon, Kenya, Madagascar, Nigeria, Rwanda, Tanzania, Uganda, Zambia, and Zimbabwe. Nigeria and Rwanda are currently inactive.

GENUINE POLICY DIALOGUE

The switch from a regional to an individual country approach had a dramatic effect on the process of policy reform as stakeholders outside the ministries of works, local government and finance got involved in the debate. For the first time, the seminars started to generate a genuine policy dialogue. It turned out that the initial country dialogue lacked an important dimension. Participants were predominantly from ministries expecting to benefit from increased road spending. Their attitude was thus one of actively supporting increased road spending and creation of an autonomous road authority, while showing little enthusiasm for the types of reform which might cause them inconvenience: contract maintenance, labor-based work methods, and reform of government plant pools. The dialogue focused on getting more money to continue doing business-as-usual.

The breakthrough came during workshops in Zimbabwe, Zambia, and Tanzania as the private sector stakeholders (participants from the chambers of commerce, consultant organizations, road transport associations, and the farming community) got involved in the discussions on management and financing of roads. Their participation changed the chemistry of the discussions. It created two sides to the dialogue. Road users showed a keen interest in road sector policy issues, and started to express a willingness to pay for roads (over and above fiscal taxes), provided the proceeds were spent on roads and the work was done efficiently. The road agencies, on the other hand, started to view road users more
as partners in the provision of road services, instead of as burdensome clients, and to see a genuine opportunity to improve their position, provided they were willing to reform the way they did business.

Bringing the two sides together was not always easy. Civil servants generally distrusted the private sector, and the private sector could not see the point of talking to the road agency. However, once the ice was broken, the relationship became increasingly beneficial, with the private sector offering help and support, and the public sector showing a growing willingness to listen and respond.

Three other important insights emerged from the country initiatives. First, it became clear that solutions had to be home-grown, and that studies had little lasting impact unless they were prepared in close collaboration with local stakeholders. It also helped when the studies involved African resource persons. Second, it is clear that major policy reforms take time and cannot be unduly rushed. People have to reorient their mind-set, internalize a new way of thinking, and evaluate the consequences of major policy reforms. Gradualism seems to be of the essence, since incremental change may be more easily absorbed than radical transformation of existing institutions. Third, initial experience suggests that a sharply focused policy study may be more effective at furthering the reform process than one large integrated transport sector study with numerous components and a tight time schedule.

UNDERLYING CAUSES

What emerged from the RMI program is that many of the systemic problems associated with poor road maintenance policies—weak programming and budgeting, undue emphasis on force account work, and inefficient plant pools—are symptoms of a deeper problem. The real causes are attributable to weak and unsuitable institutional arrangements for managing and financing roads. Roads are managed like a social service, not as part of the market economy. There is no clear price for roads, road expenditures are financed from general tax revenues, and the road agency is not subjected to any rigorous market discipline. Poor terms and conditions of employment, lack of clearly defined responsibilities, lack of managerial accountability, and ineffective and weak management structures create further difficulties.

One of the first lessons to emerge from the RMI program was that attempts to improve road maintenance policies cannot focus on maintenance alone. Poor road maintenance policies are a subset of the wider issues of managing and financing road services as a whole. The key concept that emerged from the ensuing debate was commercialization: bring roads into the marketplace, put them on a fee-for-service basis and manage them like any other business enterprise. However, since roads are a public monopoly, and ownership of most roads will remain in government hands for some time, commercialization requires complementary reforms in four other important areas. These are referred to as the four basic building blocks. They focus on: (i) creating ownership by involving road users in management of roads to win public support for more road funding, to control potential monopoly power, and constrain road spending to what is affordable; (ii) stabilizing road financing by securing an adequate and stable flow of funds; (iii) clarifying responsibility by clearly establishing who is responsible for what; and (iv) strengthening management of roads by providing effective systems and procedures, and strengthening managerial accountability.
The four building blocks represent the core of the reforms associated with commercialization. They are interdependent and ideally should be implemented together. Without all four, the reforms may achieve only part of their objective. One is unlikely to solve the financial problem without the strong support of road users. And one cannot win the support of road users without taking steps to ensure that resources are used efficiently. And one cannot improve resource use unless one controls monopoly power, constrains road spending to what is affordable, and increases managerial accountability. And one cannot hold managers accountable unless they have clearly defined responsibilities. There is nevertheless scope for flexibility. The reforms can be introduced in different ways, and the content of each building block may differ, depending on country circumstances. They can move sequentially or in parallel, and both sequencing and the pace of reform can vary. Furthermore, the reforms need to be monitored and the results used to adjust the reform program as new information becomes available.

Ownership. It is difficult to reform the financing of roads without the active support of road users. They are the people who use the road network and are also expected to pay for it. Given that current allocations for road maintenance are erratic and well below the levels needed to keep the road network in a stable long-term condition, the first building block thus involves winning public support for more road funding. However, support for more road funding through user charges requires that steps be taken to ensure that road agencies do not abuse their power as public monopolies, and that no more is spent on roads than the country can afford. The key step to be taken is thus to involve road users in road management, since this is generally an essential precondition for setting them to willingly pay for roads on a fee-for-service basis. At the national and regional level, road users may be involved in management through road management boards. These are now becoming increasingly common in Africa: there are at least seven functioning boards in Benin, Central African Republic (CAR), Mozambique, Sierra Leone, South Africa (the oldest, originally established in 1935), Tanzania, and Zambia. Most boards include private sector representatives.

Financing. The second building block aims at establishing an adequate and stable flow of funds. All governments in Africa are seriously short of fiscal revenues. Budget allocations for road maintenance seldom exceed 30 percent of requirements, and it is rarely feasible for governments to increase these allocations under present fiscal conditions. Some African countries are now addressing this issue by introducing an explicit road tariff consisting of vehicle license fees and a fuel levy. The tariff is collected independently from Government sales and excise taxes and, in the best examples of collection arrangements (CAR, Ghana, and Zambia), the fuel levy is collected on an agency basis and deposited directly into a Road Fund. This prevents the proceeds from being siphoned off and spent on other public programs. The intention is (i) to generate sufficient revenues to operate and maintain the road network on a sustainable basis and (ii) to mimic a market-oriented hard budget constraint, so that more road spending means a higher tariff, while a lower tariff means less road spending. The tariff has so far generally been set to cover all the costs of maintaining main roads and part of the costs of maintaining urban and rural roads. The remaining costs
Responsibility. The third building block concentrates on creating a clear organizational structure for
managing different parts of the road network. This requires two things: (i) clear assignment of
responsibility among different government departments and different levels of government and (ii) clear
assignment of responsibility among the individual road agencies. The arrangement needs to be based on
an accurate road inventory, functional classification of roads, designation of appropriate road agencies,
formal assignment of responsibility to each road agency, and clarification of the relationship between the
road agency and the parent ministry. Responsibilities to be assigned include those for operation,
maintenance, improvement, and development of the road network; for traffic management and road
safety; and for the adverse environmental impacts associated with roads and road traffic.

Management. The final building block focuses on creating a more business-like road agency. Once road
users are involved in management of roads, they generally press for the introduction of sound business
practices to ensure that their constituents get value for money. They expect clear management
objectives, competitive terms of conditions of employment consolidated budgets, commercial costing
systems, and effective management information systems. The most important issue requiring attention is
the wide gap between terms and conditions of employment in the public and private sectors, and the
impact that this has on staffing and staff morale. An engineer in the private sector in Cameroon normally
receives a total remuneration package twice as large as his public sector counterpart (the ratio is five in
Tanzania and nearly nine in Zambia). As a result, several road agencies have lost most of their staff or
are being managed by expatriates earning international salaries paid by donor agencies. One cannot
manage a road agency on a sustainable basis with expatriates or with demoralized local staff who spend
most of their time supplementing their incomes. Any serious reform program must address these issues.
Sierra Leone has already done so be establishing a semiautonomous highway authority under an
executive board which, immediately after being inaugurated, raised salaries for engineering staff from an
average of $50 per month to over $200 per month. Tanzania likewise carried out an extensive review of
terms and conditions of employment for roads staff in Southern Africa. The review showed that salaries
and allowances for engineers would have to increase by a factor of 10 to make them competitive. The
Cabinet is currently considering ways of implementing these recommendations in the form of a
performance-based salary scale.

Reform of terms and conditions of employment should be closely coordinated with other reforms
focusing on giving the road agency a clear mission and effective management structures, more
managerial autonomy, and greater managerial accountability. The Ghana Highway Authority has made great progress in this direction by streamlining staffing and disciplinary procedures and introducing a road management system. It has also developed a corporate plan that forms the basis of an annual contract plan between the Authority and the government. These reforms improve market discipline, provide managers with the freedom to operate commercially, and strengthen managerial accountability. They also encourage a more objective approach to setting priorities, comparing in-house to contract work, and evaluating labor-based work methods. Finally, auditing procedures also need to be improved to ensure that the public get value for money from road spending. Where possible, the internal audit system should be supplemented by independent financial and technical audits, and the audit report should be presented to the Board (where applicable) and copied to the responsible ministry. Technical and financial audits are now being used on the minor roads program in Kenya and on road maintenance programs in Burkina Faso and Senegal.

**TO LEARN MORE**


**ENDNOTES**

1. The figure of $150 billion represents the costs of replacing all existing roads at current prices. It does not include the cost of structures. The calculation uses the following replacement costs: paved roads, $250,000 per km, gravel roads, $50,000 per km. The estimated erosion of capital, roughly a third of the $150 billion invested in roads, represent the costs of reconstructing or rehabilitating that part of the region's road network classified as being in poor condition (i.e., in need of rehabilitation). The costs of rehabilitation are $230,000 per km for paved roads and $36,000 for gravel roads. Back to text

2. A paved road in good condition carrying average traffic flows requires resealing or light overlays costing about $23,600 per km every 7 years to keep it in good condition. This has an NPV, discounted at 12 percent over 25 years, of $17,688 per km. Without maintenance the road will deteriorate from good to poor condition, and this will increase vehicle operating costs by about $5,000 per km which has an NPV when discounted over 25 years of $39,200 per km (World Bank, 1991, p. 29-30). The benefit/cost ratio of fully-funded road maintenance is thus 2.2. Back to text

3. The road fund in Ghana is simply a bank account which is operated under the jurisdiction of the
Ministry of Roads and Highways. It is not an effective road fund, but does have the advantage of having the fuel levy collected by the oil company and paid directly into the road fund. Back to text

4. The Ghana Highway Authority is a semi-autonomous road agency and is responsible for management of the main road network. It was established in 1974 under a roads board. The board was suspended in 1981 by the military government. The government is currently re-establishing the board and adding three members from the private sector. Back to text