FINANCING RURAL TRANSPORT INFRASTRUCTURE

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Objectives of the paper

Abstract

A fundamental requirement for making sustainable improvements to rural infrastructure is a clear understanding of who will finance maintenance and capital improvements. In the past the question of financing rural roads has centered primarily on the role of governments. Given the acute scarcity of financial and human resources in most developing countries, there are simply too many kilometers of roads and paths in rural areas for any level of government to take responsibility for anything but a part of this network. Bringing more of this network under regular maintenance requires innovative ways of combining the financial and technical resources of the public and private sectors.

This paper presents a framework for improved financing of local government roads and community roads and paths. The key element of an effective approach is to clearly define the role of local government and communities in answering the central question: Who will provide an adequate and steady source of funding, especially for maintenance?

Key issues

A sustainable financial framework for maintaining rural roads, important paths, and footbridges must be built around coherent financial arrangements based on collaboration among government, communities, and the private sector. Many industrial countries have established legal and financial arrangements that accommodate private ownership of roads at the highest level of the network, toll roads, and the lowest level, access roads. Private ownership of roads is highly cost-effective and efficient, especially at the lowest level of the network. Given the combined influence of two powerful trends—decentralization and the increased role of the private sector—the time is right to adopt institutional arrangements that encourage the largest private sector group, small-scale farmers, to assume more responsibility for the lowest level of the network.

Key topic areas

- Symptoms of inadequate finance
- A framework for reform
- Financing local government roads
- Establishing a planning framework and planning methods
- Financing community roads and paths

1. INTRODUCTION

All countries have a boundary beyond which direct government responsibility for the road system ends and the network of community roads and paths begins. Private ownership can significantly increase the kilometers of roads that receive regular maintenance and reduce the cost of maintenance to less than half that of public roads of equal engineering standards and traffic. An effective financial framework will be based on the creation of appropriate incentives to engender community ownership, empowerment, and local resource mobilization. These incentives include legal instruments, cost-sharing arrangements, and technical and managerial advice.

Cost-sharing arrangements verify demand, expand the revenue base, and give communities strong incentives to organize themselves into road associations. A written contract should be set between the community road association and the local road agency or the road fund. Communities not meeting contract obligations should forfeit the cost-sharing privilege and pay back funds received. In Madagascar and South Africa cost-sharing arrangements between local governments and communities for financing maintenance encourage communities to assume the maintenance responsibility of some roads.

2. SYMPTOMS OF INADEQUATE FINANCE

2.1 Unclear Responsibilities

Local communities have often been asked, ad hoc, to contribute to improving and maintaining roads constructed and improved through government, NGO, and donor programs. Whilst local acceptance of responsibility is encouraged, community contributions should not be mistaken for commitment to maintenance or assumption of ownership responsibilities. Very rarely have communities been consulted on and agreed to their responsibilities and those of the rural road agency for maintenance. Experience in Malawi shows that communities are more forthcoming with in-kind contributions, including labor, for the construction of a bridge or a road than for maintenance. In Zambia donor programs paid communities (in cash and food) to improve roads and tracks, which they were subsequently expected to maintain on a voluntary basis. But communities are unlikely to perform tasks for nothing if they were once paid to do so. Reliance on unpaid volunteer labor for regular maintenance of local government roads is not sustainable and leads to confused responsibilities.

2.2 Disintegration of the Planning System

A lack of an effective planning process has meant that financial resources are often not allocated economically. One of the main reasons is that the key actors respond to biased incentives. Capital and maintenance expenditures fall under separate budgets. Capital budgets are typically supported by donors and have also been favored by local politicians. Funds are allocated for capital works, while regular planning of recurrent activities and expenditures (previously a key part of the planning process) is neglected. In road maintenance expenditure, full rehabilitation is preferred over spot improvements, even though most road agencies are aware that maintenance is highly cost-effective and that improving trouble spots can enable all-season access at a lower cost than rehabilitation. Road works are favored over footbridge and path improvements. Thus existing resources are sub-optimally allocated between capital and maintenance expenditures and between roads and simpler RTI improvements.

2.3 Insufficient and Uncertain Maintenance Funding

There is an overall shortage of maintenance funds in nearly all developing countries. Most government allocations to road maintenance fall short of the amount needed for network preservation. The shortage has been especially severe at the lowest levels of the network—allocations for maintaining local government roads commonly have been only 5–15% of requirements. In many countries recurrent budgets have withered to the point at which they barely cover staff and administrative expenses and a few emergency repairs—little is left for maintenance. Donors were initially part of the problem in that they primarily supported the capital budget. But now they are not willing to finance rehabilitation projects without viable arrangements for road maintenance.

Further, central government funding allocations to local governments are unpredictable and irregular. Local governments are generally given an estimate of the budget resources they will receive in the next fiscal year so that they can make realistic plans. Unfortunately, actual receipts nearly always fall short of original estimates. Even in countries with road funds (which should facilitate more regular and programmable allocations), funding can be highly irregular and unreliable, particularly during a fund’s early years. In Tanzania, for example, local district councils were not told of expected funding levels from the local government road fund, turning planning and programming of works into a futile exercise.

2.4 Inadequate Local Capacity

A lack of steady finance leads to a lack of incentives for road staff at the local level. Civil servant salaries—inadequate when compared with private sector salaries—have adversely affected the technical capacity of road agency staff, leading to high vacancy rates and poor motivation. Local government employees have fewer career prospects and opportunities for training than staff working for a strong central sector ministry. Many district works departments are headed by underqualified and indifferent staff, and have unfilled positions.

3. A FRAMEWORK FOR REFORM

After decades of highly centralized systems of governance, many countries are moving toward decentralization. Effective decentralization (devolution) hinges on a balance of political, institutional, and fiscal responsibilities. Allocation and control of finances lie at the root of decentralization. Many decentralization efforts are, however, partial: administrative responsibilities are assigned to local governments whereas central governments remain in control of fiscal instruments. Partial decentralization risks perpetuating weak local governments and forces the central government to take back or temporarily assume local government responsibilities because of poor performance.

3.1 Financing

The main financial issue to be addressed for RTI is who will pay for maintenance? The four most common sources for finance are donor funds, central government grants from the general budget, local revenues (from the local government and the community), and allocations from a dedicated road fund. These sources provide funds for capital and recurrent expenditures. Some funds are only available for one or the other. Until now, and for the foreseeable future, the lion's share of funds for capital expenditures have and will come from donors. Among six African countries (Cameroon, Kenya, Malawi, Nigeria, Senegal, and Tanzania), external finance accounted for 50–90% of total resources for investment in rural roads and 10–20% of resources available for maintenance (Gaviria, 1991).

Donors, however, are increasingly reluctant to finance capital expenditures unless credible arrangements for maintenance are made. The first challenge is, therefore, to secure a sufficient and reliable source for funding maintenance. The source must be domestic to ensure that investments are sustainable and, in the long run, must rely on cost-sharing arrangements with local governments and beneficiaries. Cost-sharing between the central government and local institutions gives local institutions a powerful incentive to maintain RTI and is an important way of leveraging scarce resources at all levels.

4. FINANCING LOCAL GOVERNMENT ROADS

4.1 Financing Maintenance

The sustainability of all roads hinges on the timely execution of routine maintenance. Financing maintenance requires a steady and adequate flow of funds. The local entity responsible for local government roads must know how much it will receive and when. Without clear allocation schedules, work programming becomes impossible, and unit costs increase as contractors build foreseen payment delays into their costs. A rough estimate of network maintenance requirements can be obtained by applying an asset-based approach to financing needs.

4.2 Locally Raised Revenues

Local governments mobilize only modest revenues, which vary widely because of differences in economic bases and administrative capacities. The main sources of local revenues are often market and business taxes. For example, in a rural district in Malawi market fees accounted for 67% of revenues. Other tax instruments include levies on property, locally produced agricultural, and building. Land-based taxes on local commerce are relatively easy to collect and are rational taxes for good access and road usage. Local governments often also engage in various business projects such as bars, hotels, and transport services to expand their revenues. But these enterprises often lose money.

Local revenues account for only a small proportion of the total resources allocated to local government roads in most developing countries. Maintenance funding from local taxes is likely to be as irregular and unreliable as funds from the central budget.

Much can be done to improve local revenue collection, like maintaining strong enforcement, a reliable local court system, and incentives to tax collectors.

Most countries have limited experience using local road-user charges (such as licenses) as a source for maintenance funding. In some cases local transport operators, other business people, and, to a lesser extent, farmers have contributed money to improve local government roads. But these tend to be one-time contributions—certainly not a formalized source of funding—and generally can not be relied on. An important source could be property taxes. Road access is a component of property taxes in many countries. Property taxes are not collected in many countries, especially where land is not traditionally held by private individuals or is ceded to the central government. The possibility of imposing maintenance and access charges tied to property taxes should be explored.

4.3 Central-Local Fiscal Transfers

Transfers to local governments from the central government budget are the main source of domestic funding for local government roads in many countries. The central government sets the amount of funding allocated to local government roads. Often, transfers are sector-specific, not given as block grants, which are unrestricted in the usual sense. Three main problems result from relying on the central budget for maintenance funding:

1. In most countries only a small share (5% or less) of aggregate public sector revenue is made available to rural governments.
2. General budgets rarely allocate adequate funds for maintaining main roads, much less rural roads.
3. Local governments often receive their allocation in two separate envelopes—one for capital expenditures and another for recurrent expenditures. The allocation for recurrent expenditures may barely cover the salary expenditures of the local rural road unit. A significant difference often appears between the authorized estimates local governments are told they will receive and the amount they actually receive. Road Maintenance Funds

Instead of depending on central budget allocations, a number of countries have turned to dedicated road maintenance funds to finance maintenance. This “new generation” of road funds, which rely on road-user charges, is a promising approach. Road-user charges are generally collected centrally and include fuel levies, vehicle license fees, international transit fees, and road tolls (the latter particularly in francophone African countries). The main source of revenue for road funds is the levy on fuel. Because fuel is consumed by vehicles everywhere on the entire network, the road fund should finance all roads, not just main roads. (Refer to paper 3:2:a for further details on Road Funds).

4.4 Cost-Sharing for Maintenance

Cost-sharing with local governments is a way of leveraging available funds for road maintenance and increasing the proportion of the tended network. Cost-sharing in the form of matching grants can involve road users, the central government, or donors financing an amount proportional to that provided by the local government. Financing maintenance of local government roads from a road fund is more complex than financing main roads because some local government roads are not economically viable even though they meet important economic, social, and administrative needs. Road users should not and cannot be fully responsible for financing maintenance of local government roads. Local people benefit primarily from access to important services. Local governments must share this cost with road users. Local governments can opt to meet their share from locally raised revenues or by applying a proportion of their transfer from the central government (block grant).

5. ESTABLISHING A PLANNING FRAMEWORK AND PLANNING METHODS

Planning for local government roads should be based on a recurrent dialogue between local constituents and local government officials. Local governments must consult with their constituents, who should voice their concerns and preferences. Because local constituents, through the local government, are expected to allocate substantial resources to maintenance, the planning process must respond to their demands and observations. Plans (and planning criteria) should be transparent and vetted by constituency representatives.

Local governments must articulate constituent demands in a plan and forward it, with a request for funding, to a provincial rural road or administrative office. Alternatively, the plan may be sent directly to the central coordinating unit for local government roads. Road programs are generally coordinated at the regional level by a development committee, the regional office of the main road agency, or a regional road board. At this time plans are gathered from the respective local governments and the main road agency determines how it sees the road network evolving in terms of development, upgrading, and rehabilitation. Local governments can then provisionally adjust their plans and improve work programming.

The participatory planning process then becomes an exercise in participatory budgeting in that local constituents are faced with an actual budget constraint. Local constituents and local governments may have to choose between technical standards and physical coverage. When investment grants require proof of maintenance of current assets, constituents are encouraged to raise additional resources to meet the maintenance requirements of existing roads. In other words, when capital and recurrent expenditures are assessed side-by-side, it becomes clear that investment decisions must be based on the future annual demands that a specific investment will place on the recurrent budget. Stakeholders must now determine whether they can afford the new investment.

An important objective of planning is to ensure optimal allocation of available resources. Local governments must be aware of the high return on maintenance compared with most capital projects and the high return on spot improvements compared with full rehabilitation. The principal argument for keeping a consolidated budget is the importance of assessing maintenance requirements alongside development and improvements. A consolidated budget framework helps local governments and constituents consider their options in light of the demand maintenance costs will put on future revenues.

6. FINANCING COMMUNITY ROADS AND PATHS

A basic institutional framework is required to empower and encourage communities to claim responsibility for those roads and paths that have no legal owners and for those designated roads that the local government road agency fails to maintain. A strong argument in favor of creating a private-public partnership for community roads and paths is economic: private ownership can reduce the cost of maintaining roads to less than half the cost of public ownership and significantly increase the kilometers that receive regular maintenance (Ivarsson and Nydahl 1995).

6.1 Cost-Sharing Arrangements

Cost-sharing arrangements for maintaining community roads and paths fulfil three important functions.
1. They constitute a financial incentive for communities to organize themselves.
2. They expand the revenue base.
3. They can verify demand and improve allocative efficiency.

Communities often apply to donor-financed projects for grants to improve access roads and paths. But seldom are there any cost-sharing arrangements for maintenance. To effectively manage and maintain roads and paths, communities must buy materials and obtain technical advice that may not be available locally.

There are informal cost-sharing arrangements for road maintenance. For example, communities may motivate road agency staff to provide technical assistance by paying overnight allowances, while the communities provide resources such as land, labor, and materials for maintenance or improvement works. In Ghana local communities pay for the fuel and overnight allowances of grader operators assigned to them by the regional engineer. In the long-term, however, cost-sharing agreements for both improvement works and maintenance are best formalized through written contracts.

6.2 Technical and Managerial Advice

Communities require advice on contract management and procurement. The principal challenge to community procurement is not just to keep proper accounts, but to strengthen village organizational structures. In some donor-financed investment projects (such as social and community infrastructure development funds), community groups have become end-users of foreign credit. They must therefore learn to keep proper financial accounts when they act as executing agents in procuring goods, works, or services from inside and outside the village.

Community cost-sharing with a road maintenance fund also demands financial and technical accountability. Current legal frameworks in many countries and donor agencies are frequently unsuitable for community-based procurement and disbursement to communities. The local government road agency and donor-financed projects can initially help communities to procure goods and services. A survey of Bank-financed projects indicates that community involvement in procurement enhanced the sustainability of investment and a larger proportion of investment was spent in the local economy, generating employment and economic opportunities; capacity and know-how was built in the community.

6.3 Financing Community Roads and Paths

The main source of funds are likely to be communities themselves and external donors, at least in the short and medium term. In the long term, with increasing decentralization, partial funding for community-level infrastructure may be forthcoming from local governments. Nevertheless, communities themselves will have the principal responsibility for financing maintenance of RTI, though there may be nominal cost-sharing with a road maintenance fund.

6.3.1 Donor Financing of Investments

In many countries, especially in Sub-Saharan Africa, external donors provide most funds for rural infrastructure investment. Until recently, rural road projects financed by donors have not offered communities a choice among investments. They simply offered “roads or nothing.” Although communities may accept and even contribute to improving roads, they may opt for other types of investment, such as improving the water supply, when permitted a choice. Community priorities can be identified through the use of cost-sharing requirements and by allowing communities to choose among various types of investments. Social and community and rural infrastructure funds (referred to as “the funds”) possess both of these features.

However, the funds have important limitations. One is the risk of funding ad hoc projects without giving adequate attention to the institutional arrangements of the sub-sector. The funds finance local government roads and community roads and paths without ensuring adequate maintenance and without distinguishing between the community contributions required for these two administratively different types of RTI. This limitation can be addressed through improved coordination with the local government road agency and through implementation of a national strategy for rural transport.

Another limitation of the funds is the lack of ability to formulate projects at the community level. Communities are not aware of available opportunities. Some of the most successful social funds in Latin American countries created an outreach unit that traveled to all parts of the country. The unit disseminated information on the social fund and its selection criteria in local meetings and on the radio. It clarified the procedures for proposing projects, helped communities determine if specific projects met the criteria, and helped communities to formulate their projects. Communities were also taught project management and basic bookkeeping skills.

Yet another limitation of the funds relates to the bias against roads that is built into their rules requiring that all casual/unqualified labor be contributed by the communities. The proportion of unqualified labor on road works using labor-based work methods in rural areas is many times higher than the proportion constructing buildings. Thus some communities opt to construct schools and clinics instead of roads or to carry out road works using relatively equipment-intensive methods. For example, in the Tanga region in Tanzania a village that needed an access road opted to raise its contribution in cash (25 percent of the total cost) rather than do the physical works itself because the share of casual labor would have been 60 percent of the total cost using labor-based work methods. The village chose to hire a road grader. Had the community been allowed an unbiased choice of technology, that is, not had to adhere to the condition that all casual labor be voluntary, it is likely that it would have opted to improve the road using labor-based work methods. By doing so, community members themselves would have earned much of the project costs working as paid laborers.

A village infrastructure project in Indonesia has had the opposite experience. This project provides a block grant to each community, does not require cost-sharing arrangements, and allows villagers to pay themselves for the work. Two-thirds of the villages have opted to improve roads. Among all the infrastructure sub-sectors, road works probably have the highest labor requirements. This indicates that the incentive structure can have a significant impact on choice.

The first step in financing rural infrastructure should be allowing communities to identify their priorities across sectors. Transport sector investment programs and projects can collaborate with existing social funds to acquire this feature. The second step is providing sector linkages, possibly through a national rural transport strategy. The strategy should provide the institutional framework, including the financing arrangements for investment and maintenance of community roads and paths.

6.3.2 Community Financing of Investment and Maintenance

Despite the poverty of most rural populations, communities often raise resources to partly finance their high-priority investments. Communities may pay their share of an investment in cash (in agriculturally productive areas, for example), but frequently prefer to pay in-kind with labor or locally available materials.

Instead of raising cash, many communities have a system whereby a half or whole day per week is assigned to community work, frequently referred to as “self-help” or “communal labor” activities. For example, under the Umuganda system in Rwanda, each adult dedicated one day per week to work organized by local administrative and political organizations. If a household fails to participate, its members usually have to pay a fine.

6.3.3 Government and Road Fund Financing of Maintenance

Community roads and paths are mainly local concerns. Given the low volume of traffic on community roads and the constrained finances of governments, communities have to shoulder a larger share of the financial responsibility for maintaining these roads and paths. Nevertheless, a road maintenance fund has great potential for providing partial financing to rural communities. Partial funding of maintenance for selected access roads and paths should also be feasible. Sensitization and possibly a change in the membership structure of some road fund boards may be needed to redirect road fund revenues to community roads.

Any cost-sharing arrangements between a private road association and a road fund must be formalized in a written agreement between the parties and requires technical and financial oversight to ensure proper use of funds.

6.4 Planning Community Roads and Paths

The first step in helping communities to plan access improvements should be a horizontal process that allows them to mobilize funds for the investment of their choice. Hence, funding agencies, including local governments and communities themselves, must develop communication skills and methodologies for identifying local priorities. Trained outreach workers can ensure that information on local needs and priorities are presented to local road agency staff and that agency plans and proposals are in turn communicated to villagers in terms they understand.

7. CONCLUSION

The framework described here requires that central government devolve planning of local government roads to local governments and their constituents and that it create an environment that encourages communities and other private or non-government entities to become owners of community roads and paths. Devolving ownership to small-scale farmers, the largest private sector group in most developing countries, will increase efficiency and bring more roads under regular maintenance.

KEY REFERENCES

Galenson, A. and Holste, S. (1994). Provision of Rural Infrastructure in Sub-Saharan Africa. World Bank, Washington, D.C.

Gaviria, J. (1991). Rural Transport and Agricultural Performance in Sub-Saharan Africa: Six Country Case Studies. Joint Sub-Saharan Africa Transport Policy Program/Managing Agricultural Development in Africa. Washington, D.C.: World Bank and Economic Commission for Africa.

Gaviria, J. (1992). Mobilizing Financial Resources for Rural Roads in Sub-Saharan Africa: Case Studies. World Bank, Sub-Saharan Africa Transport Policy Program, Washington, D.C.

Ivansson, S. and Ngdahl, B. (1995). Private Roads in Sweden. World Bank, African Technical Department, Washington, D.C.

Ivansson, S. (1995). Development of Good Governance in the Road Sector in Finland. Working Paper 21. World Bank, Sub-Saharan Africa Transport Policy Program, Africa Technical Department, Washington, D.C.

Kessides, C. (1993). Institutional Options for the Provision of Infrastructure. Discussion Paper 212. Washington, D.C.: World Bank,

Kincaid, J. (1991). Financing Local Government in the United States. In J. Owens and G. Panella, eds., Local Government: An International Perspective. Amsterdam: North Holland.

Louis Berger International Inc. (1996). Study to Improve Management and Financing of Roads.Final Report. Prepared for the Ministry of Communications and Transport, Government of Zambia, Insaka.

Malmberg Calvo, C (1998). Options for managing and financing rural transport infrastructure. The World Bank, Technical Paper No. 411.

Parker, A. (1995). Decentralization: The Way Forward for Rural Development. Policy Research Paper 1475. Washington, D.C.: World Bank.