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# Options for Managing and Financing Rural Transport Infrastructure



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## FOREWORD

A fundamental requirement for making sustainable improvements to rural infrastructure is a clear understanding of who will own assets, who will finance maintenance, and how the capacity will be mobilized to assume management responsibilities. In the past the question of managing and financing rural roads has centered primarily on the role of governments. Given the acute scarcity of financial and human resources in Sub-Saharan Africa, 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.

A sustainable institutional and financial framework for maintaining rural roads, important paths, and footbridges must be built around at least two distinct categories of owners—local governments and communities (including non government entities such as farmers' groups and other private interests). Each category requires a set of coherent institutional and financial arrangements relying 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 in Sub-Saharan Africa—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 ownership responsibilities for the lowest level of the network.

Through the Rural Travel and Transport Program (RTTP), the World Bank is working with bilateral and multilateral donors, African governments, road users, and local constituents to improve rural accessibility. The RTTP is a component of the Sub-Saharan Africa Transport Policy Program (SSATP), a collaborative framework designed to improve transport policies and strengthen transport management. The purpose of this paper is to stimulate reform efforts and dialogue within countries.

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## **ABSTRACT**

Ineffective rural transport services are a major obstacle to economic and social development in Sub-Saharan Africa. Alleviating poverty requires improved access to social and economic facilities. And, in turn, improving access hinges on better transport infrastructure, including roads, tracks, footpaths, and footbridges.

Sub-Saharan Africa has about 940,000 kilometers of designated rural roads, whose replacement value is estimated at US\$48 billion. In addition, Africa has a vast network of undesignated rural roads, tracks, paths, and footbridges. Along this network is generated a third of the region's gross domestic product coming from agriculture and 40 percent of its export revenues. Despite the importance of local government roads and community roads and paths, policymakers and transport professionals in governments and donor agencies have paid little attention to the design of institutional arrangements for their management and financing. The lack of a well-defined institutional framework seriously threatens the sustainability of ongoing and future efforts to fight rural poverty and break rural isolation.

This paper presents a framework for improving management and financing of local government roads and community roads and paths based on two distinct owner categories and a redefined partnership between the public and private sectors. Local governments or their agents will manage the core rural roads; communities and farmers' associations will choose which roads and paths they will own; the private sector will sell management services to the local road agencies and carry out physical works. Ownership of roads by small-scale farmers, the largest private sector group in most Sub-Saharan African countries, will increase efficiency and bring more roads under regular maintenance. This framework is based on a public-private partnership in which costs are shared by governments, communities, farmers, and road users.

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## **OVERVIEW AND CONCLUSIONS**

Inadequate rural transport infrastructure and lack of mobility pose important constraints to rural development in Sub-Saharan Africa. Poverty assessments from Sub-Saharan Africa stress the close link between isolation and rural poverty. African villagers walk and carry their loads. The most common means of transport in Africa are the legs, heads, and backs of African women. Seventy percent of the population in Sub-Saharan Africa live in villages and depend on rugged roads, tracks, and paths to perform their productive activities and daily chores. Over this local transport network the rural African carries a third of the region's gross domestic product (GDP), which becomes food for urban populations and generates 40 percent of the continent's export revenues.

Policymakers and transport professionals in governments and donor agencies have paid little attention to institutional arrangements for managing and financing local government roads and community roads and paths. More than half of the local government roads in rural Sub-Saharan Africa need to be rehabilitated or replaced at a cost estimated at US\$48 billion. Community roads and paths are worse still. The lack of a well-defined institutional framework for rural transport infrastructure seriously threatens the sustainability of ongoing and future efforts to fight rural poverty and break rural isolation.

### **FINDING A DIRECTION: A FRAMEWORK FOR REFORM**

This paper presents a framework for better managing and financing local government roads and community roads and paths. The first step of the reform effort is to develop a national rural transport policy and strategy. The policy must be consistent with the government's overall plans for rural development. The strategy should provide the conceptual base for the reform effort, defining the role of governments, communities, private sector stakeholders, and donors. Stakeholder involvement in designing the strategy will engender workable solutions, keep policymakers committed, and ensure that the reform process is on course.

An effective strategy must provide clear answers to three key questions:

- Who should own local government roads and community roads and paths?
- How can capacity for managing local government roads and community roads and paths be economically mobilized at the local level?
- Who will provide an adequate and steady source of funding, especially for maintenance?

A fundamental step in clarifying responsibilities involves establishing legal ownership. Legal owners may be public or a private bodies. Clarifying ownership is necessary for defining the management structure of local government roads and community roads and paths. A key feature of this structure is a private-public partnership, preferably based on legal instruments.

It is unrealistic and inefficient to build full capacity for all management functions in each local government and community. The different levels of government, the community, and the private sector should allocate tasks according to each comparative advantage. For example, the preparation of plans, work programs, designs, bill of quantities, and contracts, as well as supervision, can be economically provided by the private sector. Local governments should develop their client role and ability to plan for and with their constituents.

Sources for financing maintenance include local revenues (modest), and transfers from the central government (the major source for investments) and road funds based on user charges (growing in popularity). Community contributions in cash and in-kind are suitable primarily for community roads and paths. Strategically designed cost-sharing arrangements for both local government roads and community

roads and paths stimulate resource mobilization at all levels and increase the proportion of the network receiving regular maintenance.

### **MANAGING AND FINANCING LOCAL GOVERNMENT ROADS**

The paper discusses the implications of assigning responsibility for local government roads to different ministries or levels of government. A pivotal difference between centralized and decentralized management hinges on financing. The more decentralized is the agency holding the purse strings, the higher is the sensitivity to local priorities and needs. The advantages of having the entire road network managed by one central sector ministry include superior technical capacity and better network coordination. The disadvantages include insufficient attention to local priorities and local consultation in planning. When responsibilities are assigned to local governments, the local road agency is often more responsive to local priorities but weaker technically.

The paper highlights four options for mobilizing capacity to manage local government roads: a central government rural roads agency, a contract management agency, a joint-services committee, and private consultants. The first option is centralized in that it relies on a main roads ministry or another central sector ministry to manage rural roads. The other three options are decentralized, vesting responsibility for rural roads with local governments assisted by a coordinating unit at the central level. None of the options are mutually exclusive. For example, a joint-services committee may use private consultants and hire them through a contract management agency. The same applies to a central government rural road agency. The decision of how to manage local government roads depends, naturally, on many factors. The paper values each option according to its ability to respond to local priorities, introduce elements of market discipline, provide sufficient scale advantages, and retain administrative simplicity. In a country that has an autonomous road authority responsible for all roads, the drawbacks of the centralized option for local participation could be mitigated by forming a subcommittee of the road authority board to deal exclusively with rural roads, including representatives of local government and rural stakeholders on the committee. Alternatively, local governments may contract the roads authority to manage the roads on their behalf or to assist with planning and procurement. Then, local governments remain legally charged with responsibility for the roads and hold the funds—which should make the road authority more sensitive to local preferences.

Adequate and steady funding for maintenance is more likely to be forthcoming from a dedicated road fund than from block grants to local governments. Several practices for distributing road fund revenues are discussed in the paper—between main and local roads, between urban and rural roads, among rural jurisdictions, and among individual roads. Allocating road funds on the basis of network conditions and need is rare in Sub-Saharan Africa. Given the lack of reliable network information, road fund revenues are often allocated among local governments based on composite formulas of road and population density and economic activities.

### **MANAGING AND FINANCING COMMUNITY ROADS AND PATHS**

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. It is time to build an institutional framework to manage and finance the lowest level of the network in Sub-Saharan African countries.

Such a framework should be based on the creation of appropriate incentives to engender community ownership and empowerment. These incentives include legal instruments, cost-sharing arrangements, and technical and managerial advice.

Many industrial countries have well-established legal instruments for private ownership of roads at both the highest and lowest level of the network. For example, in Finland and Sweden two-thirds of the road network is private and directly managed by landowners. Both countries encourage communities to form road associations and register ownership of their roads under the Private Roads Act. Efforts to create similar instruments are underway in Latvia and Zambia. Obviously, communities will vary in their enthusiasm for self-help. Community ownership of roads must therefore be voluntary.

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.

Community ownership of roads also hinges on the provision of technical and managerial advice and some training, at least in the initial stages. This can be provided by local consultants hired through the rural road agency or a road fund. Training must include work planning, organization, bookkeeping, and procurement.

### **DRAWING CONCLUSIONS AND LINKING THE NETWORK**

Strengthening local institutions is the centerpiece of rural development, and the provision of local government roads and community roads and paths must be viewed in the broader context of rural development and service delivery. Management of rural transport infrastructure must be local in character, regardless of which government or private overlay is chosen. The paper proposes a framework for improving the management and financing of local government roads and community roads and paths based on a public-private partnership in which costs are shared by governments, communities, farmers, and road users. Local governments or their agents will manage the core rural roads, communities and farmers' associations will determine which roads and paths they will own, and the private sector will sell management services to local road agencies and carry out physical works. This framework requires that the 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 Sub-Saharan African countries, will increase efficiency and bring more roads under regular maintenance.

The paper presents a practical menu of institutional options. The government, communities, and other stakeholders must devise what will work for them given country circumstances. Local governments and communities are poor, and the private sector is still weak in many Sub-Saharan African countries. But given the right incentives, they will mobilize resources and seize the opportunity to break their isolation. Central governments can concentrate primarily on catalytic policy interventions to promote rural development and sector reform, and on sustaining the commitment to reform. Donors should support domestic reform efforts, facilitate the sharing of international experience, and provide the initial capital to implement the reform programs.

# 1. INTRODUCTION

Inadequate rural transport infrastructure and lack of mobility pose important constraints to rural development in Sub-Saharan Africa. The rural transport infrastructure network serves 70 percent of the population in carrying out their productive activities and daily chores. It provides them with essential access to local markets and a bare minimum of social services. Poverty in Africa is primarily a rural phenomenon (World Bank 1996). Poverty assessments from many Sub-Saharan African countries point to the pivotal role of access as an enabling condition for development in all sectors. Improving rural mobility and ease of transport should therefore be part of any poverty reduction program.

Sub-Saharan Africa has an estimated 940,000 kilometers of designated rural roads. The replacement value of these roads has been estimated at US\$48 billion, that is, about one-third of the total estimated value of all designated roads in the region (Heggie 1995).<sup>1</sup> In addition, there is a vast network of undesignated rural roads, tracks, paths and footbridges. Taken together, this infrastructure likely constitutes a network of more than 2 million kilometers. Along it is generated a third of the region's gross domestic product (GDP) that comes from agriculture and 40 percent of its export revenues.

This paper uses the concept of rural transport infrastructure (RTI).<sup>2</sup> RTI includes what are commonly referred to as rural roads, tertiary roads, low-volume roads, district roads, local government roads, council roads, feeder roads, access roads, and community roads. It also includes tracks, trails, paths, and footbridges. This paper separates the RTI network into two administrative categories: local government roads, which are the assigned responsibility of some level of government, and community roads and paths, which, in most countries, have no legal owners and are often left in the care of communities. RTI is thus a broader concept than the conventional term "rural roads" because it includes both the lowest level of the designated network for which the government has direct responsibility and the undesignated network.

This paper builds on and extends earlier work, including a review of 127 donor-financed projects with rural road components in Sub-Saharan Africa (Riverson, Gaviria, and Thriscutt 1991), a review of rural road maintenance in 85 Bank operations worldwide (World Bank 1992c), and a document on good practice in rural road maintenance and improvements (Hoban, Riverson, and Weckerle 1994). These reports show that rural road projects were rarely sustainable and recommend that countries adopt a "program approach," preparing a national rural road strategy and establishing a central focal point for rural road policy formulation, overall planning, funding, and coordination. The studies did not explicitly address the unclassified network of access roads, trails, paths, and footbridges, nor did they clearly distinguish between the roads that are the responsibility of the government and those that are the responsibility of communities.<sup>3</sup> Community participation in the road sector was evaluated in terms of selecting routes for improvement, rather than in terms of ownership and management. Heggie (1995) looks in greater detail at the specific organizational, managerial, and financial issues affecting sustainable road operations. He confirms that the principal causes of poor road maintenance in Africa are institutional and sets forth a reform agenda focusing on four main areas: ownership, financing, responsibility, and management. Although Heggie discusses the entire road network, including roads managed by communities and others, he emphasizes main roads.

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<sup>1</sup> A designated road has a legal owner. This concept is discussed in more detail in chapter 5, box 5.1.

<sup>2</sup> The concept of RTI was first used in a comprehensive book on rural transport by Beenhakker and others (1987). Although the book highlighted the importance of policy and strategy, it focused mainly on the technical organization of works and detailed engineering considerations. Institutional issues were treated principally from the point of view of the institutions needed to better implement projects.

<sup>3</sup> Riverson and Carapetis (1991) stressed that the economic impact of the rural road network will be fully realized only by also considering what happens on tracks, trails, and paths.

Previous work has pointed to the economic and social importance of access roads and paths but has not elaborated on the detailed institutional framework needed to support a sustainable network of both local government roads and community roads and paths. This paper will thus offer guidance on how to establish institutional arrangements that ensure that both levels are brought under regular maintenance. Because sustainability depends on sound investments, aspects of planning and financing capital works are also addressed. The paper is written for government policymakers and technicians, donors, non governmental organizations (NGOs), and consultants that collaborate in this effort. It proposes appropriate principles, identifies current practices (both conventional and experimental), and outlines options suggested by case studies in Africa and elsewhere.

Improving rural accessibility in Africa requires a comprehensive and integrated approach. This paper concentrates on the institutional aspects of RTI. Three companion papers address other aspects of rural transport: planning (Connerly and Schroeder 1996), the enabling environment for adoption of labor-based work methods (Stock and de Veen 1996), and promotion of intermediate means of transport (I.T. Transport Ltd. 1996). A forthcoming paper deals with motorized rural transport services.

## 2. UNDERSTANDING THE TERRAIN: TRANSPORT AND THE VILLAGE

Rural Africa walks and carries its burdens—goods, possessions, produce, crafts, and each other.<sup>4</sup> Africans will continue to do so into the twenty-first century. Where the terrain is benign and incomes allow, animal transport is used, and there economic prospects are more hopeful. One may also see wheelbarrows and carts, bicycles, and sometimes a motor vehicle. Of course, the African farmer may live near rail and road arteries, but usually a remove of 30 kilometers or so is beyond a day's trip. That means everything.

The majority of the poor in Sub-Saharan Africa live in isolate rural areas. Transport there is characterized by female portorage, treacherous river crossings, seasonal access, and an occasional visit by a motorized vehicle. Only with great difficulty can the typical rural household gain access to the most basic services, such as local and regional markets, agricultural extension centers, health clinics, and schools.<sup>5</sup> Mobility and ease of transport are essential to their everyday life and to breaking their isolation and poverty.

Household surveys show that 87 percent of trips in rural Africa take place on foot and that women devote more than 65 percent of the household time and effort spent on transport.<sup>6</sup> In survey areas in three countries the daily transport effort of a typical adult woman was equivalent to carrying a load of 20 kilograms for 1.4–5.3 kilometers. In many communities in rural Africa women are also the principal farmers and key providers for their families (Cleaver and Schreiber 1994). Reducing unnecessary time spent on transport would thus increase time available for other beneficial economic and social activities.

Community roads, tracks, paths, and footbridges make up the local transport infrastructure system on which rural dwellers gain access to markets and social services, and women transport their loads, such as firewood and water, for household needs. Farmers walk to and from their fields on paths and footbridges, carrying implements, fertilizer, fuelwood, water, and harvested crops. Community roads and paths constitute the first and last leg of most trips to the market and towns (see figure 1). Yet although these modest infrastructures are the major circulatory system in rural Africa and provide an essential link with the designated network, transport planners in government and donor agencies generally do not consider them part of the transport system because they are beneath or outside the direct responsibility of government. Transport professionals tend to overlook the importance of designing an institutional framework for their upkeep.

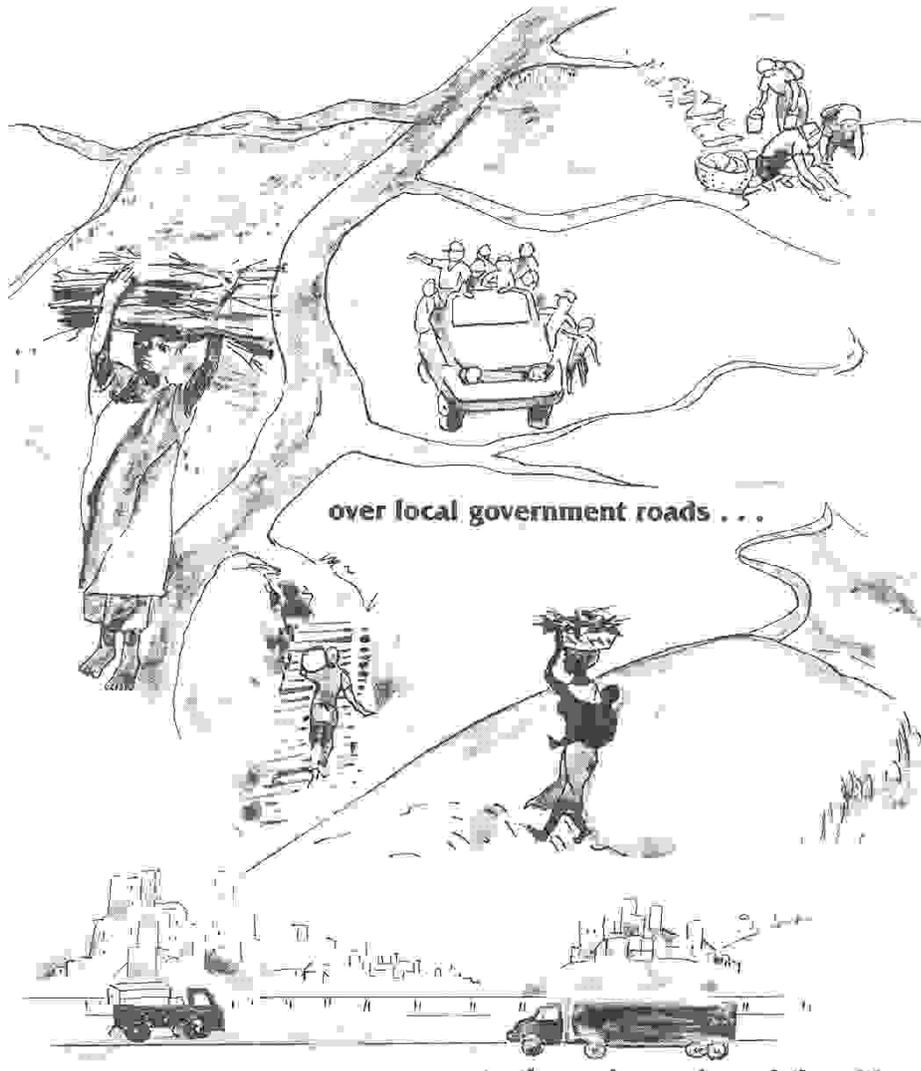
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<sup>4</sup> The title of this chapter is that of a World Bank discussion paper that documents household-level transport in rural Africa (Barwell 1996).

<sup>5</sup> Although 70 percent of the population lives in rural areas, rural Africa remains relatively sparsely populated, and facilities are few and scattered.

<sup>6</sup> Surveys were carried out in five study areas in Burkina Faso, Uganda, and Zambia (Barwell 1996). Earlier surveys in Ghana and Tanzania provided data that are consistent with these findings (Malmberg Calvo 1994).

**From community roads and paths . . .**



**over local government roads . . .**

**. . . to the main roads and the cities.**

**Figure 1. The Integrated network**

Local government roads enable farmers to take crops to larger markets and bring back inputs needed to live and expand production.<sup>7</sup> These roads also allow farmers access to consumer goods that give them an incentive to earn more income. Most of Africa's rural roads, however, are in poor condition. Reliable statistics on local government roads are difficult to come by, although their condition is generally found to be much worse than that of main roads;<sup>8</sup> 50 to 90 percent probably require rehabilitation or reconstruction. Many rural areas are effectively cut off during the rainy season. Nearly every African country has had instances where surplus crops were left to rot at collection points because there was no transport to market. There are numerous examples of the high costs of rural transport in Africa and its impact on farm income (Hine and Rizet 1991; Hine, Riverson, and Kwakye 1983).

The size of the RTI network is largely unknown. Some scattered and unreliable data are available on roads that are the responsibility of local governments. These data indicate that Sub-Saharan Africa may have approximately 940,000 kilometers of local government roads, representing much more than half of all designated roads. Information on the undesignated network is virtually nonexistent, in part because this network is rarely mapped. A comprehensive survey of rural roads in Zambia found more than twice as many roads as anticipated. Case studies and anecdotal evidence suggest that there are one-and-a-half to two times as many kilometers of undesignated roads as local government roads in rural Sub-Saharan Africa.<sup>9</sup> For example, South Africa has twice as many undesignated roads as local government roads;<sup>10</sup> the Makete district in Tanzania has more than one-and-a-half times as many undesignated roads as local government roads,<sup>11</sup> and a community of 2,500 people in a sub-district in Ghana has twice as many undesignated roads and three times as many tracks as local government roads.<sup>12</sup>

In Sub-Saharan Africa local government roads usually have gravel or earth surfaces, are sometimes all-weather, and often carry fewer than 50 vehicles per day. Community roads and paths are generally unengineered and often impassable during the rainy season. Motorized traffic on these roads is usually low enough so that they are registered in vehicles per week rather than vehicles per day. Much of the traffic on both local government roads and community roads and paths is non motorized. Indeed, the lack of motorized transport services and intermediate means of transport seriously adds to the access problem. It is quite common to see in rural Africa, even on quality roads, only few motorized vehicles and a predominance of pedestrians and intermediate means of transport. For example, in Kenya pedestrians make up 92 percent of the traffic volume on community roads (Gaviria 1991), and in Uganda bicycles account for up to 81 percent of vehicle flows on some main roads (Grisley 1994).

There is considerable scope for improving transport services and reducing transport operating costs in many Sub-Saharan Africa countries. There is also scope for improving the load-carrying capacity of common intermediate means of transport, such as the bicycle, and promoting the use of draft animals and other forms of relatively low-cost means of transport. For example, Sub-Saharan Africa has a population one-half that of India, but has one-twentieth as many animal carts (Starkey 1989).

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<sup>7</sup> A study of the impact of rural roads in 56 Bank projects in six countries (Cameroon, Kenya, Malawi, Nigeria, Senegal, and Tanzania), which together account for 40 percent of the Sub-Saharan Africa population and 46 percent of its gross national product (GNP), found a close correlation between the performances of the agricultural and transport sectors (Gaviria 1991).

<sup>8</sup> The proportion of main roads in Africa requiring rehabilitation varies between 25 percent in Zimbabwe and 50 percent in Madagascar (World Bank 1995a).

<sup>9</sup> This is equivalent to the proportion of the network managed by private road associations in some industrialized countries, for example, Canada, Finland, and Sweden.

<sup>10</sup> A survey in South Africa estimated the number of kilometers of access roads at 200,000 compared to 97,000 kilometers of tertiary roads (South Africa 1991).

<sup>11</sup> This district had 188 kilometers of tertiary roads and 314 kilometers of access roads (Selvarasa 1990).

<sup>12</sup> The RTI system in a sub-district in the Brong Ahafo region in Ghana was estimated at 27 kilometers of tertiary roads, 52 kilometers of access roads, 90 kilometers of tracks, and an unmeasured length of seasonal trails (Twumasi 1994).

### 3. THE PROBLEM: ITS SYMPTOMS AND ITS CAUSE

In the past few decades attempts to improve rural transport in Africa have not created a sustainable network of rural roads. Frequently, the wrong facilities were provided in the wrong places using the wrong technology. By focusing on the construction of roads rather than the improvement of access, problems were accentuated. This chapter looks at five closely related symptoms and the principal underlying cause of this state of affairs.

#### FIVE SYMPTOMS

##### *Symptom 1: Unclear Responsibilities*

Responsibilities are fragmented at the central government level. Multiple agencies are involved in providing rural roads in most countries of Sub-Saharan Africa. In addition, many countries have repeatedly changed the organizational structures of central government agencies overseeing local government roads, shifting responsibility from one ministry to another, often producing little more than confusion. For example, in Ghana, until the Ministry of Roads and Highways was created in 1981, no fewer than five central sector ministries had responsibility for rural roads. In making changes, governments hoped to improve living conditions in rural areas by providing more and better roads. But the frequency of change, and the many sector ministries involved in rural road construction, resulted in a situation in which no one knew who was really in charge of rural roads.

Sub-Saharan African countries lack a legal framework regulating community ownership of roads and paths. Efforts to create a “sense of community ownership” of roads, that is, a willingness to maintain roads, have often been erratic and typically have not included a clear definition of communities’ legal rights and responsibilities. While in some countries ownership of roads by non government entities is illegal, rural communities have, often by default, been assigned responsibility for maintaining both designated and undesignated rural roads. The lack of a legal framework for private or community ownership of roads may result in all rural roads being designated as the responsibility of the local government, even when the local government does not have the capacity to assume this responsibility. In Tanzania the commitment of communities to maintain the access road they built themselves was destroyed when the government officially took over maintenance responsibilities but failed to meet its obligations.

Local communities have often been asked, ad hoc, to contribute to improving and maintaining roads constructed and improved through government, NGO, and donor programs. In principle, nothing is wrong with this. In fact, local acceptance of responsibility is encouraged (see chapter 6). But 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 and elsewhere 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.

### ***Symptom 2: Disintegration of the Planning System***

Even though local governments are often the legally constituted road authority for the designated rural roads in their area, many roads are planned at the central level without local government involvement. Central government agencies have repeatedly acted without consulting or coordinating with each other or local governments, even though local authorities are expected to maintain the roads. For example, in Nigeria two high-level agencies, the Agricultural Development Programs and the Federal Directorate of Food, Roads, and Rural Infrastructure, built rural roads, leaving maintenance to local governments. Several roads were constructed in the same local government jurisdiction by different agencies. Many roads did not correspond to local priorities, or maintenance responsibility was not transferred to a competent road agency. As a result, many of these roads do not have effective owners and receive no regular maintenance.

Planning is often inconsistent and uncoordinated. The lack of a comprehensive planning system for assessing overall client demands means, in practice, that many of the basic access needs of rural households go unaddressed. While RTI facilitates the delivery of various services, individual ministries deal with the needs of their specific client subgroup and provide the roads their client requires. Thousands of kilometers of roads in rural Africa have been constructed by agricultural projects, food-for-work schemes, NGOs, timber companies, and cocoa and cotton boards without a consistent national policy and strategy framework and without consulting with the road agencies that are eventually supposed to maintain these roads. For example, a Zambian NGO built thousands of kilometers of roads during the first half of the 1990s as part of a food drought relief effort; now, no one is legally responsible for overseeing many of these roads, and they are rapidly deteriorating. In theory, rural households are a constituency aided under the rubric of infrastructure development. In practice, their needs are addressed only peripherally by the state and haphazardly by others.

Financial resources are not allocated economically. Planning processes in Sub-Saharan Africa fail to allocate resources efficiently, largely because the key actors respond to biased incentives. Capital and maintenance expenditures fall under separate budgets, between which fungibility is limited. Capital budgets are typically supported by donors and have also been favored by local politicians. Erosion of recurrent budgets has turned planning for maintenance into an exercise in futility. Funds are allocated for capital works, while regular planning of recurrent activities and expenditures (previously a key part of the planning process) is neglected. Road maintenance is not glamorous, and 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 suboptimally allocated between capital and maintenance expenditures and between roads and simpler RTI improvements.

### ***Symptom 3: Insufficient and Uncertain Maintenance Funding***

There is an overall shortage of maintenance funds. 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 percent 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.

#### ***Symptom 4: Inadequate Local Capacity***

There is 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. Poor remuneration has inadvertently encouraged road agency staff to supplement their incomes through moonlighting, daylighting, and pilfering. A study on the terms and conditions of service for road staff in Tanzania found that “salaries are below the minimum living wage and do not enable the road staff to meet the basic expenses of living. This means the road staff in Tanzania have to struggle for extra income from elsewhere in order to bridge the gap between the income from the salary and what is required to pay for the basic expenses of living” (Sabai 1995). This situation is at its worst at the local government level. Local government employees have fewer career prospects and opportunities for training than staff working for a strong central sector ministry. Furthermore, living conditions are often harsh. Many district works departments are, therefore, headed by underqualified and indifferent staff, and have unfilled positions. But having a competent cadre of local road officials would make little sense if they command few resources.

Private sector involvement in rural roads is marginal. Many countries are in the process of moving from executing works in-house (force account) to using private contractors. Countries have considerable experience with using private, often foreign, contractors for large capital works on rural roads. The contracting process itself is usually handled by the responsible ministry in the capital city. Local governments, though, have little experience with formal contract management. They rarely use local consultants in planning and supervising rural transport infrastructure works, partly because of the small size of the contracts that local governments can offer—making it unattractive for experienced firms to mobilize in rural areas—and partly because of local governments' and communities' lack of experience in dealing with the private sector. Local governments' lack of contract management experience and the resultant lack of contracts act as powerful brakes to the involvement of both local consultants and small-scale contractors in the road sector.

In addition, centralized administration and poor communications between urban and rural areas have perpetuated an urban bias in allocating both human and financial resources. In some countries this dualism can be profound. Policymakers tend to respond first to what they see close at hand. They live in urban areas, thus they tend to first address the more visible urban problems. Urban constituencies are more vocal and may pose internal security problems. Central governments have inadvertently accelerated rural-to-urban migration by failing to better respond to the needs of rural areas and build up local capacity. The bias toward urban areas may become increasingly pronounced in Sub-Saharan Africa as second- and third-generation leaders are more likely to come from cities than from villages.<sup>13</sup>

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<sup>13</sup> The plight of rural areas has been eloquently captured by Julius Nyerere, the first president of Tanzania: “While the great powers are trying to reach the moon, we are trying to get to the village. While the great powers have been to the moon and are now even trying to communicate with the stars, we are still trying to reach the village and the village is getting even further remote.”

### ***Symptom 5: Inappropriate Design Standards and Methods***

Transport policy and programs in rural Africa have focused on providing conventional highways for use by motorized vehicles. This is the case, in part, because engineers have been trained using curricula and educational materials influenced by the requirements of high-wage industrial countries. Many foreign technical assistants have also encouraged the use of design standards that are more suited to the levels of motorized traffic they are accustomed to in their home countries. Inappropriate methods have also contributed to inefficient resource use. The issues of standards and methods have already been treated extensively in previous publications and are covered in Stock and de Veen (1996). They will not be further discussed here.

### **THE UNDERLYING CAUSE**

The common thread running through the five symptoms described above is weak local government and community institutions. African governments have been highly centralized. The central government often has representatives not only at the central and regional levels but at the district, sub-district, and village levels. Most ministries and parastatals (government enterprises) are vertically structured, with decision-making and financial authority firmly vested at the center.

Because central sector ministries control resources at the local government level, local governments are virtually absolved of accountability for rural infrastructure and other local services. Planning for roads has been carried out by central government agencies with minimal local involvement, effectively marginalizing local stakeholders and road users. Donor intervention has accentuated centralized provision of rural roads. Donors have typically reacted to institutional weaknesses at the local level by channeling their support through central government sector ministries. As a result, they have bypassed local governments and unintentionally contributed to the weakening of local institutional capacity.

These issues must be resolved along with the broader questions of rural development. Provision of RTI is clearly only one of many rural development activities and must be viewed in the broader context of rural service delivery. Most of the manifestations of weak local institutions are directly related not only to roads, but are generic to all sectors. An arbitrary shift of responsibility for rural roads to weak local governments is unlikely to enhance service delivery or respond to the priority demands of rural communities. In this sense much of what this paper proposes by way of community empowerment may apply to other sectors as well.

Strengthening local institutions through effective decentralization is the centerpiece of rural development (see box 3.1 and annex A). It implies building local capacity in both the public and private sectors. To do that, an enabling environment of sound policies, incentives, effective management structures, democratic control of local governments, and trained and motivated people is needed. The primary issue is cross-sectoral—the need for a sound framework for rural development. The secondary issue is sectoral—in the case of RTI, the lack of coherent institutional and financial arrangements to make sustainable improvements. A dual approach that addresses both the primary and secondary issues is essential to promoting the development of services that meet the priority needs of the rural population.

*Box 3.1. Devolution*

After decades of highly centralized systems of governance, many countries in Sub-Saharan Africa 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.

*Source:* Jerry Silverman (1992).

## **4. FINDING A DIRECTION: A FRAMEWORK FOR REFORM**

The root cause of the unsatisfactory condition of RTI is weak local institutional capacity, brought on by centralized African governments and perpetuated by donors unwilling to entrust implementation of “their” projects to what they see as dysfunctional local government institutions. The symptoms of this malaise are unclear responsibilities, absence of coherent planning mechanisms, erratic and insufficient funding, inadequate local capacity, and inappropriate design standards and methods—problems that evaluations of past rural road interventions have reported again and again.

This chapter presents a conceptual framework for reforming the rural transport sub-sector specifically focused on RTI. The framework can be provided through a national rural transport policy and concomitant strategy. The first section of this chapter reviews three key questions that the policy and strategy must address. The second section deals with the rural transport policy and strategy as reform instruments and the importance of a participatory reform process to breed commitment to reform.

For the policy and strategy to fulfill their function as reform instruments for RTI, they must provide clear answers to three key questions concerning the institutional and financial arrangements for local government roads and community roads and paths:

- Who should own the various levels of the RTI network?
- How can local capacity for managing and planning RTI be mobilized?
- Who will provide an adequate and steady source of funding, especially for maintenance?

### **OWNERSHIP AND RESPONSIBILITY**

The first question addresses ownership and responsibility—particularly important issues for rural roads and paths because of the many actors involved in their development and rehabilitation. Although the central government frequently delegates the responsibility for rural roads to local governments, there is often a significant degree of confusion regarding ownership of individual roads and maintenance responsibilities at the local level. Many roads either have no legal caretakers or are untended by the local governments that are legally responsible. For example, within the administrative area of a local government there may lie new and relatively important roads constructed by NGOs and others that remain undesignated.

Thus a crucial step in the reform process is to end the confusion and clarify who owns each asset. Clarifying ownership is also a prerequisite to designing the management structure of local government roads and community roads and paths. A key feature of this structure is a private-public partnership. Such a partnership rests best on a legal instrument that can grant *de jure* ownership of roads and paths to communities and interest groups, such as individual landowners, agricultural cooperatives, and NGOs.

### **LOCAL CAPACITY**

The second question focuses on the managerial and technical know-how that ownership requires. It is easy to understand why donors have frequently opted to work through central ministries and bypassed local institutions. Local governments are often little more than empty shells. But while central sector ministries may have technical capacity, they rarely possess any interest or stake in maintaining RTI over time. Governments and supporting donors must take a long-term view and actively strengthen local public and private institutions. Central governments and donors should be denied the exculpation of “inadequate local capacity.” They should instead support the development of innovative arrangements to

mobilize required capacity. For example, while building full-fledged capacity for all management functions in each local government and community would be costly (and unrealistic), many of the required management skills for rural roads can be more cost-effectively provided by the private sector.

Of course, transferring responsibilities to local governments and communities, and involving the private sector in rural road management must be gradual. Their networks are small, and the management contract for an individual local government may be too modest to attract the interest of competent consulting firms. But many small contracts for the provision of management services can be aggregated through joint packaging across adjacent local governments and communities.<sup>14</sup> Building effective managerial control at the local level requires training both the public and private sector, and developing economies of scale.

## **FINANCING**

The final question deals with who will pay for maintenance. The four most common sources for financing RTI 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 percent of total resources for investment in rural roads and 10–20 percent 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.

## **A RURAL TRANSPORT POLICY AND STRATEGY**

Experience to date in Ghana, Sierra Leone, Tanzania, and Zambia has shown that, although road sector reforms have initially tended to focus on the main road network, the impetus to bring all roads under regular maintenance develops quickly. At this early stage, countries should establish a clear rural road and transport policy and strategy before they begin significant road reconstruction and rehabilitation. A coherent sector policy and strategy will provide a playing field on which the reform debate can take place.

Policy and strategy have two important functions. First, they serve as a conceptual framework and set out the steps for implementing the reform agenda. Second, when developed in close consultation with key stakeholders, they can be powerful instruments for bringing order and consistency to the rural transport sub-sector. For rural transport policy and strategy to be effective reform instruments, they must provide realistic responses to the questions raised above. Production of long documents that only describe existing problems and state desired outcomes are not sufficient. What is needed is a detailed

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<sup>14</sup> Although unbundling large contracts is important for enabling small contractors to enter the market, providing sizable amounts of work may be important to motivate local consultants to establish themselves in rural areas.

process through which stakeholders map out and customize the reform program, given the country context.

The rural transport policy should be a concise document that clearly states the objectives of the reform agenda. The policy should be realistic and consistent with the overall direction that the government has set for local government and community development. The government's rural transport policy is often a series of brief statements that identify priority areas on which the government has decided to act (this is the case in Zambia). The rural transport policy is typically an integral part of the overall national transport sector policy (as in Tanzania), although it may initially be prepared as a separate document (as in Malawi).

The rural transport strategy specifies actions to take in pursuing policy objectives. Formulating a sound policy is thus only the beginning of the process. The rural transport policy merely sets out the direction of reform and serves as a guide in defining the strategy for the sub-sector. The rural transport strategy is the instrument that should provide the framework within which the groups involved in providing RTI harmonize their efforts. A good strategy stresses local consultation particularly to prevent central sector ministries from intervening in an ad hoc manner.

There is no simple blueprint format or textbook approach to the formulation of a rural transport policy or strategy. And none would be advisable. Each country has to find its own way, identifying which issues and which routes are appropriate. Still, there are a few general issues the rural transport strategy must address (box 4.1).<sup>15</sup> Only a handful of Sub-Saharan African countries have an explicit policy on rural transport, and fewer have a rural transport strategy. Most countries have focused narrowly on rural roads rather than approaching rural transport as a whole. The advantage of the latter is that it recognizes accessibility as the critical problem and that roads alone cannot address the problems of accessibility and mobility.

### ***The Participatory Strategy Process***

Making the reform process sustainable requires homegrown solutions and stakeholder involvement. The speed of the reform process will depend largely on the political will and commitment of policymakers. Still, stakeholder involvement in the strategy process engenders "ownership" of the reform agenda—which goes a long way toward ensuring that the recommended measures have "champions" and watchdogs.<sup>16</sup> Indeed, "constituent building" is an integral feature of political democracy. Rural transport, however feeble, is part of an economic and social matrix, and the consultation reform process therefore must involve the participation of a wide range of stakeholders. At the user level important stakeholders include ordinary rural people, particularly women, who are often the main transporters in rural areas (Malmberg Calvo 1994); community groups; farmers' associations; and road-user and transport associations (local truckers and informal transport operators).<sup>17</sup> At the provider level key stakeholders include local government and central government sector ministries, investors, NGOs, and donors that support rural development.

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<sup>15</sup> An account of various strategies to address rural accessibility is given in chapter 2 of Beenhakker and others (1987).

<sup>16</sup> Recent experiences with the management of road funds in Africa provide a solid case for involving road users in the reform process and subsequent oversight arrangements. See Balcerac de Richecour and Heggie (1995).

<sup>17</sup> In many areas of rural Sub-Saharan Africa pick-ups and other light four-wheel-drive vehicles are the only available forms of transport, and often carry passengers even though they do not have licenses to do so.

#### *Box 4.1. Outline of a Generic Rural Transport Strategy*

The strategy must be placed in the general context of the country's rural development and, more specifically, rural service delivery and accessibility. The rural transport strategy must clearly address issues in three main areas:

1. The strategy should state the national objectives for the sub-sector, as reflected in the government's policy on rural transport, and the contribution of rural transport to economic and social development. It should identify the target population, assess the current rural transport situation, and establish an approach for dealing with rural access problems.
2. The strategy should spell out the key institutional arrangements in the three principal areas of rural accessibility and mobility:
  - *Infrastructure.* RTI's institutional framework should answer the key questions related to ownership and responsibility, local capacity, and funding. These include the legal setup for local government roads and community roads and paths, organizational arrangements for management, planning processes and criteria for development and maintenance, financing of maintenance and development, and means to ensure local capacity for management and execution of works (design, supervision, technology, and environmental issues).
  - *Rural transport service.* Transport needs include both motorized goods and passenger services for long trips and intermediate means of transport for short distances. The key areas of concern are the role of government in creating an enabling environment for increased production and use of the services (establishing import duties and licenses, taxes, tariff and route regulation, safety measures, and subsidies), the role of the private sector (acting as operators, manufacturers, and credit institutions), and any social and cultural aspects. Other important issues include allocating responsibilities for providing rural transport between the local and central government.
  - *Location of physical facilities* (clinics, markets, and schools). Certain problems of access are best solved through an effective planning system that gives adequate attention to such concerns in planning new facilities and improving the old. Such a system must be based on community consultation and involvement, allow resources to be fungible (for example, through block grants), and address local resource mobilization and cost-sharing issues.
3. The strategy should specify the roles of key stakeholders (the central and local government; communities; road users; farmers', transport, and other private sector associations; NGOs; and donors) in formulating the policy and strategy, providing infrastructure and rural transport services, and planning the location of physical facilities. It should include a plan to build the capacity of the public and private sector actors to perform these roles effectively.

The rural transport strategy must be a "living document"—revisited periodically as the reform process evolves and surrounding conditions change. The development of the first strategy document can, therefore, be seen as an important first step in a continuous and sustained reform process (see box 4.2). Controversy and false starts are to be expected. Regular revision of the rural transport strategy enables the various stakeholders to raise their concerns. It is important to define clearly the audience for the rural transport strategy. An initial strategy document, for example, may be more of an advocacy piece intended for influential policymakers. Eventually, the national rural transport strategy should be written to serve as the main reference document and code of conduct for the sub-sector. It should lay out the assumptions and, with respect to RTI, clearly detail the institutional, financial, and technical arrangements for local government roads and community roads and paths.

*Box 4.2. Tanzania: The Role of the Strategy in the Reform Process*

In Tanzania preparation of a strategy document got the reform process under way. In 1992 a seminar on rural travel and transport was held in Tanzania for stakeholder representatives from national and local levels. A local consultant, guided by an interministerial committee and the Rural Travel and Transport Program, had prepared in advance a draft rural transport strategy. This initial strategy took stock of the situation at the time and pointed to important issues in the sector. The seminar discussed the strategy and drew up a detailed plan of action outlining the required measures for reform. The plan was organized into five sections: planning and programming, design and technology, institutional arrangements, financial resource mobilization, and implementation of a pilot project.

Since the seminar progress has been made in two of the areas identified: financial resource mobilization and implementation of a pilot project. The initial strategy document and the seminar also helped ensure that rural transport was included in the national transport policy. The strategy now needs to be revisited and updated in order to stimulate dialogue and reactivate the reform process.

## 5. MANAGING AND FINANCING LOCAL GOVERNMENT ROADS

With the ongoing decentralization efforts in Sub-Saharan African countries, local governments are being assigned responsibility for the rural roads within their administrative area. In other African countries responsibility for rural roads remains with the ministry in charge of main roads. In still others legal responsibility may rest with local governments, but a central sector ministry manages the roads on their behalf. All of these road agencies must manage the network competently. The first three sections of this chapter deal with the three key preconditions for competency: clarification of responsibilities, adequate management and local capacity, and availability of financing for maintenance. The fourth section addresses the importance of responding to demand and involving local constituents in planning the network.

### CLARIFYING RESPONSIBILITIES

The responsible agency must know which roads it has to manage. It therefore needs legal records, accurate maps, and inventories. Many countries in Sub-Saharan Africa have scant records on the rural road network at both central and local levels. Regular inspections of the roads are not made, and information is lacking on designation, condition, and usage. Two initial steps are required to clarify responsibilities: first, an inventory and functional classification of the RTI network, and then the establishment of legal ownership.

#### *Inventory and Functional Classification*

Creating an RTI inventory entails identifying and mapping its most important parts.<sup>18</sup> Each part should then be classified by function.<sup>19</sup> This paper divides the RTI network in Sub-Saharan Africa into two administrative categories: local government roads and community roads and paths. Within each category there are different types of RTI. For simplicity, the paper uses only two functional categories—*tertiary roads*, which provide access within a local government administrative area between the sub-district headquarters or between a key facility and the main network, and *access roads and paths*,<sup>20</sup> which connect a village to the higher levels of the network and provide rural people with access to other villages and to fields, water, and firewood. Most tertiary roads are the responsibility of local governments and most access roads and paths are the responsibility of communities and other non government entities. Local governments may, however, be responsible for some important access roads and paths, and communities may be responsible for some less important tertiary roads. For example, in a Tanzanian district the local council is the designated owner and highway authority for a footpath that links two districts. In this case the footpath ranks higher on the district's list of priorities than some roads. When the term "rural roads" is used in the paper, it includes both tertiary and access roads.

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<sup>18</sup> This is not a blanket recommendation to identify every path in rural Africa. Such an exercise would quickly reach the point at which the cost of inventorying and keeping records reasonably current would exceed the benefits of the process. With involvement of community representatives and subsequent vetting of the outcomes by community members, inventories should be restricted to roads and the most important paths (Larry Schroeder, Indiana University).

<sup>19</sup> Functional classification organizes roads into relatively homogeneous classes based on the functions they fulfill. Functional classes may range from three to a dozen or more depending on the country (Stowers and Talvitie 1994). It is not advisable to classify roads based on engineering standards, because this can result in a higher classification than warranted by function (road agencies often use unjustifiably high engineering standards when building rural roads). Nevertheless, it is normally essential to recommend a spectrum of engineering standards for each functional class.

<sup>20</sup> The term "access roads and paths" is meant to illustrate that surface transport infrastructure in rural Africa includes both road and off-road structures, such as tracks, trails, paths, and footbridges.

The road inventory provides data on the functions, conditions, and usage of the RTI network. These data should be added to existing public records of roads and paths in order to provide a comprehensive record of the current RTI responsibilities and network characteristics. Subsequent annual inspections should determine if the classification and ownership designation of a particular road is adequate.

Inventories for local government roads are relatively standard. They include assessment of surface type and condition, drainage structures, and volume and composition of traffic, including bicycles, animal carts, tractors, motorcycles, and pedestrians. Inventories should be complemented by information on the location of important services found along the roads, such as hospitals, markets, and schools. More challenging is developing an inventory for the extensive network of community roads and paths. Such inventories must be simple, avoiding the costly collection of large amounts of information. South Africa, for example, used aerial photographs and satellite imaging to get an overview of the extent of the unclassified network. Other countries, such as Zambia, have relied on simpler inventories when evaluating access needs, using scoring sheets to identify the functions and physical characteristics of this network. A road inspector from the local government engineer's office or a local consultant with the assistance of community representatives may drive or walk along access roads and paths. Such efforts may be initiated on a pilot basis in one region or a few districts before being extended to the entire network.

### ***Legal Ownership***

Establishing ownership of individual roads and paths required designating roads and paths, that is, naming the owner or primary entity responsible (see box 5.1). Subsequent annual inspections will determine if the set classification and ownership is adequate. The designation of a road must be revisited periodically because the function and usage of individual roads and paths may justify a change of owner. For example, some roads already designated to a government body may, because of few government resources, need to be adopted by communities and other private entities or abandoned if no one claims responsibility for them. New roads may need to be specifically designated as government responsibilities. The annual road management system can, through regular inspections, furnish the required data so that road ownership can be transferred in an orderly fashion to prevent roads from deteriorating.

Prompt adjustments in road ownership are particularly important in rural areas, where the function of a road may change when new facilities, such as markets or health clinics, are built along them (see box 5.2). Rural road inventories in Sub-Saharan Africa are often one-time exercises carried out as part of the preparation for a road improvement project. They are rarely revisited. It would be useful to establish a system for regularly updating road condition, usage, and function, and legal record-keeping. The agency in charge of local government roads in an area is the most appropriate keeper of these records.

### *Box 5.1. Establishing the Legal Status of Roads*

Roads fall into two main legal categories: designated or undesignated. A designated road has a legal owner that is responsible for its maintenance. Undesignated roads have no legal owner. Legal owners may be government or private bodies. Although responsibility for roads can be assigned to a government body, by private entities, such as a local community or a group of landowners, must volunteer to take responsibility to be effective. Taking responsibility for maintaining a road involves both benefits and liabilities. For example, a local community that has assumed responsibility be eligible for receiving certain grants. At the same time, it can be held legally accountable if it does not maintain the road adequately.

When a road is designated, the act of designation is published as a notice in a government gazette or other official publication used to record official acts of the government, citing the act under which the road is designated. Usually, main roads (sometimes all roads) are designated under the roads and road traffic act. Local government roads may be designated under the local government act, whereas other roads may be designated under a private/cooperative roads act, national parks act, or game parks act. Sometimes the central sector ministry in charge of main roads is responsible for all roads and in turn delegates responsibility for certain roads to local governments and other specialized agencies. The notice that designates a specific road also specifies its location, the responsible (designated) highway authority, and the functions of that authority. Once a road has been designated, the responsible highway authority is expected to physically mark out the road reserve (to define the land holding of the highway authority) and to take responsibility for the various functions delegated to it in the gazette notice.

*Source:* Jeremy Lane, World Bank.

## **ENGENDERING MANAGEMENT AND LOCAL CAPACITY**

Local governments can mobilize the capacity required to discharge their responsibilities for RTI in various ways. In the past local governments commonly created an in-house rural road unit to manage projects and execute works. Technical assistance and training were provided by donor-financed programs to build capacity. Technical assistance has been marginally successful in transferring skills to local government staff. Often, no member of the road agency staff is qualified for training, and the technical assistants themselves end up performing the staff's routine functions. Furthermore, except for countries with large local government units (such as India), local governments have not successfully carried out in-house management of rural roads because road networks are too small to justify developing adequate technical capacity in each local government unit.

Rationalizing and reducing demands on local governments' in-house capacity involves two basic steps. The first step is to contract out physical works to the private sector. Contracting out is particularly cost-effective in rural areas where the workload is unevenly distributed throughout the year. Small firms often produce better quality work at a lower cost than government agencies because they have far more flexibility in creating incentives, hiring (and firing) staff, setting working conditions, adapting techniques to local skills and resources, and taking into account local social and political constraints. The written contract can be monitored, and it in itself provides an incentive for performance regardless of whether physical works are contracted to the private sector, as in Ghana, or to a parastatal, as in Mozambique. The strongest incentive for performance is, of course, prompt payment to the contractor.

*Box 5.2. Zambia: Proposed Procedures for Road Classification and Designation*

There are no standard procedures for (re)classifying and (re)designating roads in Zambia. Under an ongoing project the government commissioned a study to propose procedures under which a designated highway authority may apply to the minister of transport to have an unclassified road designated under one of the established road classes or an already classified road under its jurisdiction declassified or reclassified. The proposed procedure involves three steps:

1. Every application must be made in writing and provide the following information:
  - The point on the main or local government road from which the candidate road starts.
  - The terminal point up to where the road is proposed to be designated.
  - Geometric characteristics of the candidate road (road length, type of surface and shoulder, and width of carriageway, formation, and road reserve)
  - The function and characteristics of the candidate road (level and composition of traffic, number of towns and villages linked, bus route, number of public services served by the road, such as markets, schools, and clinics).
2. The application will be addressed to the minister of transport who will forward it to the road classification committee (discussed below). After considering an application and making any further appropriate inquiries, the committee will make a report and recommendation to the minister.
3. If, after consideration of any such report and recommendation, it appears to the minister that the candidate road should be (re)classified, he or she may, by statutory notice, designate such a road to be classified under an established road class.

To implement the proposed procedure, the study recommended that the road classification committee be established. This committee shall be placed under the National Roads Board and will advise the minister of transport to (re)classify and (re)designate any road in exercise of the powers of the roads and road traffic act. Members of the committee will be appointed to represent the various ministries responsible for existing designated highway authorities, that is, from the Ministries of Communications and Transport, Works, Local Government, Tourism, and Agriculture. The road classification committee must:

- Prepare operational procedures, including criteria for roads to be (re)classified or (re)designated (steps 1–3 described above).
- Organize seminars and workshops to disseminate information about the reclassification procedures.
- Help designated highway authorities to prepare applications.
- Undertake field visits to validate the accuracy of information provided in the applications.
- Make recommendations to the minister regarding the appropriate road class for designation of candidate roads.
- Prepare draft statutory instruments for implementing the minister's decision on road classification.

*Source:* Louis Berger International (1996).

The second step is to contract out key management functions to local consultants. When private contractors execute physical works, local governments are able to focus on which kind, quantity, and quality of RTI to provide and how to finance construction and maintenance. Planning works, preparing and evaluating bid documents, awarding contracts, supervising, carrying out physical audits, accounting, and ensuring timely payment of contractors are not small tasks—most of the skills needed to complete them are lacking at the local level. Local governments can purchase many of these services from the

private sector. The challenge is to ensure that the volume of work is large enough to encourage local consulting firms to operate in rural areas.

The advantages of having all roads managed by one ministry include superior technical capacity and network coordination (see box 5.3). The disadvantages include insufficient attention to local priorities and local consultation in planning. When responsibilities are assigned to local governments, the reverse holds. The rest of this section presents two models for managing rural roads. Model A relies on a central sector ministry, model B devolves responsibility for rural roads to local governments. Four options for mobilizing the required capacity to effectively manage local government roads are discussed. The first option—a central government rural road unit—is part of the centralized model A. The second, third, and fourth options—a contract management agency, a joint-services committee, and private consultants—are part of the decentralized model B. All four options rely on private contractors to execute physical works.

### *Box 5.3. Assigning Responsibility for Local Government Roads*

There are two common organizational set-ups for local government roads in Sub-Saharan Africa. The first assigns legal responsibility for all roads to one ministry or a specialized road agency, and the second assigns legal responsibility for main and rural roads to different ministries or levels of government.

*1. One ministry for main and rural roads.* There are three common varieties of this set-up: separating the management function by having a rural road department and a trunk road department (such as in the Sierra Leone Road Authority), separating management by standard, that is, having a gravel and earth road department and a paved road department (as in Kenya), and managing main roads and rural roads together (as in South Africa).

*2. Several ministries or levels of government for main and rural roads.* In this set-up legal responsibility for main and rural roads rests with different ministries or levels of government. The institution legally responsible is usually a local government or rural district council. The agency responsible for overseeing rural roads at the central government level is often the local government ministry (as in Uganda and Zambia), the ministry of agriculture (as in Guinea), the office of the prime minister (as in Tanzania), or the president (as in Nigeria). Some countries, however, have no coordinating ministry or unit (as in Madagascar).

These two set-ups have strengths and weaknesses. The challenge of the first lies in ensuring that there is adequate local input in planning. The challenge of the second lies in coordinating oversight of local government roads with main roads and ensuring that local government road departments are technically competent. Many of the problems of coordination and technical capacity in the second set-up can be overcome if there is a capable rural road unit at the national level. If, however, in the second set-up responsibility for rural roads is not vested with local governments, but, as in Guinea, with a ministry of agriculture, the challenges presented by both set-ups may present themselves because links to both local governments and to the main road ministry may be weak.

The first model is common in small countries and countries with centralized governments and limited technical capabilities at the local level. The second model is suitable for countries with decentralized administrative systems. Both models should, however, attempt to decentralize operations through the active involvement of local constituencies in setting priorities and planning, and have one strong central unit responsible for coordination, guidance, and oversight.

### ***Model A: Central Government Management***

*Option 1: Central Government Rural Road Department.* A central government rural road department is the designated agency responsible for rural roads.<sup>21</sup> The department is responsible for developing and

<sup>21</sup> Legal responsibility for local government roads may rest with the central sector ministry (as in Kenya) or be temporarily assigned to a central agency, whereas legal responsibility remains with local governments (as in Ghana).

maintaining the rural road network and managing it independently of local governments. The typical central government rural road department has a national headquarters in the capital and branch offices in provincial centers and some districts (road area offices). The department is headed by a director whose performance is assessed on the basis of the state of the rural road sub-sector.<sup>22</sup> The headquarters should advise on policy, formulate guidelines for planning and standards, and provide technical support to provincial branch offices on contract and network management. The road area offices should be in charge of day-to-day management of the network, planning and programming, and supervising works. Although the road area offices liaise and consult with relevant local governments, they report to the provincial branch office and ultimately to the rural road department at headquarters. In this model funds flow from the rural road department's headquarters to the provincial branch offices, and from there to the road area offices.

The central government rural road department is most often located in the same ministry as the main road department, though it may reside in another ministry, for example, agriculture. An advantage of attaching a central government rural road department to the sector ministry of roads is that it will receive technical support and guidance from the parent ministry. Another advantage is that the various levels of the network can be more easily coordinated. The disadvantages include difficulty ensuring that sufficient attention is given to local priorities and local consultation in planning.

The best known example of a central government feeder road department in Sub-Saharan Africa may be the Department of Feeder Roads in Ghana. The Department of Feeder Roads is a civil service agency under the Ministry of Roads and Highways. It has managed the local government network on behalf of local governments since 1981 and has 37 road districts with offices that serve about 100 local governments. The Department of Feeder Roads has its own director and is one of the few rural road agencies in Sub-Saharan Africa with a mission statement. Its strategic mission is "to improve and maintain the entire national feeder roads network to higher levels of accessibility at optimum cost through planning, development, rehabilitation, maintenance, and administration; to open up and link rural areas of agricultural potential to stimulate production, enhance the movement of goods and people, support other small-scale economic activities, and reduce the cost of travel."

All rehabilitation works are done by contract; the Department of Feeder Roads is gradually beginning to use small-scale contractors for maintenance. Unlike most rural road agencies in the region, the Department of Feeder Roads is technically competent (with about 40 engineers), has been relatively successful in providing a coherent framework for planning and contract management, and has coordinated the activities of the many donors supporting the sub-sector. But the Department of Feeder Roads has been less successful in responding to local government priorities. As part of ongoing decentralization efforts in Ghana, it is piloting the return of maintenance responsibilities to six local governments as a first step toward fully decentralizing responsibility for local government roads.

In Malawi the central sector ministry for roads "temporarily" assumed management responsibility from local governments for almost 20 years during implementation of the District Roads Improvement and Maintenance Program. A main road ministry will generally accept management responsibility for a local government road project if external funding is available. Once the funding dries up, however, the ministry has a strong incentive to return the roads to the entity constitutionally responsible for them.

The intention behind the District Roads Improvement and Maintenance Program was to build local capacity and gradually transfer responsibility back to local governments. But the program's failure to build

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<sup>22</sup> Just as for main roads, the more autonomous is the department from civil service terms and conditions of employment, the more likely is it to attract competent staff. See Heggie (1995) on the importance of adequate pay for performance.

district level capacity lead the ministry to retain the maintenance units in all but one district. Although the District Roads Improvement and Maintenance Program achieved its physical targets, responsibility for maintenance was left unclear, even though in Malawi local governments are the designated highway authorities for rural roads.

Such temporary reassignments should be avoided because they often end up undermining the authority of local governments. In a country that is decentralizing, a central government rural road department does not provide a satisfactory long-term solution for managing local government roads. It should therefore be seen as an interim measure for providing technical cohesion.

### ***Model B: Local Government Management***

In the decentralized model individual local governments are the designated highway authorities for the road network in their jurisdiction. Because this model makes every local government a road authority, a coordinating body or rural roads unit must be established at the central level. The central unit advises on policy and standards, takes the lead in formulating strategy for the sub-sector, and lends technical support to local governments. Its functions include establishment of planning guidelines, technical and financial oversight, and resource allocation. When the coordinating unit is placed in the local government ministry, local priorities tend to be better accommodated than when it is placed in another ministry (see box 5.3 above). This is in part because rural road branch offices more often coincide with local government administrative boundaries.

Three options for decentralized management of local government roads are presented below. Each offers a different way of mobilizing local capacity to manage local government roads competently. All three options rely on support from a technically capable coordinating unit at the central level.

*Option 2: Contract Management Agencies.* In this option local governments purchase the services for which they lack capacity, such as planning and accounting, through a contract execution agency. The agency manages contracts on the governments' behalf. In addition to managing contracts of physical works, the contract agency can hire consultants to assist in drawing up development and maintenance plans according to the guidelines issued by the coordinating rural road unit. Local government representatives will then work with the consultants to ensure that they have adequate information and that the plans reflect local priorities. Local governments may subsequently request that the contract agency hire consultants to prepare designs and bid documents and manage the bidding process. In Sub-Saharan Africa contract management agencies have been used primarily for physical works, not for planning the road network.

The use of delegated contract management has been the preferred option of many French-speaking countries, for example, Madagascar, Mali, Mauritania, Niger, and Senegal, which have created agencies for executing public works, AGETIPs.<sup>23</sup> There are different types of AGETIPs, but all manage contracts and use private consultants and contractors to execute public works on behalf of ministries and municipalities (see box 5.4). AGETIPs hire consultants to prepare designs and bids. They evaluate and award the bids and sign the contracts. AGETIPs subsequently monitor and audit the work and pay contractors. AGETIPs themselves are subject to quarterly financial audits, and the technical quality of works is checked periodically. So far, audits have found both financial management and technical quality of works to be satisfactory. While most AGETIPs focus on work in urban areas, where the burden of oversight is concentrated, some have set up local branch offices to improve their ability to manage

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<sup>23</sup> AGETIP stands for *l'Agence pour l'Execution d'Interêt Publics* or Agency for the Execution of Works of Public Interest.

contracts in rural areas. Their experiences confirm that it is more difficult and costly to supervise contracts in rural areas.

*Box 5.4. AGETIPs*

There are more than ten AGETIPs in Africa, most in French-speaking countries. The first AGETIP was created in 1989 in Senegal. It is a lean agency with 24 staff, including drivers and secretaries. The typical AGETIP manages contracts worth about US\$3 million per month. The average contract is about US\$200,000. They are nonprofit organizations; most charge a 5 percent management fee. They employ highly qualified private sector staff attracted by the market salaries offered. AGETIPs have been successful in increasing productivity: they take an average of two months for the bidding and selection process, compared with six months or more in the public sector; costs are typically 15–20 percent lower.

Donor-financed capital works dominate AGETIP portfolios. Many of the earlier AGETIPs performed the dual function of selecting and financing projects and managing contracts. Increasingly, however, donors channel funds directly to government ministries and local governments to give them the choice of hiring an AGETIP or managing the contract themselves, subjecting AGETIPs to an element of competition.

In addition to managing contracts effectively and efficiently, AGETIPs have been highly successful in developing local enterprises and creating employment opportunities. Many provide training for firms, local consultants, municipalities, and other beneficiaries. The AGETIP experience indicates that when contracts for road works are offered to private firms, entrepreneurs quickly move into the sector. The number of contractors and their performance have been greatly enhanced when parallel training is given in bid preparation, work planning and execution, and financial management.

AGETIPs have been highly successful in reducing the bureaucracy surrounding the management of contracts. Their ability to select contractors, finalize contracts promptly, and pay contractors on time is key to their success. They take an average of two months to prepare bidding documents, evaluate bids, and award contracts. Contractors are often paid in fewer than ten business days—this is in environments in which small contractors are not able to work under government contract because payment delays are measured in months or years, even when funding is available. To ensure prompt payment, AGETIPs do not let any contracts for which they do not have local counterpart funding up front (usually 10 percent). Another important factor explaining AGETIPs' high performance is that their staff are paid market salaries. The close correlation between adequate pay and performance cannot be overstated. In fact, the Sierra Leone Road Authority, a semi-autonomous road agency whose employees are paid private sector salaries, is at times branded as one of the most efficient “AGETIPs” in the region because of its efficient management of contracts.

The drawbacks of AGETIPs include their monopoly over contract management for public agencies, heavy reliance on donor funding, and limited experience in rural areas. But there is no reason why they could not be allowed to operate for profit in a competitive environment. In many ways AGETIPs can be seen as an important interim body in introducing a private market in contract management. Other challenges of delegating contract management include the lack of able contract management firms, local governments' ability to deal with the contract management agency, and scale (small networks and small funds make for small contracts). In short, although highly efficient in managing individual contracts, AGETIPs do not solve the problem of road network management or funding.

*Option 3: Joint-Services Committees.* A third option is for a group of local governments to form a special purpose district or joint-services committee. The main objective of the joint-services committee is to

achieve sufficient scale to procure services (such as periodic maintenance) competitively from the private sector or provide a new facility that will serve many local governments. The creation of a joint-services committee may be a logical outcome of economic development because the needs of an area within an administrative district do not necessarily follow jurisdictional patterns. As a consequence an area may come to rely more on the economic and social services of a neighboring district than those of its own local government. In such cases neighboring districts have a strong motivation to collaborate in meeting their infrastructure demands.

Joint-services committees are hard to define. In a way they resemble customers who band together to get volume discounts from vendors or to share capital. Joint-services committees include arrangements that link local governments for the purpose of providing specific projects or programs. For example, a joint-services committee may provide public services, such as waste disposal, water provision, or road development and maintenance. Joint-services committees are typically organized as commissions or task forces. Members are commonly technical officers and elected officials of the concerned local governments. It is also common to include representatives of special interest groups, such as transport operators or road users. The governing body of a joint-services committee functions only for the time necessary to complete its tasks. Key determining factors for success include the ability and willingness of the originating jurisdiction to innovate and how motivated the concerned local governments are to cooperate—which will depend on common history, economic stress, or political pressure.

Joint-services committees operate in a wide range of countries, including Canada, Jordan, South Africa, and the United States. The administrative arrangements range from very informal to the creation of an independent agency charged with full responsibility for the joint program. There are two general types of joint-services committees. The first is virtual in the sense that, although comprising key officials from local governments and other interest groups, it entrusts management of the service to one of the local governments in the joint-services committee. Such committees may meet once a month or as needed (as called by any of the members). For example, in the United States the largest or wealthiest jurisdiction typically assumes the responsibility of lead agency. It houses the project/activity, signs contracts, and assumes risks. Cost-sharing formulas are worked out for the other districts. Design, physical works, and supervision are contracted out to the private sector. For large projects the lead agency may delegate contract management to a specialized agency. In a developing country contract delegation may be an option if none of the participating local governments have sufficient capacity to manage the contract. Alternatively, the committee members may approach a higher level of government or a central sector ministry to manage the contracts on their behalf.

The second type of joint-services committee has its own buildings and management staff. Jordan is an example—some joint-services committees there have become large and are involved in the actual production of services. Public agencies that take on the dual functions of provision and production of services risk running into the same problems that road agencies face. Physical works should preferably be entrusted to the private sector.

Two key advantages of joint-services committees stem from the efficiencies gained in providing services and from the potential redistribution of income. Joint-services committees enable local governments to set their own priorities and reap economies of scale. As development may render historic boundaries less and less representative of local interests, joint-services committees give local governments flexibility in addressing issues of development and regional interest. Further, tax incidence and the burdens of development do not necessarily occur in the same jurisdiction. A relatively wealthy district center may receive the benefit of taxation while the burden of providing access to the central jurisdiction falls on its neighbors. Joint-services committees enable cost-sharing arrangements, which

balance such inequities. Given these advantages, many governments provide fiscal incentives to encourage the formation of joint-services committees. Typically, these incentives are built into selection criteria for grants or into other financial incentives based on revenue sharing. For example, in the U.S. state of Colorado, a joint-services committee will attract grants from the state more easily, the more jurisdictions it represents. As a result, relatively rich local governments are sometimes willing to subsidize relatively poor local governments. They both gain in that the former have power of the purse and the latter may not have to be in charge of management.

The challenge of the joint-services committee stems in part from its strength. Concerned local governments are often hard pressed to find existing bureaucratic and legal architectures upon which to draw and may have to create a specific body for their collaboration. Creating such bodies may be difficult, given administrative and legal rigidities, especially when local governments belonging to different regions or states wish to create a joint-services committee. Furthermore, setting up a joint-services committee in Sub-Saharan Africa to manage rural roads may require considerable technical assistance from central sector ministries, something that may not be readily forthcoming. One potential option is for a joint-services committee to purchase the services of a regional office of the main roads ministry. Then, the local governments (the joint-services committee) would hold the purse strings and the regional office would have to account to them.

*Option 4: Private Consultants.* The final option for mobilizing management capacity is the use of private consultants. The road sector has a long tradition of hiring private consultants to prepare designs. Central government rural road units increasingly hire consultants to supervise contractors. But it is still far less common for local governments to rely on local consultants for planning and contract management.

Recently, local governments in Ghana, Tanzania, Zambia, and Zimbabwe have employed local consultants to assist in the planning and supervision of road works. In Ghana, under a Danida-supported project, the Department of Feeder Roads acknowledged the difficulties of recruiting qualified staff to jobs with civil service salary rates and conditions, and instead trained and hired three consultants to manage part of the feeder roads network. In Zambia the National Roads Board, which manages the road maintenance fund, recruited local consulting firms to assist local governments in planning and managing contracts. The Board recruited these firms because local governments submitted poor plans requesting allocations from the Zambian road fund. One consulting firm per province assists all districts in that province. Its responsibilities include helping the districts to draw up an annual road maintenance program and to tender, evaluate, negotiate, and supervise works. The consulting firm cosigns the checks paid to local contractors.<sup>24</sup>

Although consultants have greatly assisted local governments, enabling them to receive and properly use allocations from the road fund, experience shows that both local government staff and consultants must be trained. Some of the local governments in Zambia, for example, have not fully understood what it means to be a client, that is, that their priorities, not those of the consultant, are the ones that matter. Initially, consultants were paid a percentage of the works awarded, a system that did not produce economical plans. Instead, incentives favored towns where supervision of works was easier and costs per kilometer were higher. More remote areas were ignored. The consultants' remuneration scheme has been reviewed, and a schedule that awards payment upon producing satisfactory maintenance plans has been approved.

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<sup>24</sup> The terms of reference for the consultants as set out by the National Roads Board are included in annex B.

In the United Kingdom many local governments now contract out the entire management of their road network to a consulting firm.<sup>25</sup> The firm, in turn, contracts out physical works to other private contractors (see box 5.5). If local governments can rely on a steady source of funding, similar setups could be used in Sub-Saharan Africa, particularly if groups of local governments joined together and hired the same consulting firm, along the lines of what was done in Zambia.

The use of private consultants for key management functions is an attractive option for local governments. It will result in better quality work completed at lower cost and will allow local governments to mobilize the capacity required to manage their networks. In order for this option to be effective, local governments that are used to functioning in a force account environment must learn how to become effective clients, and there must be a private sector that is able to provide quality services. Local consulting firms, just like private contractors, will require training to offer the type of services that local governments need. Consulting firms need training in financial management, competitive bidding, and technology. A strong coordinating rural road unit or the central sector ministry in charge of roads, assisted by qualified local or international consultants, can provide technical training and management support to both local governments and the local consulting industry.

The experience of many Sub-Saharan African countries with using private contractors in road works indicates that a shortage of contracts and funding is a more binding constraint to maintenance by contract than the number and technical quality of available contractors. When funds and, therefore, work and contracts become available in the road sector, contractors will emerge. This experience may be applicable to the consulting industry as well. The most important aspect of an enabling environment for private sector contractors and consultants is timely payment for work. This in turn depends on a steady source of funding and an effective system for technical audits and payment processing.

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<sup>25</sup> By 2000 all councils in the United Kingdom will be required to contract out at least 65 percent of their management functions to the private sector, that is, “compulsory competitive tendering of white-collar construction services.”

#### *Box 5.5. Contracting Out Management of Local Government Roads*

The county of Berkshire in the United Kingdom has 3,500 kilometers of roads. In 1993 it became the first U.K. county to contract out management of roads completely to a private consulting firm. The county was driven to do so because of a reduction of funds that led to shrinking workloads and the belief that the private sector would be able to manage the network more cost-effectively. The reduction in funding and workloads meant that the county could no longer retain sufficiently competent staff in-house; it was forced to lay off workers. When Berkshire chose between offering many contracts or putting together one comprehensive package, an important concern for the council was that the consulting firm agreed to absorb a significant proportion of its staff. Berkshire opted to have only one contract, believing that a single contract would offer economies of scale to the contractor and would thereby lower costs. The county has kept a small in-house staff that also performs other engineering functions.

The main feature of the process of negotiation was the specification of services—which focused on output rather than on process. For example, the county specified the overall standard for roads rather than the number of potholes filled. The specifications covered the objectives of the services, description of work, scope, quality, reporting procedures, client and consultant functions, and staff requirements. The Babbie consulting firm was awarded a four-year contract to manage the network. The contract was subsequently extended to seven years. Babbie submits monthly progress reports to the county. Weekly business meetings and monthly contractual meetings take place between client and contractor.

In hindsight, the county found that it had focused too much on developing the specifications for the private contractor and not enough on developing its role as the client. It has subsequently focused on the latter in terms of monitoring service delivery, technical validation, corporate activities, contract administration, financial control, and political policy interfaces. Experience so far points to considerable gains for the county, including much increased accountability, flexibility, and value for money.

*Source:* Wingfield (1996).

#### ***A Comparison of the Models and Options***

In the decentralized model individual local governments rely on a technically competent coordination unit to define national strategy and standards, planning guidelines, and financial intermediation. This coordinating unit is different from a central government rural road department. For example, in the decentralized model each local government, not the central coordinating unit, decides on funding priorities and ultimately controls the resources; local engineers report to the respective local government, not the central unit. A central coordinating unit for local government roads can perform as well as a central government rural roads department provided it has adequate technical capacity, status (a qualified director), and resources to support decentralizing responsibility for rural roads to local governments.

So far, coordinating units for local government roads have been dismally weak. In Tanzania the central unit for local government roads consists of one engineer who is responsible for supporting more than 100 local governments, both urban and rural. In Zambia two engineers are responsible for rural roads and two for urban roads. Both situations are inadequate. In Zambia using a local consulting firm to complement the limited in-house capacity may become a permanent feature of the management structure for local government roads.

The strengths and weaknesses of the two models and the four options for mobilizing adequate capacity to manage local government roads are assessed below (table 5.1).

*Table 5.1. A Comparison of Models and Options for Mobilizing Management Capacity*

<b>Management Model</b>	<b>Options</b>	<b>Local Priorities</b>	<b>Market Discipline</b>	<b>Sufficient Scale</b>	<b>Administrative Simplicity</b>
Centralized	Central government rural road department	Usually not achieved	Usually achieved	Achieved	Achieved
Decentralized	Contract management agency	Achieved	Usually achieved	Achieved	Usually achieved
	Joint-services committee	Achieved	Usually achieved	Achieved	Usually not achieved
	Private contractors	Achieved	Achieved	Usually achieved	Achieved

*Local Priorities.* In the centralized model agency staff are often technically more competent than local governments and are able to coordinate with the main road ministry. However, they tend to go over the head of local governments and do not consult sufficiently with local stakeholders. The decentralized model relies on local governments to handle their own network and is therefore usually better at incorporating local priorities in plans and programs.

*Market Discipline.* All four options purchase services in the private sector, which promises discipline and efficiency. With a central government department or joint-services committee, however, more maintenance works and management functions may be kept in-house. The most common form of contract management agency in Sub-Saharan Africa—the AGETIP—although more successful in lowering costs than in-house contract management, may create a dominant monopoly. Effective contracting requires that local governments have the capacity to hire others to undertake the work and that competent local contractors and consultants are available. Staff who have worked exclusively in a force account environment may lack the skills to manage contracts effectively. Local governments can solve this problem by asking a higher level agency to act as facilitator and assist in procuring private consulting assistance (as did the National Roads Board in Zambia) or resort to a contract management agency. Training local governments to be effective clients is an area in which the central government oversight ministry should provide assistance and donors should focus more attention.

*Sufficient Scale.* A key aspect of all four options is acquiring sufficient scale to be able to manage the local government network efficiently and procure services competitively in the private sector. A potential drawback of the decentralized model is the small networks that local governments control, which may mean that the size of contracts for planning and accounting are too small to attract the interest of domestic consulting firms. In Madagascar the average network size for a local government is 140 kilometers; in Cameroon and Nigeria, 180 kilometers; and in Tanzania and Zambia, 280 kilometers. To economically justify employing an engineer in a local unit, the network should preferably be 500–2,000 kilometers, depending in part on road density. This problem can be addressed if adjacent local governments package contracts together, facilitated by a contract management agency (AGETIP), if local governments form joint-service committees, or if a higher-level agency assists in the hiring of private sector services for a group of local governments (as in Zambia).

*Administrative Simplicity.* Of the four options, the joint-services committee may be the most cumbersome, particularly if a new body must be created and none of the individual local governments can assume responsibility for contract management. But with the tendency of countries to increase the number of local governments (in Nigeria the number of local governments has grown from 300 to 600 over the past decade), forming joint-services committees may become increasingly necessary. In the United States, which has many small local government districts, the formation of single-purpose districts is common.<sup>26</sup> It is administratively simpler to employ private contractors to perform key management functions or assign responsibility to a central government roads department. But the tendency in the latter to refer all decision-making to headquarters can slow tendering procedures and payment of contractors, which results in higher overheads, more expensive per unit costs, and reduced local accountability.

The four options discussed here also apply to an autonomous or semi-autonomous road authority that is responsible for all roads. For example, the road authority could provide technical coordination and oversight, similar to the setup in the decentralized model, or the road authority could function as a central government rural roads unit. In either case the pros and cons of the respective model apply. One way to mitigate the negative implications of the centralized model would be to establish a subcommittee of the road authority board that deals exclusively with rural roads. Local government representatives should be included both on the committee and the board.

## 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 (see box 5.6).

The next three sections assess the extent to which the three main domestic sources of funding for maintaining local government roads in Sub-Saharan Africa—revenues raised by local governments, central-local fiscal transfers, and allocations from a dedicated road fund<sup>27</sup>—meet the criteria of a steady and adequate flow of funds. None of the revenue sources alone will raise sufficient funds to maintain the road network. Nor is it desirable from the point of view of efficiency and equity that any one of them do so. The final section explores the concept of cost-sharing and how local governments can leverage their scarce funds and split costs with road users and the central government.

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<sup>26</sup> Seventy-two percent of all local governments in the United States have fewer than 3,000 residents (Kincaid 1991).

<sup>27</sup> Local governments rarely borrow in financial markets in Sub-Saharan Africa. Typically, only the largest urban councils in South Africa and Zimbabwe borrow.

*Box 5.6. An Asset-Based Approach for Estimating Road Maintenance Needs*

If the value of roads is known, it is possible to estimate the funding required to maintain them. If the national road authority knows the length of asphalt, gravel, earth, and urban streets in the country, their value can be approximated by multiplying their length times the total cost of each type of road surface. The table below shows the types of road surfaces, their length, and their value per kilometer. The calculations assume that adequate maintenance requires an expenditure of approximately 2.5 percent of the asset value per year. This would mean that US\$15 million should be allocated to road maintenance throughout the network.

The asset-based approach is a rational but highly generalized way to estimate overall network needs. It is less suitable for determining allocations among road levels. For example, paved roads with low traffic volumes may require a smaller percentage of their asset value (less than 2.5) and gravel roads may require more.

<b>Surface</b>	<b>Length (km)</b>	<b>Value per km (\$/km)</b>	<b>Total Value (US\$ million)</b>	<b>Percentage of Total</b>
Asphalt	900	400,000	360	60
Gravel	2,500	50,000	125	20
Earth	8,500	10,000	85	14
Urban	500	80,000	40	6
Total	12,400	—	610	100

*Source:* G. Metschies, adapted from Connerley and Schroder (1996).

### ***Locally Raised Revenues***

Local governments mobilize only modest revenues, which vary widely because of differences in economic bases and administrative capacities.<sup>28</sup> 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 percent of revenues. Other tax instruments include levies on property, locally produced agricultural products (the tea cess in Kenya), and building materials (the sand cess in Kenya). Both land-based taxes and cesses 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 Sub-Saharan Africa. Maintenance funding from local taxes is likely to be as irregular and unreliable as funds from the central budget.<sup>29</sup> Much can be done to improve local revenue collection, like maintaining strong enforcement, a reliable local court system, and incentives to tax collectors (see box 5.7).

African 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

<sup>28</sup> Local governments in Kenya raised 6 percent of public sector recurrent expenditures for goods and services in fiscal 1989 (Smoke 1993).

<sup>29</sup> Locally raised revenues are subject to a process at the local government level similar to the one the central budget is subject to at the national level. That is, locally raised revenues are allocated among all sectors and between capital and recurrent budgets. Depending on, among other things, terrain and existing conditions of the road network in an area, road maintenance is likely to be passed up for more urgent priorities, and locally mobilized funds are used to leverage investment grants rather than for maintenance.

countries. Property taxes are not collected in many Sub-Saharan African countries because land is not traditionally held by private individuals or is ceded to the central government—amounting to limited incentives for collection at the local level. The possibility of imposing maintenance and access charges tied to property taxes should be explored. Strong local interests may argue for a dedicated road-user access charge through a tax surcharge on property.

*Box 5.7. Tanzania: Tax Collection and the Importance of Incentives*

A district executive director in the Iramba district in Tanzania succeeded in increasing local tax revenues by 170 percent in one year simply by improving revenue collection. Local tax collectors were given estimates of what they were expected to raise and were allowed to keep 10 percent of the amount they collected. Also, local authorities were allowed to keep or add a small percentage to the state taxes they collected (a collection surcharge). Furthermore, the local government ministry could develop a mechanism that rewarded local tax efforts at the same time as it compensated for limited fiscal capacity in poorer districts—perhaps a matching-fund incentive weighted for very poor districts.

### ***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. First, throughout most of Sub-Saharan Africa, only a small share—generally 5 percent or less—of aggregate public sector revenue is made available to rural governments. Second, experience shows that general budgets rarely allocate adequate funds for maintaining main roads, much less rural roads. Third, local governments often receive their allocation in two separate envelopes—one for capital expenditures and another for recurrent expenditures. These envelopes are usually not fungible, and 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. Experiences to date indicate that central-local government fiscal transfers by themselves do not provide an adequate and timely source of funding for maintaining local government roads.

### ***Road Maintenance Funds***

Instead of depending on central budget allocations, a number of African 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 French-speaking countries).<sup>30</sup> 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.

Allocating the funds among various levels of the network is a murky business. There is no generally accepted formula. Because of the dearth of information on network composition and condition, allocating road fund revenues must be carried out through several steps in most Sub-Saharan African countries. First, the funds must be allocated among different levels of the road network. Then, the funds

<sup>30</sup> Road funds should, though rarely do, receive fines for overloading, which is a penalty charged for damage done to the road. See Balcerac de Richecour and Heggie (1995) for a full discussion of road funds.

may have to be split between rural and urban local roads. Third, funds must be divided among rural districts. Finally, there must be a simple method for allocating funds to different roads within each district.

In Sub-Saharan African countries the proportions allocated to the different levels of the network are often subject to political negotiations between central and local governments and between urban and rural constituencies.<sup>31</sup> To ensure that the interests of road users (who pay the fuel levy) are heard, road fund allocations should be set by a road fund board that includes strong representation from road users, including rural constituents. The board should review funding allocations annually. Still, generalizations and rules-of-thumb abound in determining allocations. For example, the rule in Tanzania holds that, “because 80 percent of the traffic moves on 20 percent of the network 80 percent of the road fund should be allocated to the main roads and 20 percent to the local roads.” The Tanzanian Prime Minister’s Office, which is responsible for urban and rural roads, now argues that its allocation of 20 percent of the road fund revenues should be increased. The government has therefore commissioned a study to review the allocations from the road fund to the various levels of the network.

South Africa allocates maintenance funds based on technical standards and traffic levels. Unit rates for routine and periodic maintenance activities by type of road surface are compiled. The rates are multiplied by the length of maintainable road in each jurisdiction to arrive at the total maintenance budget. Final adjustments are made taking into account environmental conditions and budget constraints (see Heggie 1995, box 7.9). This approach provides an initial estimate of the funding requirements of different districts and practically eliminates the second, third, and fourth steps of the allocation process described above. The potential drawbacks of this model, particularly for many Sub-Saharan African countries, are that it relies on an accurate network inventory and requires detailed information on road conditions—neither of which are usually available.

The second step is to distribute the initial allocation between rural and urban roads, unless this was done up front. It is preferable that the allocation of funds among main, urban, and rural roads is set by the road fund board. Rural roads compete poorly with main and urban roads, in part because urban agencies submit better prepared proposals and urban constituencies are strong. In Tanzania the local government road fund finances maintenance of both urban and rural roads; urban districts received 75 percent of the funding in the first two years. Some rural councils did not realize that the local government road fund had been established for several years.

Separate funds can be created for main, urban, and rural roads or a portion of existing road funds can be set aside for rural roads. Countries have chosen to deal with the allocation problem in different ways. Zambia’s road fund predefines, with possible review, the proportion of funds to be allocated to main (40 percent), urban (20 percent), and local government roads (40 percent). In fact, though, less than 10 percent of road fund revenues were allocated to rural local government roads in 1995 and 1996. In Ghana funding for local government roads is allocated centrally from the road fund (25 percent of which is allocated to the Department of Feeder Roads) and from the central government budget. A portion of these funds can also be set aside for access roads and paths (see chapter 6).

The third step involves allocating road fund revenues among rural local governments. The need for an equitable formula to distribute funds among rural local governments arises frequently in Sub-Saharan African countries because of the lack of reliable network data. Allocation formulas may be similar to those used for planning investments. Common variables are population and road density and

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<sup>31</sup> The old-generation road fund in Benin, for example, finances maintenance for local government roads when traffic levels justify it; the Central African Republic Road Fund has no specific funding for maintenance of local government roads; Rwanda’s Road Fund allocates a minimum of 10 percent of its resources for maintenance of local government roads and roads that fall under the responsibility of communities.

economic activity. For example, the proposed procedure in Tanzania for allocating funds for routine maintenance among all districts (see box 5.8) is quite the formula used for allocating investment funds among rural districts in Zambia. Examples of commonly used criteria for allocating road fund revenues and investment funds among districts are given in annex C.

A road maintenance fund needs regular oversight. Financial and technical audits should be carried out periodically and misuse of funds penalized. Local governments must respect that the mission of the road fund is maintenance. They must be trained to develop proper road maintenance programs and to determine which activities and expenses qualify. Otherwise, allocations from the road fund may be used for capital works and to purchase equipment. This happened when the local government road fund in Tanzania was introduced. Even after five years many councils were still not fully aware of the maintenance obligation. There are many explanations. For one, local governments were instructed to apply for allocations on a project-by-project basis rather than present an overall maintenance plan. This left an impression that funds were destined only for capital works. Further, the development grants for local government roads were cut soon after the maintenance fund was created. Consequently, many local governments thought the larger road fund allocations came from an increase in the development grant.

Another complication is the deplorable condition of the rural road network. In many Sub-Saharan African countries most of the rural roads must first be improved before they can be maintained. The ideal, therefore, is to introduce a road fund or improve management of the existing road fund along with a sizable effort to improve the existing network.

### ***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. In the long term, then, 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).

*Box 5.8. Tanzania: Proposed Procedures for Allocating Road Maintenance Funds Among Districts*

In Tanzania 20 percent of the proceeds from the road tariff are set aside in a Local Government Road Fund, designed to support maintenance of roads under the jurisdiction of 84 rural and 17 urban district councils. This fund has raised the average level of resources available for recurrent expenditures on district roads from 2 million shillings (Tsh) per year per district to Tsh 10 million. (The actual allocations vary widely, ranging from zero to Tsh 40 million; urban districts received three-quarters of the money.) The fund is administered by the prime minister's office, which is responsible for district affairs but lacks the technical capacity to allocate funds among districts efficiently.

To ensure that the funds are allocated in a manner that is simple, transparent, and based on network need, a study proposed to allocate funds among urban and rural districts as follows:

$$\text{Allocation index} = \text{population density} + \text{road density} + \text{prime minister's office rank}$$

Population density indirectly measures trip generation rates, whereas road density is used primarily as a separation parameter to differentiate between urban and rural districts. The prime minister's office rank, which is a system used to decide budget subventions, grades districts according to their stage of development by measuring levels of commercial activity and thus, indirectly, trip generation rates.

The variables are given a value of one, two, or three, depending on whether their values are high, average, or low. The allocation index thus varies from a high of 9 (a commercially active district with a high population and road density) to a low of 3 (a commercially inactive district with a low population and road density). Districts scoring 8–9 points receive an allocation of 1.3 percent of the road fund, those scoring 5–7 points receive 1.0 percent, and those scoring 3–4 points receive 0.7 percent.

The allocation index distributes funds according to need and does not adjust the index to reflect affordability or equity. Indeed, wealthy districts receive a greater allocation because the prime minister's office rank is added to the other two variables in the same way (high rank equals high points) to reflect the fact that they will probably have more traffic. If equity is a concern, the prime minister's office rank could be added to the other two indicators in an inverse fashion so that a high prime minister's office rank would score one instead of three points. The highest score of 9 would then go to a commercially inactive district with a high population and road density, whereas the lowest score of 3 would go to a commercially active district with a low population and road density.

*Source:* Heggie (1995).

## **ESTABLISHING A PLANNING FRAMEWORK AND PLANNING METHODS**

Plans for providing basic services in rural areas, including local government roads, should respond to the demands of local constituents and deliver maximum benefits at the lowest cost. The central government is usually responsible for providing the overall planning framework and direction. In most Sub-Saharan African countries, however, there is no consolidated planning process for rural transport or for transport infrastructure. There may be planning methods and criteria for selecting road improvement projects, but these are useful only if applied in the context of a planning framework for both capital works and maintenance.

### ***A Planning Framework***

As a first step in the local planning process local governments and their constituents must assess priorities across sectors.<sup>32</sup> Pilot programs using such a cross-sectoral approach to consultation are under way in Zimbabwe (see box 5.9). Planning for investments in RTI might thus be considered a second

<sup>32</sup> A companion paper (Connerley and Schroeder 1996) approaches rural transport planning in an integrated fashion and considers multiple interventions to alleviate access problems. These may include the provision of water supply, intermediate means of transport, and motorized transport services, as well as RTI.

step—that is, once an RTI intervention has been selected. Planning for maintenance of already existing roads and RTI for which the local government is responsible should be part of the annual planning process. The planning framework should be built on a participatory and iterative process, providing incentives for good performance. The planning framework should also generate good value for money.

*Box 5.9. Zimbabwe: Participatory Planning*

In 1984 a new system for popular participation in decision-making was put in place. The system was subsequently reinforced by two laws passed in 1985 and 1988. The structure consists of a village development committee, ward development committee, district development committee, and provincial development committee. Each village development committee includes at least six members, four elected by adult members of the village and two selected by party (ZANU-PF) youth and women’s representatives. The chairperson and secretary of each of the six village development committees make up a ward development committee, which is chaired by the district councilor for the ward. Plans are aggregated at each level.

Individual community needs are expressed to the district level through the village development committee and ward development committee. The district development committee then prepares a district plan (or series of sectoral plans), which are endorsed by the council and passed on to the province. The provincial plans are then prepared and transmitted to the center. Multipurpose extension workers—village community workers (village community workers)—are based at the village level. Elected by the community, village community workers are employed part-time (100 hours monthly) by the Ministry of Community and Cooperative Development. About 80 percent of village community workers are middle-aged married women, generally with at least a primary education. They have received six weeks of training to enable them to work with the community to identify needs, solve problems, and plan and evaluate projects. Using participatory approaches, village community workers help the village development committee to draw up plans through meetings and workshops held at the village level. Traditional leaders often play a key role in community mobilization and represent community needs at the village development committee and ward development committee.

The process is “bottom up,” but a few initial problems have arisen. First, in many cases local plans were prepared without prior knowledge of budgets. Second, local priorities were overlooked in finalizing central plans for budget allocations. Unresponsive planning led to considerable frustration. Third, expectations regarding government handouts created considerable dependency. Fourth, implementation of the new system was slow. A Pilot District Support Project was therefore initiated in two districts in the Midlands province in 1989 with the assistance of British official development assistance. Its overall objective was to strengthen the capacity of the local government to improve planning and implementation of development activities. Although relatively rudimentary at the village and ward levels, the quality of the plans have improved over time. People at the village and ward levels are increasingly motivated to participate as they see that local government projects respond to their plans.

The pilot project successfully developed local capacity to manage 69 infrastructure projects over five years at a cost of US\$820,000. Per project costs range from US\$1,000 to US\$30,000. A variety of implementation arrangements were pursued, including community-led initiatives, contracting out, force accounts, and implementation through line agencies. Significant emphasis was placed on planning to achieve sustainable investments. By mid-1996 all 69 projects were still operating, maintained by local governments and communities. Because of their success, the program has expanded to the whole country.

*Source:* World Bank (1992b).

*A Participatory and Iterative Process.* Planning for local government roads should be based on a recurrent dialogue between local constituents and local government officials. The transport ministry or the central coordinating unit for local government roads is best placed to provide the overall planning framework. The framework should establish links between constituents and the different levels of government. The plans should be annual and may involve a three- to five-year rolling planning horizon. The participatory and iterative planning process involves three basic steps.

First, 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. Consultation with constituents can take different forms. In some countries elected local councilors sufficiently represent key stakeholders. However, decision-making commonly becomes highly politicized (see box 5.10). In other countries constituent representatives are invited to attend or become members of transport or road committees of the local government council. Although NGOs and interest groups may be allowed to join technical committees, they rarely do so, and most local governments do not actively seek their participation. Experience indicates that when road users are not present neither setup is particularly effective in ensuring value-for-money. Local governments can also learn from the successful experience of national road boards that include strong representation of the private sector and road users.

*Box 5.10. Local Consultation in Planning Local Government Roads*

Constituents typically participate in the planning of local government roads through consultations, which may take place on representative councils, road committees, or road boards. At Tanzania's district level, one councilor is elected per ward. These councilors are well able to express the concerns of their constituents because they have information on access to key facilities and the use, importance, and problems of their transport infrastructure that cannot be collected in other ways.

Many countries, for example, Uganda and Ghana, have so-called district development committees at the local government level with a transport working group or subcommittee. These committees usually include officers of various sector departments in the district, representatives from elected councils, and members of parliament. Although this type of local government committee may involve road users and NGOs, these stakeholders are rarely represented, and the district development committees have, at times, been perceived as the hand of central government at the local level. A commonly mentioned problem is that technical staff of central sector ministries often feel that they know best and do not pay sufficient attention to local views and priorities. In Kenya district development committees have delayed projects because of bureaucratic and political conflicts with local authorities. In Malawi considerable tension arose between the district development committee (mainly technical staff) and the Full Council Meeting (elected councilors and local chiefs); the tension resulted in a merger of the two bodies.

In other countries, for example, Senegal, membership on local councils is biased in favor of elites or specific groups, rendering the councils unrepresentative of the stakeholders at large. In such cases other forms of consultation must be sought, such as through farmer and parent-teacher organizations, as well as associations of transport operators.

In programming physical works, however, it is not enough to rely on the councils—villages directly affected by a road project must be closely involved. Planners should explore with affected communities the potential impact of proposed road improvements and act to reduce negative impacts. Improving roads can have many effects. For example, the productivity and use of adjacent lands may be affected through drainage, dust, and increasing land values. Government officials should negotiate with local people, especially about specific parcels of land that might need to be acquired for widening, straightening, or constructing roads. Land might also need to be allocated temporarily for labor camps, site supervision, equipment storage, and maintenance. Local people know the skills and availability of local labor and can help road agency staff and private contractors gain the cooperation necessary to effectively execute work. Furthermore, they can often improve project plans by providing specific, local information, such as the properties of local construction materials; sources of sand, stone, and gravel; and local drainage and traffic flow patterns.

Second, 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.<sup>33</sup> 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. Coordination at the provincial level also provides local governments and constituent representatives an opportunity to give feedback on the main road agency's plans. In Zambia local government road plans are coordinated by the provincial engineer for main roads in collaboration with provincial road boards, which have sprung up spontaneously in some provinces. The coordinating rural road unit at the central level assesses the technical soundness of the plan and reviews the expenditure program in light of financial resource constraints. The unit provides feedback to the local government road department, which then must revisit the plan.

Third, a round of negotiations ensues, in which local governments bring the actual resource envelope to their constituents. The participatory planning process now 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.

*Incentives for Good Performance.* The planning process can be a tool for rewarding performance and local efforts to share the costs of maintenance. It can build capacity as well. Funds should be allocated, therefore, in light of various performance criteria, including maintenance records, financial management, and technical quality of works. The ability of local governments to safeguard existing assets should affect their eligibility for receiving new funds from the central government. Virtue can be rewarded.

In Zimbabwe the planning process has been used in the urban sector as an incentive for improving local performance and as a capacity-building instrument. A central fund provides investment financing to urban councils, which submit a consolidated plan (for capital and recurrent expenditures) that demonstrates their ability to pay for the maintenance of existing and proposed assets. The council's performance is monitored according to specific indicators, including financial and technical competency. Performance is a key criterion for determining funding allocation in subsequent years. The councils receive start-up funding to hire local consultants to draw up the plans. This up-front assistance enables weaker councils to take advantage of the project. A similar system could be put in place for rural local governments.

*Value-for-Money.* An important objective of planning is to ensure optimal allocation of available resources. Resources must therefore be relatively fungible between maintenance and capital works. Also, 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.<sup>34</sup> The principal argument for

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<sup>33</sup> Experience with regional road boards is growing in Tanzania and Zambia. The boards perform the dual role of voicing the concerns of local constituents and serving as a watchdog over both local governments and private contractors. The formation of regional road boards in both countries is closely linked to setting up a road fund.

<sup>34</sup> Another important issue is the use of cost-effective work methods and choice of technology. Unless explicitly forbidden, local road agencies often prefer to execute works themselves rather than hiring a contractor and to repair a broken grader

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. Fungibility between capital and recurrent expenditures is an issue primarily when funds are available for capital works and not for maintenance. When funds are available for maintenance and not for capital works, the desirability of fungible resources declines considerably.

### ***Planning Methods for Maintenance and Investment***

Planning methods are often assumed to be synonymous with criteria for selecting investment projects. This assumption implies that all maintainable roads are being maintained, which is false. This section focuses first on sound rules of thumb for planning maintenance of local government roads and then on the virtues and drawbacks of different methods for prioritizing roads for improvement.

*Maintenance Criteria.* Recently rehabilitated rural roads begin to deteriorate immediately after they are improved in many Sub-Saharan African countries. Untended roads soon begin exacting costs in time, safety, and vehicle damage. Yet at the local level the maintenance plan is often an alien concept. An important task of the central coordinating unit for local government roads is therefore to create a “maintenance culture” and to reward its practitioners. To this end, the central coordinating unit should formulate guidelines for preparing maintenance plans and arrange for the training of planners and local consultants to assist them (see box 5.11).

*Investment Criteria.* The central coordination unit for rural roads should provide guidelines and criteria for planning and programming capital works. National consistency in planning and the use of a set of standard criteria are important because national resources are allocated, at least in part, based on information from the planning process. Local input should be allowed to influence the importance given to specific criteria. The outcome of the initial application of the criteria must be vetted during consultation with local constituents. Many industrial countries, Sweden, for example, emphasize local consultation as the most significant evaluation tool and do not apply strict economic analysis to capital expenditure programs for local government roads. Donors who lend or grant assistance to developing countries, however, often require elaborate evaluation procedures for local government roads.

The standard technique of economic cost-benefit analysis, based on savings in vehicle operating costs, is only marginally relevant for roads with traffic of less than 50 motorized vehicles a day. Most of the traffic moving on this network is non motorized, that is, pedestrians and intermediate means of transport. Post-intervention assessment often reveals that both increases in vehicle flows and projected agricultural output are exaggerated, while other impacts, such as improvements in the quality of existing services, are significant. Socio-economic impact assessments of rural roads point to improvements in both the access to services and the quality of existing services. For example, qualified teachers and health officers may accept posts at rural schools and clinics, or medical supplies and kerosene may be replenished regularly at rural clinics (World Bank 1996; Strauss 1992). In short, many of the benefits from improving rural roads (and rural transport in general) are difficult to quantify, and it is a major outstanding challenge to develop easy tools that can capture these benefits.

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rather than hiring a large number of casual laborers for a few days. This is in part due to what remains of the force account system.

### *Box 5.11. Sound Practices in Maintenance Planning*

Giving primary attention to keeping roads in good condition makes the best use of scarce resources and maximizes rural accessibility in the long term. Frequently, however, this approach is overlooked in favor of improving the roads that are in the worst condition.

Good practices for sustainable maintenance planning include:

- Maintain those roads that are functionally important and in reasonably good condition.
- Create a multiyear rolling maintenance program that establishes the core network and its condition.
- Define routine and periodic maintenance according to tasks and budgets and include these tasks in reporting measures of achievement. Avoid charging routine maintenance as staff and equipment costs; instead, specify outputs such as drain clearing, grass cutting, shape correction, and grading.
- Make separate provisions for emergency work that is required to keep roads open and serviceable.
- Selectively add roads to the maintainable core network as capacity and resources expand.

It is also important that provision for emergency works not be diverted from maintenance funds but, if necessary, be provided for by tapping the capital budget.

*Source:* Hoban, Riverson, and Weckerle (1994).

Most of the methods used in donor-financed projects to plan for upgrading, rehabilitation, and development of rural roads require information that is difficult or expensive to obtain, such as reliable estimates of increased producers' surplus (Beenhakker and Lago 1983). Planners, therefore, often rely on national averages, which may not represent local conditions. Given local capacity constraints, producer surplus models, for example, which rely on information being collected locally, depend on a few trained individuals at the central level to process the information, thus removing planning from the local level and effectively limiting local participation in the selection process. In Ghana an ongoing feeder road project uses a variation of the producer surplus model. The Department of Feeder Roads, which is one of the most technically competent rural road agencies in Sub-Saharan Africa, nonetheless complains about the complexity of the model. Furthermore, the model leads to prioritization taking place at headquarters in Accra. Although these models have the advantage of being relatively neutral (apolitical), they are often insensitive to local priorities.

At the local level the criteria used for prioritization must be user-friendly and require easily obtainable information.<sup>35</sup> Simpler planning methods include multi-criteria ranking systems that assign points for certain features of a road link based on a variety of factors. These may comprise network considerations, improved access to economic and social services, equivalent passenger counts, and vehicle counts that include intermediate means of transport and pedestrians. More detailed information will be required for final selection, such as road condition, task estimate, and cost of works. A list of commonly used criteria for screening roads is found in annex C. The Rural Access Roads Program in Kenya and the District Roads Improvement and Maintenance Program in Malawi used criteria that combined economic assessments with social and engineering considerations. Multi-criteria analysis is also used to rank local government roads in Zambia, where local governments and rural constituents will vet the outcome of the ranking exercise to ensure that the correct information has been taken into account.

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<sup>35</sup> Consultants in Tanzania found that the official guidelines for selecting roads for improvement were often not understood or observed or even received at the district level (COWIconsult 1988).

## **6. MANAGING AND FINANCING COMMUNITY ROADS AND PATHS**

In most Sub-Saharan Africa countries governments have left responsibility for access roads and paths to communities. Communities, however, have rarely assumed this responsibility. In fact, communities have often failed to construct or maintain access roads and paths even when they themselves consider them important. This chapter proposes a basic institutional framework 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).

### **BUILDING COMMUNITY OWNERSHIP AND CAPACITY**

Access roads and paths in Sub-Saharan Africa are often undesignated but are considered to belong to adjoining landowners, communities, or commercial entities, such as logging, tea, or mining companies. As a general proposition, no one can be held legally responsible for a specific road or path unless that person or entity has been granted or has established ownership. Interested parties can assume upkeep of orphan roads, but just as easily abandon them. In fact, roads and paths can be mapped and functionally classified, yet have no designated owner.

In developing countries the issue of community ownership of roads and paths has not been addressed in depth. Countries that allow private ownership of roads provide a well-structured institutional framework and incentives (legal, financial, technical, and managerial) to encourage citizens who live along undesignated roads to form road associations and become effective owners and managers of specific roads. This section focuses on these incentives: legal ownership, cost-sharing arrangements, and technical and managerial advice.

#### ***Legal Ownership***

Ownership of private roads requires a legal framework that permits communities and non government entities to assume management responsibility. Without a law that grants legal ownership of a community road or path to a community, and without other incentives, it is very difficult to engender a tangible interest that will translate into effective management. Assigning legal responsibility to communities as a blanket covenant makes little sense. Responsibility for local government roads can be assigned to a public agency, but designating ownership to a non government entity, such as a group of private landowners or a village, should be based on consent and active interest.

Granting private or community ownership usually requires a specific law. If the basic road act does not make provisions for private or community roads, the act can be amended, or a specific act passed under which these roads can be designated. Roads designated to a private entity may be fully assigned (such as community roads) or assigned with time limits, (such as toll road concessions). Countries with significant private ownership have legally constituted this ownership under a private roads act (see box 6.1). The act outlines how citizens can form themselves into private road associations and how the associations should be organized and run. In Sweden and Finland private roads account for two-thirds of the national road network. Managers of the national road agencies in both countries point to an explicit and well-defined legal framework for private road ownership as the most important

component of the institutional framework. In Zambia an effort to increase the kilometers of roads that received regular maintenance includes a review of the Roads and Road Traffic Act to accommodate private ownership.

*Box 6.1. Sweden: The Private Roads Act Legally Constitutes Private Ownership of Roads*

In Sweden the first private roads act dates from 1939 but has been revised on numerous occasions. The adoption of a new, comprehensive private roads act is planned for 1998. Two-thirds of the country's 400,000 kilometers of roads are private. These carry approximately 4 percent of the total tonnage transported on all roads. Along many private roads are shops, businesses, and even post offices and other public services.

Sixty thousand private road associations are responsible for the upkeep of the private road network. The associations are responsible for maintenance and may choose either to pay its own members to do the work or use a contractor. The private roads act constitutes the associations as legal entities established by means of a survey carried out by the Land Survey office. The initiative for the survey can come from an individual property owner or a public entity. The Land Survey office appoints an impartial government or municipal officer to carry out the survey. The members of the associations are those property owners along the road whose membership has been determined by the survey.

The survey allots the maintenance costs to the association members depending on the size of their property and the amount of traffic they generate. Membership is compulsory; the survey is legally binding, and the association can sue members who fail to pay their dues. Each association has a set of regulations that stipulates election of a board of representatives and formulation of an annual maintenance program, financial reports, and audits. The association must hold an annual meeting and elect a chairperson, secretary, trustee, and other members to manage its maintenance operations.

Changing road ownership requires prompt and explicit procedures, including consultation with the concerned parties (see box 5.2 above). A change in ownership of a rural road, especially a public-to-private transfer, merits special mention because it is a transfer from (to) a public entity to (from) a private entity. For example, if a road has been the responsibility of a local government and will no longer be designated as such, local communities and other concerned parties must be informed so they can decide whether to assume this responsibility. Otherwise, the road will fall into disrepair.

Often in Sub-Saharan Africa the local government road agency is legally responsible for many more kilometers of roads than it can maintain. Clarifying responsibilities for individual roads and paths is a continuous need. Prompt procedures for changing the designation of roads become especially important when the local government road agency identifies a core network that it can effectively sustain given its resources. This core network will be smaller than the full local network and will thus result in many unclaimed (undesignated) kilometers of roads. The fate of these dispossessed roads must be decided. Some have no value and will be abandoned. Others will require an assumption of responsibility. The local road authority should at least contact potential owners as a matter of routine.

### ***Cost-Sharing Arrangements***

Cost-sharing arrangements for maintaining community roads and paths fulfill three important functions. First, they constitute a financial incentive for communities to organize themselves. Second, they expand the revenue base. Third, they can verify demand and improve allocative efficiency. Experience in Canada, Finland, Madagascar, Namibia, South Africa, and Sweden confirms that access to partial funding for maintenance motivates local stakeholders to form private road associations to maintain access roads. For example, cost-sharing arrangements for community roads in the Canadian province of Ontario differ depending on whether or not landowners have formed a local road board. If citizens have formed a board, the province pays two-thirds of construction and maintenance costs; if not, the province

pays half of the cost of maintenance. In Sweden formation of a private road association is a prerequisite for seeking government grants for maintenance. The associations receive grants covering between 20 and 80 percent of costs, depending on the relative utility of the road. This percentage is based on, among other things, traffic and number of beneficiaries (see box 6.2).

*Box 6.2. Finland: Cost-sharing Criteria for Maintaining Private Roads*

Three-quarters of the Finnish road network are designated as private or cooperative roads. These roads carry an average of 45 vehicles per day, and 99 percent have gravel and earth surfaces. A full 104,000 kilometers of the total of 280,000 kilometers of private roads have been legally constituted as cooperative roads under the Private Roads Act. Of these, 87,000 kilometers receive public support from the central government, a municipality, or both. The central government provides grants to maintain private roads if a formal cooperative has been established, the road length to a permanent residence is at least one kilometer, and at least three estates with permanent residents are located along the road. Government support is channeled through the National Road Administration and is allocated to each qualifying road on the basis of traffic volume and number of permanent households served. The amount of government support is adjusted for climate and average income. Additional support may be granted to cover exceptional items. Each municipality has its own rules for supporting private roads in its jurisdiction. In 1995 the government provided about US\$40 million to support private roads, municipalities provided US\$40 million, and members of the cooperatives provided the remaining US\$50 million. This support was received by 17,400 cooperatives with 392,000 members responsible for 87,000 kilometers of private roads.

*Source:* Isotalo (1995).

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. A system in which communities receive financial assistance for both investment and maintenance is being implemented in Madagascar. While the government agency remains legally responsible for the roads, it provides grants to community road associations to cover part of the cost of maintenance (see box 6.3). In Sweden local governments have asked road associations to manage some of the local government roads on their behalf. While the road associations receive cost-sharing grants for the roads they themselves own, they are fully reimbursed for managing local government roads. A pilot program in Zambia is providing cost-sharing assistance to communities for both capital and recurrent expenditures to encourage them to assume responsibility for roads that fall outside of the capabilities of local government (discussed below).

The contract between a community and a local road agency, an NGO, a project, or a road fund should detail what will be contributed by whom and should include a schedule of works. Before any contract is signed, detailed discussion of the nature of the agreement with the local road committee or community representatives is crucial. This is the time to clarify issues, seek consensus and commitment, and set the stage for a collaborative effort. Annex D provides a sample contract between a community and a project for improving community transport infrastructure.

There are informal cost-sharing arrangements for road maintenance in much of Sub-Saharan Africa. 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.

*Box 6.3 Madagascar: Community Management and Financing of Roads*

In Madagascar a U.S.-funded project is supporting a public-private solution to the financing and management of select tertiary and access roads. Most of these roads are the legal responsibility of the provinces. This framework has been recognized by the government of Madagascar as the first operational model for transferring authority to local governments and associations under its decentralization program. For the community to qualify as a management unit, it must first form a road-user association. The association is an agent acting on behalf of the local government at the same time as it cofinances the road. Project organizers work closely with individual and groups of associations (Unions of Road-User Associations) to strengthen their planning and management capacity. The road-user associations bring together elders, private businesses, farmers, and elected officials. Once an association is operational, responsibility for the road is transferred from the region to the local government (commune), which in turn signs a management contract with the road-user association. The contract gives the association responsibility for performing routine and periodic maintenance and grants it the right to collect user fees and control access to the road after rain. As of June 1997 the project had worked with 47 road-user associations covering approximately 290 km of roads in 11 local government jurisdictions.

Associations raise revenues in different ways. Most receive about one-third of the required revenues from the local government. All charge their members (property owners) a fee of about \$1 per household. Some associations receive up to one-third of their revenues from local agri-businesses that expect to benefit from good accessibility. The range of revenues of the associations are as follows: local government, 35-60 percent; private sector, 0-35 percent; tolls, 10-33 percent; membership fees, 10-33 percent; and fund-raising, 2-10 percent.

In each local government an advisory and oversight committee comprising representatives of the local and central government technical staff monitor the performance of the associations. If a road association does not perform satisfactorily, the oversight committee can revoke the management contract. It would be desirable to also include community representatives on the monitoring committee.

*Source:* Sally Cameroon, Chemonix International.

### ***Technical and Managerial Advice***

Communities in Sub-Saharan Africa need technical advice (such as on road design and standards, appropriate materials, work planning) and managerial advice (such as on financial accounting, contract management, procurement) so that they can effectively perform the new responsibilities that come with ownership of roads and paths.

The lack of technical know-how is often mentioned as the main hurdle to achieving effective community management. Yet an old rule of thumb in construction holds that most tasks are simple and repetitive and can easily be learned. This holds for road maintenance. Experience shows that the required skills in road maintenance can be effectively transferred to communities by a foreman in a few days coupled with periodic supervisory visits. The Village Access Roads and Bridges Assistance Unit project in Malawi found that one day of training, combining theory and hands-on experience, suffices to prepare community work gang leaders for the technical aspects of maintaining their roads. Periodic supervisory visits by a foreman from the road agency helps the community to follow an annual schedule of programmed maintenance activities. (The Village Access Roads and Bridges Assistance Unit schedule for training communities in both rehabilitation and maintenance is attached in Annex F.)

In other areas of Sub-Saharan Africa community representatives who have worked as laborers on local government roads assume responsibility for supervising work on the access roads in their home villages. In Finland and Sweden the provincial road agency initially provided technical advice on road maintenance to private road associations. With the increased involvement of the private sector in physical works, this function vanished because most associations purchase the little advice they require from private

consultants. This trend may eventually reach Sub-Saharan Africa. Then, technical expertise may not necessarily have to be located within the community, the community simply must have the financial means to access it.

Villages can group themselves into road associations based on maximum community participation and minimal government involvement. Such associations might be based on chieftaincies, groups of villages, extended families, groups of commercial farmers, transporters, or other groups that share a common interest. In Ghana each village has a development committee with a subcommittee on transport infrastructure. The subcommittee sets the priorities in its sector and submits these to the plenary village development committee for consideration. Each group of villages has a joint villages development committee dealing with projects, such as roads, that affect many villages. To function more efficiently, this joint villages development committee can register as the legal owner of a road in order to qualify for partial funding.

Communities need to organize themselves to execute work planning and programming in a timely and efficient manner. In Sub-Saharan Africa this involves organizing works around the seasonality of labor supply. Financial planning and bookkeeping are other key tasks. In Finland and Sweden a technical staff in the local road agency guides the road cooperatives and participates in some association meetings. Sweden has a national NGO for private roads (*Riksforbundet for Enskild Vaghallning*) that arranges training on managerial and technical topics for road associations. This NGO is also consulted by the government ministry in charge of roads on all issues related to private roads including changes in legislation. In Namibia managerial advice is provided by a representative from the road agency who chairs the annual meetings of the local road committees.

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 both Sub-Saharan Africa countries and donor agencies are frequently unsuitable for community-based procurement and disbursement to communities (see box 6.4).<sup>36</sup> Communities must have the legal right to contract and to pursue recourse. A checklist for task managers of donor agencies on community procurement is provided in annex F. The local government road agency and donor-financed projects can initially help communities to procure goods and services. Experience shows such assistance has a number of positive spin-offs. 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 (Gopal and Marc 1994).

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<sup>36</sup> World Bank policies on procurement and disbursement at the community level are flexible, however, they give limited guidance on mechanisms suited for procurement by rural communities or groups that may be commercially unsophisticated and semiliterate (Gopal and Marc 1994).

#### *Box 6.4 Community Groups as Executing Agencies*

When communities become end users of foreign credit, the following questions must be answered:

*Organizational capacity of the community.* Does the community have the capacity to organize itself into a formal group and draft by-laws and other regulations? Are there NGOs that can assist in drafting such documents? Can the community be provided with sample documents? Must such documents need to be registered to be valid? If a community has inadequate capacity to receive public funds, is there any intermediary that can act on behalf of the community and procure and account for the use of the funds? (If so, the intermediary's legal status must be reviewed.) Will the intermediary be a consultant or a contractor?

*Rules for operation.* What are the rules of group membership? Do the by-laws establish simple norms for operation?

*Accountability of leaders.* Will the group elect members? To whom will this group be accountable? Can a treasurer be appointed? Will the group have the necessary skills to maintain elementary accounts? Can beneficiary monitoring be established?

*Ability to receive public funds.* Do any government, regional, or local regulations inhibit groups from receiving public funds? Who will need to audit such accounts? Who in the communities receives such funds? What formalities will the group have to perform to access the funds?

*Ability to contract.* Does the group have the legal status to enter into contract? Is there a suitable legislative provision under which communities can formalize their groups? What steps must be taken? In the absence of such regulatory provision is there a need for a project-specific regulation? Otherwise, can project design provide this capacity?

*Dispute resolution.* Which dispute resolution processes are available? Are there any simpler indigenous methods of dispute resolution that the community would respect and accept?

*Financial status of the community.* What is the capacity of the community to contribute? How will such a contribution be collected and accounted for? Will the community need an advance payment to start work? Can the group provide collateral or security? Can a 50 percent advance on the community contribution be made a condition for the release of funds?

*Source:* Gopal and Marc (1994).

## **FINANCING COMMUNITY ROADS AND PATHS**

The main sources of funds are likely to be communities themselves and external donors, at least in the short and medium term.<sup>37</sup> 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.

Three revenue sources and mechanisms will be discussed. The first is channeling donor funds to communities for investments, principally social and community fund instruments. The second revenue source is community financing in-kind and cash for both investment and maintenance. The third is government and road fund revenues for cost-sharing in maintenance.

### ***Donor Financing of Investments***

In many countries 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

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<sup>37</sup> Although in some countries central and local governments provide a cross-sectoral investment window through which communities can request financial support for priority investments.

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. The risk of communities failing to assume effective responsibility for access roads falls when they are allowed cross-sectoral choices. 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 (see box 6.5).<sup>38</sup>

Relatively successful in reaching rural communities, 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— and, in the case of roads total network requirements and maintenance needs. The funds have financed 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. Better linkage between the local government road agency and fund-financed community-based projects would also improve technical oversight and standards.

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. Such an outreach program is an important requirement to effectively reach rural communities in Africa.

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.

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<sup>38</sup> The Bank currently finances about 40 social funds, mainly in Africa and Latin America, but also in Asia and Eastern Europe.

### *Box 6.5. Key Features of Social and Community Funds*

Social, community, and rural infrastructure funds provide a mechanism for channeling money to both local authorities and communities, allowing for cross-sectoral choice. The demand-driven nature of these funds and their requirements for matching funds enhance prospects for sustainability. These funds finance projects put forward by local communities, NGOs, and local governments in more than 14 countries in Sub-Saharan Africa. Many of these funds are multidonor projects. Bank financing of social and community funds in Africa ranges from US\$1 million to US\$40 million, the median being about US\$10 million. The funds finance principally social and economic infrastructure projects. The typical subproject size is US\$10,000 and the maximum size is US\$400,000. The funds have provided significant amounts of financing to the local level. At the peak of its activities, the Bolivian social fund approved 30 projects weekly worth US\$2 million and had more than 1,000 projects going on simultaneously. The staff reached 130, with 80 professionals; the project appraisal department had 12 to 15 people. The funds do not propose or implement projects, and individual projects are not identified when a fund is established. Rather, they are appraised as they are submitted, applying predetermined selection criteria. Common selection criteria are:

- Benefit to poor.
- Capable implementing agency.
- Technically sound and simple.
- Maintenance costs met.
- Consistency with national and sectoral priorities.
- Use of labor-based techniques.
- Beneficiary involvement.
- Matching funds.

In order to improve the sustainability of projects financed by social funds, sector-specific criteria that apply to community roads and paths must also be developed. For example, dead-end roads are often more suitable for community ownership and management than through roads because the community itself benefits directly from the traffic that moves on the road. Other criteria for project selection should relate to network considerations, potential traffic and transport services, the length of the road or path, and an assessment of least-cost, minimum intervention. Individual projects must be linked with the overall strategy for the specific sector.

*Source:* Carvalho (1994).

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.

### ***Community Financing of Investment and Maintenance***

In Sub-Saharan Africa, 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. Villages raise cash in various ways: with a cash crop levy (such as on cocoa in Ghana), an income-generating enterprise or project (a communal field, a grinding mill, a village tractor or truck), or a

one-time household contribution for specific investment projects. Although less common, specific collections are most often made for investment purposes and are only rarely put toward recurrent expenditures. In Tanzania, however, a group of villages collected Tsh 100,000 (US\$200) to maintain a recently rehabilitated road that the local government road agency had failed to keep up. The money was collected from road users—shop owners, businesspeople, and households. If this type of fund raising is to be relied on as a steady source for maintenance, it should be formalized through the establishment of local road and path maintenance associations.

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. There are similar arrangements in Ghana, Malawi, Tanzania, Uganda, and elsewhere. If a household fails to participate, its members usually have to pay a fine. In some areas villagers residing outside the community for most of the year pay higher fines because they do not contribute to communal works.

A number of factors determine the extent of self-help in rural communities. Two key factors will be dealt with here. One is perceived need. Common sense dictates that communities will be interested in improving and maintaining their road or path only if they feel that the road or path is important (see box 6.6). A community that produces significant amounts of perishable crops is therefore often motivated to improve and maintain its road. The stake of villagers in a community road can increase significantly if they receive regular visits from a mobile health clinic or agricultural extension workers or if regular passenger transport service is provided. Because a road increases the value of adjacent land, farmers living close to a road may be more willing than those living some distance away to contribute in-kind or cash for construction and maintenance. If increases in land values will be captured mainly by the local elite or by outsiders, however, there will be little motivation for mass participation in the project.

*Box 6.6. Tanzania: Commonality of Need and Village Organization as the Keys to Success*

The people of the Mteke village in Tanzania have constructed a community road together with two neighboring villages. The road links the villages to a local government road. Access to the higher-level network was a commonly felt need among the villagers. The Mteke village government took the initiative to build the road, approaching its two neighboring villages. The Ward Development Council representing the three villages subsequently presented the project to the District Development Committee and the District Council, requesting assistance in surveying, design, and supervision. The villagers paid the per diem of the council staff during their visits to the villages. Much of the construction was done using simple hand tools belonging to the villagers. Cement, culverts, and angle iron bars for two bridges were contributed by a local church, and the District Council provided technical expertise.

In addition to labor, villagers contributed Tsh 500 (US\$1) each. This money was collected by the village secretary against receipt. No funding was received from the District Council or the government. With a per capita cash income of US\$5 per year, financing was clearly not the enabling factor in this endeavor. The key factors that distinguish these villages from others are the commonality of felt need and the communities’ highly developed organizational capacity.

*Source:* Msimbe (1994).

Further, communities are principally concerned with access. Experience suggests that communities frequently feel a stronger need for structures and footbridges than for roads. This was confirmed by the village access roads and bridges assistance unit project in Malawi. Villagers were more motivated by self-help work on construction of bridges than access roads, because the lack of a bridge over a wide and deep water crossing effectively eliminated all access—including pedestrian access. After

a bridge was constructed, some villages lost interest in finishing the work on the community road leading from the bridge to the village. Although it is in the villagers' interest to get a lift from a visiting vehicle, many do not feel the need urgently enough to work on the road.

A second factor affecting the level of self-help is commitment by political and village leaders. For example, during elections in Malawi, campaigning politicians equated self-help with indentured labor, promising that, once elected, self-help or *thangata* would be abolished and roads would be provided by the central government. Some communities thereupon withdrew commitments to improve and maintain access roads, believing that the government would provide most public goods and services, including RTI. Another factor influencing community interest in self-help is past experience with forced labor.

There are at least two risks of relying on voluntary labor contributions. The first relates to decision-making. Rural communities are not homogenous; they reflect existing social, ethnic, gender, and economic divisions. Decisions on infrastructure self-help projects, particularly those with external financing, are often made by village leaders, almost always men. There is a risk that weaker members of society and women will constitute a large percentage of the unpaid work force on access roads. It is well documented that rural women rarely use roads, and when consulted on the planning of self-help initiatives, they often prefer to work on paths and footbridges (Barwell 1996).

The second risk relates to timing. Projects often have tighter time schedules than communities are prepared to follow. The urgency of project (and road agency) staff, who are evaluated on the basis of physical achievements, can result in projects pushing communities and finding that the communities resist. When this happens, the road seems to belong to the project road than to the community. This experience was summed up well by a village access roads and bridges assistance unit project supervisor: "Projects and communities march to different beats, and we can't impose a project work schedule on a community." Increasingly, donor-financed projects that share costs with communities that are contributing voluntary labor are learning to draw up more realistic work schedules that take into account the agricultural calendar. Another important point is contract enforcement. Communities that do not meet contract obligations, even though contract terms are reasonable, indicate that the road or bridge is not a great enough priority. If the contract conditions have been carefully negotiated and are reasonable, such projects should be dropped.

### ***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. In Tanzania and Zambia creation of a road fund substantially increased funding for maintaining the local government network. Partial funding of maintenance for selected access roads and paths should also be feasible. There is a risk, however, that road fund board members will not consider access roads to be any higher a priority than do many central government agencies currently responsible for roads. 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. Representatives of rural institutions, such as peasant farmer unions and providers of rural transport services, may be included. Informal discussions with board members (road users) and road agency staff in Tanzania and Zambia indicate that they have a keen interest in exploring such financing arrangements in order to bring more roads under regular maintenance.

In Zambia a pilot program is being planned that involves cost-sharing arrangements for both investment and maintenance. Communities requesting an access road, assuming they meet set criteria,

will share the costs of investment with the social fund and the cost of maintenance with the road fund. (The community will pay 25 percent of capital costs and 75 percent of the maintenance costs in cash or in-kind.) The annual maintenance cost per kilometer is estimated at US\$300. Assuming that the average community access road is 7 kilometers, the community will be entitled to a grant of US\$525 per year, which may be sufficient to cover the cost of inputs that are not locally available.

Estimating that Zambia has 20,000 kilometers of access roads that qualify for cost-sharing grants, the total cost to the road fund of supporting road associations managing this network would be US\$1.5 million per year, which is about 11 percent of 1996 road fund revenues. If projected increases in revenues are accurate, this percentage would drop to about 4 percent by 2000. This figure is close to the 6 percent of the maintenance budget allocated to private roads in Sweden.

Another cost-sharing system for improvement and maintenance is being piloted in the province of Kwa-Zulu Natal in South Africa. Access roads will be improved through a partnership between the provincial department of transport and communities using labor-based work methods. The provincial department of transport finances materials and equipment and about 50 percent of labor cost. In theory, the community contribution would consist of the remaining 50 percent. Instead, community members work for a remuneration level that is half the stipulated minimum wage. Although the minimum wage is higher than the market wage, this system raises some social issues. For example, the laborers on the road are frequently women, youth, and elderly men who have difficulty finding work elsewhere. It could be argued that other members of society (transport operators, shop owners, and individuals who travel elsewhere to work) benefit relatively more from road improvement. Demand for work is so great that many communities rotate the labor force every two weeks to give more people an opportunity to work. The department of transport intends to cover about half of the maintenance costs of improved 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. In Canada and Finland the provincial branch of the national road agency is responsible for financial and technical audits. In Sub-Saharan Africa the local government road agency, the government auditor, or private consultants are well placed to perform these inspections.

## PLANNING COMMUNITY ROADS AND PATHS

Transport planning in rural Africa has been dominated by an emphasis on providing only roads. Yet non transport solutions may solve some access problems more effectively and at a lower cost (see Dawson and Barwell 1993). For example, a program to rehabilitate and maintain grinding mills or water sources may cost less and have a larger impact on reducing the transport burden than road rehabilitation. Often government standards for access roads are too high given community traffic and resources. Simple improvements to a dirt track might be sufficient—and result in reduced costs—considering the small number of visiting vehicles. Improving paths improvement effort in Tanzania had a positive outcome (box 6.7). The path is considered one of the most successful project components and has the highest benefit-cost ratio of all project interventions.<sup>39</sup> It also has great promise for long-term sustainability. Path

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<sup>39</sup> Footpath improvements were found to have the best ratio of total benefits (including the monetarized time savings) to costs among all project interventions in the district (feeder roads, paths, bicycles, donkeys, grinding mills, and water supply). The construction of footpaths was determined to be an efficient transport intervention in four cases: when there is no motorized access, when markets are within walking distance, when funds available for road construction are not sufficient, when and a risk-averse investment strategy is preferred (Sieber 1996).

improvement had low priority at the district council level but high priority at the village level.<sup>40</sup> The communities now maintain it with a combination of self-help work and district technical support.<sup>41</sup>

*Box 6.7 Tanzania: Low-Cost Path Improvement Yielded a High Benefit-Cost Ratio*

In the Makete district in Tanzania, improvement of an 11-kilometer footpath linking a mountainous area to a plain reduced travel time by 15 percent and improved safety by building steps and footbridges, reducing slippage, and improving drainage. After the improvement, bigger loads were registered on the way down and people could travel on the path throughout the year and at night. Also, more traders traveled up the path to the highlands to purchase agricultural produce. Instead of walking long distances to take the bus out of the mountainous area, people now hiked down to the plain to board transportation. Path usage increased by 30 percent because many villagers changed their travel routes. In 1995 the path accommodated about 60,000 trips per year. Isolation, one of the salient features of poverty, was significantly reduced.

*Source:* Sieber (1996).

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 (see annex G on various methodologies). 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.<sup>42</sup>

It can be argued that elaborate planning criteria for selecting interventions are not needed as long as a community has been able to choose among various investment options and has come forward with matching funds to access the investment funds.<sup>43</sup> In fact, the appraisal of investment options by well-informed farmers are probably more reliable than the global assessments by professional planners. Nevertheless, some simple criteria are useful for guiding the farmers in assessing options. These are also required by funding agencies (whether local governments or social funds) to appraise competing projects.

An innovative planning methodology that focuses on accessibility has been piloted in Malawi and the Philippines. This methodology can help rural households to define community requirements and local governments to develop plans (see box 6.8). Emerging experience indicates that although this planning methodology is relatively successful in determining local priorities, it is difficult to integrate into government planning systems, in part because of the considerable need for data and training (Edmonds 1997). Simple criteria have been proposed in South Africa for funding community roads (see box 6.9). These criteria have, however, overlooked the importance of bicycles, pedestrians, and other types of nonmotorized transport means. The proposal is to functionally classify and map the roads and

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<sup>40</sup> Attempts at track improvements were less successful in a Bank-financed project in Benin, where some communities objected to their road being of a lower standard than the local government road. In this case there was little communication with and involvement of the communities in the planning of the road.

<sup>41</sup> This path has been labeled a “district path.” It connects one region with another and qualifies for support from the district engineer’s office.

<sup>42</sup> Some training in how to work with community groups and respond to local needs is recommended for agency staff in charge of supporting community management of roads and paths and for foremen and contractors working at the village level (Cook, Beenhakker, and Hartwig 1985).

<sup>43</sup> The poor are often in the best position to define priorities precisely because their scarce resources demand it. A study that intended to determine an optimal sequencing of rural infrastructure investments for achieving economic growth concluded that, although there are ample complementarities and links among the various infrastructure sub-sectors, there is no evidence of any one sequence leading to higher growth (Galenson and Holste 1994).

assign a road reference number to each. Access roads and paths that do not meet the stated criteria are expected to be maintained by communities or interested parties using their own resources.

*Box 6.8. Integrated Rural Accessibility Planning*

The Integrated Rural Accessibility Planning methodology identifies and ranks alternative interventions for improving rural access. At the heart of this methodology is a 10-step prioritization process designed to guide the selection of interventions to improve rural access:

1. Articulate the project's purpose.
2. Compute indicators of access to different type of services for each community (access to markets, clinics, schools, water, firewood, grinding mills).
3. Create a matrix resulting from these indicators and determine those communities worst off in terms of access.
4. Apply the criteria of AAAA-S: logistical Availability, financial Affordability, technical Appropriateness, socio-cultural Aceptability, and operational Sustainability.
5. Rank projects based on the severity of access problems and the AAAA-S criteria.
6. Identify optimal interventions for those locations with the worst access problems.
7. Assess the availability of resources, including technical expertise and monetary and other resources, such as credit facilities, materials, land, and equipment.
8. Finalize the choice of intervention based on the resources available and the outcomes of previous steps.
9. Draw up final budget plans.
10. Devise the work program.

*Source:* Elias (1995), adapted from Connerley and Schroeder (1996).

Planning procedures and criteria, though providing useful information to guide decision-making, should not be considered a substitute for local participation in the decision-making process.<sup>44</sup> Local participation is a complex area and will be touched on very briefly. Weak members of society are likely to be affected by road works but are rarely consulted. They lack verbal skills and wealth, and local leaders may regard their views as having little value. While it is important that community leaders are involved in the planning, construction, and maintenance of access roads and paths, they can pose obstacles. Community leaders and local elite are often reluctant to expand participation for fear of altering the authority structure. Participation presents people with more choices and makes them more likely to hold community leaders accountable. Increased accountability may change power structures as well as the use and allocation of resources among social groups. Leaders, therefore, may be reluctant to open up to full participation of community members. Strategies for successful participation need include specific steps aimed at encouraging the involvement of non elite.

Participation in planning often demands substantial amounts of time, even if sporadically. The poor and women, whose time is heavily subscribed, may not be able to participate, even if the opportunity is offered. That risk is reinforced if participation is perceived as involving financial obligations. Participatory activities must be targeted precisely and appropriately in terms of quantity and

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<sup>44</sup> This call for participation is not equivalent to endless local meetings in which expressed needs and “wish lists” will quickly outstrip the ability and willingness to pay for the facilities. “Participation refers to situations in which participants can significantly influence outcomes through their participation and can be held responsible, in meaningful ways, for consequences of their decisions” (Connerley and Schroeder 1996).

scheduling to respect other obligations, particularly for women to plan for childcare, meal preparation, and their many other responsibilities.

*Box 6.9. South Africa: Proposed Criteria for a New Class of Road in Kwazulu-Natal*

In the province of Kwazulu-Natal community roads will constitute a new class of roads comprising by-roads and community access roads. Communities will be responsible for constructing and maintaining these roads and must meet the following criteria:

- The road, which the public shall have the right to use at all times, shall connect directly with another public road.
- The road shall not fall within the boundaries of an urbanized area administered by a local authority.
- Property owners and local residents shall agree to relinquish their rights to a 30-meter-wide road reserve without placing any claim on the Department of Transport for compensation.
- The road shall carry no fewer than 10 vehicles or 20 equivalent vehicle units per day or, if a road must be constructed, it shall have the potential to carry at least 20 equivalent vehicle units per day (see table below).

Vehicle Type	Equivalent Vehicle Units
Cars and light delivery vehicles	1
Minibuses, taxis, and trucks	5
Buses	20

The department of transportation will empower communities by providing technical guidance, training, and partial funding. It may provide grants toward work associated with construction and improvement of community roads, repair and maintenance of community roads, or construction of bridges, culverts, and causeways. The Department of Transport will issue a road reference number to each road that has received a grant and will record the mapped position of the road. The roads will be subject to financial and technical audits. A road need-assessment rating (see table below) will be used to rank the qualifying roads to establish priority of intervention.

Sector	Facility	Points
Health	Hospital	100
	Clinic	10
	Mobile clinic	15
Justice/Welfare	Magistrate's court	100
	Tribal court	20
Agriculture	Pension payout point; community hall	10
	Agricultural holding > 10 hectares	20
	Communal cane- or timber-loading zone	10
	Communal agricultural garden	10
	Depot or office providing a public service	10
Commercial / Industrial	Communal cattle-dipping tank	5
	Permanent shop or trading area	10
Education	Manufacturer or factory premises	10
	Training institution	20
	High school	10
Cultural	Primary school; preprimary school; day care	5
	Public historical site	10
Religious	Place of worship	5
Tourism	Accommodation of recreation facilities	10
Road network	Provides access to a settled community exceeding 150 persons, more than 10 kilometers from the nearest district or higher order road	50

*Source:* Henwood (1995).

## **ANNEXES**

## A. Types of Decentralization

The term *decentralization* is often used to encompass a variety of alternative institutional structures. Three types are usually described in the literature: *deconcentration*, *delegation*, and *devolution*. Two additional types, *top-down principal agency* and *bottom-up principal agency*, are also important because they identify real situations that are not captured by the other three labels. All five types are briefly described below

### **DECONCENTRATION: BRANCH OFFICE MODEL**

Deconcentration is the most common form of decentralization employed in the agriculture services, primary education, preventive health, and population sub-sectors. In such systems selected functions are assigned to sub-national units within sector ministries or other sector-specific national agencies. One way to think about deconcentrated institutional arrangements is in terms of a Branch Office system. In deconcentrated systems the government exists at local levels in the form of discrete central government sector ministry offices, without any mechanism at the local level for mandatory horizontal integration. Despite geographic dispersion of ministry offices and despite a large number of central government employees stationed in branch offices, the impact of such a structure is to concentrate power within the central government.

### **DELEGATION: INDEPENDENT SUBSIDIARY MODEL**

Delegation is the form decentralization takes when parastatals and other semi-autonomous government agencies are assigned responsibility for implementing or maintaining sector investments. Such arrangements occur primarily in the energy, communications, port, and transport sectors. Functions are sometimes delegated to a parastatal, which, in turn, deconcentrates responsibility for internal managerial and administrative systems to its own sub-national units. The act of delegating responsibility to an organization, however, does not ensure internal deconcentration within that organization.

### **DEVOLUTION: DISCRETIONARY AUTHORITY MODEL**

Decentralized organizational arrangements within sectors are rarely of a purely devolved type. Devolution of some functions is found primarily in the urban development sector and, with respect to operations and maintenance, in the rural and urban road sub-sectors. The essence of devolution is significant discretionary authority. In devolved systems responsibilities for a range of operations encompassing more than one sector are assigned to local governments. To the extent that local governments have discretionary authority, they can do essentially what they decide to do; they are bound only by broad national policy guidelines; their own financial, human, and material capacities; and the physical environment within which they must operate.

An essential characteristic of discretionary authority is that the oversight role of the central governments is limited to ensuring that local governments operate within very broad national policy guidelines—at least with respect to those functions for which local governments have the authority to exercise discretion. The exercise of effective discretion by local governments depends to a significant extent on their ability to generate the financial and staff resources to implement the decisions that they

themselves make. In these devolved systems project implementing agencies are responsible to provincial or local governments rather than to sector ministries.

### **TOP-DOWN PRINCIPAL AGENCY MODEL**

In the top-down principal agency model local governments exercise responsibility on behalf of the central government or, sometimes, parastatals (such as electricity corporations). When acting as principal agents under such circumstances, local governments do so under the direction and supervision of central government agencies. An important expectation concerning the relationship between local and central governments is that when local governments are acting as agents of central governments, the latter remain responsible primarily for financing the costs associated with whatever programs are involved. For example, states in Nigeria manage the national highways on behalf of the federal government. Thus in some cases, local governments are, in their entirety, no more than principal agents of central governments; in other cases they serve as principal agents in parallel with performing other roles as well.

### **BOTTOM-UP PRINCIPAL AGENCY MODEL**

The bottom-up form of principal agency reverses many of the characteristics of top-down principal agency noted above. With respect to bottom-up principal agency, various levels of government or government parastatals act as agents of lower levels of government or directly as agents of beneficiaries/users/clients. Thus a system of bottom-up principal agency is much different from the top-down version because of the source of discretionary authority to initiate contracts with government agencies and supervise their implementation. For example, a local government road agency might contract with the regional engineer's office to construct a bridge on its behalf, with the understanding that payment to the latter would be made by a budget transfer from the former. This model also encompasses a much broader range of arrangements between lower-level government agencies, local communities, or individual users/clients and higher-level government agencies.

The bottom-up form of principal agency is important conceptually, especially when considering a fresh perspective on alternatives to the failed way in which the provision of rural transport infrastructure is organized in many African countries. Although there are few actual examples of it, where some attempt has been made to provide such services as primary health care in forms similar to this model, results have been encouraging.

*Source:* Silverman (1992).

## **B. Terms of Reference for Local Government Planning Consultants**

### **ROAD MAINTENANCE WORKS FUNDED THROUGH ROAD FUND**

In Zambia the National Road Board (NRB) engaged local consulting firms to help local governments (councils) prepare annual maintenance programs and contracts and, subsequently, supervise the contractors. One firm per province was hired to assist all the councils within the same province. At first, there was considerable confusion with respect to the roles and responsibilities of the consultants, the councils, and the NRB. It was also unclear how work should be programmed to manage the gradual cash inflow to the road fund and accommodate the requirements of the individual road agencies, the consultants, the contractors and the road users. Based on this experience, the NRB renegotiated the contract terms of the consultants and specified the responsibilities of the various parties as outlined in these terms of reference.

#### *1. Duties of the Consultants*

1.1 Visit all councils and prepare a list of the roads to be maintained based on the funds allocated by the NRB. Prior to the visit, estimated rates for various road work activities will be prepared by the consultants and submitted to the councils for their use in preparing the preliminary list of roads. The list prepared should be limited to the priority roads based on the agreed prioritization guidelines issued by the NRB. The availability of funds governs the number of roads and extent and nature of works to be carried out.

1.2 Carry out a visual survey of the condition of the preliminary roads and prepare a list of the works needed to maintain the roads. Based on the visual condition survey, prepare a schedule of works and estimate the cost of the works on each road. After examining the costs, the allocated budget, and other considerations, in consultation with the councils, finalize the list of the proposed roads for the year.

1.3 After approval by the councils, prepare a contract document and submit the document to the NRB for approval.

1.4 Carry out tender invitation and analysis, and recommend a contractor to the council.

1.5 After approval by the council submit the recommendations to the NRB and seek approval and commitment of funds.

1.6 Prepare an estimate of cash flow requirements for the NRB covering the whole province based on the awarded or anticipated contracts in the province.

1.7 After award of the contract, supervise the contractor, certify payments, and submit certificates to the councils for their recommendation for payment. A copy of the certificate should be submitted to the NRB with proof that the council has received the certificate. If the council does not raise objections to the certificate in two weeks, the NRB will effect payment in 15 days and send a notice of payment to the council.

1.8 If councils do the work, prepare a work schedule, verify the capacity to do the work, and agree on the rate of payment to the council as a contractor. Use the NRB guidelines in order to determine the rates for works as a percentage of commercial contractor's rates in the region. The procedure in 1.6 should be followed after the contract is signed.

1.9 In case of a labor-based contract, follow the same procedure as in 1.7 with the potential contractors. The potential contractors should be identified by the councils and the first meeting arranged

between the consultants and the contractors. The procedure in 1.6 should be followed after the contract is signed.

1.10 Prepare monthly progress reports on the physical and financial progress of the works. The progress reports should be made for the councils, with copies sent to the NRB.

## 2. *Duties of the Councils*

2.1 Provide the preliminary list of prioritized roads to be examined by the consultants. When preparing the preliminary list, the council must consider budget limitations and other practice issues.

2.2 Approve the contract documents, tender analysis, and certificates in a timely manner according to the agreed schedule.

2.3 Identify the labor-based contractors and arrange for the first meeting between the consultants and the contractors.

## 3. *Duties of the NRB*

3.1 Allocate budgets for each district according to the agreed guidelines with the councils.

3.2 Approve the contracts and commit the funds to each contract.

3.3 Monitor the cash flow regularly and ensure the availability of funds.

3.4 Process the certificates and issue notice to proceed with payment to the councils according to the agreed schedule.

3.5 Examine the progress report and pass the relevant information to all stakeholders, including the politicians.

3.6 Prepare guidelines on prioritization of the roads procedures, the level of acceptable maintenance work, payment procedures, and workshops for council staff and politicians with the objective of familiarizing them with the scope of the works to be done under NRB funding.

## 4. *Lines of Communication*

4.1 The consultants will only deal with the director of engineering or the council secretary/town clerk at each council.

4.2 The NRB will deal with politicians and other stakeholders.

4.3 The consultants will report to the Technical Committee or the Executive Secretary of the NRB.

4.4 All matters regarding payment of approved certificates will be settled between the consultants and the NRB. The Board will not deal with contractors or enter into any contracts with them.

## 5. *Input by the Consultants*

The consultants' input will vary depending on the nature of the work. Apart from the direct inputs of travel, accommodation, printing communication, and so on, the consultants will make the following levels of effort according to the scope of works:

### 5.1 Works involving an established roads contractor

*Prior to the award of the contract:* The project manager and roads engineer should meet the council; survey the roads visually; make a schedule of works, contracts, tender analysis; and follow the approval procedures.

*After the award of the contract:* The resident engineer should make weekly site visits while the road supervisors should visit the site on a daily basis. The number of the resident engineers and the road supervisors depend on the number of contracts and locations of the contracts that are active simultaneously. The project manager will be in charge of the overall activities.

### 5.2 Works involving the council as contractor

*Prior to the award of the contract:* The project manager and roads engineer should meet the council, survey the roads visually, and make a schedule of works. At the same time, the capacity of the council in terms of personnel and machinery will have to be determined. The recommendation to use the council requires approval by the NRB.

*After the award of the contract:* The resident engineer should make the initial visit to the site and agree on the method of works, level of input from the council, and give advice on other practical issues. The frequency of the visits and the degree of involvement depend on the performance of the council, but a weekly site visit at the start of the works is essential. The road supervisors may have to work together with the council staff at the beginning of the project. The number of resident engineers and road supervisors depend on the number of contracts and locations of contracts that are active simultaneously. The project manager will be in charge of the overall activities.

### 5.3 Works involving the labor-based contractor

*Prior to the award of the contract:* The project manager and roads engineer should survey the roads visually and make a schedule of works. The capacity of the local residents in terms of level of organization and participation will have to be determined during the initial meeting with the potential contractors. This meeting will be arranged by the council. At the initial meeting the level of training required by the locals will be determined and assessment of needs will be carried out. Training workshops at district levels have to be conducted in order to familiarize the potential contractors with the method of works and the process of payment and evaluation.

Credit facilities may be organized for the contractors who have shown greater potential. Alternatively, tools may have to be purchased and advanced to them with a guarantee of pay-back.

Rates for various activities have to be determined and agreed with the contractors. Simple contracts have to be developed by the engineer. The exact level of effort by the engineer can be determined only after the situation in each district is investigated thoroughly.

*After the award of the contract:* The resident engineer should make the initial visit to the site and agree on the method of work and level of input from the contractors, establish the extent of the road to be rehabilitated by each contractor, and give advice on other practical issues. The frequency of the visits and the degree of involvement depend on the performance of the contractors, but a weekly site visit at the start of the works is essential. The road supervisor will have to work together with the contractors to monitor the quality and the rate of progress at the beginning of the project. The number of resident engineers and the road supervisors will depend on the number of contracts and locations of contracts that are active simultaneously. The project manager will be in charge of the overall activities.

## C. Commonly Used Criteria for Allocating Funds for Rural Roads among Districts

Criteria are required to guide the allocation of funds among districts for the improvement and maintenance of rural roads. Given the dearth of accurate data at the local level in many countries in Sub-Saharan Africa, these criteria must be simple and transparent and rely on information that can be collected easily. Some countries have a formula for allocating block grants to local governments which may serve as a point of departure. In Tanzania this index is composed of variables such as the level of commercial activity and stage of development. For the allocation of road fund revenues the index is complemented by information on population and road density. The Tanzanian index does not adjust for equity concerns but guarantees a minimum amount for all districts (see box 5.8 of the main text). An equivalent index does not exist in Zambia, where it is proposed to allocate funds for road improvements using a simple scoring system based on the following commonly applied variables:

*Road Density*—kilometers of road per square kilometer. In order to estimate accurately the length of local government and community roads, an inventory is likely to be required.

*Population Density*—number of inhabitants per square kilometer.

*Economic Activity*—measures of agricultural output can usually be obtained from the local agricultural officer. Production should preferably be measured in both monetary terms and weight. This information must be complemented with data on other economic activities, such as fishing and local industry.

Road selection and work planning and programming will require more precise information. The three variables suggested above will therefore need to be complemented by additional information including an assessment of past performance of the rural road agency. Selection of additional variables can be made from the following:

*Extent and condition of the network* (to ensure the maintenance of existing infrastructure):

- a. Kilometers of local government roads, community roads, tracks, and paths.
- b. Number of bridges and water crossings.
- c. Links to the rest of the road network.

*Socio-economic factors*:

- a. Population along specific roads and paths.
- b. Importance of road for links to markets, education, health, administrative services, and so on.
- c. Economic potential of the area, such as number and type of businesses, shops, and markets.

*Measures of use*:

- a. Vehicle kilometers (trucks, cars).
- b. Fuel sales.
- c. Marketable agricultural output and potential output.
- d. Area of cultivated land.

*Accessibility constraints to be overcome and costs:*

- a. Number of structures (culverts, bridges) at bottleneck points.
- b. Condition of roads or tracks (such as number of months during which they are passable).
- c. Engineering costs of intervention.

*Capacity of districts:*

- a. To raise revenue for cost sharing—what are sources and collection rates?
- b. To apply for, use, and account for funds.
- c. To undertake maintenance by contract (number of firms available to bid).
- d. To provide appropriately priced labor for labor-intensive maintenance.

## D. Sample Contract between a Project and a Community

### Contractual Agreement Form For Infrastructure Improvement<sup>45</sup>

BETWEEN (owners) \_\_\_\_\_ AND (advisers) \_\_\_\_\_

PROJECT AREA : \_\_\_\_\_ TA \_\_\_\_\_

PROJECT NO. & TITLE: \_\_\_\_\_

I. The Project Construction and Maintenance Committee (PCMC) as the body responsible for construction and Maintenance of this low-cost footpath / track / road from \_\_\_\_\_ to \_\_\_\_\_, the total length of which is estimated to be \_\_\_km and on which is foreseen the construction of low-cost bridge(s) over the river(s) / stream(s) \_\_\_\_\_: hereby:

- a) undertakes to Complete the construction of the above facility within the period of \_\_\_months from \_\_\_\_\_199\_\_ to \_\_199\_\_.
- b) agrees to mobilize and organize the beneficiary community, according to the schedule decided by the committee and PIRTP.
- c) agrees to provide all unskilled and skilled labor ( if available) necessary for completing the works described above.
- d) agrees to make available local materials necessary for the works, such as :

Items	Quantities	Location
1	_____	_____
2	_____	_____
3	_____	_____

- e) agrees to make use of “own” basic hand tools (such as hoes, bush knife, pangas, slashers), except where special tools are required and are provided for by the advising or funding partner.

II. The technical adviser (such as PIRTP) representing the Ministry of Local Government and Rural Development (Malawi Government) being a cooperating agent:

- a) agrees to provide technical assistance to villagers served by the above facility by giving technical advice in the form of plans, designs, quantification of works, specifications, and costing.
- b) agrees to provide construction materials and special construction tools that are locally not available, but are necessary for completion of the works such as:

<sup>45</sup> This contract document was used by the Pilot Integrated Rural Transport Project in Malawi.

Items	Quantities	Location
1	_____	_____
2	_____	_____
3	_____	_____

c) agrees to provide special training of some locally identified members on construction know-how and maintenance techniques.

The work will be carried out to the technical standards set by the Technical Adviser (PIRTP) and according to the schedule agreed on by both parties.

While the Adviser (PIRTP) undertakes to be responsible for the technical planning and direction of the works during construction, the subsequent up keep and maintenance of the infrastructure is the sole responsibility of the community through the Maintenance Sub-Committee of the PCMC.

Contributions made either in-kind or cash are specified below:

The contributions of the beneficiary community (owners) are costed at Mkw.\_\_\_\_.

The contributions of the Technical Adviser (MG facilitator) are cost estimated at Mkw.\_\_\_\_.

The contributions of the financier (funding partner) is estimated at Mkw.\_\_\_\_.

Any disagreement arising during the implementation of works shall be settled by discussion between the signing parties. If, on the other hand, agreement can thus not be reached, then the Office of District Commissioner at the District headquarters should arbitrate on the basis of this agreement.

Signed this \_\_\_ day of \_\_\_\_\_ 199\_\_, at \_\_\_\_\_.

(A) FOR PMP ( on behalf of beneficiary community)

1. Name \_\_\_\_\_ Signature \_\_\_\_\_ Position \_\_\_\_\_

2. Name \_\_\_\_\_ Signature \_\_\_\_\_ Position \_\_\_\_\_

3. Name \_\_\_\_\_ Signature \_\_\_\_\_ Position \_\_\_\_\_

4. Name \_\_\_\_\_ Signature \_\_\_\_\_ Position \_\_\_\_\_

(B) FOR TECHNICAL ADVISER (on behalf of government)

1. Name \_\_\_\_\_ Signature \_\_\_\_\_ Position \_\_\_\_\_

2. Name \_\_\_\_\_ Signature \_\_\_\_\_ Position \_\_\_\_\_

(C) FOR FUNDING AGENCY (if applicable)

1. Name \_\_\_\_\_ Signature \_\_\_\_\_ Position \_\_\_\_\_

2. Name \_\_\_\_\_ Signature \_\_\_\_\_ Position \_\_\_\_\_

(D) WITNESS (on behalf of District Council)

1. Name \_\_\_\_\_ Signature \_\_\_\_\_ Position \_\_\_\_\_

2. Name \_\_\_\_\_ Signature \_\_\_\_\_ Position \_\_\_\_\_

## **E. Training Villagers in Construction and Maintenance of Community Roads and Paths**

Two One-Day Workshops<sup>46</sup> on  
CONSTRUCTION of Village Access Roads/Bridges  
MAINTENANCE of Village Access Roads/Bridges

### CONSTRUCTION Theory

Time	Activity
08:30 - 08:45	Registration/Welcome of Participants
08:45 - 09:00	Opening by Project Engineer and Comment
09:00 - 09:15	Setting Out Center Line and Curves
09:15 - 09:25	Bush Clearing
09:25 - 09:30	Stump and Bolder Removal
09:30 - 09:40	Slotting
09:40 - 09:50	Leveling
09:50 - 10:00	Ditching
10:00 - 10:15	Break
10:15 - 10:25	Sloping of Ditches
10:25 - 10:35	Spreading and Compaction
10:35 - 12:00	Open Forum/ Group Discussion
12:00 - 13:10	Lunch

### CONSTRUCTION Practicals

Time	Activity
13:30 - 14:00	Practical Setting Out Center Line and Curves
14:00 - 14:05	Practical Bush Clearing
14:05 - 14:15	Practical Stump and Boulder Removal
14:15 - 14:20	Practical Slotting
14:20 - 14:30	Practical Leveling
14:30 - 14:45	Practical Ditching
14:45 - 15:00	Practical Slopping and Back Slopping
15:00 - 15:15	Break
15:15 - 15:30	Practical Spreading and Compaction
15:30 - 16:45	Open Forum/ Group Discussion
16:45 - 17:00	Closing

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<sup>46</sup> Village Access Roads and Bridges Assistance Project in Malawi.

## MAINTENANCE Theory

Time	Activity
08:30 - 08:45	Registration/Welcome of Participants
08:45 - 09:00	Opening by Project Engineer and Comment
09:00 - 09:20	Pothole Patching/Repairs
09:20 - 09:40	Corrugation and Runner Patching
09:40 - 10:00	Reshaping
10:00 - 10:20	Grass Cutting/Vegetation Control
10:20 - 10:30	Refreshments/Break
10:30 - 10:50	Drainage Maintenance
10:50 - 11:10	Cleaning Culverts
11:10 - 11:30	Annual Maintenance of Bridges
11:30 - 12:00	Open Forum/Group Discussion
12:00 - 13:30	Lunch/Break

## MAINTENANCE Practicals

Time	Activity
13:30 - 13:50	Pothole Patching/Repairs
13:50 - 14:10	Corrugation and Runnel Repair
14:10 - 14:30	Reshaping
14:30 - 15:10	Grass Cutting/Vegetation Control
15:10 - 15:30	Refreshments/Break
15:30 - 15:50	Drainage Maintenance
15:50 - 16:10	Cleaning Culverts
16:10 - 16:30	Annual Maintenance of Bridges
16:30 - 16:50	Closing Remarks

## F. Community Procurement—Checklist for Task Managers

Component	Action or Steps Required
Procurement Planning	<ul style="list-style-type: none"> <li>a. Separate into goods, works, and services;</li> <li>b. Estimate quantities/nature and sources of procurement;</li> <li>c. Examine Institutional aspects;</li> <li>d. Plan schedule for procurement;</li> <li>e. Select procurement method; and</li> <li>f. Design project arrangements for procurement.</li> </ul>
Community contribution (In consultation with Community)	<ul style="list-style-type: none"> <li>a. Evaluate ability of communities to contribute both physical and financial resources;</li> <li>b. Determine nature of community contribution; and</li> <li>c. Designate responsibility for coordination and management of such information.</li> </ul>
Relationship with Government or other Agencies	<ul style="list-style-type: none"> <li>a. Coordinate with government agencies when necessary for sustainability or maintenance; and</li> <li>b. Examine government's experience in conducting International Competitive Bidding.</li> </ul>
Implementation Plan	<ul style="list-style-type: none"> <li>a. Advise borrower of need to formulate its implementation plan (during pre-appraisal);</li> <li>b. Agree on procurement and disbursement schedule and implementation schedule to be included in implementation plan (during appraisal).</li> </ul>
Studies for Effective Designing	<ul style="list-style-type: none"> <li>a. Examine availability of information on socioeconomic data of participating communities;</li> <li>b. Examine availability of information on regulatory systems affecting community-related procurement and disbursement; and</li> <li>c. Identify areas where further studies may be needed.</li> </ul>
Mechanisms Increasing Accountability	<ul style="list-style-type: none"> <li>a. Assess which contracts would need prior review by the Bank;</li> <li>b. Examine the possibility of disbursing only for output in the case of infrastructure construction or rehabilitation;</li> <li>c. Examine the need for a procurement and disbursements manual;</li> <li>d. Examine whether the project should call for independent procurement audits or assessments;</li> <li>e. Develop monitoring indicators suitable for community-related procurement; and</li> <li>f. Examine the need to establish a unit-cost roster to assess the economy of community-related procurement.</li> </ul>
Quality of Goods, Works, or Services	<ul style="list-style-type: none"> <li>a. Examine need for technical assistance;</li> <li>b. Examine need for training and capacity building in matters related to procurement; and</li> <li>c. Identify agencies or persons responsible for arranging and providing training.</li> </ul>
Information	<ul style="list-style-type: none"> <li>a. Examine the adequacy of existing institutional mechanisms for disseminating information;</li> <li>b. Delegate responsibilities for promotional and other related activities;</li> <li>c. Determine need to use different modes of advertisement and modes of information dissemination; and</li> <li>d. Discuss timing for release of such information.</li> </ul>
Contracting Arrangements	<ul style="list-style-type: none"> <li>a. Examine the types of contracts that communities will need to enter into and the scope for drafting standard documents;</li> <li>b. Discuss the specific terms and conditions with communities; and</li> <li>c. If communities are to be involved in national competitive bidding, determine if there is scope to draft simplified “model” tender documents and contracts.</li> </ul>
Dispute Resolution	<ul style="list-style-type: none"> <li>a. Examine the existence of indigenous dispute resolution process; and</li> <li>b. Establish simple process for dispute resolution.</li> </ul>
Training and Capacity Building	<ul style="list-style-type: none"> <li>a. Evaluate the need for training and capacity building;</li> <li>b. Inquire into the availability of trainers and facilities within the country;</li> <li>c. Inquire into effective methods of capacity building given the socio-cultural characteristics of targeted communities; and</li> <li>d. Examine the effectiveness of institutional mechanisms to identify and respond to training needs of communities.</li> </ul>

Disbursement (Opening Special Account)	<ul style="list-style-type: none"> <li>a. Examine the suitability and prevalence of banking facilities for disbursement to such communities;</li> <li>b. Examine the need for more than one Special Account;</li> <li>c. Discuss the operation of such a Special Account for community-related procurement if project design provides only for a single Special Account;</li> <li>d. Examine the steps for flow of funds from Special Account to communities;</li> <li>e. Discuss the maintenance of records including Statement of Expenses for community-related procurement;</li> <li>f. Examine the disbursement schedule and the disbursement percentages to ensure that they are realistic;</li> <li>g. Evaluate the availability of local counterpart funding in a timely and adequate fashion; and</li> <li>h. Examine the possibility of eliminating Performance Bonds or Guarantees for community-related procurement and introducing alternate forms of guarantees.</li> </ul>
Modified Special Account Procedure	<ul style="list-style-type: none"> <li>a. Examine the need for funds at decentralized levels;</li> <li>b. Examine the capacity of banking facilities and the access of communities to such facilities;</li> <li>c. Examine and assess the adequacy of accounting and auditing systems and the need to provide the borrower with technical assistance to develop them;</li> <li>d. Develop necessary documents for financial reporting; and</li> <li>e. Establish a cycle for preparing an annual work plan.</li> </ul>
Accounting and Auditing	<ul style="list-style-type: none"> <li>a. Review responsibility of the existing accounting and financial management system and build in enhancements where necessary, not only for the project but also for NGOs and other participating or implementing agencies;</li> <li>b. Review the need for technical assistance;</li> <li>c. Examine coordination between the accounting system and system for managing information;</li> <li>d. Review umbrella agreements, by-laws of community groups, and other legal documents to ensure accountability of community leaders;</li> <li>e. Incorporate provision for conducting annual external audits by independent auditors acceptable to the Bank; and</li> <li>f. Assess regular or continuous auditing capacity of the borrower, and participating NGOs.</li> </ul>
Negotiation	<ul style="list-style-type: none"> <li>a. Ensure that the institutional arrangements and mechanism for community participation are incorporated into the credit agreement and other related documents; and</li> <li>b. Finalize Borrower's Implementation Plan.</li> </ul>
Implementation	<ul style="list-style-type: none"> <li>a. Incorporate relevant training into project launch workshop; and</li> <li>b. Ensure that training sessions planned relating to community-related procurement and community-related disbursement and implemented on schedule.</li> </ul>
Monitoring	<ul style="list-style-type: none"> <li>a. Ensure that the monitoring system is functioning as planned and that indicators are identified and in place.</li> </ul>
Evaluation	<ul style="list-style-type: none"> <li>a. Examine the achievement of targets and evaluate project results against set indicators.</li> </ul>

*Source:* World Bank (1994a).

## G. Tools for Participation

This annex summarizes six tools used by Bank Task Managers to engender participation in a local government context.<sup>47</sup> These tools may be equally useful for desk officers of other donor agencies as well as local governments themselves aiming to improve the process of participation.

The five principal objectives of participation in a local government context are allocation efficiency, service delivery and effectiveness, accountability, equity, and sustainability. Participation has to be addressed from a broad perspective, and different tools are appropriate at different times during the activity cycles of the Bank, the borrower, and the primary stakeholder. No one single technique will be sufficient for facilitating forms of participation appropriate to all objectives at all times. Table G.1 provides a summery classification of the tools that are described below according to their utility with respect to each of the five objectives.

The six tools briefly presented here are: action-planning, rapid appraisal, beneficiary assessment, social analysis, contingent valuation method, and participatory assessment, monitoring, and evaluation.

### ACTION-PLANNING

Action-planning is directed toward improving the institutional capacity of the borrower and other involved entities, both public and private, to efficiently and effectively plan and manage the implementation of a development strategy (Silverman, Kellering, and Schmidt 1986). An action-planning program consists of a sequence of structured meetings and workshops in which individuals and organizations can contribute to, and develop ownership of, development strategies, programs, or projects (Jones 1990). The dialogue and learning that take place make it more likely that implementation of the activity in question is widely understood and supported.

For Task Managers, action-planning workshops are highly useful for all phases of Bank work, and the earlier they are introduced in the process the better. While Task Managers may not be directly involved in long-term operations and maintenance, they can support the use of action-planning workshops early in the project cycle. In this way the various stakeholders, but particularly local government staff and citizens, can later modify and adapt the workshop to other needs, while beginning to institutionalize the process. Prior to implementation, action-planning can help shift ownership from designers to implementors and establish a management system for effective implementation, which includes local governments and local citizens.

Citizen participation is often problematic. The principal problem is determining how representative a particular group of citizens actually is. How can one ensure that the representatives accurately reflect the interests of: the various socioeconomic groups, women, younger generations, and minorities (Silverman, Kellering, and Schmidt 1986)? One way may be to organize smaller, more representative meetings and workshops, the findings of which can be fed into the larger process. In any event, action-planning workshops are likely to be most effective among representatives of formally organized groups, especially NGOs and government agencies.

Action-planning workshops can also be used later to specify tasks and sequence tasks, as well as design project implementation management arrangements. Action-planning is particularly effective as an iterative annual exercise among staff responsible for ongoing implementation once a project is effective. Thus action-planning workshops can contribute directly to achieving three of the five objectives of

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<sup>47</sup> Source: Silverman (1995).

participation, in the context of local government: improving allocation efficiencies, improving the effectiveness of service delivery, and, if continued into the post-project operational phase, ensuring sustainability of benefits. Such workshops, however, are less like to improve accountability of government staff to constituents or directly improve equity.

### **RAPID APPRAISAL**

Rapid appraisal is most often used to ascertain problems and priorities of primary stakeholders, especially those who are not organized in easily identifiable, formal groups. It includes a variety of tools ranging from interview and question-design techniques for individual, household, and key informant interviews to the use of secondary data sources. A form of applied research, the objective is to provide timely, relevant information to decision-makers on important issues (Kumar 1993). Rapid appraisal was developed initially because of the failure of decision-makers to draw on other, more formal methods of gathering information

Properly carried out, rapid appraisal methods offer several advantages over more conventional methods. First, they are interdisciplinary and can include decision-makers and researchers because the time frame is shorter and more flexible. Second, interview techniques are more open-ended than more formal techniques. Third, they include a number of interactive methods for gathering information through close discussion with local clients. Finally, rapid appraisal methods allow for re-evaluation of the questions being asked, so that they can be adjusted in light of new information (Kumar 1993).

This technique is most useful during economic sector work and prior to the finalization of project identification. It is particularly useful for fostering participation, identifying problems and priorities, and obtaining reasonably accurate information about specific problems cheaply and quickly. Periodic rapid appraisals can also be useful as part of management information systems with results being fed into annual action-planning workshops. Thus, rapid appraisal can contribute most to improving allocation efficiencies, improving accountability, and, if structured properly, improving equity. Rapid appraisals are less likely to have significant impact on improving service delivery effectiveness or enhancing sustainability.

### **BENEFICIARY ASSESSMENT**

Beneficiary assessment can help ensure that a project is demand-driven. It assesses the value of an activity as it is perceived by its principal users. It attempts to derive understanding from shared experience as well as observation, and gives primacy to the centrality of the other person's point of view (Salmen 1992). A largely qualitative methodology that relies heavily on direct observation, conversational interviews, and participant observation, it seeks to make decision-makers aware of the points of view of the key actors in a development program—local citizens, service providers, and managers. While the focus of beneficiary assessment is clearly on the beneficiaries of a particular policy or activity, the information and findings are for the use of those making the decisions.

While beneficiary assessment has been found to be relevant for project selection, it is of particular relevance in the downstream phases of monitoring and evaluation. It is flexible and can be easily adapted to changing circumstances and contexts. In addition, an ongoing process of beneficiary assessment can build commitment among stakeholders if the information generated is readily available and put to practical use by those who provided it, as well as by those who requested it. Thus beneficiary

assessments are most likely to enhance allocation efficiencies, accountability, and equity. They are less likely to contribute to improving service delivery effectiveness or sustainability of those services.

### **SOCIAL ANALYSIS**

Social analysis describes and analyzes the real or potential effects of planned development activities on specific groups of people. Its primary contribution is to challenge and clarify explicit and implicit assumptions—made by those responsible for planning and implementing development policies—about problems to be solved and the institutional linkages between proposed policy interventions and their impact on income, asset distribution, employment, the role of women, the distribution of power, health, nutrition, the environment, and other areas of inquiry (Hoben 1982).

In contrast to the other tools, social analysis calls for more in-depth study and analysis. It is most likely to be useful for economic sector work and pre-finalization of project identification. By challenging and clarifying assumptions about problems and institutional linkages, its most effective contribution is to improving subsequent efficiency and effectiveness of project implementation. Social analysis can also play a useful role in evaluation, particularly a mid-term evaluation or one conducted with a view to designing a second phase. It can also provide information on many aspects of participation and local government. Thus social analysis can contribute most to improving allocation efficiencies and improving service delivery effectiveness. Social analyses are less likely to significantly enhance accountability, equity, or sustainability.

### **CONTINGENT VALUATION METHOD**

The contingent valuation method is most useful when trying to determine whether or not the services that are expected to flow from an infrastructure investment are likely to be financially sustainable. Its primary objective is to determine consumer preferences among alternate technologies in terms of alternative fee requirements prior to decisions with respect to infrastructure investment decisions. Thus the contingent valuation method is best employed at project identification and preparation stages, prior to finalization of financial and technical specifications, to address allocation efficiency and sustainability issues.

Structured, close-ended, interviews among potential consumers are the essence of contingent valuation method. A sample of potential users is identified and then desegregated into smaller groups. The members of each of the smaller samples are interviewed individually to determine the maximum fees they are willing to pay for alternative technologies. But in order to avoid strategic bias in the answers, each sample group is questioned only with respect to one fee level related to only one technology choice. Responses to the questionnaire from all groups are aggregated to arrive at a picture of the optimal combination of fee and technology. Although there has been some skepticism about the validity of responses prior to the need for demonstrating actual payment performance by users, limited experience has shown a reasonably close correlation between the results of such surveys and performance. Thus contingent valuation method can contribute most to improving allocation efficiencies and enhancing sustainability. It is less likely to have a significant impact on improving service delivery effectiveness and accountability or enhancing sustainability.

## **PARTICIPATORY ASSESSMENT, MONITORING, AND EVALUATION**

The primary focus of participatory assessment, monitoring, and evaluation is on the information needs of communities and neighborhoods that undertake development activities, while the secondary focus is on the information needs of those designing and implementing the projects. As a result, this approach has most often been used at the community level in activities involving NGOs and other forms of local organization where field workers have developed a series of methods and accompanying tools (Davis-Case 1989). Many of these tools can be used at higher levels than the community.

In participatory assessment one of the key tools is community problem analysis, which builds on existing laws, structures, and ways of solving problems to help local citizens find solutions to new problems. Participatory assessment uses these same structures to facilitate negotiations among the community, user groups, and outsiders, such as local governments, central governments, or donors. It has proved useful to establish a framework for analysis using certain simple categories, such as problem identification, physical potential, community constraints, and community organization. Under the latter, for example, it is important to analyze the potential of existing or possible new organizations. One way to approach this is by answering the question: “Does the group or community or municipality have—or can it build—an organization that can implement and sustain the proposed activity?” At this stage, listing all the relevant formal and informal organizations and examining each organization’s resources, what it actually does, and its potential to assume additional responsibilities are important. If a new committee or organization is proposed, it can perhaps be structured to replicate an existing, successful organization. Thus it is feasible that participatory assessment, monitoring, and evaluation can contribute to all five objectives although at different times during the project cycle. With regards to equity, this hinges on the community being represented by an adequate sample of community member.

## **CONCLUSION**

Task managers need to address participation issues from a broad perspective, choosing those tools that are most appropriate at specific times in the activity cycles of the Bank, borrowers, and primary stakeholders. No single technique is likely to be sufficient for facilitating forms of participation appropriate to all objectives at all times. Task managers therefore need to be judicious in the selection of approaches, fully taking into account the particular circumstances of the tasks for which they are responsible.

**Table G.1. Objectives, Tools, and the Bank's Work Cycle**

Phase	Objectives				
	Allocation Efficiency	Service Delivery Effectiveness	Accountability	Equity	Sustainability
Economic & Sector Work (ESW)	<ul style="list-style-type: none"> <li>• Action-Planning Workshops</li> <li>• Rapid Appraisal</li> <li>• Beneficiary Assessment</li> <li>• Social Analyses</li> </ul>			<ul style="list-style-type: none"> <li>• Beneficiary Assessment</li> <li>• Social Analyses</li> </ul>	
Project Identification	<ul style="list-style-type: none"> <li>• Action-Planning Workshops</li> <li>• Rapid Appraisal</li> <li>• Beneficiary Assessment</li> <li>• Social Analyses</li> <li>• Contingent Valuation Method Participatory Assessment</li> </ul>			<ul style="list-style-type: none"> <li>• Beneficiary Assessment</li> <li>• Social Analyses</li> </ul>	<ul style="list-style-type: none"> <li>• Contingent Valuation Method</li> </ul>
Project Preparation/ Appraisal	<ul style="list-style-type: none"> <li>• Contingent Valuation Method</li> </ul>	<ul style="list-style-type: none"> <li>• Action-Planning Workshop Participatory Assessment</li> </ul>			<ul style="list-style-type: none"> <li>• Contingent Valuation Method</li> </ul>
Project Implementation		<ul style="list-style-type: none"> <li>• Action-Planning Workshop Participatory Assessment</li> </ul>	<ul style="list-style-type: none"> <li>• Rapid Appraisal</li> <li>• Beneficiary Assessment Participatory Assessment</li> </ul>	<ul style="list-style-type: none"> <li>• Rapid Appraisal</li> </ul>	
Project Evaluation		<ul style="list-style-type: none"> <li>• Action-Planning Workshop Participatory Assessment</li> </ul>	<ul style="list-style-type: none"> <li>• Rapid Appraisal</li> <li>• Beneficiary Assessment Participatory Assessment</li> </ul>	<ul style="list-style-type: none"> <li>• Beneficiary Assessment</li> <li>• Social Analyses</li> </ul>	
Operations			<ul style="list-style-type: none"> <li>• Rapid Appraisal</li> <li>• Beneficiary Assessment Participatory Assessment</li> </ul>	<ul style="list-style-type: none"> <li>• Beneficiary Assessment</li> <li>• Social Analyses</li> </ul>	<ul style="list-style-type: none"> <li>• Action-Planning Workshops Participatory Assessment</li> </ul>

Source: Silverman (1995).

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