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The Institutional and Financial Framework of Rural Transport Infrastructure

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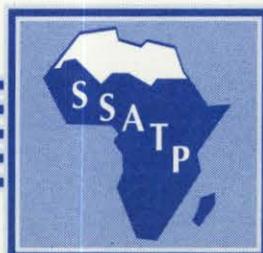
Approach Paper

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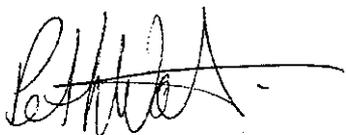
FOREWORD

A fundamental requirement for sustainable improvements in rural infrastructure is a clear understanding of who will own assets and finance maintenance, and from where the capacity will be mobilized to effectively assume management responsibilities. In the past, attention has been primarily focused on the role of governments in the management and financing of rural roads. 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 assume effective responsibility for anything but a part of this network. Bringing more of this network under regular maintenance requires innovative ways of combining the financial and technical resources of the public and private sectors.

This paper asserts that a sustainable institutional and financial framework for rural road maintenance has to be built around at least two distinct categories of owners—*local governments* on one hand and *communities* (including non-government entities such as farmers' groups and other private interests) on the other. Each owner category requires a set of coherent institutional and financial arrangements relying on collaboration between government, communities and the private sector.

Many industrialized countries have established legal and financial arrangements which accommodate private ownership of roads of all varieties—toll roads and access roads. Private ownership of roads is an integral part of the road management system in these countries. It is highly cost-effective and efficient, especially at the lowest levels of the network. The combination of two powerful trends in sub-Saharan Africa—decentralization and the increased role of the private sector—signal the time is right to encourage the largest single private sector group—the farmers—to assume ownership responsibilities for community roads and paths.

Through the Rural Travel and Transport Program (RTTP), the World Bank is working with bi-lateral and multi-lateral donors together with African governments and road users to improve rural accessibility. The RTTP is a component of the Sub-Saharan Africa Transport Policy Program (SSATP), a collaborative framework set up to improve transport policies and to strengthen transport management. This paper is one of a series of approach papers prepared by the RTTP. Other papers in the series address rural transport planning systems, labor-based based work methods, and intermediate means of transport. A forthcoming paper will address rural transport services. The RTTP is now entering its implementation phase and will assist countries to develop broad-based rural transport strategies and rural transport programs. The purpose of this paper is to serve as a conceptual basis for these efforts. While it is clear that no blueprint solutions exist and that institutional arrangements must reflect country context, the paper presents a number of realistic options on how to establish institutions that enhance the viability of local government roads and community roads and paths.



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EXECUTIVE OVERVIEW

UNDERSTANDING THE TERRAIN: THE RURAL TRANSPORT CONTEXT

In sub-Saharan Africa overland travel is, like life itself, a rough passage. In the rural areas, where two of three people live, isolation means limited access to markets and social services. African villagers walk, they carry their goods and possessions and each other. The most common means of transport in Africa are the legs, heads and backs of African women. Over rugged paths and tracks, produce is carried to pick-up points and hauled for city and port. Despite inefficiency and poverty, it is over these routes that rural people transport a third of the region's gross domestic product and 40 percent of export revenues. Yet, these crude roads and paths may seem unimportant to governments.

Poor roads and transport constrict mobility and progress. Rural sub-Saharan Africa is served by possibly two million kilometers of local and community roads. More than a third of 'local government' roads need rehabilitation and replacement at a cost estimated at US\$48 billion. The condition of 'community' roads and paths is much worse still. Indeed, the neglect is pandemic.

PROBLEMS: THE SYMPTOMS AND THE CAUSE

The poor road network reflects the political-institutional shortfalls of commitment, money, and skills: many agencies are involved in providing rural roads but few in maintenance; legal responsibilities are unclear or passive; planning has been reduced to the selection of individual roads for investment projects with little attention to local priorities; priorities and means are controlled by the center; at the local levels, available funds are used for emergency repairs leaving little for upkeep; and incentives are biased against low-cost interventions and improvements in accessibility. These problems are accentuated by acute capacity constraints such as shortages of competent professionals in both the public and private sectors.

A common thread running through these problems is weak local institutions. Provision of local government roads and community roads and paths must be viewed in the broader context of rural development and service delivery. African states are highly centralized; local governments are often mere agents of the central government. Donors, unwilling to entrust implementation to dysfunctional local governments, have often perpetuated the weakening of local institutions by assigning projects to central government ministries. Strengthening local institutions is the centerpiece of rural development. Local empowerment requires the build-up of capacity in both the public and private sectors.

FINDING A DIRECTION: THE INSTITUTIONAL FRAMEWORK FOR REFORM

This paper presents a framework for reforming management and financing of local government roads and community roads and paths. At the root of the reform process is a redefined partnership between the public and the private sector. Local governments will manage the core rural roads. Communities and farmers' associations themselves will determine the roads and paths they will assume ownership of. The private sector will be responsible for physical

works and sell management services to the local road agencies. Government must create an environment which encourages communities and other private/non-government entities to become owners of community roads and paths. This partnership will increase efficiency and bring more roads under regular maintenance. Costs are shared by governments, farmers, communities, and road users.

The first step of the reform process is to develop a national rural transport policy and strategy. The policy must be realistic and consistent with the government's overall direction for local government and rural development. The rural transport strategy provides the conceptual framework for the reform effort and specifies the actions required to ensure mutual support among governments, communities, private sector stakeholders, and donors. An effective strategy must be dynamic and clearly answer three key questions:

- ⇒ *Who are or should be the owners of local government roads and community roads and paths?* A fundamental step in clarifying responsibilities involves establishing legal ownership. Through designation the owner responsible for each individual road is named. Legal owners may be a public or a private body. Community or private ownership of roads may require an amendment to the existing roads act or a specific act which accommodates private ownership of roads.
- ⇒ *How can capacity be cost-effectively mobilized at local levels for managing and planning rural transport infrastructure?* Building full-fledged capacity for all management functions in each local government and community is unrealistic and inefficient. The preparation of plans, work programs, designs, bill of quantities, and contracts as well as supervision can be cost-effectively provided by the private sector.
- ⇒ *Who will provide an adequate and steady source of funding, especially for maintenance?* Sources for maintenance include local revenues (modest), and transfers from central government (the major source) and road funds based on user charges (growing in popularity). Community contributions in cash and kind are suitable primarily for community roads and paths. Cost-sharing arrangements should leverage scarce resources at all levels and increase the proportion of the network receiving regular maintenance.

The policy-makers must guarantee high-level commitment to reform. Broad-based stakeholder involvement in the strategy formulation process at both user and provider level is equally indispensable. Stakeholder participation in strategy development is at the core of reform.

LOCAL GOVERNMENT ROADS: INSTITUTIONAL FRAMEWORK

The agency in charge of local government roads must know which roads it is responsible for. This requires legal records, maps and up-to-date inventories. Given the dearth of information in many African countries, the first step to determine responsibilities often requires an inventory and functional classification of the RTI network. The designation of individual roads will be revisited during the annual inspection process because changes in function and usage may justify a change of owner.

The paper identifies four organizational options for mobilizing capacity for the management of local government roads: (a) *central government rural roads agency*; (b) *contract management agency*; (c) *joint service committee*; and (d) *private consultants*. The first option is

usually a main roads ministry with responsibility for rural roads assigned to a specific department with regional and local offices. The remaining three options are decentralized models which vest responsibility for rural roads with local governments assisted by a coordinating unit at the central level. The second option involves using a contract management agency which manages contract procurement and administrative process and finds consultants and contractors, tasks often beyond the competence of local authorities. The third option is the establishment of a joint service committee, a consortium of local governments united mainly to gain economies of scale and appropriate scope of action. Finally, local governments can simply opt to hire local consultants directly to assist in the planning and management of their network. None of the options are mutually exclusive. For example, joint services committees may opt to use private consultants and hire them through a contract management agency.

The choice of a model and option to manage local government roads is, naturally, subject to many factors. Each option is valued by its ability: *(a) to respond to local priorities*. In short, the higher the degree of decentralization in management of the local government network, the higher the sensitivity to local preferences; *(b) to introduce elements of market discipline*. All four options promise discipline and efficiency. However, the fourth option (hiring local consultants) may be the most certain to deliver; *(c) to provide sufficient scale advantages*. Creation of scale to procure services effectively can be achieved in all the options. However, the small networks could pose a problem for individual local governments in the fourth option; and *(d) to retain administrative simplicity*. The establishment of joint services committees may be the potentially most complex option.

In countries with limited technical capacity at the local level, local government roads may be best managed by a central government rural roads department in the short run. In countries which are decentralizing, ownership of local government roads should be devolved to local governments and the private sector gradually engaged in management. In the case of an autonomous road authority responsible for all roads, the drawbacks of the centralized model on local participation could be mitigated by having a subcommittee of the road authority board deal exclusively with rural roads and to include local government representatives and rural stakeholders on the committee.

All road authorities need money. Adequate and steady funding for maintenance is more likely to be forthcoming from a dedicated road fund than from block grants to local government. Several practices for distribution of road funds are discussed--between main and local roads, between urban and rural roads, between rural jurisdictions, and between individual roads. Although funds ought to be equitably distributed on the basis of network condition and need, this is uncommon in SSA. Given the lack of reliable network information, road fund revenues are often allocated among local government based on composite formulae of road and population density and economic activities.

COMMUNITY ROADS AND PATHS: INSTITUTIONAL FRAMEWORK

In all countries there is a boundary beyond which government responsibility for the road system ends, and the network of community roads and paths begins. The paper argues that it is possible to build an institutional and financial framework to manage this network through community empowerment and ownership and the creation of appropriate incentives: *(a)* a legal framework, *(b)* cost-sharing arrangements, and *(c)* technical and managerial advice.

The concept of private ownership of roads is well-established. In both Sweden and Finland the majority of roads are private, under the direct management of users. Both countries encourage communities to form road associations and register ownership of their roads under the Private Roads Act. South Africa is supporting the maintenance of private farm roads, a set-up it is now trying to recast to include access roads to local communities. Cost-sharing arrangements for maintenance of community roads and paths verify demand, expand the revenue base, and constitute a strong incentive for communities to organize themselves into road associations. There should be a written contract between the roads 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. Finally, communities require technical and managerial advice and some training to prepare themselves for road ownership. Training has to include work planning, organization, bookkeeping and procurement.

The benefits of private roads can be swift and tangible. Private ownership has proven to significantly increase the number of kilometers which receive regular maintenance and the cost of maintenance is less than half of that of public roads of equal engineering standards and traffic level. Implementation of private roads is not spontaneous. Jurisdictions have to be drawn, legal title written, road associations established, governing bodies elected, start-up funds and technical assistance acquired, plans drafted, and in-kind and labor contributions forthcoming. Obviously, communities will vary in their enthusiasm for self-help. Community ownership of roads must therefore be voluntary.

DRAWING CONCLUSION AND LINKING THE NETWORK

The paper concludes that the management of the rural transport infrastructure should be local in character, form and deed, whatever government or private overlay is chosen. A practical menu of options is presented. Given country context, local government, communities and other stakeholders must devise what will work for them. Local government and communities are relatively poor but the enabling framework is cheap and the gains can be significant. Central governments, with the assistance of donors, can concentrate primarily on catalytic policy interventions. They can rest confident that local governments and communities will seize the opportunity and turn trickles into torrents.

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I. INTRODUCTION

Inadequate rural transport infrastructure and lack of mobility pose important constraints to rural development in Sub-Saharan Africa (SSA). The rural transport infrastructure network serves 70 percent of the population in their productive activities and daily chores. It provides them with essential access to local markets and a bare minimum of social services. Poverty assessments from many countries in SSA, point to the pivotal role of access as an enabling condition for development in all sectors.¹ Improving rural mobility and ease of transport should be part of any poverty reduction program.

SSA has an estimated 940,000 kilometers of local government 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 designated² roads in the region.³ Local government roads and the most important access roads and paths may constitute a network of more than 2 million kilometers. Along this network is generated a third of the region's gross domestic product that comes from agriculture and 40 percent of its export revenues, making rural transport infrastructure economically and socially significant. Governments and donors, therefore, have an obligation to extend their attention beyond the designated network to better address the access needs of rural households. Such an effort will include formulation of an institutional framework for those roads and paths that will be managed by local communities. This proposed framework will rely on a private-public partnership with the largest private sector group in most SSA countries—the farmers.

This paper uses the concept of *rural transport infrastructure* (RTI).⁴ RTI includes what is 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. The paper separates RTI into two administrative categories for the purposes of explaining the management and design of an institutional framework. These are: (a) local government roads, which are the assigned responsibility of some level of government and (b) community roads and paths, which have no legal owners and are usually left in the care of communities and others. RTI is thus a broader concept than the conventionally used term "rural roads," because it includes both the lowest level of the network for which government has direct responsibility and the currently undesignated access roads, tracks, paths, and footbridges.

The paper builds on and extends earlier work including a review of the experience of 127 donor-financed projects with rural road components in SSA,⁵ a review of rural road maintenance in eighty-five Bank operations worldwide,⁶ and a document on best practice in rural road maintenance and improvements.⁷ These reports showed that rural road projects were rarely

¹ World Bank (1996).

² A designated road has a legal owner. This concept is discussed in more detail in chapter 5, Box 5.1.

³ Heggie (1995).

⁴ 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 mainly focused on the technical organization of works and detailed engineering considerations. Institutional issues were principally treated from the point of view of the institutions needed to better implement projects.

⁵ Riverson, Gaviria, and Thriscutt (1991).

⁶ World Bank (1992b).

⁷ Hoban, Riverson, and Weckerle (1994).

sustainable and recommended 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 reports did not explicitly address the unclassified network of access roads, trails, paths, and footbridges; nor did they clearly distinguish between those roads that are the responsibility of government and those that are the responsibility of communities.⁸ Community participation in the road sector was treated more from the point of view of selection of routes for improvement than towards ownership and management. A more recent paper looks in greater detail at the specific organizational, managerial, and financial issues affecting sustainable road operations.⁹ It confirms that the principal causes of poor road maintenance in Africa are institutional and sets forth a reform agenda focusing on four main areas: (a) ownership, (b) financing, (c) responsibility, and (d) management. Although the paper addresses the entire road network, including roads managed by communities and others, it does emphasize main roads.

Previous work has pointed to the economic and social importance of access roads and paths but did not elaborate on the detailed institutional framework needed to support a sustainable network of *both* local government roads and community roads and paths. The objective of the present paper is thus to develop guidance on how to establish institutional arrangements that ensure that both levels are brought under regular maintenance. Because sustainability also depends on sound investments, aspects of planning and financing capital works are also addressed. The paper is written for government policymakers and technicians, donors, and nongovernmental organizations (NGOs) 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. Although many of the issues and options apply to all countries, appropriate responses must be sought in a country-specific context.

Chapter II gives the context of rural transport in SSA. Chapter III identifies the symptoms and underlying cause of current problems. Chapter IV presents a framework for reform that emphasizes the importance of defining coherent institutional arrangements that separately define the institutional setup for roads assigned to local government and for roads and paths managed by communities. Chapter V deals with the institutional framework for local government roads and presents various options for mobilizing the required capacity to manage, plan, and finance this network effectively. Chapter VI identifies the key aspects of community ownership of roads and paths and includes examples of approaches to community management of roads employed in some countries.

⁸ A subsequent paper stressed that the economic impact of the rural road network will only be fully realized by also considering what happens beyond the road network in terms of tracks, trails, and paths and the intermediate means of transport used on them (Riverson and Carapetis 1991).

⁹ Heggie (1995).

II. UNDERSTANDING THE TERRAIN: CONTEXTS AND CONCEPTS OF RURAL TRANSPORT

Well, sir, this here is not the end of the Earth but from here you can see the end of the Earth.

— Common complaint of Dakota wheat farmers and millions of other country folk.

The first section of this chapter provides a snapshot of the reality of rural transport in SSA. The second section focuses specifically on rural transport infrastructure as an important component of the local transport system.

2.1. TRANSPORT AND THE VILLAGE¹⁰

Rural Africa walks and carries its burdens — goods, possessions, produce, crafts and each other. They will do so into the 21st century. Where the terrain is benign, animal transport exists and there the economics is more hopeful. Where the terrain permits one finds barrows and carts, and there one sees bicycles and an occasional motor vehicle. Of course the African farmer can live near rail and road arteries but a remove of 20 or so kilometers is beyond a day trip and that means everything. To the rural African, the village is the world.

The typical transport vessel in rural Africa is a woman. The portage to and from the village may be treacherous, the river crossings, the burdened climb and descent of hills and through bush hazardous. Only with great exertion 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.¹¹ Poverty in Africa is primarily a rural phenomenon.¹² The majority of the poor live in isolated rural areas and mobility and ease of transport are essential to begin their ascent into the modern world.

Household surveys show that 87 percent of trips in rural Africa take place on foot and that women account for more than 65 percent of the household time and effort spent on transport.¹³ In survey areas, the daily transport effort of a typical adult female was equivalent to carrying a load of 20 kilograms for 1.4–5.3 kilometers. No matter how strong the body the sheer exertion of primitive transport has an unhealthy effect. In many communities in rural Africa, women are also the principal farmers and key providers for the welfare of their families.¹⁴ Reducing unnecessary time spent on transport, therefore, would increase time available to other economic and social activities of benefit to the rural household.

Access roads, tracks, paths, and footbridges make up the local transport infrastructure system on which rural dwellers gain access to markets and social services. Farmers trudge to and from the fields on paths and footbridges, carrying implements, fertilizer, fuelwood, water and

¹⁰ This is also the title of a World Bank discussion paper that documents transport in rural Africa (Barwell 1996).

¹¹ Although 70 percent of the population lives in rural areas, rural Africa remains relatively sparsely populated and facilities are few and far between.

¹² World Bank (1996).

¹³ 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).

¹⁴ Cleaver and Schreiber (1994).

harvested crops. Yet, even though these modest passages are the major circulatory system in Africa, 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 therefore tend to overlook the importance of designing an institutional framework for their upkeep.

Rural roads enable farmers to take crops to larger markets and bring back inputs needed to live and, possibly, to expand production.¹⁵ These simple roads also provide farmers access to consumer goods that furnish incentives. Most of Africa's rural roads, however, are in poor condition. The proportion of main roads in Africa requiring rehabilitation varies between 25 percent in Zimbabwe, 50 percent in Madagascar.¹⁶ Reliable statistics on local government roads are difficult to come by, although the condition of such roads is generally found to be much worse than main roads; 50 to 70 percent probably require rehabilitation or reconstruction. Many rural areas are effectively cut off during rainy seasons. Nearly every country on the continent has examples of surplus crops left to rot at collection points due to lack of transport to market. Numerous examples exist of the high costs of rural transport and its impact on farm income.

Until recently, governments and donors have emphasized the construction of rural roads¹⁷ rather than provision of access. Resources have often been devoted to building rural roads to higher standards than justified given low vehicle flows. The point should be carefully made. Excessive attention to high technical standards means that fewer resources are available to increase access. Increasing rural access requires a network approach that puts greater emphasis on improvements of trouble spots and provision of reliable and affordable tracks, paths, and footbridges. Simply said, existing resources might be spread thinner to maximize total access. This is a tough choice but arises out of the reality of restricted budgets.

Lack of motorized transport services and intermediate means of transport (IMT) further exacerbates the access problem. Although the most common IMT in Africa is the bicycle, considerable scope exists for promoting the use of draft animals and other forms of relatively low-cost means of transport. For example, SSA, which has a population half that of India, has one-twentieth as many animal carts.¹⁸

A comprehensive and integrated approach is required to improve rural accessibility in Africa. This paper concentrates on the institutional aspects of RTI. Three companion papers address other aspects of rural transport: planning,¹⁹ the enabling environment for adoption of labor-based work methods,²⁰ and promotion of IMT.²¹

¹⁵ A study of the impact of rural roads in fifty-six Bank projects in six countries (Cameroon, Kenya, Malawi, Nigeria, Senegal, and Tanzania), which together account for 40 percent of the SSA population and 46 percent of gross national product, found a close correlation between the performances of the agricultural and transport sectors (Gaviria 1991).

¹⁶ World Bank (1995).

¹⁷ SSA has 72 kilometers of roads per thousand square kilometers of land. This is less than a quarter of the road density in East Asia. Although this suggests that Africa needs more roads, the typical African already supports three times as many kilometers of roads as the typical East Asian. Furthermore, far less than 1 percent of rural households in Africa own a motor vehicle.

¹⁸ Starkey (1989).

¹⁹ Connerley and Schroeder (1996).

²⁰ Stock and de Veen (1996).

2.2. RURAL TRANSPORT INFRASTRUCTURE (RTI)

In the introduction, this paper divides the RTI network in SSA into the two main administrative categories of 'local government roads' and 'community roads and paths'. Within each of these two administrative categories there can be different type of RTI. The two functional categories used in the paper are *tertiary roads*, which provide access within a district or local government administrative area from a subdistrict headquarters or other key facility to the main network, and *access roads and paths*,²² which connect a village to the higher levels of the network and provide rural people with access among 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 nongovernment entities. It is possible that local governments are responsible for some important access roads and paths,²³ and that communities are responsible for some less important tertiary roads. When the term "rural roads" is used in the paper, both tertiary and access roads are included.

In SSA, tertiary roads usually have gravel or earth surfaces, are sometimes all-weather, and often carry fewer than fifty vehicles per day. Access roads and paths are generally unengineered and often impassable during the rainy season. Motorized traffic on these roads is usually low enough to only be registered in vehicles per week rather than per day. Much of the traffic on both tertiary roads and access roads and paths is nonmotorized. For example, in Kenya pedestrians make up 92 percent of the traffic volume on access roads²⁴ and in Uganda bicycles account for up to 81 percent of vehicle flows even on some main roads.²⁵

The size of the RTI network is largely unknown. Some scattered and unreliable data are available on those roads that fall under the responsibility of local governments. These data indicate that SSA 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. Case studies and anecdotal evidence on undesignated roads suggest that *one and a half to two times as many kilometers of undesignated roads as local government roads* exist in rural SSA.²⁶ For example, South Africa has twice as many undesignated roads as tertiary roads;²⁷ a district in Tanzania has more than one and a half times as many undesignated roads as tertiary roads;²⁸ and a community of 2,500 people in a

²¹ I. T. Transport Ltd. (1996).

²² Functional classification organizes roads into relatively homogeneous classes based on the functions they fulfill. The term "access roads and paths" is meant to illustrate that surface transport infrastructure used by people in rural Africa includes both road and off-road structures such as tracks, trails, paths, and footbridges.

²³ For example, in a district in Tanzania, 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 of the roads.

²⁴ Gaviria (1991).

²⁵ Grisley (1994).

²⁶ This is equivalent to the proportion of the network managed by private road associations in some industrialized countries, for example, Canada, Finland, and Sweden.

²⁷ 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).

²⁸ Makete district had 188 kilometers of tertiary roads and 314 kilometers of access roads in 1990 (Selvarasa 1990).

subdistrict in Ghana has twice as many undesignated roads and three times as many tracks as tertiary roads.²⁹ These data exclude trails and paths, which have not been measured.

²⁹ The RTI system in a subdistrict 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 number of seasonal trails (Twumasi 1994).

III. THE PROBLEM: THE SYMPTOMS AND THE CAUSE

During the last few decades, attempts to improve rural transport in Africa have created an unsustainable network of rural roads. Frequently, the wrong facilities were provided in the wrong places using the wrong technology and wrong processes. 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 one principal underlying cause of this state of affairs.

Symptom 1: Unclear Responsibilities

Fragmented responsibilities at the central government level. Multiple agencies are involved in providing rural roads in most countries of SSA. In addition, in recent decades, many countries have repeatedly changed the organizational structures of central government agencies overseeing local government roads, shifting responsibility for them from one ministry to another, often accomplishing little but confusion and inaction. For example, in Ghana, up until creation of the Ministry of Roads and Highways in 1981, no fewer than five central sector ministries had responsibilities for rural roads in the preceding 10 years. 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 not knowing who was really in charge of rural roads.

Lack of a legal framework for community ownership of roads and paths. SSA countries have a large network of undesignated roads that do not legally belong to anyone. Indeed, the concept of ownership, individual or collective, communal or national, may be remote or non-existent in some traditional societies. Rural communities have, often by default, become responsible for the maintenance of rural roads. Efforts to create a "sense of community ownership," that is, a willingness to maintain roads, have been erratic and typically have not included definition of legal rights and responsibilities to the communities. Local communities have often been asked to contribute to improving and maintaining roads constructed and improved through government programs. In principle, nothing is wrong with this, local acceptance of responsibility is what this paper urges in Chapter VI. However, reliance on unpaid volunteer labor for regular maintenance of local government roads is unrealistic. Donor programs have paid communities (in cash or food) to improve roads and tracks. Human nature being what it is, doing the same thing for nothing is equally unrealistic. Experience indicates that voluntary local contribution of resources, however beneficial, is not sustainable. Examples from Tanzania show that an existing commitment of communities to maintain "their" access road built by self-help have even been destroyed when the government officially took over maintenance but failed to meet its obligations.

Symptom 2: Disintegration of the Planning System

Over-centralized decisionmaking. Even though local governments are often the legally constituted road authority for the 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. Construction of roads, therefore, does not necessarily correspond to local priorities, 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 and left maintenance to local governments. Numerous roads were constructed in the

same local government area by different agencies without any effective transfer of maintenance responsibility to a competent road agency. As a result, a large number of these roads are now without effective owners and receive no regular maintenance.

Inconsistent and uncoordinated planning. The lack of a comprehensive planning system assessing overall client demands means, in practice, that many of the basic access needs of rural households have not been addressed. The planning universe has to be re-defined. RTI facilitates the delivery of services of various sectors; ministries deal with the needs of their specific client subgroup in these sectors and provide the roads their particular clients require. 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 with no consistent national policy and strategy framework and no consultation of 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; no one is now legally responsible for the oversight of 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.

Uneconomical allocation of financial resources. Planning processes in SSA countries fail to allocate resources efficiently, largely because the key actors respond to biased incentives. Capital and maintenance expenditures are dealt with 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 is neglected (previously a key part of the planning process). Road maintenance is an unspectacular activity. Full rehabilitation is preferred over spot improvements, and road improvements are favored over footbridge and path improvement though most road agencies are aware that maintenance is highly cost-effective and that improvement of trouble spots can achieve all season access at lower cost than rehabilitation. Still, they carry out full fledged capital works at the expense of maintenance. Existing resources are, thus, suboptimally allocated between capital and maintenance expenditures.

Symptom 3: Insufficient and Uncertain Maintenance Funding:

Overall shortage of maintenance funds. The total allocation by most governments to road maintenance falls short of the amount needed for network preservation. The shortage has been especially severe at the lowest levels of the network where allocations for maintenance of local government roads commonly have been only 5–15 percent of requirements. In many countries recurrent budgets have withered to the point that they barely cover staff and administrative expenses and a few emergency repairs, leaving little for maintenance. Donors were initially part of the problem in that they primarily supported the capital budget. Now they are not willing to finance rehabilitation projects without viable arrangements for road maintenance.

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 allocations 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. In Tanzania, for example, expected funding levels from the local government road fund

to local district councils are not communicated to the districts, making planning and programming of works a futile exercise.

Symptom 4: Inadequate Local Capacity

Lack of incentives for road staff at the local level. Civil servant salaries—inadequate when compared with both the private sector and opportunities in other countries—have adversely affected the technical capacity of road agency staff, leading to high vacancy rates and poor motivation.³⁰ 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. Even a competent cadre of local road officials, however, would make little sense if they command few resources.

Weak private sector response in rural areas. Many countries are in the process of moving from executing works in-house (force account) to using private contractors. Considerable experience exists with using private contractors for large capital works on rural roads. The contracting process itself is usually handled by the ministry in the capital city. Local governments, therefore, have little experience with preparation of specifications, awarding and supervising contracts. Furthermore, local consultants are little used in planning and supervision of 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 due to the lack of experience of local governments and communities in dealing with the private sector in general. Letting out contracts is not for untrained staff. Contracting for service (such as maintenance) rather than for projects or structures requires skill in setting performance goals.

Urban bias in allocation of resources. 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 address the more visible urban problems first. Urban constituencies may also pose internal security problems. Central governments as a result have inadvertently accelerated rural to urban migration by failing to respond better to the needs of rural areas and building up local capacity. Because second and third generation leaders will more likely come from cities than villages, the bias toward urban areas may become further pronounced in SSA.³¹

³⁰ 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” (M. T. Sabai 1995).

³¹ 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 Technical Standards

Inappropriate design standards and technology. Transport policy and programs in rural Africa have been narrowly focused on providing conventional highways for use by motorized vehicles. This is the case, in part, because engineers have been trained using curricula and training materials that have been heavily influenced by the current requirements of high-wage industrialized countries. Large numbers of foreign technical assistants have also encouraged the use of technical standards that are more suited to the levels of motorized traffic they are accustomed to in their home countries. The use of inappropriate technology and standards has been a significant factor contributing to the inefficient use of existing resources. The use of local resource-based technologies has already been treated extensively in previous publications and covered in a companion paper³² and will not be further discussed in this paper.

Underlying Cause of the RTI Problem: Weak Local Institutions

The common thread running through the five symptoms described above is weak local government and weak community institutions. African governments have been highly centralized. 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 decisionmaking and financial authority firmly vested at the center.

The control of resources by central sector ministries at the local government level virtually absolves local government 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. Centralized provision of rural roads has been accentuated by donor intervention. 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 government and unintentionally contributed to the weakening of local-level institutional capacity.

Resolving these issues cannot be divorced from the broader questions of rural development in a country. Provision of RTI is clearly only one of many development activities taking place in rural communities and must be viewed in the broader context of rural service delivery. Most of the manifestations of weak local institutions are not directly related only to roads but are generic to all sectors. An arbitrary shift of the responsibility for rural roads to weak local governments is unlikely to be successful in either getting services delivered or responding to the priority demands of rural communities. In this sense much of what this paper proposes by way of community empowerment may apply for other infrastructure sectors as well.

Strengthening local institutions through effective decentralization (see box 3.1 and Annex A) is the centerpiece of rural development and 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 to address 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 for sustainable improvements in RTI. A dual approach

³² Stock and de Veen (1996).

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 SSA are moving toward decentralization. Effective decentralization (devolution) hinges on a balance of political, institutional, and fiscal responsibilities. The allocation and control of finances lies 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 causes central government to take back or temporarily assume local government responsibilities due to poor performance.

Source: Jerry Silverman, World Bank.

IV. FINDING A DIRECTION: A FRAMEWORK FOR REFORM

The previous chapters have set the scene for this paper by reminding the reader of the checkered history of RTI interventions in Sub-Saharan Africa. The root cause of this unfortunate history has been diagnosed as weak local-level institutional capacity, brought about by centralized African governments, and perpetuated by the interventions of 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 wholly insufficient funding, inadequate local capacity, and inappropriate use of technology—problems that evaluations of past rural road interventions have reported over and over again.

This chapter presents a framework for reform that seeks to bring coherence and order into the current institutional labyrinth. Strengthening local institutions is indispensable to reform and to solving RTI problems but reform takes time and is an evolving process. Stakeholder representatives must be active participants in the reform process because stakeholder commitment to the reform agenda will be instrumental in ensuring political follow-through and implementation.

To be effective, the reform process requires a conceptual framework—a national rural transport policy, and a concomitant strategy to achieve policy objectives. This framework must answer a set of key questions to provide effective institutional arrangements for RTI. This chapter first reviews these questions and then deals with the rural transport policy and strategy as integral parts of the reform effort. The following two chapters will develop responses to these questions by presenting in detail the institutional arrangements for managing local government roads and community roads and paths.

4.1. KEY QUESTIONS

The conceptual framework must answer three questions:

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

4.1.1 Ownership and Responsibility

The first question addresses the issue of ownership and responsibility—a particularly important issue for rural roads and paths because of the many actors involved in the development and rehabilitation of roads. Although central government frequently delegates the responsibility for rural roads to local governments, a significant degree of confusion often exists regarding ownership of individual roads and maintenance responsibilities at the local level. For example, within the administrative area of a local government may lie relatively new and important roads constructed by NGOs. Simultaneously, there are large numbers of access roads and paths. At any moment one may ask ‘who is in charge of these assets?’

Many roads either have no legal caretakers or are untended by local governments who are legally responsible. A crucial step in the reform process then is to end the confusion and bring rational order. A key aspect of this process is to develop a coherent framework for managing both local government roads and community roads and paths and to forge a private-public partnerships for their maintenance. Such a partnership requires a legal instrument to grant *de jure* ownership of roads and paths to communities and interest groups such as individual landowners, agricultural cooperatives, and NGOs.

4.1.2. Local Capacity

The second question focuses on the managerial and technical know-how required by ownership. It is easy to understand why donors frequently have opted to work through central ministries and bypassed local institutions. Local governments are often little more than empty shells. The exculpation of 'inadequate local capacity' should be denied to central governments and donors if only to enable local governments communities to obtain the experience and responsibility they need. Central sector ministries may have technical capacity, but they do not possess any sustainable interest or stake in maintaining RTI over time. Instead, governments and supporting donors must take a long-term view and actively promote the strengthening of local public and private institutions.

Of course the transition must be measured and orderly. Building full-fledged capacity for all management functions in each local government and community is unrealistic. Their networks are small. Many of the required management skills can be more cost-effectively provided by the private sector. The aggregation of many small contracts can be facilitated through joint packaging of required services across adjacent local governments and communities.³³ Building effective managerial control at the local level, finding and using expertise, developing economies of scale and training, are key elements which follow the decision to support the build-up of adequate capacity at the local levels.

4.1.3. Financing

The final question deals with financing. The four most common sources for financing RTI are donor funds, central government grants from the general budget, local revenues (local government and community), and allocations from a dedicated road fund. These sources provide funds of varying proportions 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 for RTI is provided by donors. Among six African countries, external finance accounted for 50–90 percent of total resources for investment in rural roads and 10–20 percent of resources available for maintenance.³⁴

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 of maintenance. The source must be domestic to ensure sustainability

³³ Although unbundling of large contracts is important to enable small contractors to get into the market, providing sizable amounts of work is also important to motivate local consultants and rehabilitation contractors to establish themselves in rural areas. This does not apply to maintenance contractors who, in many countries, are individuals.

³⁴ The countries were Cameroon, Kenya, Malawi, Nigeria, Senegal, and Tanzania (Gaviria 1991).

of investments and, in the long run, rely on cost-sharing arrangements with local governments and beneficiaries. Cost-sharing arrangements between central government and local institutions provide a powerful incentive to the latter to maintain RTI and are an important way of leveraging scarce resources at all levels.

4.2. 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 quickly develops. At this stage, countries should build policies and strategies before roads.³⁵ This 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 implementation of the reform agenda. Second, when developed in close consultation with key stakeholders, they can be powerful instruments to bringing order and consistency to the rural transport subsector. The following discussion deals with both policy and strategy as reform instruments and the participatory reform process.

4.2.1. The Policy and Strategy Instruments

For the rural transport policy and strategy to be effective, they must provide realistic responses to the questions of ownership and responsibility, local capacity, and financing. Production of long documents that only describe existing problems and state desired outcomes are not sufficient. What is needed is a painstaking process through which stakeholders map out and customize the reform program, given the country context.

The *rural transport policy* should clearly state 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 (Zambia). In most cases, the rural transport policy is an integral part of the overall national transport sector policy, although it may initially be prepared as a separate document (Malawi).

Formulation of a sound policy is only the beginning of the process. The rural transport policy merely sets out the direction of the reform and serves to guide the course of action of government ministries and others involved in defining the strategy for the subsector. The *rural transport strategy*, however, is the instrument that should provide the framework within which the many entities involved in providing RTI (government, communities, NGOs, and donors) harmonize their efforts. A good strategy is strong on local consultation particularly to avoid ad hoc interventions by central sector ministries.

The rural transport strategy specifies actions in the service of policy objectives. Although no simple blueprint format or textbook approach exist, box 4.1 briefly outlines the type of issues the rural transport strategy needs to address.³⁶ Only a handful of SSA countries have an explicit policy on rural transport and fewer a rural transport strategy. Most countries have focused narrowly on

³⁵ Thompson (1995).

³⁶ An account of various strategies to address rural accessibility is given in chapter 2 of *Rural Transport Services* by Beenhakker and others (1993).

rural roads rather than approaching rural transport as a whole. The advantage of the latter is that it recognizes accessibility as being the problem at hand.

Box 4.1. Outline of a Generic Rural Transport Strategy

The strategy must be placed in the general context of rural development of the country and must be viewed in the broader context of rural service delivery and accessibility. In respect to the rural transport subsector, the strategy needs to address three main issues:

1. *The national objectives for the subsector 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 define an approach for dealing with rural access problems.
2. *The three principal interventions to improving rural accessibility and mobility:*
 - *Infrastructure.* The institutional framework for RTI should answer the key questions related to ownership and responsibility, local capacity, and funding. This includes the legal setup for local government roads and community roads and paths, organizational arrangements for management, planning process and criteria for development and maintenance, financing of maintenance and development, and means to ensure local capacity for management functions and execution of works (design, supervision, technology, and environmental issues).
 - *Rural transport services,* including motorized goods and passenger services for long trips and IMT for short distances, the role of government in creating an enabling environment for increased production and use of the services (import duties and licenses, taxes, tariff and route regulation, safety, and [cross-]subsidies), the role of the private sector (operators, manufacturers, and credit institutions), and any social and cultural aspects. Other important issues include assignment of responsibilities between local and central government for providing rural transport services.
 - *Location of physical facilities* (clinics, markets, and schools), including an effective planning system that gives adequate attention to accessibility concerns in the planning of new and improvement of old facilities. Such a system needs to be based on community consultation and involvement, allow for fungibility of resources (e.g., through block grants), and address local resource mobilization.
3. *The roles of the key stakeholders* (central and local government, communities, road users, farmers' and transport associations, NGOs, and donors) in formulating the policy and strategy and providing and producing infrastructure, rural transport services, and siting of facilities. Include a plan to build the capacity of the public and private sector actors to perform their roles effectively.

4.2.2. The Participatory Strategy Process

Sustainability of the reform process requires homegrown solutions and stakeholder involvement. Political will and the commitment of policymakers are indispensable. Nevertheless, stakeholder ownership goes a long way to ensuring that the recommended measures have "champions" and that the reform process remains "on course."³⁷ Indeed, 'constituent building' is an integral feature of political democracy. Rural transport, however feeble, is part of an economic and social matrix and to emerge and grow must take on political value. The consultation reform process

³⁷ 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).

therefore must involve the participation of a wide range of stakeholders. At the user level, important stakeholders include ordinary rural people (particular women, who are the main transporters in rural areas³⁸), community groups, farmers' associations, and road user and transport associations (local truckers and informal transport operators).³⁹ At the provider level, key stakeholders include local government and central government sector ministries, investors, NGOs and donors that support rural development.

The rural transport strategy, therefore, must be a "living document," one that is revisited periodically as the reform process evolves and surrounding conditions change. Controversy and false starts are to be expected. 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. The document should lay out the assumptions and, with respect to RTI, clearly detail the institutional, financial and technical arrangements for both local government roads and community roads and paths. The development of the first strategy document can, therefore, be seen as an important first step in a continuous and sustained reform process. Regular revision of the rural transport strategy provides an opportunity for the various stakeholders to raise their issues of concern. An example of the role of the first rural transport strategy in Tanzania is described in box 4.2.

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

In 1992 a seminar on rural travel and transport was held in Tanzania with stakeholder representatives from national and local levels. A draft rural transport strategy had been prepared in advance by a local consultant, guided by an interministerial committee and the Rural Travel and Transport Program. 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 on two of the areas identified: financial resource mobilization and implementation of a pilot project. Preparation of the initial strategy document served to get the reform process started. The strategy now needs to be revisited and updated. The revision will serve to stimulate dialogue and reform further.

³⁸ Malmberg Calvo (1994).

³⁹ In many areas of rural SSA, pick-ups and other light four-wheel-drive vehicles are the only available forms of transport and often carry passengers without licenses.

V. LOCAL GOVERNMENT ROADS: INSTITUTIONAL FRAMEWORK

With decentralization in SSA, many local governments are being assigned responsibility for access roads within their administrative area. In other countries, responsibility for local roads remains with the ministry in charge of roads. In still others, legal responsibility may rest with local governments but a central sector ministry manages the roads. All of these agencies must manage the network competently. The first three sections of this chapter deal with the clarification of responsibilities, management and local capacity, and financing of local government roads. The fourth section outlines the key characteristics of a participatory planning framework intended to respond to the demands of local constituents.

5.1. CLARIFYING RESPONSIBILITIES

The responsible agency must know which roads it has to manage. This requires legal records, accurate maps and inventories. In many countries in SSA, at both central and local levels, scant records exist of the extent of the rural road network. Regular inspections of the roads are not made and information is lacking on condition and usage. Two initial steps are required to clarify responsibilities for RTI involving: (a) inventory and functional classification of the RTI network, and (b) establishment of legal ownership. Subsequently, annual inspections will determine if the classification and ownership of an individual road is adequate.

The road inventory entails identifying and mapping the most important parts of the RTI network.⁴⁰ Each part should then be classified by function.⁴¹ The inventory provides an official public record on RTI conditions, usage, and functions. These data should be added to information on the existing registration of ownership of individual roads and important paths in an area. This will provide a comprehensive record of the current RTI responsibilities. Local consultants, assisted by staff from the local government road agency and representatives of the people who live in the area, are well suited for carrying out this work.

Inventories for local government roads are relatively standard and include assessment of surface type and condition, drainage structures, as well as volume and composition of traffic, including bicycles, animal carts, tractors and motorcycles. Inventories should preferably be complemented by information on the location of important services found along them, such as hospitals, markets, and schools. More challenging is an inventory for the extensive community roads and paths network. 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

⁴⁰ This is not a blanket recommendation to identify every single 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 the roads and most important paths (Larry Schroeder, Indiana University).

⁴¹ 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 may be useful to recommend a spectrum of engineering standards for each functional class.

get an overview of the extent of the unclassified network. Other countries, e.g., Zambia, have relied on simpler inventories when evaluating access needs and used 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 on 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.

The second step in establishing responsibilities involves establishing legal ownership for individual roads and paths. The procedure for establishing ownership of roads involves *designation*, that is, naming the owner or primary entity responsible for each individual road (see box 5.1).

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 responsible for its maintenance. Undesignated roads have no legal owner. Legal owners may be either a government or private body. Although responsibility for roads can be assigned to a government body, responsibility accepted by private entities, such as a local community or a group of landowners, must be voluntary to be effective. Taking responsibility for maintaining a road involves both benefits and liabilities. For example, a local community may as a result be eligible for receiving certain grants. At the same time, once it assumes responsibility for a road, 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 government, citing the Act under which the road is to be 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 has responsibility for all roads and then 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 delegated to it. 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.

The inventory, functional classification, and designation need to be periodically revisited because the function and usage of individual roads and paths may justify a change of owner. For example, new roads may need to be specifically designated as government responsibilities and some roads already designated to a government body may, due to a lack of government resources, need to be adopted by communities and other private entities or abandoned if no one claims responsibility for them. The annual road management system can, through regular inspections, furnish the required data for a relatively flexible process in which road ownership can be transferred in an orderly fashion to prevent roads from deteriorating.

Box 5.2 describes the proposed procedures for changing road classifications in Zambia. 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. Rural road inventories in SSA are often one-time exercises carried out as part of preparation for a road improvement project and rarely revisited. It would be useful to establish a system for regular

updating on condition, usage, function, and legal recordkeeping. The agency in charge of local government roads in an area is the most appropriate keeper of these records.

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

No standard procedures exist 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 (a) an unclassified road designated under one of the established road classes or (b) an already classified road under its jurisdiction declassified or reclassified as a road under another road class. The proposed procedure involves three steps:

1. Every application must be made in writing and provide the following information:
 - Point on the main or local government road from which the candidate road starts
 - Terminal point up to which 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)
 - 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, that is, markets, schools, clinics, and so on).
2. The application will be addressed to the minister of transport who will forward it to the road classification committee (see below). After considering an application and making any further appropriate inquiries, the committee shall make a report and recommendation to the minister.
3. If, after consideration of any such report and recommendation, it shall appear to the minister that a need exists to (re)classify the candidate road, he or she may, by statutory notice, designate such a road to be classified under an established road class.

For implementation of the proposed procedure, the study recommended that a committee be established known as the Road Classification Committee. This committee shall be placed under the National Roads Board and will advise the minister of transport to (re)classify 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, i.e., from the ministries of Communications and Transport, Works, Local Government, Tourism, and Agriculture. The terms of reference for the Road Classification Committee will be to:

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

Source: Louis Berger International (1996).

5.2. MANAGEMENT AND LOCAL CAPACITY

Local government can mobilize the required capacity to discharge its 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 (TA) and training, were provided by donor-financed programs to build capacity. Experience shows that TA has been marginally successful in transferring skills to local government staff. Often no staff in the road agency may be 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 (e.g., India), in-house management of rural roads at the local government level, has not been successful because road networks are too small to justify adequate technical capacity in each local government unit.

Rationalization and reduction of demands on local government 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 is monitorable and in itself provides an incentive for performance whether physical works is contracted to the private sector as in Ghana or to a parastatal as in Mozambique. The strongest incentive for performance, of course, is prompt payment to the contractor.

The second step is to contract out key management functions to local consultants. Execution of physical works by private contractors allows local government to focus on what kinds, quantity, and quality of RTI to provide and how to finance construction and maintenance. Planning of works, preparation and evaluation of bid documents, award of contracts, supervision, physical audits, accounting, and ensuring timely payment of contractors are not small tasks; many of the skills required to discharge these tasks effectively are lacking at the local level. Local governments can purchase many of these services from the private sector — from preparation of bid documents to complete management of their network. The challenge is to ensure that the volume of work is large enough to encourage local consulting firms to operate in rural areas.

The implications of assigning responsibility for local government roads to different ministries or levels of government is elaborated in box 5.3. Advantages of having all roads managed by one ministry include technical capacity and facilitated network coordination. Disadvantages include insufficient attention to local priorities and local consultation in planning. When responsibilities are assigned to local governments, the reverse is true. The remainder of this section presents two models for managing rural roads. The first (model A) relies on a central sector ministry. The second (model B) devolves rural roads to local governments. Four options for mobilizing the required capacity to effectively manage local government roads will be discussed. The first option—a central government rural road unit—forms part of the centralized model A. The second, third, and fourth options—contract management agency, joint services committee, and private consultants, respectively—are part of the decentralized model B. All four options, however, rely on private contractors for execution of physical works. These options are then summarized and compared.

Box 5.3. Assignment of Responsibilities for Local Government Roads

Two common organizational arrangements for local government roads in SSA are either to assign legal responsibility for all roads to one ministry or specialized road agency or to assign legal responsibility for main and rural roads to different ministries or levels of government.

Model 1: Same ministry for main roads and rural roads. Three varieties of this model exist: (a) separation of network management function by having a rural road department and a trunk road department (Sierra Leone Road Authority), (b) separation of management by standard, that is, having a gravel and earth road department and a paved road department (Kenya), and (c) management of main roads and rural roads together (South Africa).

Model 2: Different ministry or level of government for main roads and rural roads. In this model, legal responsibility for main and rural roads rests with different ministries or levels of government. The institution legally responsible is, most frequently, 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 (Uganda, and Zambia), the ministry of agriculture (Guinea), the Office of the Prime Minister (Tanzania) or the President (Nigeria). Some countries, however, have no coordinating ministry or unit (Madagascar).

These two models for assigning responsibility for local government roads have strengths and weaknesses. The challenge of the first, which places the roads in a central sector ministry, lies in ensuring adequate local input in planning. The challenge of the second lies in coordinating local government roads with main roads and ensuring local government road departments are technically competent. Many of the problems of coordination and technical capacity in the second model can be overcome by having a capable rural road unit at the national level. If, however, in the second model, responsibility for rural roads is not vested with local governments, as in Guinea, with a ministry of agriculture, the setup will be subject to the challenges presented by both models because links to both local governments and to the main road ministry may be weak.

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

5.2.1. Model A: Central Government Management

Option 1: Central Government Rural Road Department

In this option, a central government rural road department is the designated agency responsible for rural roads in the country.⁴² The department is responsible for developing and maintaining the rural road network and manages the network relatively independently from 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 accomplishments are assessed on the performance of

⁴² Legal responsibility for local government roads may in this model rest with the central sector ministry (Kenya) or be temporarily assigned to a central agency whereas legal responsibility remains with local governments (Ghana).

the rural road subsector.⁴³ The functions of the headquarters is to advise on policy, formulate guidelines, and provide technical support to provincial branch offices on planning and contract management. The road area offices are in charge of day-to-day management of the network, planning, and supervision of 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 onward to the road area offices.

The central government rural road department is most often located in the same ministry as the main road department but may reside in another ministry, for example, agriculture. An advantage of a central government rural road department attached to the sector ministry of roads is that it receives technical support and guidance from the parent ministry. Another advantage is the facilitated coordination of the various levels of the network. The disadvantages of the central government rural road department include ensuring sufficient attention to local priorities and local consultation in planning.

The best known example in SSA of a central government feeder road department may be the Department of Feeder Roads (DFR) in Ghana. DFR is a civil service agency under the Ministry of Roads and Highways. DFR has managed the local government network on behalf of local governments since 1981 and has thirty-seven road districts, with offices that serve about 100 local governments. DFR has its own director and is one of the few rural road agencies in SSA with a mission statement.⁴⁴ All rehabilitation works are done by contract; DFR is gradually adopting the use of small-scale and one-man contractors for maintenance. Unlike most rural road agencies in the region, DFR is technically competent (with about forty engineers) and has been relatively successful in providing a coherent framework for planning, managing contracts, and coordinating the activities of the many donors supporting the subsector. DFR has been less successful in responding to local government priorities. As part of ongoing decentralization efforts in Ghana, DFR is, therefore, piloting the return of maintenance responsibilities to six local governments as a first step to full decentralization of responsibility for local government roads.

A different example of a central government rural road department is the case of Malawi, where the central sector ministry for roads "temporarily" assumed management responsibility from local government for about twenty years during implementation of the District Roads Improvement and Maintenance Program (see box 5.4). A main road ministry will generally accept management responsibility for a local government road project if external funding exists. Once the funding dries up, however, the ministry has a strong incentive to return the roads to the entity constitutionally responsible for them. Although the intention behind the program was to build local capacity and gradually transfer responsibility back to local governments, the program instead weakened the capacity of local road agencies and governments and created confusion regarding management responsibilities. Temporary assignments of management responsibility from local government to central government ought to be avoided because they often end up undermining

⁴³ Just as for main roads, the more autonomous the department is from civil service terms and conditions of employment, the more likely it will attract competent staff. See Heggie (1995) on the importance of adequate pay for performance.

⁴⁴ The strategic mission of DFR 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."

the authority of local governments. Overall, in a country which is decentralizing, a central government rural road department does not provide a satisfactory long-term solution for the management of local government roads and should therefore be seen more as an interim measure providing technical cohesion.

Box 5.4. Malawi: Temporary Assignment of Local Government Roads to Central Government

The District Roads Improvement and Maintenance Program (DRIMP) was implemented between 1978 and 1995. Although DRIMP achieved its overall physical target, it weakened the capacity of local governments to maintain their roads and responsibility for maintenance was left unclear. In Malawi, local government is legally responsible for district roads. Prior to DRIMP, twenty-four district councils (DCs) under the Ministry of Local Government were responsible for district road maintenance. As DCs had limited technical capacity, it was decided to set up a DRIMP unit in the Ministry of Works and Supplies, which is responsible for main roads. It was expected that all district road maintenance units would gradually be handed over to the DCs as their capacity increased. The failure, however, to build the capacity of the DCs led to retention of the DRIMP units by MWS in all but one district. The DRIMP program has ended, allocations for maintenance are scarce, and MWS is keen to hand back maintenance responsibility to the DCs. In 1995, the DCs had less capacity in road maintenance than in 1978.

5.2.2. Model B: Local Government Management

In this 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 unit advises on policy and standards, takes the lead in strategy formulation for the subsector, and lends technical support to local governments. Its functions includes formulation 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 (2, 3, and 4) for decentralized management of local government roads are presented below. Each provides a somewhat different way of mobilizing capacity at the local level to manage local government roads competently. All three options rely on support from a technically capable coordinating unit for local government roads at the central level.

Option 2: Contract Management Agency

In this option, local governments purchase the services for which they lack capacity, for example, planning and accounting, through a contract execution agency. The agency manages contracts on their behalf. That is, in addition to managing the contracts of physical works, local governments can request that the contract agency hire a consultant who can assist in drawing up development and maintenance plans according to the guidelines issued by the coordinating rural road unit. Local government representatives work with the consultants to ensure that they have adequate information and that the plans reflect local priorities. Subsequently, local government may request the contract agency to hire consultants to prepare technical designs and bid documents and to manage the bidding process and award of the contract. So far in SSA, contract management agencies have primarily been used for physical works and not for planning of 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 so-called agencies for execution of public works or AGETIPs.⁴⁵ Different types of AGETIPs exist, however, all manage contracts and use private consultants and contractors to execute public works on behalf of ministries and municipalities (see box 5.5). AGETIPs hire consultants to prepare designs and bids and then evaluate and adjudicate the bids and sign the contracts. AGETIPs subsequently monitor and audit work and pay contractors. The AGETIPs themselves are subject to quarterly financial audits; the technical quality of works are audited periodically. So far, the audits have found both financial management and technical quality of works satisfactory. Most AGETIPs focus on work in urban areas where the burden of oversight is concentrated. Some of the AGETIPs have, however, set up local branch offices to improve their ability to manage contracts in rural areas. Their experiences confirm that it is more difficult and costly to supervise contracts in rural areas.

Box 5.5. AGETIPs

More than ten AGETIPs exist in Africa; most are in French-speaking countries. The first AGETIP was created in 1989 in Senegal. It is a lean agency with twenty-four 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. AGETIPs employ highly qualified private sector staff attracted by the market salaries offered and are nonprofit; most charge a 5 percent management fee. They have been highly successful in increasing productivity: it takes an AGETIP 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 the portfolios of the AGETIPs. Many first generation AGETIPs performed the dual function of project selection (including financing) and contract management. Increasingly, however, donors channel the funding directly to government ministries and local governments to provide them the choice of hiring the AGETIP or managing the contract themselves, subjecting the 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 of the AGETIPs provide training for firms, local consultants, municipalities, and other beneficiaries. The AGETIP experience indicates that when contracts for road works are offered to the private sector, 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 and 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 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 that explains AGETIP performance is that their staff are paid market salaries. The close

⁴⁵ AGETIP stands for l'Agence pour l'Execution d'Interêt Publics contre le Sous-Emploi or Agency for the Execution of Works in the Public Interest to Combat Underemployment. This is the name of the Senegalese agency, the first to be established; it is often used to refer to all such agencies.

correlation between adequate pay and performance cannot be overstated. In fact, the Sierra Leone Road Authority (SLRA), which is a semiautonomous 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 in their current form include their monopoly over contract management for public agencies, heavy reliance on donor funding, and limited experience in rural areas. No reason exists, however, 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 step in introducing a private market in contract management. Other challenges of the delegation of contract management involve (a) the existence of able contract management firms, (b) the ability of local government to deal with the contract management agency, and (c) scale (small networks and small funds make for small contracts). In short, although highly efficient in the management of individual contracts, AGETIPs do not solve the problem of road network management or funding.

Option 3: Joint Service Committee

A third option is for a group of local governments to form a special purpose district or joint services committee (JSC). The main purposes of the JSC is to achieve sufficient scale to procure services (e.g., periodic maintenance) competitively from the private sector or provide a new facility that will serve many local governments (e.g. a road). The creation of a JSC may be a logical outcome of economic development, because the needs and demands of an area within an administrative district do not necessarily follow jurisdictional patterns and, 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 a case considerable motivation exists to seek a collaborative arrangement among neighboring districts to address the infrastructure demands of the specific area.

JSCs are hard to define. In a way it resembles customers who band together to get volume discounts from vendors or to share capital. JSCs encompass any of those arrangements that link local governments for the purpose of providing specific projects or programs. For example, a JSC may provide a wide range of public services such as waste disposal, water provision, and road development and maintenance. JSCs are typically organized as commissions or task forces. Members of a JSC 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 bodies exist only for the time necessary to complete the tasks for which they are charged. Key determining factors for successful JSCs include the ability and willingness of the originating jurisdiction to innovate, and the degree of motivation of the concerned local governments to cooperate based on common history, economic stress, or public, political pressure.

JSCs exist in a wide range of countries, for example in Canada, Jordan, South Africa, and the United States. The administrative arrangements range from the very informal up to the creation of an independent agency that is charged with the responsibility for the joint program. There are two broad types of JSC. The first is virtual in the sense that, although comprising key officials from the local governments concerned and other interest groups, it entrusts management of the service to one of the local governments in the JSC. Such committees may meet once a month or simply as needed, called by any of the members. For example, in the US, the largest or

wealthiest jurisdiction typically assumes the responsibility of lead agency. It houses the project/activity, signs contracts and assumes the risk. Cost-sharing formulae are worked out for participation by the other districts. Design, physical works, and supervision are contracted out to the private sector. In the case of large projects, the lead agency may delegate contract management to a specialized agency. In a developing country setting, contract delegation may be an option when 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 JSC is formal and explicit and has its own buildings and staff to manage the joint services. Jordan is an example; some JSCs there have become rather 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 as some of the current road agencies do. As noted in section 5.2. above, physical works should preferably be entrusted to the private sector.

Two advantages gained by forming JSCs stem from the efficiencies gained in the provision of services and the redistribution of income. First, JSCs enable local governments to set their own priorities and gain economies of scale. As development may render historic boundaries less and less representative of local interests, JSCs create flexibility in the ability of local governments to address issues of development and regional interest. Second, 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 for travel to the central jurisdiction falls on its neighbors. JSCs provide the opportunity for cost share formulae to balance such inequities. Given these advantages, many governments provide fiscal incentives to encourage the formation of JSCs. Typically these incentives are built into selection criteria for grants or in other financial incentives based in revenue sharing. For example, in the U.S. state of Colorado, it is easier for a JSC to attract grants from the state for the more jurisdictions it represents. As a result, relatively rich local governments are sometimes willing to subsidize relatively poor local governments. Ultimately, the former have power of the purse and the latter may not want to be in charge of managing.

The challenge of the JSCs option 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. The creation of specific bodies may be difficult, given administrative and legal rigidities, specifically when local governments belonging to different regions or states wish to create a JSC, in effect a new power center. Furthermore, setting up a JSC in an SSA country to manage rural roads may require considerable technical assistance from central sector ministries, something that may not be readily forthcoming.

Option 4: Private Consultants

The final option for local governments to mobilize 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. It is still far less common for local governments to rely on local consultants for planning and contract management.

Recently, local consultants have been employed in Tanzania, Zambia, and Zimbabwe to assist local governments in the planning and supervision of road works. In Zambia, the National Roads Board, which manages the road maintenance fund, facilitated the hiring of local consulting firms to assist local governments in planning and managing contracts. The recruitment of the firms was prompted by poor plans submitted by local governments requesting allocation from the Zambian road fund. One consulting firm per province assists all districts in that province. The responsibilities of the consulting firms include assisting the districts in drawing up an annual road maintenance program and to tender, evaluate, negotiate, and supervise works. The consulting firm cosigns the checks to local contractors.⁴⁶

Although consultants have greatly assisted local governments, enabling them to receive and properly use allocations from the road fund, experience shows that training of both local government staff and consultants is required. Some of the local governments, 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, the consultants were paid by percentage of the works awarded, something which did not produce economical plans. Instead incentive favored towns where supervision of works is easier and costs per kilometer are higher and ignored more remote areas. The remuneration scheme of the consultants has been reviewed and a schedule which awards payment upon the production of satisfactory maintenance plans approved.

In the United Kingdom, contracting out of planning and management of local government roads has reached the point that many local governments now contract out the entire management of their network to a consulting firm.⁴⁷ The firm, in turn, contracts out physical works to other private contractors. Box 5.6 describes the experience of hiring a consulting firm to manage local government roads in Berkshire county in the United Kingdom. If local governments can rely on a steady source of funding, similar setups could be used in SSA, particularly if groups of local governments joined together and hired the same consulting firm, along the lines of the above Zambia example.

By using private consultants, local governments with small networks are able to determine their own priorities while they selectively procure the services they require from the private sector. The use of private consultants for key management functions is an attractive option for local governments. It will result in better quality work at lower cost and allow local governments 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. Yet, there must also be a capable 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 to plan and manage their networks efficiently.⁴⁸ They need well-targeted support in financial management and competitive bidding. A

⁴⁶ The terms of reference for the consultants as set out by the National Roads Board are attached in annex B.

⁴⁷ By the year 2000 in the United Kingdom, all councils 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."

⁴⁸ The experience of many SSA countries with the introduction of the use of private contractors in the road works, for example, from Guinea and Mali, indicates that 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 come "out of the woodwork." This experience may be applicable to the consulting industry as well. The most important aspect of an enabling

system relying on the use of private contractors for key management functions in SSA, therefore, requires a targeted effort to provide initial technical training and management support to both local governments and the local consulting industry. This support can be provided by a strong coordinating rural road unit or the central sector ministry in charge of roads assisted by qualified local or international consultants.

Box 5.6. Contracting Out Management of Local Government Roads

Berkshire County has 3,500 kilometers of roads. In 1993 it became the first county in the United Kingdom to contract out management of roads completely to a private consulting firm. The two main reasons that drove the county to do so were (a) a reduction of funds that led to shrinking workloads and (b) the belief that the private sector would be able to manage the network more cost-effectively and, thus, save the county money. A reduction in funding and workloads meant that the county could no longer retain sufficiently high caliber staff in-house to keep up the quality of services; as a consequence, it was forced to lay off staff. As Berkshire chose between having many contracts or putting together one comprehensive package, an important concern for the council was that the consulting firm agreed to absorb large numbers of its staff. Berkshire opted to have only one contract to manage, believing that a single contract would offer economies of scale to the contractor and would thereby lower the cost for the council. The county has kept a small in-house capability which it has amalgamated with other engineering functions.

The main feature of the process of negotiation was the specification of the services. The specifications focused on output rather than on process. For example, the county specified the overall standard for roads rather than the number of potholes filled. Key features of the specifications covered the objectives of the services, description of work, scope, quality, reporting procedures, client and consultant functions, and staff requirements. Babbie consulting firm was awarded a four-year contract to manage the network, which 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 of the private contractor and not enough on developing its client role. It has subsequently focused on the latter, in terms of service delivery monitoring, technical validation, corporate activities, contract administration, financial control, and political policy interfaces. Experience so far points to considerable gains for the county, including significantly increased accountability, flexibility, and value for money.

Source: Wingfield (1996).

5.2.3. Comparison of the Models and Options

The centralized model (model A) for managing local government roads has a central government rural roads department responsible for the local government network. In the decentralized model (model B), responsibility for local government roads rests with local governments. In the latter, individual local governments rely on a technically competent coordination unit for the definition of 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 decides on funding priorities and ultimately controls the resources, not the central coordinating unit; local engineers report to the respective local government, not the central unit. A central coordinating unit for local government roads can perform its functions to the same standard as a central government

environment for private sector contractors and consultants is timely payment for work. This in turn depends on a steady source of funding as well as an effective system for technical audits and payment processing.

rural road department, provided it has adequate technical capacity, status (a qualified director), and resources to support decentralization of responsibility for rural roads to local governments effectively.

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 responsible for supporting more than 100 local governments, both urban and rural. In Zambia, two engineers are responsible for rural roads and urban roads respectively. In both cases, this situation is clearly inadequate. In Zambia, there is increasing awareness that the use of 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 centralized and decentralized models for managing Local government roads and the four options for mobilizing adequate capacity to perform the management functions are assessed in table 5.1. The key factors which are examined are local influence in priority setting, market discipline (cost effectiveness), the creation of sufficient scale, and administrative simplicity.

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

Management Model	Options	Local Priorities	Market Discipline	Sufficient Scale	Administrative Simplicity
A. Centralized	1. Central Government Rural Road Department	-?	+?	++	++
B. Decentralized	2. Contract Management Agency	++	+?	++	+?
	3. Joint Services Committee	++	+?	++	-?
	4. Private Contracting	++	++	+?	++

Note: ++ Achieved
 +? Usually achieves but not always
 -? Can achieve but usually does not.

Local priorities. In the centralized model, agency staff is often technically more competent than local governments and is able to coordinate with the main roads ministry. However, it tends to go over the heads of local government and does 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 and this promises discipline and efficiency. In the first and third option, however, more of maintenance works and management functions may tend to be kept in-house. In the second option, the most common form of contract management agency in SSA—the AGETIP—although highly successful in bringing down costs compared to in-house contract management, may create a

dominant monopoly. Effective contracting in the fourth option requires local government capacity to hire others to undertake the work and availability of competent local contractors and consultants. 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 for a local councils' agency (as is the case for the National Roads Board in Zambia) or resort to option two and manage the contract through a contract execution agency. Training local governments to be effective clients is an area in which the central government oversight ministry should provide assistance and donors need to 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 of each local government,⁴⁹ which may mean that the size of contracts for planning and accounting are too small to attract the interest of domestic consulting firms. This problem can be addressed by packaging contracts from adjacent local governments together, facilitated by a contract management agency (AGETIP), by local governments forming joint service committees or by a higher level agency assisting in the hiring of private sector services for a group of local governments (the Zambia case cited above).

Administrative simplicity. Among the four options, the JSC may potentially be the most cumbersome setup, particularly if a new body must be created and none of the individual local governments can assume contract management responsibility; however, with the tendency for countries to steadily increase the numbers of local governments (in Nigeria the number of local governments has doubled over the last decade from 300 to 600) the formation of JSCs may become increasingly necessary. In the United States, which has many small local government districts, the formation of single purpose districts is common.⁵⁰ It is administratively simpler to employ private contractors to perform key management functions (option 4) or assign responsibility to a central government roads department (option 1); however, the tendency in the latter to refer all decisionmaking to the headquarters in the capital can slow down tendering procedures and payment of contractors, which results in higher overheads, more expensive per unit costs and reduced local accountability.

In the case of an autonomous or semiautonomous road authority that is responsible for all roads, the four options discussed here apply as well. For example, the road authority could provide the technical coordination and oversight function to local governments, similar to the setup in the decentralized model, or the road authority could function much 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 have a subcommittee of the road authority board deal exclusively with rural roads and to include local government representatives on the committee.

⁴⁹ In Madagascar the average network per local government is 140 kilometers, 180 kilometers in Cameroon and Nigeria, and 280 kilometers in Tanzania and Zambia. To justify the assignment of an engineer to a local unit economically, the network should preferably be 500–2,000 kilometers, in part depending on road density.

⁵⁰ Seventy-two percent of all local governments in the United States have fewer than 3,000 residents, and more than half have populations under 1,000 (Kincaid 1991).

In conclusion, the higher the degree of decentralization in management of the local government network, the higher the sensitivity to local preferences. The effective involvement of the private sector in production and provision of roads requires a phased approach to training of both road agency staff and the private sector. Mobilization of local capacity to improve management of local government roads involves creating sufficient scale; various ways of doing this have been discussed. In the short run, in countries with limited technical capacity at the local level, local government roads may be better managed by a central government rural roads department. In the long run, in countries which are decentralizing, ownership of local government roads should be devolved to local governments and the involvement of the private sector phased in.

5.3. FINANCING MAINTENANCE

Ensuring steady and adequate financing for maintenance is indispensable for ensuring the viability of local government roads. One needs an estimate of the money needed to maintain the full network. This can be done through an “asset-based approach” (see box 5.8). Because funding allocations to the respective road authorities must be carefully scheduled. The entity responsible for local government roads at the local level needs to know how much it will receive and when. Without clear allocation schedules, work programming becomes impossible and unit costs increase as contractors build in foreseen payment delays in their costs.

The following three sections assess the extent to which the three main domestic sources for funding maintenance of local government roads in SSA countries—revenues raised by local governments themselves, central-local fiscal transfers, and allocations from a dedicated road fund⁵¹—meet these criteria. None of these three sources alone will raise sufficient funds to maintain the road network nor is it desirable from the points of view of efficiency and equity that any one of them should do so. The final section therefore explores the concept of cost-sharing and how local governments may leverage their scarce funds and split costs with the road users and the central government.

⁵¹ Local government borrowing in the financial markets in SSA is still unusual; it only takes place in the largest urban councils in South Africa and Zimbabwe.

Box 5.8. An Asset-Based Approach for Estimating Overall Road Maintenance Needs

If the value of the assets, that is, the value of the roads is known, it is possible to estimate the funding required to maintain these assets. If the national road authority knows the length of asphalt, gravel, earth, and urban streets in the country, the value of these can be approximated by multiplying each length times the total costs of each type of road surface. In the table below, the various types of road surfaces and their length and value per kilometer are shown. In this case, it is assumed 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. The approach is less suitable to determine allocation among levels. For example, paved roads with low traffic volumes may require less than 2.5 percent of the asset value and gravel roads may require more.

Surface	Length (km)	Value (\$/km)	Total Value (\$ million)	Percent of Total
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
<i>Total</i>	<i>12,400</i>		<i>610</i>	<i>100</i>

Source: G. Metschies adapted from Connerley and others (1996).

5.3.1. Locally Raised Revenues

The revenues local governments mobilize themselves are modest⁵² and vary widely among local governments due to differences in economic bases and administrative capacities. The main local revenue source is 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 locally produced agricultural products (for example the tea cess in Kenya) and land-based taxes. Local governments often also engage in various project such as bars, hotels, and transport services to expand their revenues. Usually these enterprises lose money.

Local revenues account for only a small proportion of total resources allocated to local government roads in SSA. Maintenance funding from local taxes is likely to be as irregular and unreliable as funds from the central budget.⁵³ Much can be done to improve local revenue collection through strong enforcement, a local court system, and incentives to tax collectors (see box 5.7). African countries have limited experience in using local road user charges (e.g., licenses) as a source for maintenance. Examples exist in which local transport operators, other business people, and, to a lesser extent, farmers have contributed money to improve local government roads. This tends, however, to be in the form of one-time contributions—certainly not a formalized source of funding—and can generally not be relied on. An important source can be property taxes. Road

⁵² Local governments in Kenya raised 6 percent of public sector recurrent expenditures for goods and services in fiscal 1989–90 (Smoke 1993).

⁵³ Locally raised revenues are subject to a similar process at the local government level as the central budget is at the national level. That is, locally raised revenues are divided among all sectors and between capital and recurrent budgets. With regards to allocation to road maintenance, 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 used to leverage investment grants rather than for maintenance.

access is a component of property taxes in many countries. Property taxes are not collected in many SSA countries because land is not traditionally held by private individuals or is ceded to central government, which means limited incentives for collection at the local level. There should be an exploration of maintenance and access charges tied to property taxes. 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 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. Another incentive to collect taxes allows local authorities to keep or to add a small percentage to the state taxes they collect, a collection surcharge, as it were. Furthermore, the local government ministry could develop a mechanism that rewarded local tax efforts at the same time that it compensated for limited fiscal capacity in poorer districts, perhaps a matching-fund incentive weighted for very poor districts.

5.3.2. 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 amount of funding allocated to local government roads is set by central government. Often transfers are sector specific as opposed to block grants which are unrestricted in the usual sense. Three main problems result from relying on the central budget for maintenance of rural roads: First, throughout most of SSA, 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 to maintain 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 just barely suffice to meet the salary expenditures of the local rural road unit. A significant difference often exists between the authorized estimates local governments are told they will receive and the actual amounts they actually receive. As a rule, central-local government fiscal transfers cannot be relied upon to maintain local government roads.

5.3.3. Road Maintenance Funds

Instead of depending on central budget allocations, a number of African countries have turned to dedicated road maintenance funds to seek an adequate and steady flow of funding for maintenance. This “new generation” of road funds, which rely on road user charges, is a promising approach. Road user charges are generally collected centrally and include fuel levies, vehicle license fees, international transit fees, and road tolls (the latter particularly in francophone countries).⁵⁴ The main source of revenue for road funds is the levy on fuel. Fuel is consumed by vehicles that may move anywhere on the entire network. The road fund should therefore be for all roads, not just main roads.

Allocation of the funds among various levels of the network is a murky business. No

⁵⁴ Road funds should also receive fines for overloading, which is a penalty charged for damage done to the road. This is rare. See Balcerac de Richecour and Heggie (1995) for a full discussion of road funds.

generally accepted formula exists for allocating road fund revenues (or even central budget allocations for roads) among the various classes of roads. Due to the dearth of information on network composition and condition, allocation of road fund revenues will require a number of steps in most SSA countries: First, the funds must be allocated among different levels of the road network. Then, the funds may have to be split among rural and urban local roads. Thirdly, funds must be divided among rural districts. Finally there must be a simple method for allocating funds to different roads within each district. The first three steps are discussed in this section on financing. The fourth step will be discussed under the section on planning methods below.

In SSA countries, the proportions allocated are often subject to political negotiations between central and local governments, and between urban and rural constituencies.⁵⁵ 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 which includes strong representation from road users, including rural constituents. The board, annually, should review funding allocations to different levels of the network. Even so, generalizations and rules-of-thumb abound in determining allocations. For example, "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." This is the split in Tanzania. 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 to the various levels based on technical standards and traffic levels. Unit rates for routine and periodic maintenance activities by type of road surface is 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 for environmental conditions and budget constraints.⁵⁶ This approach provides an initial estimate of the funding requirements of different districts and eliminates, to a certain extent, the second, third and fourth steps of the allocation process as described above. The potential drawbacks of this model, in the country context of many SSA countries, is that it relies on an accurate network inventory and requires detailed information on road conditions, something which is often not readily available.

The second step is to distribute the initial allocation to local roads among rural and urban local 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 become aware of the existence of the local government road fund for several years. Separate funds can be created for the maintenance of main, urban and rural roads or a portion of existing road funds set aside for rural roads. Countries have chosen to deal with the allocation among rural and urban roads in different ways: Zambia's road fund predefines, with possible

⁵⁵ The old generation road fund, for example in Benin 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 road; 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.

⁵⁶ See box 7.9 in Heggie (1995).

review, the proportion of funds to be allocated to main (40 percent), urban (20 percent), and local government roads (40 percent). In reality 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 to urban and rural council roads respectively (25 percent of which is allocated to the Department of Feeder Roads) and from the central government budget. A portion of these funds could also be set aside for access roads and paths (see chapter VI).

The third step involves the allocation of road fund revenues among rural local governments. The need for an equitable formula to allocate funds among rural local governments frequently arises in SSA countries due to the lack of reliable network data. In such situations, allocation formulae may be quite similar to those used for planning of investments. Common variables are population and road density and economic activity. For example, the proposed procedure in Tanzania for allocating funds for routine maintenance among all districts (both urban and rural) is quite similar to the formula considered for the allocation of investment funds among rural districts in Zambia (see box 5.9). Examples of commonly used criteria for the allocation of road fund revenues and investment funds among districts is 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. All staff should respect that the mission of the road fund is maintenance. They must receive training in developing proper road maintenance programs and which activities and expenses qualify. Otherwise, allocations from the road fund may be used for capital works and purchase of equipment. This happened when the local government road fund in Tanzania was introduced. In fact, after five years many councils were still not fully aware of the maintenance obligation. There are many reasons for this. For example, local governments applied for allocations on a project-by-project basis rather than with a maintenance plan which left an impression of funds being 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 were an increase in the development grant. Another complication is the deplorable condition of the rural road network. In many SSA countries, most of the rural roads must first be rehabilitated 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.

Box 5.9. Tanzania: 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 to support maintenance of roads under the jurisdiction of eighty-four rural and seventeen urban district councils. This has raised the average level of resources available for recurrent expenditures on district roads from Shillings (Tsh) 2 million 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 (PMO), which is responsible for district affairs but which lacks the technical capacity to allocate funds among districts in an economically efficient manner. To ensure that the funds are allocated in a manner that is simple and transparent and are based on network need, a study proposed to divide funds among urban and rural districts as follows:

$$\text{Allocation index} = \text{population density} + \text{road density} + \text{PMO rank}$$

Population density indirectly measures trip generation rates, whereas road density is primarily used as a separation parameter to differentiate between urban and rural districts. The PMO 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 three variables are given as one of three values—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; whereas those scoring 3–4 points receive 0.7 percent.

The allocation index distributes funds according to needs and does not adjust the index to reflect affordability or equity. Indeed, wealthy districts receive a greater allocation, because the PMO 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 PMO rank could be added to the other two indicators in an inverse fashion so that a high PMO 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).

5.3.4. Cost Sharing for Maintenance

Cost-sharing with local governments is a way of leveraging available funds for road maintenance and of increasing the proportion of the tended network. Cost-sharing in the form of matching grants can involve road users, central government, or donors financing an amount proportional to that provided by local government. Financing maintenance of local government roads from a road fund, however, involves an added complexity compared with financing main roads. Some local government roads are not economically viable even though they meet important economic, social, and administrative needs. It can be argued that road users should not and cannot be fully responsible for financing maintenance of local government roads. Local people primarily benefit from access to important services. The long-term goal should, therefore, be for local governments to 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 central-local fiscal transfer (block grant).

This section on maintenance financing concludes that a dedicated road maintenance fund has the best chance to generate an adequate flow of resources. In the long term, maintenance

funds should be provided on a cost-sharing basis with local governments, similar to investment grants, while adjusting for a district's ability to pay. In the short term, the current disarray of local government finance means that road maintenance funding will require grants from a road fund, or from the central government, in response to approved maintenance plans. With decentralization, the ability of local governments to raise revenues and access larger block grants will likely improve. The opportunity hence exists to gradually introduce carefully crafted cost-sharing arrangements to leverage allocations from the road fund.

5.4. PLANNING FRAMEWORK AND METHODS

Plans for 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. Central government has the responsibility for providing the overall planning framework and direction. In most SSA countries no consolidated planning process exists for rural access and transport infrastructure—only planning methods and criteria for the selection of road improvement projects. Such methods and criteria are only useful if applied in the context of a planning framework for both capital works and maintenance. This section first focuses on a sound planning framework and then deals with planning methods for maintenance and investment respectively.

5.4.1. Planning Framework

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, IMT and motorized transport services, as well as RTI. The first step in the local planning process must allow local governments and their constituents to assess priorities across sectors. Such a cross-sectoral approach to consultation is being pursued in Zimbabwe under pilot programs (see box 5.10). Planning for investments in RTI, as addressed in this paper, might thus be considered a next step, that is, once an RTI intervention has been selected. Planning for road maintenance should be part of the annual planning process.

Key characteristics of a sound planning framework for local government roads are discussed below: (a) a participatory and iterative process, (b) an incentives system, (c) network considerations, and (d) value for money and the consolidated budget.

Box 5.10. Zimbabwe: Participatory Planning

In 1984 a new system for popular participation in decisionmaking 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 (VIDCO), ward development committee (WADCO), district development committee (DDC), and provincial development committee. Each VIDCO consists of 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 chairman and secretary of each six VIDCOs make up a WADCO, 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 VIDCO and WADCO. The DDC 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—so-called village community workers (VCW)—are based at the village level. Elected by the community, the VCW is employed part-time (100 hours monthly) by the ministry of Community and Cooperative Development. About 80 percent of the VCWs are middle-aged married women, generally with at least 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, the VCW works with the VIDCO in developing 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 VIDCO and WADCO levels.

The process is "bottom up" but a few initial problems have arisen. First, in many cases, local plans were prepared without foreknowledge of budgets. Second, local priorities were overlooked in finalizing central plans in budget allocations. This led to considerable frustration over unresponsive planning. 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 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 level 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 sixty-nine infrastructure projects over five years at a cost of US\$820,000, ranging from US\$1,000 to US\$30,000 per project. 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. In mid-1996, all sixty-nine projects still were operating, maintained by local government and communities. Their success has expanded the program to the whole country.

Source: World Bank (1992c).

A Participatory and Iterative Process

Planning for local government roads should be based on a recurrent dialogue between local constituents and local and central government officials. The transport ministry and central coordinating unit for local government roads should provide the overall planning framework. The framework should provide effective links between the different levels of government and the constituents. Local governments, as designated road authorities, would arrange consultations with constituents. The plans should be annual and may involve a three- to five-year rolling planning horizon. The participatory and iterative planning process involve three basic steps.

The first step is for local government to consult with its constituents so that they can voice concerns and preferences. Because local constituents, through local government, are expected to allocate substantial resources to maintenance, the planning process must articulate and 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. In others constituent representatives are invited to attend or become members of transport or road committees of the local government council. In the former, decisionmaking commonly becomes highly politicized (see box 5.11). In the latter, although NGOs and interest groups may be allowed to join technical committees, they rarely do so and most local governments do not actively pursue their participation. Experience indicates that neither setup is particularly effective in ensuring value for money when road users are not present. The positive experience of setting up road boards that include strong representation of the private sector and road users at the national level can fruitfully be duplicated to the local level.

The second step in the planning process is for local government to articulate constituent demands into 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. A regional road board or the regional office of the main road agency or a regional development committee can be involved at an intermediate stage to ensure that local plans are well balanced between maintenance and expenditure programs, and that network considerations are adequately reflected. In Zambia, which has no administrative entity for local government roads at the provincial level, the coordination of local government road plans is done by the provincial engineer for main roads. The engineer collaborates with provincial road boards which have spontaneously sprung up in some provinces. When the plan is passed on to the coordinating rural road unit at the central level, it assesses the technical soundness of the plan and reviews the expenditure program in light of financial resource constraints. This provides feedback to the local government road department which then must revisit the plan.

The third step then embraces a round of negotiations when local government brings the actual resource envelope to constituents. The plan is now circumscribed by reality. The participatory planning process changes into an exercise in participatory budgeting in that local constituents are faced with an actual budget constraint. Local constituents and local governments may have to compromise between technical standards and physical coverage. It is a critical moment. When investment grants require proof of maintenance of current assets, constituents realize that what they do now will have long-term consequences. They may be 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 new investment.

Box 5.11. Local Consultation in Planning Local Government Roads

Local consultation may take place through representative councils, road committees, or boards. At Tanzania's district level, one councilor is elected per ward. These councilors are well suited to expressing 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. They inevitably, however, tend to behave as local "members of parliament" and have a natural bias in favor of their local constituency.

Many countries, for example, Uganda and Ghana, have so-called district development committees (DDCs) at the local government level with a transport working group or subcommittee. The DDC usually includes officers of the various sector departments in the district, representatives from the elected councils, and, at times, members of Parliament. Although this type of local government committee may involve road users and NGOs, these stakeholders are rarely represented and the DDCs have, at times, been perceived as the hand of central government at the local level. In Kenya DDCs are known to have delayed projects through bureaucratic and political conflicts with the local authorities. In Malawi considerable tension existed between the DDC (mainly technical staff) and the Full Council Meeting (elected councilors and local chiefs); the tension recently resulted in a merger of the entities.

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, for example, through farmer and parent-teacher organizations as well as associations of transport operators.

Participation by constituents in the planning of local government roads principally takes the form of consultations. In the programming of physical works, villages directly affected by a road project must be more closely involved. Planners should explore the potential impact of proposed road improvements with affected communities and act to reduce negative effects. Road improvements, for example, can affect the productivity and use of adjacent lands through drainage, dust effects, 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 and straightening or new construction of 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 for the effective execution of work. Furthermore, because they possess local knowledge, they can often improve project plans by providing specific information, such as the properties of local construction materials; sources of sand, stone, and gravel; and local drainage, and traffic flow patterns.

Incentives System

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. Allocation of funds should, therefore, be valued in light of various performance criteria, including the maintenance record, financial management, and technical quality of works. The ability of local government to safeguard existing assets will then affect their eligibility for new funds from 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), demonstrating their ability to cover the maintenance of existing and proposed assets. The performance of the councils is monitored according to specific indicators which include financial and technical performance. Performance is a key criterion in determining funding allocation in subsequent years. To prepare the plan, 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 even simpler system could be put in place for rural local governments.

Network Considerations

The planning framework facilitates network-based interventions and provides effective links through which local governments can share their plans with each other and with the main road agency. Coordination of road programs is generally done at the regional or provincial levels by a government administrative committee, which brings together plans from the respective local governments. The main road agency provides a plan that shows 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 levels provides an opportunity for local governments and constituent representatives to give feedback on the main road agency's plans. Experience with provincial road boards as coordinating bodies is gradually 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 or revival of provincial road boards in both countries is closely linked to setting up a road fund.

Value for Money and the Consolidated Budget

An important objective of planning is to ensure optimal allocation of available resources. This depends on resources being relatively fungible between maintenance and capital works. It also depends on local governments being aware of the high return on maintenance compared with most capital projects and the high return on spot improvements compared with full rehabilitation.⁵⁷ The principal argument for 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 the situation is reversed, that is, funds are available for maintenance and not for capital works, the desirability of fungible resources declines considerably.

5.4.2. Planning Methods for Maintenance and Investment

Planning methods are often assumed to be synonymous with criteria for selection of investment projects. This implies that somehow, all maintainable roads are being maintained. This a perilous fallacy. 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.

⁵⁷ Another important issue is the use of cost-effective work methods regarding and technology choice. Unless explicitly conditioned not to, local road agencies often prefer to execute the works themselves, rather than hiring a contractor, and resort to renting a grader or repairing a broken grader to hiring a large number of casual laborers for a few days. This is in part due to what remains of the force account system, which is still reflected in the staffing structure of local government road units.

Maintenance Criteria

Recently rehabilitated rural roads begin to deteriorate instantly given the heavy rains in many SSA countries. Untended roads soon begin exacting costs in time, safety and vehicle damage. Yet at the local level, the maintenance plan is 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 training of planners and local consultants to assist them. Box 5.12 lists a few criteria and sound practices for planning the maintenance of rural roads.

Box 5.12. 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 rehabilitating roads in the worst condition.

Good practices for sustainable maintenance planning include the following:

- Maintain those roads that are functionally important and in reasonably good condition.
- Create a multiyear, rolling maintenance program that defines the core network and its condition.
- Define routine and periodic maintenance in 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 maintenance work that is required to keep low-quality 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 and others (1994).

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, on information from the planning process. The recommended criteria should allow for local input in determining the weight given to specific variables. The outcome of the initial application of the criteria needs to be vetted during consultation with local constituents. Interestingly, many industrialized countries, for example, Sweden, 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 quite elaborate procedures.

There is a general consensus that for roads with traffic below fifty motorized vehicles a day, the standard technique of economic cost-benefit analysis, based on savings in vehicle operating costs, is marginally relevant and that many of the benefits from improving rural roads (and rural transport in general) are difficult to quantify. Most of the traffic moving on this network is nonmotorized, i.e. pedestrians and IMT. 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.⁵⁸

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.⁵⁹ Planners, therefore, often resort to national averages, for example, for crop yields, which may not represent local conditions. Given local capacity constraints, producer surplus models, for example, which rely on information being collected locally, must rely on a few trained individuals at the central level to process the information, thus removing the planning process from the local level and effectively limiting local participation in the selection process. In Ghana, when selecting among roads, an ongoing feeder road project uses a variation of the producer surplus model. DFR, which is one of the most technically competent rural road agencies in SSA, has, however, complained about the complexity of the model, which results in 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 selection criteria need above all to be user-friendly⁶⁰ and require easily obtainable information. Simpler planning methods include 'multicriteria' 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 IMT 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 can be found in annex C. The Rural Access Roads Program in Kenya and the DRIMP in Malawi used criteria combining economic assessments with social factors and engineering judgment. Multicriteria analysis will also be 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.

To conclude, few countries have a coherent set of standard criteria to apply to rural road projects nationwide. Most local government road units simply adhere to conditions that will trigger funding for capital works. Donors provide the lion's share of funds for capital expenditures on rural roads and most focus their support on one district or region of a country. In a country there may be as many planning methodologies as donors. As a result, it is not unusual that a central sector ministry finds itself applying different prioritization criteria to the same network. This complicates and confuses planning and is a serious drain on scarce resources. The formulation of a government rural transport strategy should bring increased consistency by providing a planning framework and a methodology that all stakeholders can comprehend, identify with and apply.

⁵⁸ Socio-economic impact assessments of rural roads point to improvements both in the access to services and the quality of existing services. For example, qualified teachers and health officers accepting to be posted to rural schools and clinics; medical supplies and kerosene being replenished regularly to rural clinics.

⁵⁹ Beenhakker (1983).

⁶⁰ Consultants in Tanzania found that the official guidelines for selection of roads for improvement were in many cases not understood or observed or even received at the district and village level in time to be used (COWIconsult, 1988).

VI. COMMUNITY ROADS AND PATHS: INSTITUTIONAL FRAMEWORK

In most SSA 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 explains why and proposes a remedial institutional framework. This framework empowers communities to claim responsibility for those roads and paths which have no legal owners and for those designated roads which the local government road agency fails to maintain. Experience from Finland and Sweden proves that private ownership works well. Users living and working next to these roads have the most direct interest in their operation. 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 equivalent public roads and significantly increase the number of kilometers which receive regular maintenance.

This chapter has three sections. The first section addresses the question of ownership and capacity to manage community roads and paths. The second section explores available revenue sources for the financing of capital and recurrent expenditures. The final section focuses on the planning of community roads and paths and the importance of broad-based local participation in priority setting.

6.1. COMMUNITY OWNERSHIP AND CAPACITY

Access roads and paths in SSA are often undesignated but are considered to belong to adjoining landowners, communities, or commercial entities, familiar examples are logging, tea, or mining companies. As a general proposition, no one can be held legally responsible for a specific road or path unless someone, or some entity, has been granted or has established ownership. The upkeep of orphan roads can be assumed by interested parties but just as easily abandoned. In fact, roads and paths can be mapped and functionally classified and yet have no designated owner. In developing countries the issue of ownership has not yet been confronted. Countries that allow private ownership of roads provide a well-structured institutional framework and incentives (legal, financial and technical and managerial support) to encourage citizens who live along undesignated roads to become effective owners and managers of specific roads. This section focuses on these incentives: (a) legal ownership, (b) cost-sharing arrangements, and (c) technical and managerial advice.

6.1.2. *Legal Ownership*

Ownership of private roads requires a legal framework that permits communities and nongovernmental entities to assume management responsibility. Private road ownership is not exclusively a juridical matter to be judged by a court. In practice, ownership becomes consensual stewardship, i.e., the owners agree to manage their assets. Without a law that grants legal ownership of a community road or path to a community, it is very difficult to engender a 'tangible interest' that will in turn 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 designation of ownership of roads to a nongovernmental

entity, such as a group of private landowners or a village, must also be based on consent and active interest.

Private or community ownership usually requires a specific law. If the basic road act does not make provision for private or community roads, it has to be amended or a specific act has to be passed under which these roads can be designated. Roads designated to a private entity may be fully assigned (e.g., community roads) or assigned with limits such as a specific period of time (e.g., toll road concessions). Countries with significant private ownership of roads have legally constituted this ownership under a Private Roads Act (see box 6.1 on Sweden). The act outlines how citizens can organize themselves into private road associations and how the associations should be organized and run. In Sweden and Finland private roads are a fundamental and large component of the national road network. Managers of the national road agencies in both countries point to a well-defined legal framework for private ownership as the most important component of institutional framework. In Zambia a legal framework for private ownership of roads is a necessary pre-requisite for a formalized partnership between local communities and the road users organized through the road maintenance fund. An effort to increase the kilometers of roads which received regular maintenance include therefore a review of the Roads and Road Traffic Act to accommodate private ownership of roads.

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. The private roads carry approximately 4 percent of the total tonnage transported on all roads. Along many of these 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 (280,000 kilometers). The associations are responsible for organizing maintenance and may either 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 properties along the roads whose membership has been determined upon by the survey. The survey allots the maintenance costs among 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, formulation of an annual maintenance program, financial reports, and audits. The association must hold an annual meeting and elect a chairman, secretary, trustee, and other members to manage its maintenance operations.

A Change in Ownership

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. Changes in road ownership require prompt and explicit procedures, which include consultation with the concerned parties (see box 5.2 above on procedures for road classification and designation). For example, if a road that has been the responsibility of local government and no longer will be designated as such, local communities and other concerned parties must be informed so they can decide whether to assume responsibility. Otherwise, the road may fall into disrepair.

Often in SSA, the local government road agency is legally responsible for many more kilometers of roads than it can maintain. Clarification of responsibilities for individual roads and paths is a continuous need. Prompt procedures for changing the designation of roads become especially important as the local government road agency identifies a core network that it can effectively sustain given its resources. The core local government road network will be smaller and thus result in many kilometers of roads becoming unclaimed (undesignated) by government. The fate of these dispossessed roads has to be decided. Some are without any value and will be abandoned. The others will require an assumption of responsibility by someone. At the least the local road authority should contact potential owners as a matter of routine.

6.1.2. Cost Sharing Arrangements

Cost sharing arrangements for maintenance of community roads and paths fulfill three important functions. First, they constitute a financial incentive for communities to organize themselves. Secondly, they expand the revenue base. Thirdly, they can verify demand and improve allocative efficiency. Experience in Canada, Finland, 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 province of Ontario in Canada differ, depending on whether landowners have formed a local road board. Where citizens have formed a board, the province pays two-thirds of construction and maintenance costs; for community roads without a board, 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 to 80 percent of costs, depending on the relative utility of the road. This is calculated on, among other things, traffic and number of beneficiaries. (See also box 6.2 on the cost-sharing criteria applied in Finland.)

Box 6.2. Finland: Cost-sharing Criteria for Maintenance of Private Roads

Three quarters of the Finnish road network are designated as private or cooperative roads. These roads carry an average of forty-five vehicles per day, and 99 percent have gravel and earth surfaces. 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 roads, 87,000 kilometers receive public support from central government, a municipality, or both. Central government supports maintenance of private roads provided that (a) a formal cooperative has been established, (b) the road length to a permanent residence is at least one kilometer, and (c) 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 government provided about US\$40 million to support private roads, municipalities provided US\$40 million, while the remaining US\$50 million was provided by members of the cooperatives. This support was received by 17,400 cooperatives with 392,000 members responsible for 87,000 kilometers of private road.

Source: Isotalo (1995).

Donor-financed projects in SSA countries commonly expect that communities contribute to investments in access roads and paths but seldom are there cost-sharing arrangements for maintaining the same roads. To manage and maintain effectively roads and paths communities

need to buy materials and technical advice not locally available.⁶¹ A system in which communities receive financial assistance for both investment and maintenance is being planned as a pilot program in Zambia. This system will be discussed in section 6.2.3. below on government and road fund financing of maintenance.

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 also include a schedule of works. (Annex D provides a sample contract between a community and a project for improvement of community transport infrastructure.) 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.

Informal cost-sharing arrangements for road maintenance exist in much of SSA. 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. Cost-sharing agreements for both improvement works and maintenance are best formalized through written contracts.

6.1.3. Technical and Managerial Advice

Communities in SSA countries need some expert advice to prepare themselves for effective performance of new responsibilities which comes with ownership of roads and paths. This advice is required both in technical areas (e.g., road design and standards, appropriate materials, work planning) and in managerial areas (e.g. financial accounting, contract management, procurement). Both areas are discussed below.

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 most of the time one is doing these tasks. This is particularly true for road maintenance. Experience shows that the required skills in road maintenance can be effectively transferred to communities by a foreman in a period of days coupled with periodic supervisory visits. The Village Access Roads and Bridges Assistance Unit (VARBAU) 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 maintaining their roads themselves. Periodical supervision visits by a foreman from the road agency enabled the community road committee to maintain its road. The visiting foreman assists the community in following an annual schedule of programmed maintenance activities. (The VARBAU schedule for training communities in both rehabilitation and maintenance is attached in annex F.)

In other areas of SSA, 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, technical advice on road maintenance had been provided to private road associations by the provincial road agency. With the increased involvement of the private sector in physical works, this function vanished because most associations purchase the little advice

⁶¹ A study in Ghana indicated that financial constraints, such as cash for goods that were not locally available, were generally the most binding for the rural communities because labor could be volunteered (Twumasi 1994).

they require from private consultants. This may become the trend also in SSA countries. If so, technical expertise must not necessarily be located within the community but the community must have the financial means to access it.

To organize and execute the work in a timely and efficient manner communities do need to organize themselves. A particularly challenging problem in SSA is managing work to organize around the seasonality of labor supply. Villages can group themselves in 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 groupings that share a common interest. In Ghana, each village has a development committee (VDC) with a subcommittee on transport infrastructure. The subcommittee sets the priorities in its sector and submits these to the plenary VDC for consideration. Each group of villages has a joint villages development committee (JVDC) dealing with projects, such as roads, which affect many villages. To function more efficiently, the subcommittee or JVDC can register as the legal owner of a road in order to qualify for partial funding.

Financial planning and bookkeeping are key tasks. In Finland and Sweden, a technical staff in the local road agency gives a full range of guidance to the road cooperatives including participating in meetings. Sweden has a national NGO for private roads (Riksforbundet for Enskild Vaghallning) that arranges training on managerial and technical topics for the associations. This NGO is also consulted by the government ministry in charge of roads on all aspects related to private roads including changes in legislation. In Namibia, managerial advice is provided by a representative from the road agency who attends and chairs the annual meetings of the local road committees.

Communities require advice on contract management and procurement. The principal challenges to community procurement is not just to keep proper accounts but to strengthen village organizational structures. In some donor-financed investment projects (e.g., social and community infrastructure development funds), community groups have in essence 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 SSA countries and donor agencies are frequently unsuitable for community-based procurement and disbursement to communities.⁶² Communities must have the legal right communities to contract and to pursue recourse. Some of the issues the World Bank clarifies when community groups act as executing agencies are described in box 6.3. A checklist for task managers of donor agencies on community procurement is provided in annex F. There is a problem of a low level of formal schooling in rural communities and important paperwork must be done. The local government road agency and donor-financed projects must help communities procure their own goods and services. Experience shows such assistance has a number of positive spin-offs.⁶³

⁶² 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).

⁶³ A survey of Bank-financed projects indicates that community involvement in procurements enhanced the sustainability of the investment; a larger proportion of the investment was spent in the local economy, generating

Box 6.3. 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 to draft by-laws and other regulations? Are there NGOs that can assist them in drafting such documents? Can they be provided with sample documents? Do 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? (In that case, the intermediary's legal status needs to 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 is the point of receipt by communities of such funds? What formalities will the group have to perform to access the funds?

Ability to contract. Does the group have legal status to enter into contract? Is there a suitable legislative provision under which communities can formalize their groups? What steps need to 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. What are the existing dispute resolution processes 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 payment?

Source: Gopal and Marc (1994).

6.2. FINANCING OF COMMUNITY ROADS AND PATHS

The previous section on cost-sharing assumed that financing is available. This section discusses various revenue sources and mechanisms for financing community roads and paths. The main sources of funds are likely to come from communities themselves and external donors, at least in the short and medium term.⁶⁴ With increasing decentralization funding for community level infrastructure may be forthcoming from local governments. For example, the common fund in Ghana allocates five percent of GDP to district assemblies. Communities themselves will have to carry the principal responsibility for financing maintenance though there may be nominal cost-sharing with a road maintenance fund.

employment and economic opportunities; and capacity and know-how was built in the community (Gopal and Marc 1994).

⁶⁴ In some countries, central and local government provide a cross-sectoral investment window through which communities can request financial support for a priority investment.

This section will first focus on channeling donor funds to communities for investments, principally for social and community fund instruments. Second, community financing for both investment and maintenance will be treated. Investment and maintenance are combined because communities' revenue sources are the same, in-kind and cash. Finally, government and road fund revenues for cost-sharing in maintenance are discussed.

6.2.1. Donor Financing of Investments

In many countries in Africa, external donors provide most funds for rural infrastructure investment. Until recently, rural road projects financed by donors have not offered communities a choice among investments but simply offered "roads or nothing." Although communities may accept and even contribute to improvement of roads, they may opt for other types of investment, such as improved water supply when permitted a choice. The risk of communities failing to assume effective responsibility for access roads is reduced when they are permitted cross-sectoral choices. Important ways of surfacing priorities within communities include the use of cost-sharing requirements and allowing communities to choose among various types of investments. Social and community funds have both of these features (see box 6.4).⁶⁵

Relatively successful in reaching rural communities, social funds have important limitations. One is the risk of funding ad hoc project interventions without adequate attention to the institutional arrangements of the subsector, the total network requirements, and maintenance needs. Social funds have financed local government roads and community roads and paths not only without ensuring adequate maintenance but without making any distinction between the requirements for community contributions. These issues can be addressed through improved coordination with the local government road agency and through implementation of a national strategy for rural transport. Lacking appropriate sector linkages, the quality of work has suffered and reduced the life of the investment. Better linkage between the local government road agency and the social fund financed community based projects would improve technical oversight and standards.

The second limitation of the social funds is the lack of capability in project formulation at the community level. Communities are not aware of available opportunities. Some of the most successful social funds in Latin America have 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 assisted communities in formulating their projects. Communities were also taught project management and basic bookkeeping skills. Such an outreach program is an important requirement to reach rural communities in Africa effectively.

⁶⁵ The Bank finances currently about 40 social funds, mainly in Africa and Latin America but also in Asia and Eastern Europe.

Box 6.4. Key Features of Social and Community Funds

Social and community funds provide a mechanism for channeling funds 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. Social and community funds finance projects put forward by local communities, NGOs, and local government in more than fourteen countries in SSA. 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 principally finance social and economic infrastructure projects. The typical subproject size is US\$10,000 and the maximum amount is US\$400,000.⁶⁶ The funds do not propose or implement projects, and individual projects are not identified at the time a fund is established but are appraised as they are submitted, applying predetermined selection criteria. Common selection criteria used by social funds are listed below and include cost-sharing arrangements:

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

In order to improve the sustainability of projects financed by social funds, there is a need to develop also sector-specific criteria which apply to community roads and paths. 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. Individuals projects must be linked with the overall strategy for the specific sector.

Source: Carvalho (1994).

Thirdly, some current social funds arrangements bias community choice against improvement of roads because they insist that casual/unqualified labor is the contribution of the communities. The proportion of unqualified labor in roads works in rural areas using labor-based work methods is many times higher than for construction of buildings. This condition has thus resulted in some communities opting to construct schools and clinics instead of roads or to do 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 total cost) rather than do the physical works because the share of casual labor would have been 60 percent of the total cost using labor-based work methods. Instead the village hired a road grader. Had the community been allowed an unbiased choice of technology. i.e., not under the condition that all casual labor had to 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

⁶⁶ The funds have reached the local level with significant amounts of financing. At the peak of activities the Bolivian social fund approved thirty projects weekly worth US\$2 million and had more than 1,000 projects going on simultaneously. The staff reached 130 with eighty professionals; the project appraisal department had twelve to fifteen persons.

of the project costs working as laborers on the road. In order to meet latent community demand for community roads and paths, social funds need to revise and tailor some of their existing criteria to capture the specificity of the rural transport sub-sector.

The first step in financing rural infrastructure should be horizontal, that is, it must allow communities the freedom 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 vertical, that is, it provides sector linkages, and can be provided by a national rural transport strategy. The strategy should provide the institutional framework including the financing arrangements for investment and maintenance of community roads and paths.

6.2.2. Community Financing of Investment and Maintenance

In SSA most rural populations are extremely poor but communities can 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, and/or locally available materials. Villages raise cash in various ways: with a cash crop levy (e.g., cocoa in Ghana), an income-generating enterprise or project (a communal field, a grinding mill, a village tractor or truck), and one-time household contributions for specific investment projects. Although less common, specific collections are occasionally made for recurrent expenditures. In Tanzania, 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 maintain. The money was collected from road users—shopowners, businesspeople, and households. If this type of fund raising is to be relied upon as a steady source of funding for maintenance, it should become formalized through formation 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. Similar arrangements exist 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. One of these is the level of economic development. For example, agriculturally productive areas may prefer to make their contribution in cash rather than labor. Common sense dictates that communities will only be interested in improving and maintaining their road or path if they feel that the road or path is important to them (see box 6.5). A community that produces significant amounts of perishable crops is therefore often motivated to improve and maintain their 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.⁶⁷

⁶⁷ Because a road increases the value of adjacent land, farmers living close to a road alignment 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 mainly be captured by the local elite or by outsiders, however, little motivation will exist for mass participation in the project.

Box 6.5. Tanzania: Commonality of Need and Village Organization as the Keys to Success

The people of 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 initiative to build the road was taken by the Mteke village government, which approached the 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 and design. The villagers paid the daily rates 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, according to the local consultant, the commonality of felt need and the communities' highly developed ability to organize the effort.

Source: Msimbe (1994).

A second factor is perceived need. Communities are principally concerned with access. Experience suggests that frequently a stronger need is felt among communities for structures and footbridges than roads. This was confirmed by the VARBAU project in Malawi. Villagers were more motivated by self-help work on construction of bridges than on access roads, because the lack of a bridge over a wide and deep water crossing effectively eliminated all access—including for pedestrians. After a bridge was constructed, some villages lost interest in finishing the work on the community road leading from bridge to village. Although it is in the villagers' interest to get a lift from a visiting vehicle, many do not feel a need urgent enough to work on the road.

A third factor which affects 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 and promised that, once elected, self-help or *thangata* would be abolished and roads would be provided by central government. Some communities thereupon withdrew commitments to improve and maintain access roads believing that government will provide most public goods and services including RTI. Another factor which influences community interest in self-help relates to past experiences with forced labor.

There are at least two risks in using voluntary labor contributions. These relate to decision-making and timing. The decision to use voluntary workers can be fateful. Rural communities are not homogenous. Rather they reflect existing social, ethnic, gender and economic divisions—"community of location does not necessarily equate to community of choice."⁶⁸ The socioeconomic spectrum in rural communities features elites as well as ordinary farmers and the very poor. Decisions regarding infrastructure self-help projects, particularly with external financing, are often made by village leaders, almost always males. The risk exists that weaker members of society and women will constitute a large percentage of the 'self-help' unpaid work force on access roads. It is well documented that rural women, who are the principal transporters in rural Africa,

⁶⁸ P. Vickers, World Bank.

rarely use roads, and when consulted on the planning of self-help initiatives, they often prefer to work on tracks and footpaths rather than on roads.

The second risk relates to timing. Projects often have tighter time schedules than communities are prepared to follow. The urgency of expatriate project 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 becomes more the "project's road" than the "community's road." This experience was summed up well by a VARBAU 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 which are contributing voluntary labor are learning to draw up more realistic work schedules that take into account the agricultural calendar. Another important point regards contract enforcement. Communities not meeting contract obligations, even though contract terms are reasonable, indicate that the road or bridge is not a great enough priority. Such projects should be dropped.

To summarize the discussion on self-help: Community contributions in kind are common. Relying on such contributions can be important for communities but also difficult and inequitable. Experience suggests that self-help is feasible when a number of conditions prevail: communities have been provided cross-sectoral choice among potential investments; they are motivated through a strongly felt need and a sense of fairness; they have the ability to organize themselves; when decisions have been preceded by exhaustive discussions usually involving trained community development staff; and when work is not scheduled during agricultural peak seasons.

6.2.3. Government and Road Fund Financing of Maintenance

Community roads and paths mainly are local concerns. Given the low volumes of traffic on community roads and the constrained finances of government, communities should assume the larger share of the financial responsibility for these roads and paths. However, a road maintenance fund has great potential for providing partial financing to rural communities for maintenance of their roads. In Tanzania and Zambia, creation of a road fund substantially increased funding for maintenance of 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 do not consider access roads to be any higher a priority than do many central government agencies currently responsible for roads. Sensitization and possibly some change in the membership structure of some road fund boards may be needed to earn support for redirecting road fund revenues to community roads. This may entail the inclusion of representatives of rural focused institutions such as peasant farmer unions and providers of rural transport services). 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 further because they would result in more roads being brought under regular maintenance.

There are various cost-sharing arrangements. In Zambia, a pilot program is being planned which involves community cost-sharing for both investments and maintenance. Communities requesting an access road, who meet set criteria, will share the costs of the investment with the social fund and for maintenance with the road funds. (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 equivalent to an estimated US\$300. Assuming that the average community access road is 7 kilometers, this will entitle the community to US\$525 per year. If Zambia has 20,000 kilometers of access roads, the total cost to the road fund would be US\$1.5 million per

year, which is about 11 percent of the 1996 road fund revenue. If projected increases in the road fund revenue are accurate, the percentage would drop to about 4 percent in the year 2000. This would be 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 the community using labor-based work methods. The provincial department of transport finances materials and equipment and about 50 percent of the labor cost. In theory, the community contribution would consist of the remaining 50 percent of the labor cost. Instead community members work for a wage rate that is half the stipulated minimum wage.⁶⁹ 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 require 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 SSA, the local government road agency, the government auditor, or private consultants are well placed to perform these inspections.

6.3. PLANNING COMMUNITY ROADS AND PATHS⁷⁰

Transport planning in rural Africa has been dominated by an emphasis on providing roads alone. Yet nontransport solutions may solve some access problems more effectively and at a lower cost.⁷¹ For example, a program to rehabilitate and maintain grinding mills or water sources may cost less and have larger impact than rehabilitation of a road. 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. Box 6.6 details the positive outcome of a path improvement effort under an integrated rural transport project in Tanzania. The path is considered one of the most successful project components and has the highest benefit cost ratio of all project interventions⁷². It also has great promise for long-term sustainability. Path improvement had low priority at the district council level

⁶⁹ Although the minimum wage clearly is higher than the market rate, 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 the society (transport operators, shop owners, and individuals who travel to work elsewhere) benefit relatively more from the road improvement.

⁷⁰ For an in-depth discussion on rural transport planning at the local levels refer to an accompanying paper by Connerley and Schroeder (1996).

⁷¹ See examples in *Roads Are Not Enough* (Dawson and Barwell 1993).

⁷² Footpath improvements were found to have the best ratio of total benefits (including the monetarised 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; markets are within walking distance; funds available for road construction are not sufficient; and a risk averse investment strategy is preferred (Sieber, 1996).

but high priority at the village level.⁷³ The communities now maintain it with a combination of self-help work and district technical support.⁷⁴

Box 6.6. Tanzania: Low-cost Path Improvement Yielded High Benefit-Cost Ratio

In 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 improvement, bigger loads were registered on the way down; people could travel on the path throughout the year and also at night. 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. As a result, path usage increased by 30 percent because many villagers changed their travel routes. In 1995, the path was used by people who make a total of about 60,000 trips per year. Isolation, which is one of the salient features of poverty, was significantly reduced by path improvement.

Source: Sieber (1996).

The first step in assisting communities to plan access improvements should be a horizontal process that allows communities to mobilize funds for the investment of their choice. Hence, he need exists for development of communication skills and methodologies for surfacing local priorities (see annex G on various methodologies). Trained outreach workers can ensure that information concerning local needs and priorities are presented to local road agency staff and that agency plans and proposals will in turn be communicated to villagers in terms they understand.⁷⁵ 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.⁷⁶ 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 the farmers to assist them in assessing options and are also required by funding agencies (whether local governments or social funds) to assess competing projects.

An innovative planning procedure which focuses on accessibility has been piloted in Malawi and the Philippines. This procedure can assist rural households to define community requirements and local government to develop plans (see box 6.7). Emerging experience indicates that although the planning procedures are relatively successful in determining local priorities in a project environment there are difficulties in integrating the procedures in

⁷³ Attempts at track improvements were less successful in a Bank-financed project in Benin, where some communities objected to their road being of lower standard than the local government road. In this case, little communication with and involvement of the communities had occurred in planning.

⁷⁴ This path has been labeled a "district path." It connects one region with another and qualifies for support from the district engineer's office.

⁷⁵ 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).

⁷⁶ The poor are often in the best position to define priorities precisely because their limited resources demand it. A study that intended to determine an optimal sequencing of rural infrastructure investments for achieving economic growth concluded that, although ample complementarities and links exist among the various infrastructure subsectors, no evidence exists of any one sequence leading to higher growth (Galenson and Holste 1994).

government systems,⁷⁷ in part due to the considerable need for data and training. Rather simple criteria have been proposed in South Africa for funding of community roads (see box 6.8). Roads will be functionally classified, mapped, and given a road reference number. 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 6.7. Accessibility Planning

At the heart of the accessibility planning procedure is a ten step prioritization process designed to guide the selection of interventions to improve rural access:

1. articulate project purpose;
2. compute indicators of access to different type of services for each community (e.g., to markets, clinics, schools, water, firewood, grinding mills and so forth);
3. create a matrix resulting from step 2. 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 (step 3.) and the criteria in step 4;
6. identify optimal interventions for those locations with the worst access problems;
7. assess the availability of resources including personnel, monetary, and other resources, such as credit facilities, materials, land and equipment;
8. finalize intervention decision based on the combination of resources available (step 7) and the outcomes of previous steps;
9. draw up final budget plans;
10. devise the work program.

This methodology requires measurements and quantification to identify and rank alternative interventions for improving rural access.

Source: T. 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 participation by local people in the decision process.⁷⁸ Local participation is a complex area and will only be very briefly touched upon, in respect to weaker members of communities and local leaders, and to time constraints on rural women. Relatively weaker 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 (see also section 6.2.2. on the discussion on self-help). While it is important that community leaders are involved in the planning, construction and maintenance of access roads and paths, they can pose obstacles. Local elites are often reluctant to implement initiatives to expand participation for fear of altering the authority structure. Participation presents people with more

⁷⁷ Edmonds, 1997.

⁷⁸ This call for participation is not equivalent to endless local meetings where 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).

choices and makes them more likely to hold community leaders accountable. Increased accountability may result in changes in power structures as well as in 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 should include a strategy to involve non-elites.

Participation in planning often demands substantial amounts of people's time even if sporadic. 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 for participants. Participatory activities should be targeted precisely and appropriately in terms of quantity and scheduling to respect other obligations, particularly for women to plan for childcare, meal preparation, and their many other responsibilities.

Box 6.8. South Africa: Proposed Criteria for a New Class of Road in Kwazulu-Natal

In the province of Kwazulu-Natal, community roads would constitute a new class of roads that comprise by-roads and community access roads. Communities would be responsible for these roads which would be constructed and maintained by the communities themselves and 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 (DOT) for compensation.

The road shall carry no fewer than ten vehicles or twenty equivalent vehicle units (evu) per day or, if a road needs to be constructed, it shall have the potential to carry at least twenty evu per day. Classified counts shall be taken at the midpoint of the section of road and the table below shall apply.

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

DOT will facilitate empowerment of communities by providing technical guidance, training, and partial funding subsidies. DOT may grant subsidies toward work associated with (a) construction and improvement of local roads, (b) repair and maintenance of local roads, or (c) construction of bridges, culverts, and causeways. DOT will issue a road reference number to each road that has received a subsidy and will record the mapped position of the road. These 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
	Pension payout point; community hall	10
Agriculture	Agricultural holding > 10 hectares	20
	Communal cane or timber-loading zone	10
	Communal agricultural garden	10
	Depot or office providing a public service	10
	Communal cattle-dipping tank	5
Commercial / Industrial	Permanent shop or trading area	10
	Manufacturer or factory premises	10
Education	Training institution	20
	High school	10
	Primary school; preprimary school; day care	5
Cultural	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).

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TYPES OF DECENTRALIZATION¹

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 which 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 subsectors. In such systems, selected functions are assigned to subnational 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, government exists at local levels in the form of discrete central governments sector ministry offices; without any mechanism at the local level for mandatory horizontal integration. Despite geographic dispersion of ministry offices and despite masses of central government employees stationed in branch offices, the impact of such a structure is to concentrate power within 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, ports, and transport sectors. Functions are sometimes delegated to a parastatal which, in turn, deconcentrates responsibility for internal managerial and administrative systems to its own subnational units. The act of delegating responsibility to an organization, however, does not, ensure internal deconcentration within that organization.

DEVOLUTION: DISCRETIONARY AUTHORITY MODEL

In a minority of cases, decentralized organizational arrangements within sectors are 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 roads subsectors. 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; bound only by: (a) broad national policy guidelines; (b) their own financial, human, and material capacities; and (c) the physical environment within which they must operate. An essential characteristic of discretionary authority is that the oversight role of 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 which they, themselves,

¹ Source: J. Silverman, 1992.

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

TOP-DOWN PRINCIPAL AGENCY

Within the *top-down principal agency model*, local governments exercise responsibility on behalf of central governments 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 no more than agents of central governments, the latter remain primarily responsible 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 the performance of 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 governments* or directly as agents of beneficiaries/users/clients. Thus, a system of bottom-up principal agency is significantly 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's 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 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 provision 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.

TERMS OF REFERENCE

DISTRICT COUNCIL MANAGEMENT CONSULTANTS ROAD MAINTENANCE WORKS FUNDED THROUGH ROAD FUND

In Zambia, the National Roads Board (NRB) engaged local consulting firms to assist the local governments (councils) in preparing the annual maintenance programs and contracts and, subsequently, in supervision of the contractors. One firm per province were hired to assist all the councils within the same province. At first, there was considerable confusion with regards to the roles and responsibilities of the consultants, the councils, and NRB. It was also unclear how work must 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 NRB re-negotiated 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 the list of roads to be maintained based on the allocated funds by the National Roads Board. 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 in 1.1 should be limited to the priority roads based on the agreed prioritization guidelines issued by the National Roads Board. The availability of the funds governs the number of the roads, extent and nature works to be carried out.
- 1.2 Carry out visual survey of the condition of the preliminary roads and prepare list of the works needed for maintenance of the roads. Based on the visual condition survey, prepare a schedule of works and estimate the cost of the works on each road. After examination of 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 Prepare a contract document and submit the document to the National Roads Board for approval after approval by the Councils.
- 1.4 Carry out tender invitation, analysis, and recommend a contractor to the Council.
- 1.5 After approval by the Council, submit the recommendations to the National Roads Board and seek approval and commitment of funds.
- 1.6 Prepare a cash flow for National Roads Board covering the whole province based on the awarded or anticipated contracts in the province.
- 1.7 After the 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 National Roads Board with proof that the Council has received the certificate. If the Council does not raise objection to the certificate in two weeks the National Roads Board will effect payment in 15 days and send a notice of payment to the Council.

- 1.8 In case of Councils doing 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 National Roads Board guidelines in order to determine the rates for works as percentage of commercial contractor's rates in the region. Procedure in 1.6 should be followed after the contract is signed.
- 1.9 In case of Labor Based contract, follow the same procedure as 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. 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 to the National Roads Board.

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 the budget limitations and other practice issues.
- 2.2 Approve the contract documents, tender analysis, certificates in 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 National Roads Board

- 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 the 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 as well as workshops for Council staff and politicians with the objective of familiarizing them with the scope of the works to be done under National Roads Board funding.

4. Lines of Communication

The Consultants will only deal with the Director of Engineering or the Council Secretary/Town Clerk at each Council.

The National Roads Board will deal with politicians, and other stakeholders.

The Consultants will report to the Technical Committee or the Executive Secretary of the National Roads Board.

All matters regarding payments of approved certificates will be between the Consultants and National Roads Board. The Board will not deal with Contractors or enter into any contracts with them.

5. Input by the Consultants

The Consultants input varies depending on the nature of the work. Apart from the direct inputs of travel, accommodation, printing communication, etc. The Consultants will make the following levels of effort according to the scope of works as follows:

Works Involving an Established Roads Contractor

Prior to the award of the contract

Project Manager and Roads Engineer meeting the Council, surveying the roads visually and making schedule of works, contracts, tender analysis, and follow the approval procedures.

After the award of the contract

Resident Engineer making weekly site visits while the road supervisors 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 which are active simultaneously. Project Management will be in charge of the overall activities.

Works Involving the Council as Contractor

Prior to the award of the contract

Project Manager and Roads Engineer meeting the Council and surveying the roads visually and making 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 as contractor would go to the National Roads Board for approval.

After the award of the contract

Resident Engineer making 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 depends on the performance of the Council but a weekly site visit at the start of the works is essential. Road supervisor may have to work together with the Council staff at the beginning of the project. The number of the Resident Engineers and the road supervisors depend on the number of contracts and locations of the contracts which are active simultaneously. Project manager will be in charge of the overall activities.

Works Involving the Labor Based Contractor

Prior to the award of the contract

Project Manager and Roads Engineer surveying the roads visually and making schedule of works. At the same time, the capacity of the local residents in terms of level of organization and participant will have to be determined during the initial meeting with the potential contractors. This meeting has to 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 or tools may have to be purchased and advanced to them with a guarantee of return.

Rates for various activities have to be determined and agreed with the Contractors. Simple contracts have to be developed by the Engineer. Exact level of effort by the Engineer could only be determined after the situations in each District is investigated thoroughly.

After the award of the contract

Resident engineer making the initial visit to the site and agree on the method of works, level of input from the Contractors and 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 depends on the performance of the Contractors but a weekly site visit at the start of the works is essential. 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 the Resident Engineers and the Road Supervisors depend on the number of contracts and locations of the contracts which are active simultaneously. Project Manager will be in charge of the overall activities.

COMMONLY USED CRITERIA FOR THE ALLOCATION OF FUNDS AMONG DISTRICTS FOR RURAL ROADS

(selection can be made from among the following or similar variables)

Criteria are required to guide allocation of funds between districts for the improvement and maintenance of rural roads. Given the dearth of accurate data at the local levels in many countries in sub-Saharan Africa, these criteria must be simple and transparent and rely on information which can be collected easily. Some countries have a formula for the allocation of block grants to local governments which may serve as a point of departure. In Tanzania, this index is composed of variables such as 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. 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; and
- *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 has to 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*. Selection of additional variables can be made from the following:

- *Extent and condition of the network* (to ensure the maintenance of existing infrastructure):
 - a. Number of km 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, etc.
- *Measures of use*:
 - a. Vehicle km (trucks, cars)
 - b. Marketable agricultural output and potential output.
 - c. 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 (e.g. 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.

SAMPLE CONTRACT BETWEEN A PROJECT AND A COMMUNITY¹

CONTRACTUAL AGREEMENT FORM FOR INFRASTRUCTURE IMPROVEMENT

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 labour (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 (i.e. hoes, bush knife, pangas, slashers, etc...), except where special tools are required and are provided for by the advising or funding partner.

II. The technical adviser (e.g. 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 advise in the form of plans, design, quantifying 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:

¹ This contract document was used by the Pilot Integrated Rural Transport Project (PIRTP) in Malawi.

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

c) also 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 upon 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 PIRTP (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 _____

TRAINING VILLAGERS IN CONSTRUCTION AND MAINTENANCE OF COMMUNITY ROADS AND PATHS¹

Two One-Day Workshops on

i) CONSTRUCTION of Village Access Roads/Bridges

ii) MAINTENANCE of Village Access Roads/Bridges

i) 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	Slopping 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 & 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

¹ Village Access Roads and Bridges Assistance Project in Malawi.

ii) MAINTENANCE Theory

Time	Activity
08:30 - 08:45	Registration/Welcome of Participants
08:45 - 09:00	Opening by Project Engineer & Comment
09:00 - 09:20	Pot-hole 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	Pot-hole 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

COMMUNITY PROCUREMENT--CHECKLIST FOR TASK MANAGERS

Component	Action or Steps Required
Procurement Planning	<ul style="list-style-type: none"> a. Separate into goods, works and services ; b. Estimate quantities/nature and Sources of procurement; c. Examine Institutional aspects ; d. Plan schedule for procurement ; e. Select procurement method ; and f. Design project arrangements for Procurement.
Community Contribution (In consultation with Community)	<ul style="list-style-type: none"> a. Evaluate ability of communities to contribute both physical and financial resources; b. Determine nature of community contribution; and c. Designate responsibility for coordination and management of such information.
Relationship with Govt. or other Agencies	<ul style="list-style-type: none"> a. Coordinate with Government agencies when necessary for sustainability or maintenance; and b. Examine Government's experience in conducting ICB.
Implementation Plan	<ul style="list-style-type: none"> a. Advise Borrower of need to formulate its implementation plan (during pre-appraisal); and b. Agree on procurement & disbursement schedule and implementation schedule to be included in implementation plan(during appraisal).
Studies for Effective Designing	<ul style="list-style-type: none"> a. Examine availability of information on socioeconomic data of participating communities; and b. Examine availability of information on regulatory systems affecting community related procurement and disbursement; c. Identify areas where further studies may be needed.
Mechanisms increasing accountability	<ul style="list-style-type: none"> a. Assess which contracts would need prior review by the Bank; b. Examine the possibility of disbursing only for output in the case of infrastructure construction or rehabilitation;; c. Examine the need for a procurement and disbursements manual; d. Examine whether project should call for independent procurement audits or assessments; e. Develop monitoring indicators suitable for CRP; and f. Examine the need to establish a unit cost roster to assess the economy of CRP.
Quality of Goods, Works or Services	<ul style="list-style-type: none"> a. Examine need for technical assistance; b. Examine need for training and capacity building in matters related to procurement; and c. Identify agencies or persons responsible for arranging and providing training.
Information	<ul style="list-style-type: none"> a. Examine the adequacy of existing institutional mechanisms for dissemination of information; b. Delegate responsibilities for promotional and other related activities; c. Determine need to use different modes of advertisement and modes of information dissemination; and d. Discuss timing for release of such information.
Contracting Arrangements	<ul style="list-style-type: none"> a. Examine the types of contract that communities will need to enter into and the scope for drafting standard documents; b. Discuss the specific terms and conditions with communities; and c. If communities are to be involved in NCB, is there scope to draft simplified "model" tender documents and contracts.

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

Source: World Bank, AFTCB, 1994

TOOLS FOR PARTICIPATION¹

This Annex summarizes six tools that are used by Bank Task Managers to engender participation in a local government context. 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 5 principal objectives of participation in a local government context are i) allocation efficiency; ii) service delivery and effectiveness; iii) accountability; iv) equity; and v) 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 1 provides a summery classification of the tools that are described below according to their utility with regards to the 5 objectives.

The six tools which will be briefly presented here are: (i) action-planning; (ii) rapid appraisal (iii) beneficiary assessment; (iv) social analysis; (v) contingent valuation method; and (vi) participatory assessment, monitoring, and evaluation.

ACTION-PLANNING

Action-planning is directed towards improving the institutional capacity of the borrower and other involved entities, both public and private sector, to efficiently and effectively plan and manage the implementation of a development strategy.² An action-planning program consists of a sequence of structured meetings and workshops in which individuals and organizations can constructively contribute to, and develop ownership of, development strategies, programs, or projects³. The dialogue and learning that take place make it more likely that these interests will be sufficiently satisfied so 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, since specific sector-level projects and programs are usually initially identified in economic and sector work (ESW). While Task Managers are not likely to be directly involved in long-term operations and maintenance, they can pave the way for the role of action-planning workshops by supporting their utilization early in the project cycle. In this way, the various stakeholders, but particularly local government staff and citizens, can modify and adapt the workshop to their own 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 how to determine just how representative a particular group of citizens actually is. How can one ensure that the "representatives" accurately reflect the interests of : (i) the various socioeconomic groups; (ii) women;

¹ Source: J. Silverman.

² Jerry M. Silverman, Merlyn Kellering, and Terry D. Schmidt, *Action-Planning Workshops for Development Management*, World Bank Technical Paper Number 56 (Washington, DC; World Bank, 1986).

³ Andrea L. Jones (Silverman), "Laying the Groundwork for Sustainability: Using Action-Planning to Improve Project Design and Implementation in Ghana and Guatemala" in Derick Brinkerhoff and Arthur Goldsmith (eds.), *Institutional Sustainability in Agriculture and Rural Development: A global Perspective* (New York: Praeger, 1990), pp.101-113.

(iii) younger generations; and (iv) minorities? ⁴ 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 for the specification of tasks and task sequencing; as well as the design of project implementation management arrangements. Action-planning is particularly effective as an iterative annual exercise among staff responsible for on-going implementation once a project is effective. Thus, Action-Planning workshops can contribute directly to achieving 3 of the 5 objectives of participation, in the context of local government, (i) improving allocation efficiencies; (ii) improving service delivery effectiveness; and, if continued into the post-project operational phase, (iii) 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 issues⁵. Rapid appraisal was developed initially because of the failure of decision-makers to draw upon other, more formal methods of gathering information.

Properly carried out, rapid appraisal methods can 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, the toolkit includes 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.⁶

This technique is most useful during ESW 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; results being fed into annual Action-Planning Workshops. Thus, Rapid Appraisal can contribute most to: (i) improving allocation efficiencies; (ii) improving accountability; and, if structured properly, (iii) 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

⁴ Jerry Silverman, *op. cit.*, pp. 4-6.

⁵ Krishna Kumar, "An Overview of Rapid Appraisal Methods in Development Settings," in Krishna Kumar (ed.), (ed.), *Rapid Appraisal Methods*, World Bank Regional and Sectoral studies (Washington, DC.: World Bank, 1993), pp. 8-22.

⁶ *Ibid.*, p. 3

view.⁷ A largely qualitative methodology which 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: (i) allocation efficiencies; (ii) accountability; and (iii) equity. Beneficiary Assessments are less likely to contribute to improving service delivery effectiveness of sustainability of those services.

SOCIAL ANALYSIS

Social analysis describes and analyzes the real or potential effects of planned development activities upon 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, distribution of power, health, nutrition, the environment, and other areas of inquiry.⁸

In contrast to the other tools, social analysis calls for more in-depth study and analysis. It is most likely to be useful for ESW 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 highly 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. Nevertheless, social analyses are less likely to significantly enhance accountability, equity, or sustainability.

CONTINGENT VALUATION METHOD (CVM)

CVM is most useful when trying to determine whether or not the services which are expected to flow from an infrastructure investment are likely to be financially sustainable. The primary objective of CVM is to determine consumer preferences among alternate technologies in terms of alternative fee requirements prior to decisions with respect to infrastructure investment decisions. Thus, CVM 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 CVM. 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. However, 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 in the aggregated to arrive at a picture of the

7 Lawrence F. Salmen, *Beneficiary Assessment: An Approach Described*, AFTSP Working Paper No. 1 (Washington, DC : World Bank, 1992).

8 Allan Hoben, "Anthropologists and Development," *Annual Review of Anthropology II* (1982), 349-375.

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.⁹

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 utilized 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.¹⁰ Many of these tools can be used at higher levels than the community.

In assessment, one of the key tools is community problem analysis which builds upon existing laws, structures and ways of solving problems to help local citizens identify, analyze, and find solutions to new problems. 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: (i) problem identification; (ii) physical potential; (iii) community constraints; and (iv) 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 the proposed activity?" 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 at this stage. If a new committee or organization is proposed, it can perhaps be structured to replicate and existing, successful organization.

CONCLUSION

Task Managers need to address participation issues from a broad perspective; choosing those tools which are most appropriate at specific times in the activity cycles of the Bank, borrowers, and primary stakeholders. No one single technique is likely to be sufficient for facilitating forms of participation appropriate to all objectives at all times. TMs 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. Figure 2 provides a summary classification of the tools described above according to their utility with respect to each of the 5 objectives of and the phases of the Bank's work.

⁹ Dale Whittington *et al*, *op .cit*.

¹⁰ D'Arcy Davis-Case, *Community Forestry: Participatory Assessment, Monitoring and Evaluation*, Community Forestry Note 2 (Rome: Food and Agriculture Organization (FAO), 1989).

TABLE I: 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"> o Action-Planning Workshops o Rapid Appraisal o Beneficiary Assessment o Social Analyses 			<ul style="list-style-type: none"> o Beneficiary Assessment o Social Analyses 	
Project Identification (ESW)	<ul style="list-style-type: none"> o Action-Planning Workshops o Rapid Appraisal o Beneficiary Assessment o Social Analyses o Contingent Valuation Method 			<ul style="list-style-type: none"> o Beneficiary Assessment o Social Analyses 	<ul style="list-style-type: none"> o Contingent Valuation Method
Project Preparation/ Appraisal	<ul style="list-style-type: none"> o Contingent Valuation Method 	<ul style="list-style-type: none"> o Action-Planning Workshop 			<ul style="list-style-type: none"> o Contingent Valuation Method
Project Implementation		<ul style="list-style-type: none"> o Action-Planning Workshop 	<ul style="list-style-type: none"> o Rapid Appraisal o Beneficiary Assessment 	<ul style="list-style-type: none"> o Rapid Appraisal 	
Project Evaluation		<ul style="list-style-type: none"> o Action-Planning Workshop 	<ul style="list-style-type: none"> o Rapid Appraisal o Beneficiary Assessment 	<ul style="list-style-type: none"> o Beneficiary Assessment o Social Analyses 	
Operations (OZM)			<ul style="list-style-type: none"> o Rapid Appraisal o Beneficiary Assessment 	<ul style="list-style-type: none"> o Beneficiary Assessment o Social Analyses 	<ul style="list-style-type: none"> o Action-Planning Workshops

Source Jerry Silverman, 1995

