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# ***Rural Transport Planning***

## ***Approach Paper***

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## *Foreword*

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A transport system responsive to needs is recognized as a major prerequisite for the social and economic development of rural areas. In Sub-Saharan Africa, the rural transport systems are, in general, in a very poor state. Accessibility in rural areas is low and fluctuates with the seasons, and transport costs are irregular but high. Transport needs claim a significant part of daily life for the rural population, especially for women of all ages.

The Rural Travel and Transport Program (RTTP) is a component of the Sub-Saharan Africa Transport Policy Program (SSATP) which is a collaborative effort between many bilateral and multilateral organizations aiming to assist governments to formulate and implement improved transport policies. The RTTP is supported by the Governments of Denmark, Norway, Sweden and Switzerland. It combines research with dissemination through country policy and strategy development, and lends support to pilot projects.

To enhance existing knowledge of local transport in rural Africa, village-level travel and transport surveys and related case studies were carried out under the RTTP. The findings were synthesized in the report “Transport and the Village” (World Bank Discussion Paper Number 344, 1996) and are the basis for an endeavor to formulate practical approaches to the design of projects and programs to improve rural transport in SSA. These endeavors are the subjects of four approach papers, of which the present paper is one. The other approach papers deal with institutional and financial issues, intermediate technology means of transport, and furthering the use of labor-based methods in road works.

Common threads through these papers are a realization that program designs must respond to local conditions, and that no standard solution exists; that whatever actions are taken must be sustainable and increasingly rely on local resources; and that this points to a much increased influence by the stakeholders in planning, designing and operating the transport systems in rural SSA.

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The World Bank commissioned four national "case studies" of rural access planning in Burkina Faso, Ghana, Ethiopia and Malawi. The Burkina Faso case was prepared by Sekou Maiga, the Ghana case was prepared by K. Kwafo Adarkwa, and the Ethiopia and Malawi cases were written by Tseggai Elias. Each of these cases contributed substantially to our understanding of existing rural transport planning efforts.

A draft of this paper was discussed at a "roundtable meeting" of the Rural Travel and Transport Project held in Yaounde, Cameroon in November, 1995. Comments by participants were useful in preparing a second draft, which was reviewed by the following external reviewers: K. Kwafo Adarkwa, Charles Kaira, Serigne M. Ndiaye, Jones Kadono Nyasulu, and Peter M. Wakori. The second draft was also discussed at a Rural Travel and Transport workshop held in Blantyre, Malawi, Feb. 5-9, 1996. John Howe and Robert Christiansen offered particularly insightful and helpful comments on this draft. Karen Jewell of the School of Public and Environmental Affairs at Indiana University provided us with research assistance which contributed greatly to the quality and comprehensiveness of the final document. We appreciate the effort and good will expressed by each of these individuals. Responsibility for any errors or omissions remains entirely with the authors.

## *Executive Summary*

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The objective of the planning process is to maximize the net benefits from rural access by keeping costs as low as possible and insuring that the facilities provided are those which are demanded. Planning is conceived as a process of efficient and transparent resource allocation and as an integral part of national governance. The economic nature of Rural Transport Infrastructure (RTI) — its "public goods" nature — was identified as the primary reason why governments and, therefore, planners must be involved in providing it.

The concept of a "public service industry" is introduced in *Chapter 1* as a way of analyzing the elements of a posited rural access planning framework. A distinction was made between the *provision* of public goods and their *production*. Provision of public goods refers to decision-making with respect to (1) the kinds, quantity, and quality of public goods and services provided; (2) the degree to which private activities related to these goods and services are regulated; (3) how to arrange for production of the desired public goods and services; (4) how to finance the provision of these goods and services; and (5) how to monitor the performance of those who produce the goods and services. Production of public goods and services refers to the technical process of transforming inputs into outputs.

Rural access and RTI are public goods of both local and national importance. Therefore, planning systems concerned with rural access are commonly organized at multiple levels. Planning systems with three, four, or more levels are frequently constructed, in order to include the interests of all organized communities and levels of government. To keep the discussion simple, this paper is confined to "national" and "local."

"Local" refers to the smallest administrative unit of general purpose government. Some argue that rural "communities" and the traditional authorities that lead them are more influential in and closer to the daily affairs of Africa's rural populace than formal units of government and that "communities" should, therefore, be encouraged to assume responsibility for rural access planning as it affects "community" roads, including paths, tracks and trails. This paper has argued that formal government units have comparative advantage in the provision of public goods and, since planning is a key provision activity, planning should be the responsibility of local governments. This is not to deny the importance of community involvement in rural access planning. In fact, the paper places great emphasis on participation of communities, groups, and individuals.

The paper deals at some length with the need for both "vertical" and "horizontal" planning at national and local levels. In general, current African rural access planning systems are dominated by vertical relationships (administrative hierarchies) and national concerns. Most national planning systems are composed of somewhat separate sectoral (ministerial) planning systems in which effective horizontal (inter-ministerial) coordination is achieved only at the higher levels of the system. The deficit of local-level horizontal coordination may be due to the absence (until very recently, in a few

countries) of locally elected officials. Most participants in the rural access planning process are administrators themselves and report to an administrative superior. Incentives for effective, local-level cross-sectoral coordination are weak.

The lack of effective inter-sectoral coordination at the local level may hinder popular expression of preferences, since popular participation is easier for most individuals at the local level than at the national level, and preferences are sometimes not sectorally discreet. For example, health services preferences may be contingent on rural access expectations. Lacking an arena in which to articulate contingent or related cross-sectoral preferences, potential participants may simply stay at home.

The paper argues that central governments must take a number of national policy actions if they are to significantly improve rural access. Policies which articulate a high priority for rural access improvement and policies requiring inter-ministerial coordination, where appropriate, are fundamental. Macroeconomic policies which encourage rural production and enable rural producers to realize the potential gains of improved access are important. These might include, for example, national agricultural product pricing policies, rural credit policies, and policies on production enhancing rural infrastructures (e.g., irrigation works or storage facilities). Policies enabling decentralization and granting a degree of local autonomy are also necessary. Where improved rural access is made a national priority, it is likely that substantial resource transfers from central to local governments will be necessary over an extended period. Policies and specific mechanisms for the transfer of financial resources and technical inputs will be needed.

Among other objectives, national policies should seek to:

1. create or strengthen incentives for mobilization of local revenues for rural access improvement and maintenance;
2. be wholly transparent to local government officials and citizens;
3. encourage and enable citizens to hold national and local officials accountable;  
and
4. contribute to a sustained, stable, predictable flow of funds through time.

Current rural access planning systems are based on identifying *needs* for rural transport, with insufficient concern for transport *demand*. Needs are expressions of aspirations for improvement, with cost constraints being budgetary, rather than economic. Demand is reflected in what users and beneficiaries are actually willing and able to purchase. The paper suggests that increased use of user and beneficiary financing of rural access improvement and maintenance is highly desirable, in part because of the closer relationship to *demand* which occurs when users and beneficiaries are responsible for significant costs.

Rural access planning must overcome a number of constraints if it is to be effective. Foremost among these may be the paucity of reliable, timely data in rural African localities, which suggests that planning processes should be based in very simple and transparent screening methods and decision rules. Planning is also made more difficult by the heterogeneity and lack of definition of the concepts included in RTI—there are no clear and agreed upon meanings for many of the terms in common use. “Roads,” “tracks,” “trails,” and “paths” are seldom explicitly defined using meaningful engineering or economic criteria. The meaning of “community” and its legal and cultural standing as a participant in governance varies tremendously among African localities. Yet, all of these poorly defined terms are conflated in the commonly used administrative/planning category of “community roads.” Decisions based on poorly defined concepts are unlikely to improve outcomes. The danger of poor decision-making is particularly great in centralized planning systems which rely on inadequate, unreliable data, reported to central decision makers through several levels of administrative hierarchy. A final constraint on rural access planning is the affordability of RTI in rural African economies. The paper argues that the economics of RTI as experienced by rural Africans are not well understood, even with respect to rural roads. Improvements to RTI tend to be over designed and, consequently, unaffordable over the long run by the local economy.

Constraints on rural access planning are substantial and will not be completely overcome in the short-term, nor solely through improvements in planning technique. Significant improvements will require a long-term, broad-scale effort to improve rural governance. The paper suggests that improvements in planning ought to emphasize (1) planning as a component of governance; (2) integration at the local level of the various aspects of rural access planning; (3) simplification of planning techniques to bring them in line with current local planning capacities; (4) widespread use of participatory planning processes; and (5) cost sharing by beneficiaries. The combination of participatory planning with cost sharing by beneficiaries is called bilateral participation — that is, participation in which those materially affected by RTI improvements participate in decision-making and enjoy benefits in exchange for bearing significant costs.

A local “prototype” planning process, which emphasizes simplicity and transparency of techniques, minimization of data input requirements, and accountability to and integration with the local governance system, is described.



### **Recommendations**

1. Rural access planning should include among its objectives the creation of a viable “rural access industry.” Although plans are important for the incentives which they create for actual and potential participants in such industrial structures, planners in viable rural access industries will be more directly concerned with the *provision* of rural access than with its *production*. Production activities are often more efficiently and effectively organized by non-governmental actors, including individuals, for profit firms, user groups, “communities,” and others. There is much room in the rural African context for experimentation with production arrangements, since efficient and effective arrangements are not obvious. The establishment of a viable rural access industry is clearly a national level planning objective.

2. Improvements to existing rural access planning systems will likely require widespread strengthening of decentralized governance capacities in most African nations. “Strengthening” refers to increases in local decision-making authority, technical capacities, and revenue generation. It also refers to improvements in transparency and accountability (both to citizens and to national governments) in local government. Consistency with traditional ways of organizing social capital should also be cultivated. Strengthening decentralized governance capacities is a national level planning objective.

3. Rural access planning systems should be increasingly based in effective *demand* for rural access rather than mere *need*. Substantial cost-sharing by beneficiaries and participation in decision-making by those materially affected by RTI activities are a *sine qua non* of a demand-based approach. Funding through loans rather than grants may also more accurately reveal demand. Creation of a demand-based rural access planning system is primarily a national-level planning objective.

4. Local ownership of RTI is highly desirable and should be encouraged. However, real ownership rights are not conferred by the exhortations to “create a sense of ownership” commonly seen in the development literature. “A *sense* of ownership” is a fiction. Real ownership involves enforceable claims over control, possession, and use of an asset. Real ownership also involves responsibilities. Ownership of rural accesses infrastructure is not well understood, but is only obfuscated by exhortation and the common practice of unilateral “assignment” of responsibilities for RTI to local governments and/or communities. Planners should disaggregate the bundle of rights implied by “ownership” and impute ownership only to those who are able to enforce their claims.

5. The following general guidelines are offered for division of responsibilities between national and local levels of rural access planning:

A. The national level should take primary responsibility for:

I. *Revenue raising*. Public finance theory and the current state of public finance in African countries suggest that national

governments will (and should) generate most public sector revenues.

- II. *Setting of planning standards and norms.* National rural access networks are defined and integrated by the standards and norms set at the national level.
- III. *Training.* National governments are in a better position to take advantage of economies of scale in training.
- IV. *Policy Setting.* A strong case for national policy-making for a wide variety of rural access issues is identified in *Chapter 3*.

B. Local rural access planning units should have strong roles with respect to:

- I. *Local-level intersectoral coordination.* This is vital to fully reveal local preferences with respect to cross-sectoral trade offs.
- II. *Inter-local coordination.* Direct coordination between local units will more likely reflect local preferences than will coordination by administrative or political superiors.
- III. *Service delivery.* Where there are multiple levels of government, local units almost always deliver the bulk of public services.
- IV. *Participatory Planning.* The direct participation which might reveal demand for public services is a local phenomenon.
- V. *Cost Sharing.* Though the bulk of public sector revenues are likely to be raised at the national level, it is critical that citizens be offered realistic choices among alternative benefits “packages” along with their respective costs.

6. With respect to the “uncharted territory” of paths, tracks and trails, a cautious, limited, exploratory effort is recommended. This is because of the lack of knowledge about the economic characteristics of these infrastructures. Participatory planning and local cost sharing are particularly important in these “pioneering” efforts. Full consideration of simplified project selection techniques, labor-based construction methods, phased construction techniques, and use of intermediate means of transport should be encouraged in order to maximize the chances of achieving infrastructure improvements which are affordable and sustainable in the local economy.

# *1. Introduction*

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The daily lives of millions of residents of rural communities in Sub-Saharan Africa (SSA) are profoundly affected by the quality and quantity of rural transport services. Many households must secure water and firewood from outside their living compounds. Farmers must transport agricultural inputs and outputs to and from their fields, and laborers must travel from their homes to places of employment. Externally produced provisions need to be transported into the villages, and surpluses must be transported out. Children attending schools must be able to move between their homes and the school building, and those seeking health services must travel to the health centers — or, providers of those services must travel to their patients. Finally, social interactions generally require some amount of transport.

Resources available for transport are limited. Thus, if transport services are to be provided efficiently, planning the allocation of these resources is essential. This paper's intent is to help country policy makers and the donor community derive improved arrangements for planning rural transport in SSA by discussing and evaluating available options. These options are derived from a combination of theory-based analysis and review of the experiences in a number of SSA countries.<sup>1</sup>

This study assumes “planning” to be primarily a process for yielding efficient allocations of national and local resources so that persons living in rural regions of SSA gain access to locations that allow them to meet domestic, economic, and social needs. In order to create the potential for efficient allocation of resources, planning systems must be able to generate, collect and analyze data, and to redistribute information in a timely manner to decision-makers. SSA planners have developed considerable expertise in the generation, collection, and analysis of data and in communication processes; and such expertise can, and does, improve rural transport. But rather than focusing on the role of planners, this paper takes a broader perspective, emphasizing how planning is an integral part of the more comprehensive concept of governance.

It is useful to first lay out the underlying conceptual arguments. The remainder of this opening chapter considers (1) the elements of rural transport and the objectives which planners ought to seek for it; (2) the nature of these elements, particularly the nature of Rural Transport Infrastructure (RTI) — the element of rural transport which is emphasized throughout this paper; (3) how, due to the nature of RTI, planning processes are required as a substitute for an ordinary market; (4) the key role that “governance” must play in making possible a successful rural transport planning system; and (5) how financing mechanisms can both constrain and enhance the planning process.

The following chapters then discuss the characteristics of rural transport and access in SSA. The analysis shows that effective planning must involve both vertical and

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<sup>1</sup>In carrying out this analysis four country-specific case studies were commissioned. The case sites include Burkina-Faso (Maiga, 1995); Ghana (Adarkwa, 1995); Malawi (Elias, 1995a); and Ethiopia (Elias, 1995b).

horizontal (intersectoral) dimensions at both the central and local levels. The issues concerning planning (in both its horizontal and vertical dimensions) at the central level are the topics considered in Chapter III, while Chapter IV is devoted to planning issues (again, both horizontal and vertical) which must be addressed locally, including how a prototype planning system might be shaped. The final chapter summarizes the salient points and addresses the principal recommendations drawn from this analysis.

### **1.1 Elements and Objectives of Rural Transport**

Rural transport is one important component of a broader concept of rural *access*. Indeed, transport *per se* is not the end which transport users seek; instead, it is access to markets, public services, labor opportunities, and household consumption items which provide benefits. Furthermore, transport itself is a composite of several kinds of inputs. Among these are (1) a power source, e.g., human, animal, or mechanical; (2) a means of transport, e.g., bicycles, trucks, or head baskets;<sup>2</sup> and (3) some kind of fixed RTI, e.g., a road, track, or path. Whereas developing countries and international lending agencies have emphasized formal roads and motorized transport, rural transport planning in SSA must be broader in scope. The rural access infrastructures of interest include paths, trails, tracks, and roads — both the formally classified system of roads and unclassified community roads (see Box 1).

A rural transport planning process must take into account all the above features. As a reasonable objective, the planning process should seek a rural transport system which maximizes the net benefits from access by keeping the costs of access as low as possible and by providing a transport system that meets the needs of its users and, therefore, yields benefits.

### **1.2 Nature of Rural Transport Elements**

The production of land-based transport requires a power source of transport, and some type of fixed infrastructure, such as a path, trail, track, or road. Although rural transport planners may try to solve this, there is nothing in the nature of these transport infrastructure aids to prevent market mechanisms from insuring that resources are allocated efficiently.

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<sup>2</sup>I.T. Transport, Ltd (1995) addresses the development of alternative types of power sources and means of transport in considerably more detail.

**Box 1: Types of RTI**

A wide variety of terms are applied to RTIs in the SSA context. One important distinction concerns whether an individual RTI link is considered to be a part of the formal (gazetted or nationally recognized) “network” of roads as defined by the national agency overseeing the road network. Conceptually, the *tertiary roads* should be those which provide access within a district or local government or administrative area whereas *community roads (and paths)* provide access to the village and surrounding villages (see Malmberg-Calvo and Silverman, 1995, p. 3).

In fact, in some SSA countries this distinction is probably artificial and based more on historical events than on current utilization of a road link. On the other hand, the distinction can be extremely important from the standpoint of management of a road since national road agencies are unlikely to take on any responsibility for community roads and, conversely, local groups of tertiary road users may think the responsibility for maintaining and improving these routes belongs to the national roads authority or its designated agent.

Another important distinction concerns the attributes of different kinds of transport links. Generally, these attributes are defined in terms of the traffic which they are designed to carry as well as their physical characteristics. Following Riverson and Carapetis (1991, pp. 23-24), one can designate the following as being a part of the RTI system:

Feeder Roads:	Link access zones to a major road network. They are accessible to motor vehicle traffic, but do not usually serve through-traffic.
Tracks:	Single-lane, cleared, and unimproved seasonal roads that connect higher class roads. They are traversable at certain times by light four-wheel drive vehicles, pickup trucks, animal-drawn carts or pack animals.
Trails:	Narrow tracks suitable only for two-wheeled vehicles, pedestrians, and pack animals.
Paths	Narrow, cleared way for walking traffic and, in some cases, bicycles and motorcycles.

However, in practice, a variety of RTI characteristics can lead to a failure of ordinary market mechanisms to allocate resources efficiently. Among these are :

- (1) Public good attributes
- (2) “Lumpiness” of capital investments
- (3) Relatively long useful lives
- (4) Difficulty measuring and monitoring usage
- (5) Lack of any perception of ownership.

Key economic characteristics of RTI are (1) the difficulties associated with trying to exclude persons unwilling to pay for the services which RTIs yield; and (2) one person’s use of the facility does not diminish others’ ability to use it as well.<sup>3</sup> In such instances,

<sup>3</sup>The 1994 *World Development Report* (World Bank, 1995) cites rural roads as one of the few instances of infrastructures that are purely public goods.

ordinary markets cannot allocate resources efficiently. Since users cannot be charged for the service, private owners seldom have incentives for making the necessary investment in this infrastructure.

The large up-front investment costs of RTI also discourage private sector investments in such infrastructures. Only in exceptional cases might a private user of a route find it profitable to undertake construction of some type of RTI. Most often there must be some pooling of resources from a large number of potential users in order to meet these lumpy investment needs.

Because many RTI facilities have — at least potentially — a long useful life, two issues arise. First, a long useful life together with the large up-front investment means that any planning errors can be very costly: they consume large amounts of resources initially and design errors must be addressed over a long time. Second, a long useful life for most roads depends critically on the extent to which routine and periodic maintenance are performed. Since well constructed roads deteriorate slowly, there can be strong tendencies for decision makers to defer maintenance, particularly when resources are tight, thinking that doing so will have few negative consequences. But such behavior often significantly shortens the useful life of the asset.

A key characteristic of using market mechanisms for allocating resources is that, in addition to being able to exclude non-payers from using the good or service, it is easy to monitor and measure this usage. But in the case of RTI — particularly facilities where there are a wide variety of users, from head-loads to motorized vehicles — monitoring that usage is much more difficult. And measuring the use — particularly the damage to the road associated with different types of users — can be difficult. For example, an animal powered cart with narrow steel wheels can do greater damage to a road surface than a heavier motorized vehicle with pneumatic tires.

### **1.3 Planning as a Partial Substitute for Pure Market Mechanisms**

The characteristics mentioned above suggest that providing RTI will require some form of collective supply rather than using price-based market mechanisms to allocate RTI resources. The position taken throughout this paper is that the planning process ought to simulate the principal features of a price-based market mechanism as closely as possible.<sup>4</sup> It is also argued that most of the current planning processes do not achieve this objective. A market-based resource allocation mechanism simultaneously considers the willingness to pay for and costs of using scarce resources to produce a good or service. Most planning processes focus on the “need” for transport infrastructure

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<sup>4</sup> The arguments made here are somewhat similar to those made in the recent volume by Roth (1996) who argues that roads should be managed as “commercial” enterprises rather than as state monopolies. This is, of course, in accord with the general philosophy underlying the Sub-Saharan Africa Transport Policy Program. See Heggie (1995).

without seriously attempting to ascertain the willingness of users (actual or potential) to pay for such investments.<sup>5</sup>

Under market-based allocation mechanisms, producers (suppliers) of the good or service do so with the knowledge that inappropriate behavior on their part will result in losses (or decreased profits) to them. Particularly important in this regard is that profit maximizers will behave in ways to insure that the capital which they own is well maintained in order to produce outputs over a long time period. Ownership — which means that any gains (losses) will be fully enjoyed (borne) by the decision makers — therefore encourages appropriate behavior. If those planning the allocation of RTI resources risk nothing by any failures of the infrastructure, there is little incentive for behavior that will sustain the RTI investments. Another aspect of ownership within a market framework is that it is clear who the “owners” are and that they accept the responsibilities, as well as the privileges, of ownership.

Markets are driven by the aggregated actions of individual demanders and producers. It is much more difficult to reflect the preferences and actions of individual users in non-market decision making, including planning decisions concerning RTI. However, decentralized decision making arrangements which rely heavily on the “voice” of persons materially affected by the infrastructures,<sup>6</sup> are more likely than highly centralized planning to produce plans that reflect demand for rural transport. Thus, the paper repeatedly stresses the importance of decentralized decision making processes. Only through such mechanisms can the demands for RTI be even roughly determined.

The information in Box 1 illustrates another important aspect of the “supply” side of the planning decision that should be emphasized. As noted there, RTI include a variety of “products” — paths, tracks, trails, and roads (with a wide variety of qualities associated with each). Just as a private producer with multiple outputs must make decisions regarding the appropriate “mix” of these products, so should the RTI planning process recognize that a variety of transport infrastructures (and qualities thereof ) may be necessary for the lowest cost of access to local residents.

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<sup>5</sup>Roth (1996, p. 142-143) notes that even the Federal Highway Administration (FHA) in the United States relies almost exclusively on “needs assessment” techniques to allocate funds to states. He goes on to assert that the technique *assumes* that all existing road segments must be retained forever, that it encourages states to overstate the deficiencies in their existing highways, and that it ignores entirely the willingness of users of those highways to pay for any improvements.

<sup>6</sup>Those “materially affected” would include direct users, indirect beneficiaries, and persons bearing costs of the existing or proposed infrastructure.

### **1.4 Planning as a Component of Governance**

Given the nature of the good and the need for the transport planning process to simulate the outcomes of a market, RTI planning decisions are collective action decisions and are generally carried out best within a public sector backed by the force of law.<sup>7</sup> This paper takes the position that solutions to African rural transport problems will not be planned successfully without improvements in "governance" — with governance being defined as "authoritative social decision making."

A particularly productive approach to governance is to focus on how social institutions create incentives and disincentives for collective action. (Governmental, as well as private, voluntary arrangements used to provide goods or services with substantial public benefits). When viewed in this manner it is obvious that governance activities are widely dispersed through societies, with governments being one important contributor to the governance process. Good governance is characterized by wide dispersion of governance activities *within* governments — that is, executive, legislative and judicial agencies have well defined roles to play. Frequently, multiple levels of government (e.g., central, regional and local), each with competitive advantage in differing aspects of finance, regulation, service delivery, etc., are involved. Governance also results from the cooperative and competitive interactions of private groups and individuals. Above all, good governance is characterized by the ultimate accountability of those who make governance decisions to persons affected by those decisions.

### **1.5 The Challenges and Opportunities of Finance**

The question of how RTI is to be financed is particularly troublesome in SSA. The difficulties stem from the extreme poverty in these nations, but are, in a sense, exacerbated by the large volume (relative to the size of the recipient economies) of grants and concessionary loans which are available in response to the perceived need. Difficulties are compounded by an inability and/or unwillingness to focus on effective, sustainable demand for rural transport, rather than "need." There are also complex questions concerning: who is being financed? who are the real beneficiaries? and, in the case of loan funds, who will repay the loan?

Even well developed governance systems have difficulty allocating the costs and benefits of public goods and services, particularly when these goods are financed by

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<sup>7</sup>The well-known problems of free-riding and shirking can be avoided through exercise of the governments *fiat* powers. This is especially important when there are numerous actors involved in the provision, production, use, and financing of the RTI. Voluntary, non-governmental arrangements can be, and are, used to provide RTI, but are difficult to sustain at a scale larger than an individual infrastructure — for example, at a "network" level.



grants or concessionary loans. Well developed governance systems deal with these difficulties partly through transparent and accountable governmental processes and partly with statutory incorporation of requirements for market based guarantors of the integrity of public processes — such market based services as performance bonds, bond rating services, and insurance mechanisms of various kinds. Governmental processes are frequently non-transparent and unaccountable in SSA, and market based guarantors of public processes are either weak or absent.

In the absence of strong governance, it is critical that planning for RTI be rooted in decentralized, participative processes. Participation in this context includes both a right of all affected parties to participate in decision making and an obligation to assume an equitable share of the costs. This type of bilateral participation (participation in both benefits and costs) creates effective incentives for participants to reveal their real preferences for public goods and services, enhances the potential for genuine local ownership of the infrastructures created, tends to limit investments to those ultimately affordable by the local economy, and, thus, greatly increases the potential for long-term sustainability.

## **1.6 Summary**

This introductory chapter has identified the diverse components of a suggested planning framework for rural transport and access. In summary form, these components include:

1. The elements of rural transport
  - a. Users seek *access*, not transport *per se*
  - b. Transport is a composite of inputs, including
    - i. A power source (human, animal or mechanical)
    - ii. A means of transport (walking, bicycle, motor vehicle, etc.)
    - iii. A fixed RTI (road, track, path or trail).
2. The following economic characteristics of RTI are the primary reasons that planning of rural access is important:
  - a. Public good attributes
  - b. Lumpiness of investments
  - c. Relatively long useful lives
  - d. Difficulty of monitoring and measuring use
  - e. Lack of perception of ownership.
3. Planning is a partial substitute for pure market mechanisms while:
  - a. Governments have comparative advantage in the supply of public goods and services;
  - b. Planners can facilitate preference revelation and expressions of demand; and
  - c. Planners should seek efficient and equitable allocation of costs and benefits, both inter-group and inter-generational.

4. Planning is a component of governance, but:
  - a. Improved planning, by itself, is unlikely to improve rural transport because of the generally poor state of the governance mechanisms in Africa;
  - b. Improved planning will have effect only if it can modify the incentives and disincentives that citizens, rural transport users, government officials, and others face in transport decision making; and
  - c. Institutions do matter.
  
5. RTI finance strongly affects individual incentives:
  - a. Financing RTI improvements and maintenance is an acute problem in Africa; and
  - b. Planners should carefully consider the incentive effects of financing arrangements.

These seemingly diverse concepts can be pulled together in a meaningful way through the concept of a "public service industry." A public service industry is an industry which produces public goods or services. The concept has been widely used to analyze public service provision in the United States and other countries.<sup>8</sup> In applying the public service industry concept:

"...it is useful to distinguish between the *provision* of public goods, such as roads, and their *production*. Provision of public goods refers to decisions as to (1) the kinds, quantity, and quality of public goods and services to be provided; (2) the degree to which private activities related to these goods and services are to be regulated; (3) how to arrange for their production; (4) how to finance their provision, and (5) how to monitor the performance of those who produce them. Production refers to the technical process of transforming inputs into outputs, such as making a product or rendering a service." (Connerley and Siegel, 1989:9)

The public service industry, in this case the rural access industry, provides a useful paradigm within which we can clarify a number of potentially useful roles for rural access planners. This concept also provides some sense of the limits of planning and those roles which might better be left to other actors in the industry. Specifically, the concept suggests that the principal rationales for the involvement of governments (and therefore planners) in rural access questions are the economic characteristics of RTIs. It further suggests that governments enjoy comparative advantage (*vis à vis* individuals, private firms, NGOs, etc.) in provision of such public goods and services, while individuals, private firms, and others may have comparative advantage in the production of such goods and services. Governments (and therefore planners) act as partial substitutes for market mechanisms when they make their provision decisions, which,

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<sup>8</sup>See for example Ostrom, Tiebout and Warren (1961) and Ostrom, Parks and Whitaker (1978).

ideally, will reflect the preferences of citizens about the quality and quantity of goods and services provided, methods of financing, and so forth. When users and other beneficiaries are required to contribute substantially to costs and allowed to participate proportionately in benefits, a well planned and implemented public service industry will approximate the economic demand for the goods and services in question.

Additional complexity is introduced in the case of a public service industry dealing with African rural access because rural access is a public good with both national and local importance. Therefore, the relevant industrial structure is multi-layered, representing the interests of individuals, organizations, and groups at all levels. It is a particular sub-structure of the elaborate set of governance institutions.

The conceptual approach to rural access planning taken here focuses on the process of planning as a process of efficient and equitable allocation of resources and as an integral part of national governance. The objectives of the planning process are to maximize the net benefits from access by keeping costs as low as possible and to insure that the facilities provided are those demanded. Achieving this objective is likely only if the planning process can emulate the functions of a market.

## 2. Rural Access and Transport

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In SSA geographic, ecological, political, and social forces have interacted to produce a transport sector which, in many respects, is ill-suited to both transport demand and local capacity to sustain the transport system. The past decade has shown clearly that the existing transport system — which since colonial times has focused on expansion of the physical infrastructure of roads and, to a lesser degree, railroads — is poorly suited to the daily transport needs of the vast majority of SSA's citizens.<sup>9</sup> Until the household or "village level" transport surveys (discussed in section 2.1), transport planning showed little awareness of the need to develop appropriate techniques for measuring transport demand.<sup>10</sup>

### 2.1 Patterns of Rural Travel and Transport in SSA

Studies of the transport activities of rural households<sup>11</sup> demonstrate that (1) subsistence agriculture is the dominant economic activity; (2) nearly 90 percent of household trips are pedestrian; (3) substantial burdens are the norm (households carried 28-64 ton-km per year in one study and averaged 220 ton-kms in another); (4) rural household members seldom leave the local area (only 0.6 percent of all trips), and (5) women shoulder a disproportionate share (roughly 65 percent of household time spent on transport and of weight carried).

Traditional transport studies (focused almost exclusively on roads, motorized vehicles, and transport of agricultural inputs and outputs) have little relevance to the everyday lives of rural dwellers. Village-level surveys (Barwell, n.d.) have shown that the average rural African adult spends one and one-quarter hours per day on essential travel and transport with the following patterns:

- i. Domestic tasks. The primary tasks include collection of water and firewood, transport of small amounts of grain to and from a grinding mill, and social, leisure, and children's school travel. These trips are frequent (several per day), follow a regular pattern, and are almost always to nearby destinations. Seventy-five percent of the time spent on essential travel and transport is spent on domestic tasks.

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<sup>9</sup> This does not imply that rural dwellers do not benefit from the "roads and motor vehicles" rural transport system—however, they are seldom direct users of that system.

<sup>10</sup> Though definitely a step in the right direction, the village level transport studies do not claim to measure economic demand for rural transport.

<sup>11</sup> See Barwell (n.d.) and Bryceson and Howe (1993).

- ii. Agricultural production and marketing. These trips are for procurement of agricultural inputs, tillage, application of inputs to fields, weeding and other care of crops, harvest of crops, and marketing of surplus production. The frequency of such trips is high, but subject to considerable variation with the agricultural cycle. Most of these trips are to nearby destinations. Eighteen percent of the time spent on essential travel and transport is spent on agricultural travel.
- iii. Travel to local markets and paid employment. People regularly travel to local markets to purchase household supplies, or for social interaction. Some persons travel back and forth to work daily. This category of frequent travel is only undertaken if the round-trip can be completed in a single day. Six percent of the time spent on essential travel and transport is market related.
- iv. Travel to health facilities. Infrequent and irregular at varying distances, less than 1 percent of the time spent on essential travel and transport is related to health services.
- v. Long distance travel. Very infrequent trips, often for social reasons, normally using motorized commercial transport. Long distance travel is excluded from the above mentioned: "essential travel and transport," but time spent on long distance travel would amount to a fraction of a percent of the total time spent on essential travel and transport.

Barwell (n.d.) summarizes the village travel and transport situation in the following manner:

"The overall impression from the village studies is one of rural isolation. People in rural areas of SSA inhabit a largely walking world, moving on foot along paths and tracks to local places, and rarely traveling long distances from the village. Some people use IMT (Intermediate Means of Transport) for agricultural transport tasks and for personal travel, but travel using the "rural road and motor vehicle" system is limited."

## **2.2 RTI in SSA**

Very little is known nationally or internationally about the apparently extensive system of tracks, trails, and paths found in most SSA countries. This RTI is normally not recorded on maps; there are very few accurate national inventories of the infrastructure and its condition, and the economics (costs and benefits of use, for example) of these tracks, trails, and paths are not understood — neither at the level of individual tracks, trails and paths nor at the network level. Very crude estimates (based on a limited number of case studies and other anecdotal evidence) indicate that there are from one

and one-half to two times as many kilometers of unclassified "community" roads as there are classified tertiary roads in many SSA countries (Malmberg-Calvo, 1995). Trails and paths are excluded from these ratios.

RTI has usually been defined in practice as "roads," because a great deal more is known, both conceptually and in practice, about roads than about paths, tracks, and trails. There are technical standards, including engineering and economic standards, that usefully describe roads and accurately distinguish between types of roads. Much less is known about whether these standards will be useful, or even feasible, when and if they are applied to paths, tracks, and trails.

Admittedly, it is heroic to presume that current planning capacities in most SSA countries can encompass the full array of infrastructures in a comprehensive planning effort. No one really knows the size of even the *road* network in most African nations. This fact is obscured by the use of road classification schemes, whose categories consist of classes of *administration* of roads. Such categories as "gazetted" and "ungazetted" are used, but very little is known about the "ungazetted," not even the number or total length of such roads. Other schemes feature "primary, secondary, tertiary, and community" roads. Here again, little is known about "community" roads and the activities and uses associated with them.

### **2.3 Dimensions of "Rural Access"**

Access encompasses "the movement of rural people and their goods to meet their domestic, economic, and social needs, by any means, along paths, tracks, and roads." (Barwell, et al., 1988) Accessibility is, thus, a multifaceted concept that seeks to simultaneously consider the level of mobility of individuals and the siting and quality of service-providing facilities available to, and sought by, those individuals.

- "Mobility" expresses the ease or difficulty with which rural people move themselves and/or their goods.
- "Siting" is a measure of the average distance or time which the population served has to travel in order to avail themselves of the service provided.
- Ease of "mobility" is affected by (1) transport infrastructure and (2) means of transport (conveyance).

This paper sees the infrastructure of "rural access" as consisting of the lowest level of gazetted roads, any ungazetted roads that may exist and all paths, tracks, and trails. These are the infrastructures used by rural dwellers in their everyday movements. The means of transport commonly used in rural Africa range from walking to use of

motorized vehicles of various types; however, as noted above, walking, by a great margin, is the dominant mode of transport.

Rural access can be represented as follows:

**Table 1: The Components of Rural Accessibility**

ACCESSIBILITY				
Mobility				Siting and Quality of Facilities
Rural Transport Infrastructure		Means of Transport		
Community Roads, Paths, Tracks and Trails	Tertiary Roads	Walking (with and without loads)	Intermediate Means of Transport	

**Source: Adapted from Barwell (n.d.)**

Primary consumption items in SSA, which require access are water and fuel, especially wood. The transport costs associated with each of these items can be substantial and are borne primarily by women. Transport planning must recognize these costs and realize that they can be lowered either by making transport less burdensome (e.g., by improving the transport infrastructure and/or encouraging adoption of labor-saving innovations) or by locating the sources of water and/or fuel closer to consumer residences.

The costs of consuming social services such as health care and education are also influenced by the costs of moving between the residence and the site of the service. Lowering the costs of access will increase the demand for these social services. Access to schools is particularly important to parents of girls, thus improving access can have significant effects on female literacy.<sup>12</sup> But again, planners should recognize that access to these services can be increased either by improving RTI or by appropriate siting of the services. Since these services are produced by health care and education professionals, it is also necessary that these professionals have convenient access to the service site from their residences.

The village level transport studies and their associated literature feature a notable concern for improved siting of facilities as a means for improving "access."<sup>13</sup> It is

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<sup>12</sup>See Gold (1991) who, after reviewing several USAID-sponsored projects on education concluded that "...project experience shows that the mobility of girls and women is often more restricted than that of boys or men."

<sup>13</sup> See, for example, Barwell (n.d.).

logical to presume that if a facility or service can be placed nearer to users, access to it will be enhanced. However, there is no strong empirical evidence showing the degree to which “poor” siting has contributed to less than optimal access. Furthermore, siting decisions frequently involve tradeoffs among various desirable outcomes. Measuring the relative values held by individual service users is a formidable task for even the most qualified and competent planners and quite unlikely in the current circumstances of most African nations. The problem of “poor siting” is more likely to be solved through decentralized, participative decision-making, rather than through improved centralized planning. To the extent that “poor siting” is a problem, it may be an artifact of an overly centralized system of planning and decision-making, rather than a problem of poor planning technique.

Rural transport planners must understand that it is access which is crucial, rather than transport per se, and that access is multidimensional and can be improved in different ways. For example, planning for RTI should recognize that different types of economic activities have differing dependencies on the importance of timely movement of inputs and outputs and that local storage facilities can serve as a substitute for some transport needs. Improving local storage may prove to be a lower cost alternative to attempting to provide year-around (all-weather) access to external markets. On the other hand, some commodities, e.g., unprocessed milk, cannot be stored for long and are likely to require reliable year-around transport infrastructure. Thus, rural transport planning for economic activities should not only consider alternatives to transport but should also distinguish between levels of access necessary. According to Beenhakker et al., (1986, p. 43), some routes may require reliable access during particular seasons of the year coincident with agricultural production schedules, while others may have demands placed on them throughout the year.

### **2.4 Governance of the Rural Access System**

Assessing demand for jointly-used infrastructures and regulating their use are essential for effective rural access planning, which, this paper argues, is one aspect of a larger system of authoritative social decision-making referred to here as “governance.”<sup>14</sup> Governance is *not* solely the domain of governments — although governments play a pivotal role in shaping the governance system, particularly with respect to publicly provided goods. Governments shape the rural access governance system by laws, administrative regulation, and decisions concerning resource allocation. However, if they are to be effective, government officials depend critically on the acceptance and active cooperation of the larger society.

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<sup>14</sup>As stated in World Bank (1989:60) “Underlying the litany of Africa’s development problems is a crisis of governance.”



Due to the colonial origins and post-colonial misfeasance of many African governments, this acceptance and cooperation is not easily given. Africa may be unique in the extent to which its formal governments are estranged from its traditional units of social organization. Reconciling modern and traditional institutions of governance through the development of an accepted *modus vivendi* is necessary for the establishment of an effective system for rural access planning. An effective governance system will necessarily involve local institutions and local traditional ways of organizing and making decisions.

Only the very highest level of the rural access system, (tertiary roads) is effectively governed by any unit of government in most African nations. In a small number of cases, unclassified roads are formally a District (or *Département*) responsibility; but such governmental or administrative units rarely have the financial resources and technical capacities for successful management. Villages or traditional authorities (not administrative units of government) are more likely to have responsibility for unclassified roads, paths, tracks and trails. Such responsibility is sometimes general, implying responsibility for all such unclassified roads, paths, tracks and trails, and at times particular, implying responsibility for only certain designated roads, paths, tracks, and trails. Where such formal responsibilities exist, they have frequently been unilaterally mandated by a higher level of government, rather than having been sought /or freely accepted by the local community. These responsibilities seldom include the necessary resources or authorizations to mobilize them locally.

In most countries, paths, tracks, and trails have simply been overlooked by government. Maintenance is usually episodic, normally inspired by closure of the path, track or trail and takes the form of expensive emergency repair rather than economical routine maintenance. These efforts are generally organized by a local village(s)<sup>15</sup> whose members do the work themselves and, due to their limited resources, other than labor, and their inadequate technical skills, may yield only short-term results. In summary, the current governance of the rural access system below the level of classified roads can be characterized as "benign neglect" in most of SSA, with occasional interventions by residents.

### **2.5 Multifaceted Aspects of Rural Access Planning Systems**

Effective planning is necessarily multisectoral. Although access can be improved through transport investments, improvements may sometimes be achieved at lower cost through improved siting of services. Siting decisions may be in the domain of another sector. Since planning concerns the allocation of scarce resources, decisions that

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<sup>15</sup> These interventions are normally organized and led by the village headman acting in his capacity as a traditional leader.

allocate a resource to a particular use mean that it is not available for alternative uses. In that sense, all planning decisions are inherently multisectoral.

RTI is a part of a larger transportation network. That is, the set of local roads is connected to and, hence, is a part of the national road network regardless of official classification. Local RTI planning decisions should not be made fully independent of national decisions about the transportation network. The benefits from upgrading a local track may be significantly affected by central road authority decisions to improve a secondary road serving a village. Therefore, there should be some linkage between national and local transport planning efforts.

Planning and designing local transport infrastructure may require technical skills not available in rural areas of SSA. In those instances, planning and engineering services from the national level (in either the public or private sectors) may be required to produce effective infrastructure investments. Central governments usually provide a portion of the funding necessary to support local transport improvement.

An effective process must also rely on local inputs. Especially important in this regard is local information. All details about transport requirements, topography, local climatic conditions, etc., are unlikely to be fully known nationally. Local residents will know of particular idiosyncrasies of the physical and social conditions of the locality which are not known in the capital city. It is only at the local level that the nature of the demands for rural transport as well as their costs will be fully understood. Thus, rural transport planning systems should include inputs from the local level.

Most SSA rural access planning systems tend to be nationally determined administrative procedures, driven by donor funding and disproportionately focused on national road networks. In many countries, planning decisions depend on "guesstimates" and assumptions based on the inability to generate, process and utilize accurate, timely information on, for example, the state of the network and the economic impacts of contemplated or actual transport activities. To the extent that politics enters into the planning process, it is the politics of national office holders and, where competitive elections occur, their would-be replacements. It is a politics dominated, at least in numbers, by bureaucrats rather than elected officials, the politics of inter-ministerial competition. Truly local, competitive politics encompassing both revenue and expenditure decisions has been largely absent from rural access planning, which suggests that planning has taken place without revelation of local preferences.

Because of substantial differences in colonial legacies with respect to local government, there is some suggestion that rural access planning differs systematically, and perhaps significantly, between Francophone and Anglophone African countries. The term "local government" is somewhat of a misnomer in Francophone countries. Sub-national units of government are local units of national governments, rather than semi-independent

local governments.<sup>16</sup> Anglophone countries have experienced, at least occasionally, local governments with defined local powers and responsibilities. District and Municipal Councils in the Anglophone countries at various times are the most obvious examples of functioning local governments in Africa. Where such governments exist, there is the possibility that inter-sectoral, inter-ministerial spending decisions may be debated more thoroughly and local preferences more completely expressed due to the "forum" provided by local government.

The following chapters consider how current planning systems should be altered to encompass multisectoral concerns and provide affordable, sustainable, and demanded rural access.

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<sup>16</sup> This is also basically true of the Lusophone African countries.

### *3. National Support for Rural Transport Planning*

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Central governments have important roles to play in the support of rural transport planning. Among these are setting certain broad policy initiatives, providing resources to support development of RTI, and establishing policies for the allocation and use of these resources.

#### **3.1 Broad Policy Initiatives**

Three important policy initiatives supporting successful rural transport efforts are (1) appropriate macroeconomic policies, (2) appropriate sectoral policies, and (3) policies that provide effective decentralization of government and a degree of autonomy for local authorities and citizens.

##### **3.1.1 Macroeconomic Policies**

To the degree that local transport directly supports agricultural and non-agricultural production, costs and profitability of such activities can be affected by local transport infrastructure. National agricultural pricing and rural credit policies greatly determine the payoff to investments in rural roads.<sup>17</sup> Policies regarding investments in complementary inputs, such as irrigation, are also important. And if the benefits of improved local transport are to accrue to local users, policies supporting competitive local commercial transport are also necessary.

##### **3.1.2 Appropriate Sector Policies**

Rural access is a multisector phenomenon which involves much more than roads. Access to health centers may be more influenced by health ministry decisions than by road agencies or by decisions made at the local level. The same is true for access to elementary and secondary education, where decisions are the domain of ministries of education. Access to agricultural input and output markets, along with storage facilities, may be under the control of ministries of agriculture, while development of agroforestry resources may be controlled by a ministry of forestry or natural resources. Finally, development of other facilities such as local markets or water supply may be guided by policies of other ministries. In the absence of a broad-based decentralization of decision-making, these ministries must also be concerned about the importance of local access and act accordingly.

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<sup>17</sup>See, for example, Beenhakker and Chammari (1979) and Anderson and Vandervoort, (1982)

Sectoral ministries are often involved in the planning and development of RTI. For example, in Burkina-Faso the following ministries are directly or indirectly involved in rural transport planning: (1) Economy, Finance, and Planning; (2) Transport, Civil Works and Urban Development, (3) Rural Development, (4) Environment, and (5) the Home Office (Maiga, 1995). With multiple ministries involved, coordination becomes important. To facilitate coordination, central governments should make improved rural access a priority national policy. While this may mean allocating more monetary resources to the rural transport sector, the national government should also recognize that the welfare of its citizens living in rural areas depends to a great deal upon access.

### 3.1.3 Decentralization and Local Autonomy

Effective planning for rural transport must rely on local financial and informational inputs. Where there is no strong commitment to utilizing these inputs — that is — where all resource allocations are made at the center, there will likely be few incentives for planning decisions to take local preferences and knowledge into account. Only in an environment in which localized information is heavily relied upon can planning be expected to yield RTI that is demanded, affordable, and sustained.

Deconcentration, in which authority to make certain decisions is shifted from national civil service personnel in the capital to national civil service personnel posted in dispersed locations, is a viable form of decentralization. Such decentralization efforts do not entail a localization of “governance,” — that is, the power to make (and bear the consequences of) authoritative decisions. In such instances there are still likely to be strong personal incentives for locally-posted decision-makers to be more concerned with pleasing their superiors in the capital than with making decisions which maximize local benefits.<sup>18</sup> Decentralization efforts which recognize and legitimize indigenous local institutions will probably be more successful than those that do not. (See Box 2)

A corollary to decentralization is allowing local people to craft institutional arrangements in ways that allow them to meet their needs — for example., local transport needs — most effectively. In the Gurage case (discussed in Annex 2), the Government of Ethiopia permitted the Gurage kinship group to undertake new investments in roads<sup>19</sup>. By legitimizing this alternative (non-governmental) institutional arrangement, both the members of the clan and the country as a whole were benefited. The Gurage case illustrates the importance of both a degree of autonomy in local decision-making (governance) and the importance of a degree of local choice concerning the institutions of governance (freedom of association).

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<sup>18</sup>For further discussion of these various incentives see Ostrom, et al. (1993, pp. 168-175).

<sup>19</sup>The Government of Ethiopia also promised to assume the responsibility for subsequent maintenance of the roads, if they were built to nationally-determined standards. The Government has stood by that commitment.

**Box 2: Indigenous Institutions in African Governance**

The quality and quantity of public services produced by African governments have declined significantly over the past two or three decades. Africans have increasingly turned to indigenous social institutions for health, education, public order, dispute resolution, road maintenance, management of common pool resources and other ostensible tasks of government. The World Bank's "AM 90s" research project has tried to assess the extent to which this has occurred and the degree to which indigenous institutions have been successful in responding. A general conclusion of this work is that neither the formal institutions of government nor the informal indigenous institutions can be expected to completely resolve Africa's governance problems. The convergence of better adapted formal governmental institutions with renovated indigenous institutions is suggested.

Indigenous political and administrative institutions (e.g., chieftaincy and many other forms of socio-political organization) have exhibited considerable vitality, despite widespread government-inspired attempts to undermine or replace them. Many socio-cultural organizations, usually voluntary associations, have been discovered to play vital roles in local "social safety nets." The groups are often based on religious, gender or age group distinctions. A number of economically oriented indigenous institutions play important roles in the governance of economic life and promotion of economic and social development. Examples include the regulation of local markets by associations of market women and the widespread phenomenon of urban "hometown associations," that raise substantial sums for investment in public projects (road improvements, school construction, etc.) in their ancestral villages.

Community members and government functionaries have viewed indigenous institutions as legitimate. This adds to their stability and insures orderly succession in traditional positions. Indigenous institutions are low-cost, widely accessible, and considered fair in the administration of local justice. They also retain the interest and loyalty of nonresident elites, who are often vital to the success of rural community projects. A major weakness of indigenous institutions is their tendency toward ascriptive assignment of roles, life tenure in office, and secret decision-making processes. They often have weak capital bases, lack managerial skills, and have no entrepreneurial experience. Finally, many indigenous institutions exclude women from decision-making. Despite an evident need for selective adaptation, indigenous institutions are vital to local governance. With appropriate assistance and widespread acceptance of their legitimacy by governments, they may be able to significantly advance African rural governance.

Sources: The World Bank, 1992; Olowu and Erero, 1995.

The degree of central support for decentralization efforts is as important as the enabling environment. Ghana's "credible" approach to decentralization (Box 3) combines statutory dedication of not less than 5 percent of total national revenues to formula-based annual grants to local governments with additional authorizations of own-source revenues. Broad policy initiatives, high policy priority and sustained commitment to decentralization are required because decentralization and local autonomy run counter to

### Box 3: Credible Decentralized Planning

Decentralization efforts of the Government of Ghana are given credibility by the apparent willingness of national decision-makers to at least incrementally improve District Assembly finance. The most significant action to improve District Assembly finance was the District Assemblies Common Fund Act of 1993, which provides that not less than 5 percent of all national government revenues must be allocated to the District Assemblies by Parliament. The law specifies that District Assemblies must use these funds for "development" purposes, but does not closely define what "development" means in this context. In practice, both investment and maintenance expenditures have been allowed. In 1994, 34 billion Ghanaian cedis were distributed to the Districts from the Common Fund. Guidelines for a five-factor, formula-based sharing of these revenues among Ghana's 110 District Assemblies have been developed and are being observed. The five factors identified include need (relative imbalances among districts), local revenue effort, a specified minimum for each district, a "service pressure" factor (associated with rapid population growth), and a contingency factor. Although the District Assemblies Common Fund is clearly the most important source of District revenues, other sources are also provided. Still, Adarkwa (1995) estimates that the Common Fund provides 70 to 90 percent of District Assemblies' total revenue.

the perceived self interest of many government officials. As Smoke (n.d.) in his review of Kenya's District Development Fund writes, "Decentralized development programs are not a sustained high priority for most senior officials in a government widely perceived to be consolidating political control over its districts."<sup>20</sup>

### 3.2 Resource Transfer Policy

If planning for RTI is to yield results, resources must be available on a timely, stable, and sustained basis.<sup>21</sup> In general, national policies regarding resource transfers should be formula-based and fully transparent to local government officials and citizens. Such policies should provide incentives to local governments and community groups to mobilize their own financial and "informal" resources in support of rural access improvement and maintenance. Both resource

transfers and local mobilization of resources should be accomplished so as to enhance the abilities and incentives of individuals to hold national and local public officials accountable for the use of the funds. The strengths and weaknesses of various alternative resource transfer policies are further discussed in section 3.2.3 of this paper.

Although it is crucial that local users of these infrastructures contribute a portion of the needed resources, a realistic assessment of the situation in SSA shows that central governments (and possibly donors) will have to provide significant resources if there are to be substantial improvements in RTI. As shown in Box 4, recent support of rural roads is not substantial in a small sample of SSA countries. There is little reason to think that it is significantly greater in non-sampled countries. If countries seek improved rural

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<sup>20</sup>Smoke also posits that an important reason for the lack of commitment may be a perception that decentralization and its implementation program are seen as a "foreign idea."

<sup>21</sup>This is a local-level analogue to the point emphasized by Heggie (1995) who states "Without an adequate and stable flow of funds, road maintenance policies will not be sustainable" (p. 23).

access, it is likely that spending will have to be increased. It will also be necessary to make additional technical and scientific resources available. Policies should also be developed regarding permitted, required and/or prohibited uses of these resources.

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**Box 4: Resources and Rural Roads**

A 1991 review of resource allocation in 6 SSA countries indicated that the rural roads portion of the roads sector spending accounted for about 1 percent of total government expenditures and from 7 to about 20 percent of total roads spending. As shown in the table, only Kenya stood out as an exception. There, rural roads received about 2.4 percent of total spending and 31 percent of road spending. SSA governments that place a high priority on rural transport as a national policy will, in most cases, have to increase the relative flow of resources into rural transport.

**Expenditures for Rural Roads**

COUNTRY	YEAR	AS PCT OF ROADS SPENDING	AS PCT OF TOTAL SPENDING
Malawi	1987	15.0	1.0
Kenya	1989	31.0	2.4
Tanzania	1989	12.0	1.0
Nigeria	1989	22.0	1.0
Cameroon	1987	10.7	0.9
Senegal	1985	7.0	0.4

Source: Gaviria (1991)

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### 3.2.1 Technical and Other Non-monetary Resources

Technical skills, including civil engineering and rural planning skills, are scarce in many SSA countries. It is unlikely that local governments or administrative units will have well trained engineers and planners available. For many RTI improvement efforts, these inputs are essential to their success. Technical inputs may initially have to be made available from public sector agencies overseeing the formal highway network, i.e., engineers posted at the regional level by national ministries. The challenge in this instance is arranging appropriate incentives to insure that these centrally posted technicians realize that it is in their interest to provide quality services to rural transport provision units. Requiring that annual performance reviews of these personnel include evaluations of their performance by local units which they have assisted would be one minimal step in the right direction (if, in fact, such information is actually used by agencies evaluating work performance).

If a country has a enough trained technical personnel to assist in the planning and design of rural access facilities, it may be possible to create an independent unit concerned with rural access within the relevant road agency. This technical staff would then be made available on a fee-for-services basis to local units. In countries with strong private consulting engineering firms, local units should have the option of contracting with such firms.



It is uncertain if the equipment pools currently available at national levels can be used for improvement or maintenance of tracks, trails, and paths. Experimentation with smaller-scale equipment, privately-owned equipment, and labor intensive methods should be encouraged.

### 3.2.2 Design Standards

In some African nations, rural road engineers have deliberately, though informally, raised design standards in order to “compensate” for a presumed (and rightly so) lack of maintenance and the inability to enforce vehicle axle load limits. Private sector consulting engineers preparing road improvement designs may have an additional incentive for over design of facilities, because contracts sometimes impose substantial liabilities on design firms should the facility fail.

Many national rural transport planning systems could be improved by more explicit attention to the *economics* of road design choices. These choices have often been made with little knowledge of life cycle costs of alternative designs and inappropriate design standards. For example, many observers have commented that excessive vehicle speed standards are often assumed for rural road designs. The affordability of all weather access is also a candidate for further scrutiny. The potential for uneconomic design practices extends well beyond construction standards, including rehabilitation and maintenance standards as well. Recent experience in Ghana has suggested dramatic savings may be achieved with little loss of serviceability if “spot improvements” are emphasized rather than complete regravelling of deteriorated road surfaces.

It is critical that the economics of current design standards and rehabilitation and maintenance practices be reexamined if expansion of the classified network or serious attention to the “community roads” network is anticipated. The potential for erroneous uneconomic “improvement” of community roads, paths, tracks, and trails is especially great.

### 3.2.3 Monetary Resources

The allocation of central government resources to rural tertiary and community roads involves three questions.<sup>22</sup> One question concerns how much should be allocated to this portion of the roads sector. The second concerns how the funds planned for rural roads should be allocated across localities, while the third is centered on how the funds, once transferred, may be spent. (These three questions are no different than those which must

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<sup>22</sup> There are two additional national planning questions, which are well beyond the scope of this effort. “What proportion of total national resources should be devoted to transport?” and “From that pool, what proportion should be allocated to the roads portion of the transport sector?”

be asked about the design of any intergovernmental transfer system.) In addition, there remains the question of whether other revenue sources, namely social funds, might be used to augment the flow of resources available to improve local access, particularly on community roads.

### **3.2.3.1 Allocations to Rural Access Activities**

A portion of the national funds intended for the transport sector can be set aside or earmarked for improved rural transport. One allocation model that has been proposed is based on the assumption that funding of road maintenance should be in proportion to the relative asset value of the various types of road in the total road network (see Box 5). A second approach is to designate that a predetermined proportion of the national Roads Fund be allocated to rural roads. For example, in Tanzania 20 percent of the Roads Fund is set aside specifically to support maintenance and rehabilitation of local roads which are the responsibility of the 84 rural and 17 urban districts outside Dar es Salaam. In Ghana, 20 percent of the Roads Fund were initially allocated to rural roads; subsequently that was altered to 28 percent (Heggie, 1995, p. 85). Neither of these approaches insures that the resulting allocation is economically efficient (in the sense that they yield the maximum long term economic benefits). On the other hand, the approaches do increase the certainty of the allocation of funds to the non-primary portion of the roads network, a result that is unlikely if allocations are made on an *annual, ad hoc* basis.

### **3.2.3.2 Allocations To Local Governments**

A second concern is the mechanism used to allocate the funds among local units. One approach is to allocate the funds using simple formulas with little or no central discretion. Such formulae can range from simply allocating equal amounts to each local jurisdiction to more elaborate formulae which include population, land area, or road length. If road length is included, reasonably accurate indicators must be available. The question also arises as to whether to include lengths of tracks, trails, and paths in the formula and, if included, whether tracks, trails, and paths should have a "weighting" different (probably less) from the weighting given to road. These simple formulae have a major advantage in being transparent and insuring a relatively predictable and stable flow of funds to each locality.

The simple formulae hold a disadvantage in not differentiating among recipient

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### Box 5: A Business-Based Approach to Planning Maintenance Investments

A principal objective of the Road Maintenance Initiative (RMI) in SSA is *commercialization*. This means that roads should be brought into the market place and put on a fee-for-service basis and be managed like any other business enterprise (Heggie, 1995). One component of private businesses, often missing from the public sector, is the accounting concept of a balance sheet which shows, at any point in time, the amount of assets and liabilities of a firm.

If the value of assets, i.e., the value of the roads, are known, it is possible to estimate the amount of funds necessary to maintain these assets. A national road authority is likely to know the length of asphalt, gravel, earth, and urban streets under its jurisdiction. The value of these various lengths can then 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, their length, and value per km. are shown. If it is determined that adequate maintenance requires approximately 2.5 percent per annum expenditure, the total maintenance spending needs can be easily determined. National planners can then use this information both to determine the amount of funding that should be allocated for each type of road surface and — when combined with information about the composition of the tertiary road network under each sub-national jurisdiction — use this information to determine the amounts that should be made available to each jurisdiction.

SURFACE	LENGTH	VALUE/KM	TOTAL VALUE	PCT of TOTAL
Asphalt	900 km.	\$400,000	\$360 million	60%
Gravel	2,500	\$50,000	\$125 million	20%
Earth	8,500	\$10,000	\$85 million	14%
Urban	500	\$80,000	\$40 million	6%
TOTAL			\$610 million	100%

Under the assumption that adequate maintenance requires an investment of 2.5 percent of the asset value, then US\$15.25 million should be allocated to road maintenance throughout the network. If all earth roads are under the jurisdiction of districts, approximately US\$2.1 should be allocated to allow them to maintain these earth roads. While this can be a useful rule of thumb, the approach ignores one important aspect of efficient planning — the demand or use of the roads. Nevertheless, it can be used as a first approximation of the needs of different districts and, with decentralized decision-making, these local governments can determine which of the routes under their jurisdiction should be allocated more or less of the transferred amounts.

Source: Mr. Metschies of GTZ at the 10th RMI/RTTP Annual Coordinating Committee Meeting.

jurisdictions on the basis of benefits from investments in rural transport. More elaborate allocation mechanisms are necessary if funds are to be allocated in a way that yields the greatest benefits. For example, a more complex formula might use three factors — extent of classified network, accessibility index (which might be measured in terms of a target density of roads or distance to nearest rural road), and technological standards in

order to recognize differential costs.<sup>23</sup> A variant on this approach is being used in Tanzania, where a three-factor formula, which includes population density, road density, and “stage of development,” is used to determine allocations. Those districts with greater population densities, greater road densities, and a higher stage of development (as an indirect measure of road use) will be allocated more funds. Such a formula may achieve an allocation which produces greater net benefits than a formula which does not include stage of development. However, the method can be less transparent to localities since it gives the central government discretion in deciding the levels of development and development potential.

An alternative approach to allocating funds across localities would require each locality to submit project proposals, which would then be accepted or rejected centrally. This technique has the potential advantage of permitting the center to allocate funds in ways which have the greatest potential payoff<sup>24</sup> and, unlike the simpler formula-based allocations, it does permit the central government to require localities to commit some of their own resources on a cost-sharing basis. However, the project-based, specific grant mechanism has certain important disadvantages. It would probably result in a transparent allocation of funds and may encourage purely political factors to be used in determining the allocations. It can involve substantial delays as project proposals are prepared, reviewed, sent back for “improvements,” re-reviewed, and so forth. And it is likely to favor those jurisdictions which have the strongest abilities to write “winning” grant proposals rather than the most beneficial projects. In most SSA countries, the more transparent, less bureaucratic (and political) formula-based mechanisms are preferable to the specific, project based approaches to allocation.

### **3.2.3.3 Authorized Uses of Transferred Funds**

A final set of policy issues concerns how the transferred funds may be used by local authorities. For example, should their use be limited *entirely* to maintenance or should local jurisdictions be given autonomy in allocating the funds either to road maintenance, road repair, or to new construction or reconstruction of roads. Assuming that local decision-makers know best how to use whatever resources available, then limiting the use of the transferred funds to maintenance (even if it can be monitored effectively) would be contrary to the spirit of decentralization. However, if local decision-makers are unaware of the significant returns to maintenance, mandates limiting the use of funds for maintenance would be preferable.

A related question about use of transferred funds concerns whether their use should be limited to gazetted, tertiary roads or whether the funds can also be used to maintain

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<sup>23</sup>See Gaviria (1993, p. 93).

<sup>24</sup>A related advantage is that central planners can assure that the locally planned projects are fully in accord with national plans for development of the transport network.

and/or improve community roads (including tracks, trails and paths). Since, in fact, there may be very little real difference in the physical characteristics or use of these different “types” of roads, greater benefits may be achieved by permitting localities to use the funds on whatever RTI is deemed preferable. Such autonomy would certainly be in the spirit of decentralized decision-making discussed previously.

### 3.2.4 Social Funds

A second resource-transfer mechanism, which is potentially available to support rural transport development efforts in some SSA countries, is “social funds.” Social funds try to reduce poverty by funding local organizations, public or private in ways that are more flexible and transparent than is common by regular government line ministries. Certain features of social fund initiatives underway in SSA provide encouragement that they (or similarly designed funding arrangements) might help in transferring funds to rural areas to support rural transport. First, as noted above, they are intended to be “demand driven” — that is, rather than identifying and implementing projects, those administering the social fund respond to funding requests and proposals submitted by local groups.<sup>25</sup> This might permit highly subjective and non-transparent factors to determine the allocations of funds, but because they are normally administered outside regular government line ministries, this potential problem could be diminished.

Another feature of social funds is that they mostly are grassroots, participatory organizations, particularly local NGOs and other community groups, such as parent-teacher organizations or water user cooperatives who are permitted to be project sponsors. Thus, the funding may better reflect actual user demands for the improvements than can occur in formal governmental settings. Reliance on such groups does, however, run the risk of funding local projects which have been ill-designed and which lack the technical expertise to implement them. Furthermore, because projects are initiated from “below,” there is the risk of an urban bias in the programs — NGOs and the knowledge of social fund programs and the procedures for applying for funds may be located primarily in urban areas.<sup>26</sup>

Finally, it is not desirable to explicitly *target* social funds to RTI, although it is reasonable to permit social funds to fund them. Targeting, i.e., by requiring that some portion of social funds be spent on RTI, would sacrifice their demand-driven character. Local groups should be informed that improvements to trails or paths *may* be financed

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<sup>25</sup>See Marc, et al., 1995 for further elaboration on the definition of the term.

<sup>26</sup>One of the social fund initiatives considered most successful is the AGETIP of Senegal. Although a “non-governmental organization,” it originally did not accept proposals from NGOs but, instead, limited its efforts to local government and local branches of the central government (see Marc, et al., 1995, p. 49). This restriction has, however, been relaxed recently.

from social funds and then be permitted to decide whether they wish to request funds for that, or for some other, purpose.<sup>27</sup>

### **3.3 Summary**

National governments have important roles to play in planning rural access improvement and maintenance. Among these are setting broad policies that support decentralized planning and create a macroeconomic environment in which economic benefits from improved local transport can be maximized by users. Sectoral and intersectoral policy initiatives should also support the development of improved planning for local transport and access. National policies should:

1. create incentives for mobilization of local revenues for rural access improvement and maintenance
2. be wholly transparent to local government officials and citizens
3. encourage and enable citizens to hold national and local officials accountable for the use of funds
4. contribute to a sustained, stable, and predictable flow of funds.

Planning how resources will be transferred to localities to support development and maintenance of RTI is a national government function. Such resources include both non-monetary resources (particularly technically trained personnel and appropriate equipment) and monetary resources. For personnel and equipment, full-cost contracting for these services will help insure that they are efficiently allocated. Monetary transfers, particularly of national road funds, should insure that a fixed proportion of the total is set aside for rural access with allocations probably best made on a formula basis in order to insure transparency and certainty of the revenue flows.

Social funds offer some possibility for supplementing the flow of resources to local RTI. However, the demand-driven nature of the funds should be maintained.

The proposals of this chapter are deliberately modest and incremental. Their aim is to first move toward a planning and resource allocation system that reliably and predictably channels resources to rural access activities in a transparent, accountable manner. Simplicity of allocation processes and decision rules is emphasized in order to promote accountability. More elaborate allocation processes and decision rules, which require more sophisticated technical inputs and data but enable more efficient allocation

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<sup>27</sup> In fact, rural transport infrastructure improvement probably is not a top priority for many rural SSA dwellers. They frequently assign higher priority to improvement of health care, education facilities, and development of safe water supplies. But efforts would still improve local access to these services.

of resources, are suggested only after a reliable, transparent system has been established. In effect, this is a statement that a well-designed planning system ought to be a component of an effective, decentralized governance system.

## 4. *Local Rural Transport Planning*

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Improving rural access and RTI depend critically on local resource allocation decisions. This chapter considers the issues associated with local-level planning by expanding on the objectives of planning efforts (Section 4.1) while acknowledging the challenges and constraints involved (Section 4.2), particularly as they relate to the SSA environment. The remainder of the chapter considers the steps that, in light of these objectives and constraints, should be taken to improve RTI planning efforts at the local level (Section 4.3). The chapter closes with presentation of a “prototype” planning process (Section 4.4) that, if implemented, could lead to improved local rural access.

In keeping with the general theme of this paper, the intent is not to suggest a complex, highly detailed system of rural transport planning that relies exclusively on “planners” to decide how resources for rural transport will be allocated. If, as argued by Ayittey (1994:147), national development planning in Africa failed largely because it attempted to plan the daily lives of individuals, it is also true that any attempt to rely on a non-participatory, technocratic local planning system is likely to fail.

### 4.1 Objectives of Local RTI Planning

RTI planning should ultimately be concerned about access — both access of rural areas to the network of primary and secondary transport and access within a locality.<sup>28</sup> And, given the multi-faceted characteristics of access, the local planning effort should be multi-sectoral in its orientation.<sup>29</sup>

As discussed in Chapter 1, RTI planning should not be purely “supply oriented” but, instead, should aim to provide infrastructures which are demanded. That is, the orientation of the local planning process should be on determining the types of access which local users want and are willing and able to help support through their own contributions of resources. In the absence of demand, RTI development efforts are a waste of resources. Furthermore, such an orientation can help to overcome the tendencies in many developing countries (both within and outside SSA) to design RTI infrastructure that far exceeds the requirements of local users and, because they are very costly to maintain, are ultimately unsustainable because their benefits do not exceed their costs.<sup>30</sup> Indeed, without net benefits (which imply that the services are demanded and affordable), there is no reason for it to be sustained.

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<sup>28</sup>Access to the larger system of roads (or other forms of transport) facilitates integration of local producers into the broader economy and increases access to social services.

<sup>29</sup>The same argument, i.e., that local (or “regional”) planning should be multisectoral, is made in Conyers (1985, p. 9).

<sup>30</sup>This concept of sustainability parallels that of Cernea (1987, p. 3).



Designing a demand-oriented planning system is not a simple task since ascertaining the “real” or “effective” demand for public goods is fraught with difficulties. Although there may be an initial commitment by users to sustain an RTI, the public nature of the infrastructures can produce strong temptations for those making that commitment to avoid those responsibilities.<sup>31</sup> This is the fundamental reason why public goods are normally provided by governments. Governments, using the coercive powers of the state, have an advantage in enforcing the distribution of the costs of public goods. As discussed in the next section, the SSA environment presents a set of additional challenges and constraints to this planning effort.

### **4.2 Constraints to Local RTI Planning**

Sub-Saharan African nations do not normally offer hospitable environments for local RTI planning. Rural localities are characterized by a pre-industrial culture in which neither those charged with planning nor local citizens are accustomed to rational planning as envisioned herein. There are also difficulties in RTI planning which arise from the concepts commonly used, rather than from the circumstances of rural Africa. Overcoming these constraints will mean improving both the capacities for rational planning in rural Africa and the conceptual frameworks brought to bear on RTI planning. The following sections discuss four common constraints.

#### **4.2.1 Lack of Local Data**

As argued in the previous chapter, individuals and groups at the local level possess considerable information, not available at the center, which can lead to improved RTI planning. For example, in Ghana most District Assemblies have reasonably accurate figures for district populations, while central government figures for individual districts are subject to large errors.<sup>32</sup> Neither localities nor central governments possess the extensive, detailed data necessary to use formal road planning models over the full range of RTI.<sup>33</sup>

Furthermore, although local planning should be demand driven, the usual methods for determining demand for roads — by estimating consumer or producer surplus — will not be feasible for many tertiary and probably all community roads.<sup>34</sup> Such methods are

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<sup>31</sup>For an extended discussion of the challenges of rural infrastructure sustainability see Ostrom, et al. (1993).

<sup>32</sup> See Adarkwa (1995:22-23). Hoban, Riverson and Weckerle (1994:3) make the same observation concerning centralized rural road data.

<sup>33</sup>Thus models, such as those developed and discussed by Kumar and Tillotson (1991) or Pienaar (1993), while interesting, are not likely to be feasible in the SSA context.

<sup>34</sup>See Beenhaker and Lago (1983) for a discussion of rural road appraisal methods.

reliant on estimating rates of return from road investments. But the cost of making such estimates, except perhaps for a few principal tertiary roads, is likely to greatly exceed the benefits, particularly in light of the lack of good local data and trained local personnel.

Given these constraints, only relatively simple screening methods are likely to be feasible in the SSA context (a point returned to in the section 4.3). Furthermore, those planning techniques should still be viewed as indicative information and used as inputs in the actual resource allocation process.

#### 4.2.2 Institutional Arrangements for RTI

Rural transport infrastructure consists of gazetted tertiary roads together with the ungazetted roads, tracks, trails, and paths that, collectively, are termed "community roads." If RTI planning is to be effective, the process should recognize their probable interrelatedness and be coordinated. Coordination is complicated by the fact that current institutional arrangements generally assign the responsibility for tertiary roads to local governments (if these responsibilities have been decentralized to the local level), while responsibility for community roads is relegated, by mandate or by default, to much less well-defined "communities."<sup>35</sup> Furthermore, external funding, e.g., from intergovernmental transfers, is commonly restricted to the gazetted portion of the RTI system.

In addition to the challenge which this institutional arrangement places on coordinated RTI planning, it may well be an artificial (yet binding) constraint on localities. In fact, some road links are included in the gazetted portion of the system more on the basis of historical accident rather than on a complete and current analysis of whether they really serve the purpose and have the physical characteristics of tertiary roads. On the other hand, some community roads may provide local benefits more in line with what is expected of tertiary roads. Without a more complete up-to-date inventory of these links and analysis of their physical characteristics and use, the imposed constraints can be extremely inefficient.

The common practice of "assigning" responsibility for community roads to informal community groups raises another important issue. The implicit assumption is that these groups will assume "ownership" of the link(s). But true ownership (where owners must take on costly responsibilities) is unlikely to be acknowledged when assigned by fiat rather than as the result of a two-way transaction. Thus, if the presumed benefits of ownership, i.e., having the owner actually take responsibility for upkeep of the asset, are to occur, unilateral assignments are unlikely to have the desired effect.

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<sup>35</sup>See Malmberg-Calvo (1996) for a fuller discussion of these and other institutional issues.

### 4.2.3 Planning Systems in Place

In spite of the call for cross-sectoral planning (section 4.1), the bulk of SSA local governments are not structured in a way that facilitates this outcome (see Box 6). Rather than encouraging “horizontal” planning across sectors, most local government planning is “vertical.” Much local planning is designed to make the locality accountable to the center, rather than to the multiple sectoral agencies and local groups which affect RTI (and other initiatives) locally. A clear example of centrally determined planning is described in Annex 1. The planning structure in rural Malawi is dominated by central government and political party personnel. Also problematic is the current reliance upon centrally appointed, rather than locally elected, local government officials.

#### **Box 6: Local Government Planning in SSA**

A survey of 22 African nations conducted in 1986 and 1987 produced useful information on local government planning in 13 of those countries. In 12 of the 13 responding countries, local governments produced local development plans. In most cases, the “development plan” is like an annual budget of expenditure, except that the focus is on capital projects; in many cases it is integrated into the national development plan. The planning process and coordination of local plans are almost always controlled by a central planning ministry.

Source: Olowu, 1988

If local RTI planning is to be accountable to local users, the voice of those users must be heard. It is unlikely that this will occur where the planning function is vertically oriented and where local government decision-makers are not accountable to local residents. Paradoxically, increased local accountability does not imply lower accountability to superior political or administrative authorities. In most cases, improved means of central monitoring and evaluation are associated with decentralization and defined local autonomy.

### 4.2.4 Affordability

Since Africa includes many of the world’s poorest nations, affording infrastructure improvements of all kinds is an issue. Costs of investment, operation, and maintenance are problematic and have been well documented and analyzed in the literature. However, with respect to the infrastructure of rural access, these costs have *not* been well documented and they are *not* well understood. Although the village level travel and transport studies have opened new perspectives on rural access, they *do not* provide us with an understanding of the economic constraints and opportunities experienced by those seeking “access.”

Considerable information about the real nature of rural transport on the African continent has and is still being compiled. But there are still significant shortfalls in that knowledge base. It has, for example, been noted that “although there is considerable data on the amount of labor and time expended on the drudgery of head- and back-loading, there has been little analysis of its effect on production or social patterns in

rural Africa.”<sup>36</sup> Only with such analysis can planners and local decision-makers hope to reach a definitive conclusion about the effectiveness of allocating scarce resources to improvements in local access.

Donors and lenders have assumed the major responsibilities for providing investment funds for roads. Concomitant with the flow of funds has been a flow of technical assistance personnel, design standards, maintenance models, planning methods, equipment, etc. Recently, observers and African participants have questioned the appropriateness (or at least the optimality) of these flows. It is now widely recognized that “all weather access” is not always affordable in African rural economies and that road “design speeds” are irrelevant and costly if most goods move by head loading. Rural roads in Africa serve different economic and social purposes than rural roads in the developed world.

The rural access system is even more uniquely African and more closely linked to the daily lives of Africans than are rural roads. Planners of rural access should keep foremost in mind that the affordability of rural roads as presently designed and implemented is in doubt. Overdesign (in economic terms) of facilities is common in rural roads; this should be avoided at all costs with rural access.

### **4.3 What Should and Can Be Done?**

Although challenging, there are steps that can be taken to improve local RTI planning outcomes. Here the focus is on those that will prove to be both feasible and effective.

#### **4.3.1 Planning Recognized as a Component of Governance**

Planning is important for any effective allocation of resources, but planning as a highly structured, supply-oriented exercise that attempts to answer the resource allocation question technocratically is inappropriate in the SSA case.<sup>37</sup> Instead, effective planning should be viewed as an aspect of governance. In this paper, governance is defined, very broadly, as authoritative social decision making. Governance occurs in interactions between citizens and government officials as well as in “private” interactions between citizens and groups of citizens.

The first aspect of governance pertains to the relationship between those making public decisions (e.g., planners) and those affected by decisions (e.g., rural dwellers). Even if

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<sup>36</sup>Riverson and Carapetis (1991, p. 21).

<sup>37</sup>For that matter, a purely technocratic method of solving *public* resource allocation questions in high income countries is also inappropriate.

professional planners had perfect information and their scientific models were exact, the arrangements for making public decisions at the local level and the incentives facing those decision-makers influence decision outcomes. Thus, despite its rational and well-intentioned aspirations, planning must be but one component of a governance system in

**Box 7: Decentralized Planning and Governance in Ghana**

Ghana illustrates a broad-based approach to improving decentralized governance, rather than an attempt to improve a stand-alone rural transport planning system. Over the last several years, the Government of Ghana has cautiously, but consistently, evolved in the direction of a more decentralized and more democratic political system and a more market-driven economic system. Privatization and economic liberalization is now virtually complete. Among the more significant legal, institutional changes which have occurred in the public/political sphere are the adoption of (1) the 1992 National Constitution, (2) the Local Government Act of 1993, (3) the Civil Service Law of 1993, (4) the District Assemblies Common Fund Act of 1993 (Act 455), (5) the National Development Planning Commission Act of 1994, and (6) the National Development Planning System Act of 1994. The net effect, while not yet fully achieved, is clearly to devolve significant responsibilities for decision-making and planning to private individuals, private firms, traditional authorities, non-governmental organizations and, on the governmental side, District Assemblies.

If Ghanaian rural access planning is eventually judged as “improved,” explanations of its success will have to take account of the richly inter-related legal and institutional changes cited above. “Success” in planning will be a product of many appropriately configured institutional relationships (probably derived through a degree of trial and error, rather than perfect design), which provide sufficient opportunities and incentives for individuals and groups to become involved in planning for solution of commonly perceived rural access problems — in short, to engage in self-governance.

which many interests are represented. The African context is such that complex, broad-scale, and continuing reforms of the kind presented in Box 7 should be concomitant with improved planning.

A good example of the relationships between governance and planning is offered by the Gurage Road Construction Organization (GRCO). Annex 2 discusses this case in some detail. The GRCO has organized the construction of approximately 415 kilometers of trunk-standard roads over its more than 30 year history and raised approximately 65 percent of the costs of construction of these roads from Gurage sources. The planning exercise included explicit recognition of the importance of arranging for

financing the roads system and built in incentives for the sub-clans to contribute their shares of the total costs of the effort. The sense of planning as a shared vision of participants, which is at the core of the Gurage experience, has been largely absent from development planning as heretofore experienced in most African nations.

### 4.3.2 Integrative Planning

RTI be considered as a whole. Yet, as noted in Section 4.2.2, institutional arrangements (rules) often prescribe that local governments focus their attention on gazetted tertiary roads and ignore community roads. But the distinction between gazetted and non-gazetted roads can be artificial. As documented in Burkina Faso (Maiga, 1995) much of the classified or gazetted portion of the network was not maintained whereas approximately 20 percent of the roads maintained were not gazetted.

In those instances where classification systems are artificial and more the result of historical accident or political maneuvering than real analysis of road type and usage levels, local planning efforts should be directed at all local RTI rather than focused exclusively on the gazetted portion of the network. Only in this way can demand-oriented planning be effective. Such a change in the arrangements would permit the planning and governance effort to concentrate on the benefits from RTI rather than be constrained to work within an artificial distinction among road links.

To make such a reorientation even more effective, funds transferred from central governments in support of local RTI should not be limited to supporting only gazetted roads. Instead, local governments should be permitted to spend funds where they would have the greatest payoff. In return for this greater freedom over the use of the funds, the local governments should be required to match (at some predetermined matching rate) the grant monies with resources of their own. This would increase the likelihood that funds would be used where they would generate maximum net benefits.

### 4.3.3 Simple Planning Techniques

Although supply-oriented planning is inappropriate for directly responding to the resource allocation question, systematic planning exercises can provide important input. But as suggested in section 4.2.1, the lack of local data limits the methods used.

One simple prioritization method used in Mauritania's Construction Capacity and Employment project is computation of the ratio of total project cost to the number of beneficiaries.<sup>38</sup> Projects with smaller costs per beneficiary are preferred to those with greater ratios. While the technique *assumes* that benefits exceed the costs and that they are roughly proportional to the number of beneficiaries, such a decision rule is systematic and simple to apply.<sup>39</sup>

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<sup>38</sup>See World Bank [Report 13743-AFR], 1994.

<sup>39</sup>Cook and Cook (1990) also provide a reasonably simple project ranking technique. Although it entails a certain amount of judgement by the planner concerning users' willingness to pay, it can be used with relatively small amounts of additional data.

### **Box 8: Road Selection in Kenya's Rural Access Roads Project**

Road selection is often a contentious issue in rural road improvement projects. Road selection criteria used in Kenya's Rural Access Roads Project (RARP) evolved substantially over time, reflecting changes in the weights given to political, social and economic factors.

Between 1974 and 1980, the road selection process started with the District Development Committee (DDC) of each participating district, which was tasked with selecting 150 to 200 kilometers of roads to be improved, following criteria established by the Special Projects Branch of the Ministry of Transport and Communications (MOTC). Criteria included expected increases in agricultural production, presence or absence of other development projects in the area, and distances to markets and social service facilities. A list of the selected roads and the accompanying data for each road was forwarded to the MOTC, where an internal rate of return (IRR) was calculated for each district "package," not for the individual road segments. Three main problems were experienced: (1) reliable agricultural production data were not available; so data were fabricated with a consistent bias toward over-estimation of supply response; (2) livestock production increases were not accounted for; and (3) road "packages" often included individual roads whose IRRs did not justify improvement. In a positive development, District planning capacities did improve over time, due to the inclusion of DDCs in the selection process.

A revised selection process introduced in 1980 emphasized more realistic assessments of expected agricultural production increases and improvements in the quality of life for small farmers. Selection was done by the responsible MOTC District Field Engineer, with help from the District Agricultural Officer and District Development Officer. The following criteria were introduced for ranking of individual road segments proposed for improvement:

- \* road length and serviceability
- \* type and serviceability of connecting roads
- \* degree of connection to markets and social services
- \* density of population and small farmer holdings
- \* degree to which cultivated area could be expanded in road impact area
- \* number of related development programs in the impact area
- \* availability of appropriately priced labor for road construction
- \* degree to which development constraints would hinder road impacts
- \* cost of road improvements and technical feasibility.

The revised process de-emphasized consideration of prospective agricultural production increases (i.e., economic criteria) by introducing specific social and political criteria and assigning differing weights to individual criteria. The revised selection method was very controversial within the RARP. Analysis of individual road segments tended to increase calculated IRRs for roads selected for improvement, compared to IRRs for road "packages" selected using the previous method. The social and political dimensions of road selection, which always play a role, are to some extent formally considered in this method.

Source: Gaviria, 1991

Other simple appraisal methods built on sound economic principals can work in some instances.<sup>40</sup> Simple pre-screening procedures have been applied in the rural road sector of Kenya. Gaviria (1993:112) concluded that “the experience in Kenya suggests that simplified pre-screening procedures are the only type of selection procedure that can realistically be implemented at the district level with effective participation by involved and knowledgeable parties.” Gaviria reaches this conclusion on the basis of the lack of available data, technical capacity, and institutional capacity at the local level. Simplified criteria currently used in Kenya and their evolution over time are described in Box 8.

Neither the Kenya case nor the proposed rapid appraisal methods are the full complement of local RTI included in the analysis. That is, they focus almost entirely on formal road links and do not attempt to encompass the kinds of transport infrastructures which are most relevant to the daily lives of most rural SSA citizens.

An interesting example of a planning technique that focuses on *access* rather than simply road links is illustrated in Box 9. Although it has been utilized reasonably successfully in this project environment, it is less certain that the same planning technology might be transferred to a large number of districts throughout Malawi (or other countries of SSA). Even such “simplified” methods will probably require a considerable amount of training and rather substantial investments in data collection by localities.

#### 4.3.4 Participatory Planning

The planning techniques discussed in the previous subsection can be useful in resource allocation decisions. However, this information should not be considered a substitute for a collective decision process — i.e., the outputs of the prioritization techniques should not determine project selection, but can inform decisions.

Given their public goods nature, ascertaining demand for RTI is difficult; since individuals have no strong incentive to reveal their true preferences. Nevertheless, in the absence of a market, some form of participatory action is necessary if users’ preferences are to be determined (even imperfectly).

This call for participation does not mean that local planning systems ought to consist entirely of local meetings where needs are expressed by many users or potential users. Such an approach is likely to yield more needs than the resources available can meet.

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<sup>40</sup>See Beenhakker and Lago (1983) for a discussion of reasonably simple rapid appraisal techniques for road investments.



**Box 9: Prioritization of Alternative Rural Access Improvement Activities: The Pilot Integrated Rural Transport Project (Malawi)**

At the heart of the Pilot Integrated Rural Transport Project (PIRTP) in Malawi is a ten-step prioritization process designed to prioritize alternative rural access improvement activities. The ten steps occur in the following order:

- (1) articulation of the purpose of the project;
- (2) computation of indicators of access to nine different types of services for each focal community;
- (3) determine from the matrix resulting from step (2) those communities which are worst off in terms of access;
- (4) using the criteria of logistical Availability, financial Affordability, technical Appropriateness, socio-cultural Acceptability and operational Sustainability (AAAA-S), exclude projects that do not have a good chance for long term success at meeting the identified problems;
- (5) ranking projects based on the severity of the access problem (step 3) and the least problems identified in step 4;
- (6) identify optimal interventions for those locations with the worst access problems;
- (7) analyze the availability of resources, including personnel, monetary, other resources, such as credit facilities, and material resources such as land, equipment and materials;
- (8) based on the combination of resources available (step 7) and the outcomes from the previous steps, finalize intervention decisions;
- (9) draw up final budget plans; and
- (10) devise the workplan.

This simplified, though hardly simple, methodology uses an intermediate level of measurement and quantification (ordinal data) to identify and rank alternative interventions for improving rural access.

Source: Elias, 1995a

This is especially the case if the process focuses only on expressions of need for transport facilities, without credible commitments on the part of those users to contribute towards the facility and its upkeep. Constructing “wish lists” is not sufficient to derive expressions of willingness and ability to pay for facilities. Effective demand for transport requires the willingness of those expressing their needs to contribute some of their own resources towards meeting these needs. This is crucial to determine the sense of ownership as well as to recognize the fact that relatively few resources will be available from outside the immediate user community.

It is also important that the process be inclusive of a wide range of groups and interests. One particularly important group in this respect is women. The evidence is clear that a substantial portion of the use of RTI in SSA is by women.

Without their involvement, a “participatory” process is likely to yield results which do not correlate closely with local transport activities.

“Participation” refers only 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. Decision arrangements meeting these conditions are not easy to construct and maintain, and are most often built through extended processes of trial and error, which succeed in creating a reservoir of mutual trust among participants. Governments would do well to look to *some* traditional authority systems and *some* socially conscious non-governmental organizations for these kinds of

decision-making environments. These authority systems and NGOs can provide effective intermediary institutions between governments and their citizens.

#### 4.3.5 Cost Sharing

Since local planning efforts cannot impute benefits of infrastructure improvements, and since directly asking potential beneficiaries for their estimates of benefits is likely to result in overestimates, the only other feasible process is to require substantial sharing of costs on the part of beneficiaries. Cost sharing has several important advantages. First, it is an effective way of gauging demand. Second, it increases the likelihood that the resulting project will be affordable; since beneficiaries will be unwilling to contribute substantially towards costly improvements which do not yield them commensurate benefits.<sup>41</sup> Third, since the resulting improvement is likely to yield benefits, and since the beneficiaries have put up a substantial proportion of its costs, they are much more likely to sustain that investment through adequate maintenance to insure that the benefits continue to flow. This third advantage can, however, be circumvented if local users anticipate that, by allowing the infrastructure to deteriorate, it will again be replaced by an even better facility paid for by others. All of these factors help support the concept of local “ownership” of that facility.<sup>42</sup>

### 4.4 A Local RTI Planning Prototype

Given the extreme differences in the countries of the continent, it would be heroic to try creating a prototype “model” of rural transport planning in SSA — there is no blueprint approach to planning. The presumption throughout this paper has been that planning decisions must be made locally if they are to result in the most effective allocation of resources, while a blueprint orientation suggests that there is one “right” way to plan the provision of RTIs. Nevertheless, it may be instructive to suggest how a planning process *could* be structured in an attempt to achieve the objectives stated above (Sections 4.3 - 4.3.5), while recognizing the constraints in which the planning process must be carried out.

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<sup>41</sup>Where there are good data on the costs of motorized transport, methods exist to impute, indirectly, what vehicle users should be willing to pay for improved road surfaces which will decrease their costs of operation. Unfortunately, there is extremely little evidence regarding the benefits associated with improvements to transport infrastructures other than roads. While there is considerable information regarding how much time (and volume of goods transported) rural villagers devote to transport-related activities, little information is available concerning the benefits generated by lowering such transport costs.

<sup>42</sup>The paper by Guyer (1991) with the revealing title “Representation Without Taxation: An Essay on Democracy in Rural Nigeria, 1952-1990,” argues quite persuasively that democratic decision-making institutions without concomitant responsibilities can lead to undesirable results.

### 4.4.1 Assumed Context

It is useful to state the assumed context in which this prototype planning takes place. The following assumptions are intended to reflect situations found in many SSA countries; although it is also likely that they do not fully reflect the situation in any single country.

The assumptions include:

1. The planning process occurs within functioning general purpose local governing bodies that include legislative assemblies, in which a majority of the members are locally chosen.
2. These local governments have, on the basis of statute or well established tradition, authority over the allocation of at least some resources within their boundaries and also have some, albeit limited, authority to mobilize resources of their own.
3. Central government ministries, e.g., education, health, agriculture, etc. maintain a presence at the local level through their own local offices. These offices are assumed to oversee the activities of their respective sectors, although local governments are ultimately responsible for delivering the services.
4. The RTI “system” consists of (a) primary and secondary roads directly under the control of national and/or regional authorities, (b) tertiary roads which are the assigned responsibility of local governments, and (c) community roads that consist of paths, tracks, trails, and roads. Many of the tertiary roads and community roads have deteriorated to the point where no routine maintenance is feasible
5. The local government staff includes a planner with relatively little training, experience, or discretionary resources available to carry out extensive “planning exercises.” There are, however, rudimentary maps of the locality available which provide information on most of the tertiary roads, some of the community roads and even a few tracks. However, the entire system of fixed RTI is not available on existing maps. The maps also provide basic information on the locations of residents, the markets, mills, schools, health centers, etc. Although the planner has had relatively little training, he/she is aware that “access” entails more than simply “roads” and that “roads” constitute more than those designed for motorized vehicles, and that local transport activities include a wide variety of modes of transport and for a variety of purposes.
6. The local area that coincides geographically with the local governing unit has been subdivided into smaller, neighborhood-like units (termed “wards” in this

discussion). Although these units have no formal governing powers, they do have locally recognized leaders (traditional or popularly chosen) and are sufficiently homogeneous to have reasonably common interests and needs.

7. There is a reasonably certain flow of funds from the central government to the locality. These transfer mechanisms have been established in law or on the basis of strong tradition. A portion of the transferred money has been earmarked for “local transport.” Although the amounts are considerably less than what is necessary to adequately maintain or upgrade the local RTI network, when combined with a portion of the local government’s own resources and other local non-formal resources (primarily labor), the total amount available is sufficient to maintain the most crucial parts of the network and maintain or even upgrade a portion of the remainder of the network.<sup>43</sup>
8. Subsistence agriculture forms the economic base of the community, with some surpluses available for export out of the local area. There is also some small amount of off-farm employment.
9. Local planning takes place within the broader context of a national planning system; local plans are not explicitly reviewed and approved nationally nor are planners attached to local governments considered representatives of a national system. Nevertheless, standards for the local planning systems are determined at the national level.

#### 4.4.2 Steps in the Planning Process

The local planning process should encompass both long-term and short-term planning. Long-term plans of three to five years are more general in nature and focus on overall strategies; short-term planning activities focus on how resources are to be allocated to RTI during the upcoming fiscal year but should also fit into the long-term strategies. The long-term planning process is considered first.

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<sup>43</sup>This assumption regarding the availability of resources is crucial; since without discretionary resources, no amount of planning can lead to improved RTI.

## *Rural Transport Planning*

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### *Long Term Planning*

In keeping with the concept that the planning process should try to emulate the actions of a market, a principal objectives of the long-term planning process will be to ascertain (a) the current uses of the tertiary and community road network, (b) the current state of access problems that local users find most constraining, and (c) the actions likely to be undertaken by public or private sector actors that will help overcome these problems without any additional improvements to RTI.

While resource constraints will not permit the planner to carry out extensive surveys of current RTI use patterns and costs of transport, meetings with local users at the ward level can determine where the greatest needs are for improved access to markets, social services, and general household consumption needs, such as firewood and water. In addition, these meetings can determine which local transport routes are most important in the day-to-day lives of local residents. Through these participatory meetings, the planner will attempt to gauge (admittedly on a far from scientific basis) the nature of the demand for improved access. In addition, the planner should remind local users that, since public resources are strictly limited, strongly felt local needs may be met, at least in part, by locally initiated responses of the users.

Supply responses to these demands for transport include maintenance of as well as possible improvements to the existing network. However, the supply response may also be linked to decisions about the siting of new public or private facilities. For example, the national government may anticipate constructing new social service facilities that will help overcome at least some local access constraints and, therefore, lessen the need for improved RTI. Or a private investor may plan to construct a new milling facility in which case the need for access to existing mills could be diminished. In addition, a national roads agency may be planning relocations or upgrading of existing primary or secondary roads which will also improve local access without additional local efforts. The planner should therefore attempt to determine the likely supply changes and take them into account when drafting the long-term RTI plan.

Long-term planning should not, however, ignore the endowment (or scarcity) of resources that would affect the ability to respond to local access demand. For example, the planner should make an assessment of the availability and general condition of equipment within the area. Likewise, the process should include an appraisal of the availability of labor and the degree to which additional training would be necessary to implement effective labor intensive construction and maintenance initiatives. Finally, since it is a long-term planning exercise, these assessments of resource endowments should take into account the effects of anticipated future policy changes, such as developments of credit systems and removal of financial, regulatory, and operational constraints on private sector transport services.

At this stage of the planning process, options and orientations are transformed into more or less quantifiable objectives and targets. In other words, scenarios are examined for

their feasibility . It will then be the responsibility of the local planner to draft a 3-5 year RTI planning document that suggests a long-term RTI strategy (see figure 1). The most important feature of this planning document will be delineation of the key parts of the local (tertiary and community) road network. Among the characteristics of this key component of the network are that the links: (a) serve a broad base and significant portion of the local population so that identification of particular beneficiaries is not possible; (b) are deemed, on the basis of discussions with local users, to be especially important to productive efforts — e.g., link villages to markets or the secondary road system; (c) are currently used extensively; and (d) either be in good enough condition to be deemed “maintainable” or have the potential to reach a maintainable level without significant amounts of investment in construction or reconstruction. And although there may be a formal differentiation between the gazetted and non-gazetted portions of the local road network, the planning process should not dwell on these formal differences. Instead, the focus should be on the ability of RTI links to serve broad-based transport needs and *demands* of the local populace.

Once drafted by the planner, the long-term planning document coherence will be assessed against other analogous long-term plans for other sectors, and then presented to the local council for debate and adoption. The adopted plan will therefore identify the key network and will state the council’s objective that this portion of the overall local road network will have the highest priority in maintenance funding to insure that it remains viable. The adopted plan will also state the council’s desires concerning siting decisions of other site-specific services meant to improve local access.

### *Short Term Planning*

Short-term planning of one year in duration is equivalent to an annual budgeting process, but with some modifications to emphasize the possibility that funds available to the local government might be “leveraged” to encourage self-help efforts on the part of identifiable groups of users and/or beneficiaries with common interests in improving local access. As in the case of the long-term plans, the planner will be expected to work closely with several different persons or groups to identify the demands or needs for local access and to recommend supply responses that might meet those needs in light of resource constraints.

The list of steps (by the individuals or groups involved) include:

1. Estimate monetary resources available from central government transfers. Estimates of both total resources to be transferred and resources tied to rural access improvement and maintenance are desirable in order to facilitate integrated, multi-sectoral planning. Estimates of the amount of own source revenues for the upcoming year will also be needed. These steps would be carried out by the planner in conjunction with a local financial officer and in consultation with the local council.

2. Estimate the costs of maintaining at some minimal levels the key parts of the tertiary and community road network. The planner would produce these estimates in conjunction with the local engineer. If there is no engineer on the local government staff, the regional road engineer or a private sector engineering consultant would derive these estimates.
3. Where the total amounts available for maintaining and/or upgrading local RTI exceeds the amounts necessary to maintain the existing key parts of the local road network, the excess can be allocated to support user-based groups associated with individual road links that serve primarily a small and identifiable group of users. While the local planner would lead these efforts and make recommendations to the council, the process would rely on requests emanating from the local groups, most likely organized at the “ward” level.
  - a. Through ward level meetings attended by the planner (and a local engineer, if available, and probably a local council representative), local users would be asked to identify the local links especially important to those groups, and for which the members of the group indicate they are willing to provide additional resources of their own to supplement any resources provided from the local government for maintenance and/or upgrading of a local road link (regardless of whether classified or not). To provide some structure and to insure a transparent process, the local council will set a standard matching amount that would be the same for all user groups.
  - b. Once the user-based proposal is formulated, the local engineer (or centrally provided or private consultative engineer) would review the plan to determine its technical feasibility. This is necessary to help insure accountability in the uses of the public funds being used as a match for the local contributions.
  - c. If the total local government contributions to technically feasible, user-based proposals exceed the amount available for these efforts, the planner, together with the engineer, will have to prioritize those projects as well. Again, the prioritization should be based on the number of beneficiaries and the degree to which the various proposed projects support productive market activities.
4. The planner will then submit to the council a suggested plan for allocating next year’s resources to the key components of the local RTI network along with a suggested allocation of the remainder of funds to local user-based groups. The plan should indicate how these allocations fit with the long-term strategy and, where applicable, should provide information regarding how well the user groups have performed in carrying out their own RTI efforts on previous

occasions. Those who have performed well (by mobilizing the necessary numbers of workers and other resources and by producing effective RTI improvements) should be rewarded with additional funds or greater discretion in the use of the limited funds so as to provide an incentive for improved performance.

5. The council then has final authority over the allocation of resources and monitoring of their use.

#### **4.5 Summary**

This chapter has focused on local level RTI planning efforts. These efforts ought to be demand oriented if they are to result in sustainable improvements. The task is complicated, however, by several factors including a dearth of available data in most SSA localities, multiple components of RTI, and existing planning systems which are primarily “vertically” oriented rather than multisectoral in nature.

A key to successful RTI planning outcomes is the quality of the governance system. Without a strong governance system, even ideal planning structures will not improve local transport infrastructure. Rational and transparent planning techniques combined with participatory decision-making can yield improved resource allocation outcomes.

However, cost sharing must be relied upon in such planning processes. Only then will the resulting allocation be affordable, demanded and, therefore, sustainable.

A prototype system was then presented; although it should be emphasized that it assumes a particular set of local circumstances and certainly should not be viewed as a blueprint. Nevertheless, it can highlight the importance of designing and implementing a planning system which is a part of the local system of governance and which takes as its objective the task of planning RTI in a demand-responsive, multi-sectoral manner.



## *Annex 1: “Local” Planning in Malawi*

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**L**ocal government in Malawi is composed of 24 Rural Districts and 8 Town, 1 Municipal and 3 City Councils. Each of these local governments is, in principle, authorized and made responsible for a broad range of social, economic, and regulatory services. In fact, only the Town, Municipal and City Councils are functioning governments. Urban councils spend 55 times as much per resident as the Rural District Councils. Most services for which District Councils are formally responsible are controlled, directly or indirectly, by central government agencies. District Councils are fiscally and technically dependent on central government agencies. In addition, most rural local decision-making is taken by the District Development Committees, composed of the District Officers of the principal central government ministries active in rural areas. Even if the District Councils were technically competent and financially able, there might still be problems of legitimacy and community acceptance, since members of the District Councils are appointed by the government, not elected. In the previous government, appointments to District Councils were made by political party officials. Plans are currently being made for the first ever District Council elections.

**The Government Planning Apparatus that Permeates Local Levels (pre 1993)**

Level	Government Administration	Party Apparatus	Local Government Authorities	Community Development facilitators
Central	Office of the President and Cabinet	MCP Party Central Committee	Ministry of Local Government	Ministry of Community Services
Regional	Regional Administration	Regional Party Chairmen	Regional Loc. Government Off.	Regional Comm. Dev. Office
District (Town, City)	District Commissioner	District (MCP) Party Chairman	District Council Urban/City Council	District Community Development Officer
Ward	Traditional Authority (Chief)	Area (MCP) Party Chairman	Councilor	Community Development Assistant I
Village	Group village Headman Village Headman	Village (MCP) Party Chairman		Community Development Assistant II
Household Individual		Youth Wing Women's League		

Source: Elias, 1995a

There are three principal avenues of government control over local governments — Central Government Administration, the party apparatus of the government in power, and the Ministry of Local Government and Rural Development. Each of these avenues is a centralized, multi-layered hierarchy reaching deeply into the structures of local government and beyond. In matters of community "self-help" or community "works," which is often the case for RTI improvements, a fourth, and even more extensive, hierarchy comes into play, the Ministry of Community Services. Community Development Assistants from this ministry are found at village and ward levels throughout the country. This example is not untypical of other African nations. It raises the question of whether rural access planning can be useful in this context.

## *Annex 2: The Gurage Road*

### *Construction Organization*

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The GRCO was created in 1962 after almost 20 years of effort by leaders of the Sebat Bett Gurage, an ethnic group whose homeland lies some 150 kilometers southwest of Addis Ababa, Ethiopia. The Sebat Bett Gurage number somewhere around 1 million persons, being perhaps 20 percent of all Gurages in Ethiopia. The term "Sebat Bett" are the Gurage words for "seven houses," which refers to the Gurage being organized into seven sub-clans or "houses" which have historically had close relationships and allegiances with each other. The Sebat Bett Gurage homeland consists of approximately 5,000 square kilometers, most of which is mountainous uplands on Ethiopia's central plateau. The rugged terrain and the dense, growing population have made it necessary for many Gurages<sup>44</sup> to migrate to other areas of Ethiopia, both urban and rural, in search of economic opportunities. Over 90 percent of young Gurage males spend at least part of each year working outside the homeland. A significant, though unknown, percentage of Gurages live most of their adult lives outside the homeland. Many of them are successful merchants and traders in Ethiopia's major cities. But, even these long-term "non-resident" Gurages maintain strong ties with the homeland and their kinsman therein. The vast majority of these urban Gurage have a house and small farm in the homeland which, by custom, they must visit at certain times of the year.

Access and mobility have been severe problems for the Gurage. Mountainous terrain and relatively abundant rainfall (800 to 1200 mm per year) make travel difficult. A primary mode of personal, long distance travel and transport was, and still is, the donkey. Gurage leadership began discussing the desirability of organizing to construct improved roads in 1945, but permission to organize was repeatedly denied by provincial and national authorities who were suspicious of possible "political" intents or the possibility of worsening national ethnic cleavages. Permission was finally granted in 1962, with close government scrutiny of the statute of incorporation, attendance by government representatives at the early organizing meetings and a stern warning that members of the governing board would be liable for any deviations from the intentions expressed in the statute of incorporation.

Over the intervening 30 plus years, the GRCO has compiled an enviable record of achievement. More than 350 kilometers of road have been constructed to Ethiopian "trunk" road standards, with 65 percent of the costs provided by GRCO. The other 35 percent of construction costs and 100 percent of maintenance costs are provided by the government through the Ethiopian Road Authority. How can this record of sustained achievement be explained?

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<sup>44</sup> From this point forward "Gurage" refers to the Sebat Bett Gurage only, unless specifically noted otherwise.

### **Participation**

The GRCO incorporates many of the best aspects of true "participation." Enhanced mobility and access is a "felt need" and high priority for the vast majority of the population. The need was identified by indigenous leaders without reference to government officials and uninfluenced by the presence or absence of government/donor funding opportunities. The fact that the Gurages are contributing a large percentage of construction costs insures that their real preferences for this particular class of public goods are being "revealed." In addition to cash contributions, Gurage leaders and members have invested huge amounts of time and energy in relatively transparent and accountable procedures for discussion and decision-making.

### **Planning**

The GRCO example is relatively unique in the absence of a specific government-driven planning process. The initiative in this example clearly lies with the Gurage, who had a clear idea of what they wanted to do and a strategy for doing it. The government's role was to provide technical assistance and to construct the roads in question under contract to the GRCO and to provide maintenance for the completed roads. The Gurage plan consisted of the notion that the core road network ought to tie together the territories of the "seven houses" and should connect all of them with the outside world. This enabled them to identify and agree upon (not without difficulty) a top priority trunk route which would link the seven territories within themselves and to the main road to Addis Ababa. A second priority was to construct "feeder" roads in each territory, which would link the principal town of that territory to the trunk road. A key decision was taken that temporal priority for construction of the individual feeder road sections would be based on the amount and timing of funds contributed by the respective "house." That is, the sub-clan which first achieved its targeted contributions<sup>45</sup> would be the first one to have its feeder road constructed. Approximately 94 percent of target contribution figures were contributed, with some sub-clans exceeding the targeted amounts. Eighty percent of all contributions were from the rural homelands.

Over time, GRCO revenues have changed considerably. People were unwilling to continue contributing at the substantial rates initially assessed; so the GRCO has shifted the burden of revenue raising to commercial operation of transport services and a "development levy" imposed on transport users. However, the basic plan for construction of the network is still being implemented. Only one feeder road remains to be built.

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<sup>45</sup> Targets were set for each sub-clan by consensus among leaders, based on population and assessment of average incomes. The decision was that each household should contribute the equivalent of one month's income.

## **Linkage Structures**

The GRCO has been structured to link existing modern, urban Gurages with their traditional, rural brethren. Day to day governance of the GRCO is entrusted to a 72 member Management Council, which meets every other month and has the ability to call special sessions as needed.<sup>46</sup> The Management Council is the chief policy-making, deliberative body of the GRCO and also settles disputes brought to it by GRCO membership. Subject to the overriding authority of the Management Council, subordinate governance units of the GRCO are the Executive Committee and various Sub-committees. The key to successful governance, but, particularly in the early stages, successful fund raising, seems to be the complete mirroring of the sub-clan structure in the Management Council and rural and urban sub-committee structure. Each sub-clan is represented in the Management Council and has a sub-committee in its homeland and another composed of sub-clan members residing in Addis Ababa and other urban areas. There are a total of 25 such sub-committees. Participation in the Management Council, Executive Committee, and all sub-committees is without compensation and occupies considerable time. GRCO records show that 641 meetings of the Management Council have been held, with an average duration of 4 hours and an average of 28 members in attendance. The Executive Committee has met 957 times, for an average of 4 hours, with an average of 8 members in attendance. The decisions of the entire day-to-day governance structure is subject to review and approval by GRCO General Assemblies, which have been held 12 times, lasting about 6 hours each and have had an average attendance of 366 persons. General Assemblies are always held in Endibir, at the center of the Gurage homeland.

## **Social Self-Governance**

In addition to urban-rural linkage, GRCO also reveals a certain tendency toward separate parallelism with government structure. The Gurages are organized in several layers (not necessarily implying hierarchy among the layers) of successively larger social groups, each grouping with defined and widely accepted social functions. Each Gurage household belongs to a "Sera," a neighborhood organization comprised of approximately ten to twenty households which will normally deal with household concerns such as the management of a local common household water source. Adjacent Seras may form a "Mura," comprised of fifty or more households. Here community concerns such as the management of agricultural and grazing lands may be addressed. Muras are associated in a "Tib," which seems to be almost synonymous with the "Bett" or sub-clan. The Tib is concerned with management of an extensive landscape, such as a watershed. Many important political and developmental decisions are probably most

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<sup>46</sup> The Management Council includes all members of the Executive Committee (15), seven persons from each of the seven sub-clans (49) and two representatives from each of the four Peasant Associations found in the Gurage homeland (8). It is interesting that the Peasant Associations are represented since Peasant Associations are a relatively recent government-created unit, rather than a unit of traditional Gurage social organization.

appropriately made by the Tib, not only because of the appropriateness of its scale, but also because of the intimate relationship with and cognizance of the "lesser" social units.

The structure of official government administrative units and government defined social self-management units runs somewhat parallel, though not necessarily at the same scales, as the Gurage social structure. Starting from the larger, official administrative units the hierarchy (and hierarchy is clearly implied in practice, even if not fully embodied in formal law) is composed of Regions, Zones, Woredas (roughly equivalent to Districts in other contexts), Kebeles (neighborhood governments), Tabias, and Kushets. Peasant Associations which act somewhat as cooperative suppliers of farming inputs, but are also frequently engaged in the provision of local public goods are organized at a scale somewhere in the "neighborhood" of the Kebeles. Hierarchy (superior-subordinate relationship) is clearly embodied in law at the higher end of the scale (Regions, Zones, Woredas). The functions of each level and relationships between "greater" and "lesser" levels are less clear at the lower levels, which are evidently meant to be partly units of government administration and partly units of social self-governance. Social self-governance is made more problematic by the relative poverty of these units, the arbitrary or artificial creation of these units by government, and their frequent redefinition through policy change or succession of governments. Relationships between levels are based in budgets and project approval processes, which are defined and controlled in great detail by central government. Recurring problematic situations cannot be addressed by evolutionary change decided by those involved, but must be referred to superiors, who may see the "problem" as an administratively convenient necessity.

Gurage leadership seems to approach the dual Gurage-government structure strategically. They rely on traditional Gurage social units for decision-making while creating specific, "modern" structures (e.g., the GRCO) to relate to and deal with opportunities presented by governments and their policies.

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