

Management Tools for Rural Transport Planning

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Summary

The objective of this paper is to analyse management problems at the level of low-volume rural road networks with particular attention to the utility and relevance of available management tools. It also provides, in an appendix, summaries of some of those available. More detailed information is available at the [WorldBank](#). It is concerned with the hierarchy of networks starting at the level of paths and tracks, where motor traffic is almost absent, although use by Intermediate Means of Transport (IMT) may be high, to those roads, generally earth or gravel, where motor traffic volumes are low and levels of service and the scope of works needed to provide them must be closely adapted to the needs of users.

There are different levels of road networks, ranging from a predominantly social to a predominantly economic vocation. Social road networks require tools that take account of their contribution to local transport, mobility and accessibility while economic road networks can be prioritised using user savings as the main indicator of benefit. Tools can be drawn upon pragmatically, while taking care to choose that network where each is most applicable.

Rural roads must be analysed as collections of complementary networks, rather than as individual links. This normally requires the determination of a core motorable network that is coherent, both within itself and with those complementary to it. Coverage and level of service will be constrained by the availability of funds to improve and maintain and by the evolving situation of higher and lower level networks. Management tools must be capable of evaluating tradeoffs among these variables.

Rural roads management may be decentralised or centralised, with the former generally held to be more effective. Although dissemination and training is easier within centralised systems, they should be seen as transitional, and where they exist tools should be designed that will be compatible with their eventual decentralisation.

Management tools provide methods of collecting and processing data and transforming it using models of varying complexity into information tailored to the particular situation. The information is packaged in a way that ensures they can be generalised to different contexts and understood by those who must use them. They are usually applied within two distinct project cycles, that of the financing agency and that of the country itself. Tools tend to be designed and disseminated with the information needs of the former a primary consideration

Processing tools become less relevant moving along the continuum from economic to social networks, since expertise does not exist to apply them. Complex optimisation tools are relevant when there exists large investments, trained personnel and good data, normally found at the level of primary and secondary networks. In the context of rural transport and accessibility issues,

direct information on what to do in specific cases, reinforced by training, is more relevant.

Information requirements increase throughout the project cycle and processing tools should reflect this by providing simple variants requiring modest amounts of data to quickly provide approximate results at the identification stage, with increasingly stringent demands for data at later stages. The processing tools should be transparent so that their results are understood. Tools for direct information provision are not covered here in any detail. Further study is necessary to define needs for management information at the local level and develop strategies for dissemination and training.

Tools may be assessed vis-à-vis the following three criteria:

- That they be packaged in such a way so that they can easily be understood and applied in the different contexts to which it is destined;
- That they have a method or strategy of dissemination associated with it that ensures that it reaches the target group it is supposed to;
- That there is a training strategy associated if necessary to ensure they can be applied by those who need it.

The Internet is the principal means of dissemination for the tools discussed in this study and by far the most efficient one. However, access to it is variable, particularly outside capital cities. It is not generally accessible at the level where rural transport projects are implemented, at least to the degree necessary to download information.

Strategies for dissemination of information on tools and the tools themselves assume implicitly that their target group consists largely of experienced development practitioners Centralised and decentralised administrations, even if more inaccessible, should also be targeted.

Pooling of information among financing agencies and consultants is not common, especially in most African countries. Certain agencies attach considerable importance to dissemination (the World Bank and DFID, for example, are exemplary for this), others little. Sharing of experience should be promoted, whether on the use and adaptation or simplification of tools, as well as the numerous manuals and training courses developed for each project.

Training becomes increasingly important as an ancillary activity to packaging and dissemination as we move towards rural users. As education levels diminish, the need for training grows. Normally organised on a project-by-project basis, training resources are inevitably lost. Approaches to conservation of these resources are necessary, by standardisation of implementation strategies to ensure sustainability, and regionalisation of training to maximise access.

1. Development role of rural roads

1.1 What is a rural road?

For the purposes of this mandate a rural road will be defined following the typology proposed by Lebo and Schelling. They propose six hierarchical levels: simple paths from farm to and from home or hamlet; paths or tracks from thence to and from the central village; tracks and earth roads from village to market centre (sometimes but not always a town); earth and gravel roads thence to district headquarters or its equivalent and afterwards generally well engineered gravel to regional headquarters (or the capital; finally sealed or good gravel roads depending on traffic, between regions and the capital. Of course, in certain cases, this strict hierarchy will be short-circuited.

*Hierarchy for rural transport**

	Farm	Household/ Sub-village	Village	Market Center	District Headquarters	Regional Headquarters	Capital/ Port
Typical Transport Infrastructure	Path	Path/Track	Track/ Earth Road	Earth Road/ Gravel Road	1-2 lane Gravel / SD* Road	2 lane AC** Road	
Typical Traffic	Porterage	NMT 0-5VPD	NMT 5-50VPD	NMT 20-200VPD	>100VPD	>1500VPD	
Typical Distance	1-5 km	1-10 km	5-20 km	10-50 km	20-100 km	50-200 km	
Share of Asset Value							
Share of Network Length							
Typical Ownership/ Responsibility		Community	Local Government		Provincial/Central Government		
Type of Network	Rural Transport Infrastructure				***	National and/or Provincial Road Network	
* Surface ** Asphalt Concrete *** Part of either RTI or the Provincial Network							

* Design and appraisal of rural transport infrastructure, J. Lebo and D. Schelling, World Bank Technical paper no 496

The first four levels can be classified for the purposes of this study as rural roads, specifically that part of the continuum between the farm and district headquarters. Progression along the continuum is characterised by a growing investment in improvement and maintenance, by a shift in means of transport from head loading, through bicycles and motorcycles or hand and animal-drawn carts, to growing proportions of motor vehicles, themselves more diverse. Management responsibility is normally decentralised, to local government and communities of stakeholders. However, responsibility will normally be at the national level from the fourth level on.

This typology provides a useful means of communication, especially as it includes first level paths and tracks as part of the transport network. This is not the case in the classification systems of most countries, where the extent and importance of these networks is ignored. Nomenclature also varies from country to country, resulting in confusion as to which networks should be included in a given programme. Frequently they are not seen as networks in their own right. . Instead, they are referred to as feeder roads, as though they were simple dependants, poor relations of the real road system and not in themselves networks. Worse again, as agricultural feeder roads, thus losing sight of their social role. The hierarchy above is useful in that it uses non-specific terminology and that it includes all levels of road network.

1.2 Continuum from economic to social roles

Also to be noted is a shift in what could be called the vocation of the link, from social to economic. Rural road networks span a continuum, with at one extreme those with a largely social vocation, where ease of use of the rare motor vehicles is a minor issue and at the other those with an economic one, where it dominates.

It should be kept in mind that this distinction is arbitrary. All roads, taken with the means of transport that use them, are a part of a transport system intended to provide mobility to users, enabling them to travel in pursuit of their own objectives, whether social or financial. However, at a certain level motor traffic volumes are so low whether in absolute terms or compared with other users, on foot, bicycles and motorcycles, that traditional approaches, dedicated to meeting needs for greater speed, more comfort, and lower operating costs, become unrealistic. Such roads are seen as not viable according to traditional programming tools, which content themselves mainly with comparing the flow of vehicle operating cost savings with the costs of realising them and drawing conclusions from the size of the surplus. This error of appreciation can have serious consequences in that it ignores the vital contribution of these roads to mobility.

Paradoxically, these simple roads are the most used and also the most vital to rural dwellers whose needs for transport, as shown by many studies, are largely local, and rarely involve a motor vehicle. Motor roads become a simple element among others within the local transport system. A shift in emphasis occurs Road projects become transport or accessibility projects, with roads often a minor contributor. Motorable roads can only provide greater mobility if users have access to the vehicles that use them. If they do not road improvement will not be sufficient to ensure better access and investment in them must be traded off against investment in means of transport or in the services used by the population.

A further level of complication stems from the fact that the decision-making environment is multi-dimensional and for that matter multisectoral as we move towards low-volume roads and tracks. Roads must be viewed not as a means for facilitating the use of motor vehicles but rather as a means, among others, for

making people more mobile. This in itself is inadequate as an indicator of value unless it is integrated within an analysis of accessibility, that is, how best to help people to get where they want to go. Road projects shade into transport projects on their way to becoming rural infrastructure projects, with which they are interchangeable. For example, access to better health can be brought about by building a health centre or by improving access to a more distant one.

1.3 Implications for tool choice

1.3.1 Social rather than economic analyses

There is a shift in paradigm. Conventional road evaluation and selection tools, loosely referred to as economic because they deal with monetarised benefits, must be replaced by social ones, relying on cost-effectiveness indices intended essentially to measure the contribution to well-being of measures to promote accessibility. The cut-off point on the social/economic continuum where the paradigm shift must occur, and where different programming tools must be applied, poses methodological problems since it signals the need for a complete change in methodology. It is essentially located around the point where the flow of monetarised benefits to users does not adequately compensate expenditure on improvement and maintenance. A grey area is created where roads not quite meeting this simple go/no-go economic criterion may be rejected even if they are acceptable under accessibility criteria.

1.3.2 Network rather than link analysis

Also important is the need to examine roads as rural networks rather than on an individual basis. Too often, single links are identified and presented for financing without taking into account the state of the complementary connections on which its contribution to local mobility depends. This in turn, leads to a need for models which can help to determine the core network, that is, that sub-network which will ensure, once upgraded and maintained, an adequate level of service for motor vehicles while at the same time providing sufficient coverage to permit simpler complementary networks to benefit from them.

Certain formal tools are more easily applied to single links and this to some extent has driven project formulation. A more holistic approach is needed for network analysis, where go/no-go criteria are not pertinent. Management tools must provide clarification of the issues, rather than answers to them. This in turn requires tools whose can be applied rapidly and transparently.

1.3.3 Implications for tool choice

It is important that this shift from a road to a social or accessibility/rural transport paradigm be recognized by governments and donors. All too often, solutions to accessibility problems are seen by the engineers and economists uniquely in terms of road improvements. The scope of the analysis is accordingly limited. Excessive and unsustainable investment in them results at the expense of simpler and cheaper interventions to increase mobility.

This problem has arisen due mainly to the fact that the traditional and popular programming tools, as exemplified by HDM-4 or RED, are based on a model of reality which is imperfect at this level. All roads are largely social investments and can only be reduced to simple instruments for reducing vehicle operating costs at the expense of great loss of reality. Vehicle operating costs are coopted as a simple measure of what are in fact successive layers of economic benefits accruing first to vehicle owners, and then partially passed on to traders, users, consumers and so on, depending on the extent to which competition obliges each to share. The approach, even if limited as an indicator of absolute value in that multiplier effects are understated, is particularly convenient in that provides at least a consistent yardstick for comparing and ranking investments. It is also relatively transparent (or would be were the models more simple to apply). It becomes inapplicable at both ends of the continuum, where social impacts dominate. For example, no rational planner would now rely on this model to plan urban transport investments. It becomes similarly inapplicable at low levels of motor traffic in rural areas. It does, because it under-estimates wider economic benefits, provide a conservative measure and, in a context of shortage of funds, prevents wasteful spending. It is certainly to be preferred to the producer surplus approach, now rarely used, which, in attempting to predict the multiplier effects of road improvement on agricultural production and the resulting transportable surplus, mired itself in hypotheses about individual behaviour, and discredited itself, by its lack of transparency and manipulative potential, as an objective indicator.

This distinction between social and economic networks, even if imperfect, is useful for the purposes of determining the applicability of management tools, particularly those used for programming network investments. Frequently, studies apply the approach above to first identify the core motorable network, made up of links that are coherent with each other and adequately viable, thus ensuring that maintenance funds will be made available. This assures minimal coverage of motor transport needs. The remainder, covering lower level roads and tracks, falls within the domain of tools such as Integrated Rural Accessibility Planning (IRAP) and the Basic Access Approach. The latter provides a useful broad-brush methodology for setting priorities for minimal access to motor transport, especially within a poverty reduction framework. Finally, IRAP can be applied selectively, based on these priorities.

1.3.4 Conclusions

In conclusion, a social road will be assumed to contribute mainly to the well-being of the local population rather than economic growth (although the latter can be seen as merely postponed) and tools must take account of this. These are essentially non-monetary, at least in the short to medium term, although it is always to be hoped that gains in social indices, health, education, and so on will eventually be translated into increased incomes and hence more sustainable poverty reduction. Its existence benefits mainly the poor, and must in the context of the recent emphasis on poverty reduction (Roads and Poverty Reduction, David Tighe 2002), by improving mobility and hence access to social services. It

is also of course important for market access, but this will not necessarily be the dominant selection criterion. A project at this level cannot be approached as a "roads project" that is one limited almost entirely to technical questions focused on motor vehicle needs, but rather an accessibility project in which a road network provides a way among others of making people more mobile. Here, management decisions and the tools which help them cannot be isolated from larger questions of who is using the road, why are they using it, and even are there better ways than roads for make places more services more accessible.

An economic road network, on the other hand, is one whose improvement, if sustained, will stimulate economic transformation in the short term, for example, through improved transport services generating more marketed produce, possible demographic shifts towards these services, and higher incomes (although with growing risks of inequitable distribution and a diminishing impact on poverty as we move along the continuum towards high volume roads). The key decisions about these roads, such as core network selection, level of service the road should provide to users, choice of construction and maintenance technology, and design of management and financing structures, will be determined largely by those tools that balance annual user benefits flows against lifetime costs. Environmental issues also gather importance since the impact of a road increases as a function of the size of works.

2. Management information needs for low-volume roads

2.1 Decision-making for rural roads

The decisions within the project cycle, to which the tools under study provide information, are essentially similar no matter what level of road. What varies significantly are, on the one hand, the nature and complexity of the information needed for management and on the other, the limitations on knowledge and access to it of the managers who must use them. In general, the decentralised and small-scale environment of rural road decision-making militates against complicated and costly analyses, as does the lack of experience and education at this level.

A further level of complication stems from the fact that the decision-making environment is multi-dimensional as we move towards low-volume roads and tracks. As we have said roads must now be viewed not as a means for facilitating the use of motor vehicles but rather as a means, among others, for making people more mobile. This is only relevant as an indicator of value when it is integrated within an analysis of accessibility, that is, its contribution to helping people to get where they want to go. These aspects limit the pertinence of rigid formal models since such complicated tradeoffs can only bring about intimidating complexity. What is rather needed are simple pragmatic visual tools that can be quickly called upon to model outcomes of a set of choices and present them comprehensibly so that they can be accepted or rejected. IRAP, although it is quite complicated to apply, provides a good example of such a model. The Basic Access Approach, although less powerful, provides a useful compromise.

Another significant variation exists at the level of information accessibility. In the African context in particular, it is more difficult for decentralised management to access information, whether on management tools or anything else. Language, remoteness and education hinder comprehension as well as dissemination and transmission of information.

2.2 Management of donor-financed rural transport projects

At the level of rural transport projects, two cycles intersect: that for the local planning and implementation of the project itself; and that of the financing agency. The former is concerned directly with management of the process that leads from policy definition at the local level, through planning and programming the investments to be made, to implementing them and subsequently ensuring their maintenance. The latter is concerned with the identification, justification and programming (in the widest sense) of the activities to be performed and disbursements to be made by the stakeholders, with particular attention to those of the financing agency itself.

The existence of two separate project cycles, that of the country and that of the financing agency, is an anomaly. Ideally they should be fully integrated, using tools similar in intent, or ideally the same ones, but using more and better data as studies progress from identification, to feasibility to implementation, dictated by

the type of decision to be made. Many tools discussed in the appendix are simulation models, which provide an image of reality, of a clarity proportional to the amount of data used. Ideally, they should be applicable at different levels, with local data collection replaced by greater use of default data and generic analyses usable in a range of situations. However, in practise they are relatively inflexible, with the result that they are often not used thus.

In principle, the financing agency project cycle would normally be the responsibility of national government, who would be responsible for both, presenting its investment programme to the financing agency whose role would be essentially limited to accepting or rejecting it as the case may be. However, at the present time, at least in Africa, the financier plays a key role at all levels. The ultimate responsibility of government for its own infrastructure of course remains, but given that there are many financing agencies each with its own procedures, methods and criteria, the government cannot but play a subordinate coordinating rather than leadership role. The introduction of programme financing will replace this gradually, but is unlikely to become general for some time.

Management structures at the project level can be of two types: decentralised or centralised (with varying degrees of deconcentration). Decentralised structures, while preferable, since they place responsibility where it should be, are characterised by remoteness and lower educational levels of those involved. Dissemination of knowledge of management tools is thus difficult and training costly. Centralised structures have the advantage of better defined lines of communication so dissemination and training is easier. However, this solidity can lead to rigidity and loss of contact with local realities to the point of absurdity, especially when travel is restricted by poor roads and small budgets.

2.3 Application of tools in the project cycle

Each agency has its own nomenclature for the different phases. However, the following are typical:

- Programming:
- Identification/pre-feasibility;
- Formulation/feasibility;
- Implementation/Monitoring
- Evaluation

Only summary tools are pertinent at the identification stage, since time is limited and ideally should be spent on consultation rather than analysis. Here problems are identified, options appraised and an acceptable outline solution arrived at by means of a pre-feasibility study. This stage essentially simulates the eventual project. It requires sufficient information to decide whether the project is worth pursuing and what the next stage should focus upon. Tools used should be economical in terms of data needs, since essentially they are only required to anticipate the results of their full application. It has been recognized by tool developers that the capability of existing tools to adapt to user needs at different

stages in the project cycle is often lacking. Tools potentially useful cannot be used due to the lack of time and money to satisfy their data needs.

This solution is examined at the feasibility stage vis-à-vis agreed criteria, confirmed, rejected or modified as the case may be, and if judged appropriate by a detailed plan for implementation is formulated and agreed upon with stakeholders. This activity draws upon tools with heavier information requirements to ensure the underlying model is realistic and results acceptable. Most existing tools are adapted to the data collection constraints and information needs of this stage.

A problem of local implication arises here which reverberates at the implementation stage. Key decisions are sometimes taken prematurely by the agency, supported by its consultants without sufficient participation of the local administration and the populations concerned. For example, core networks for rehabilitation are often selected by consultants rather than the stakeholders. The local project cycle thus risks being centred on a project which is inadapted. Ideally, management tools should rather be applied by the national or, better still, local administrations, supported and trained by consultants. This however, implies much time and training effort, both ad hoc and anticipatory, which few agencies care to finance, postponing it to the implementation phase, when it may be too late.

The tools used at previous stages should provide the performance indices for monitoring and evaluation as well as for management. Again, this requires local implication at the early stages, for example at the level of logframe formulation as well as in applying the tools for choosing options and assessing them.

3. Management Tools

3.1 General discussion

Management tools consist essentially of information, packaged in a way that ensures it can be generalised to different contexts and understood by those who must use it. A tool can provide information directly to decision-makers for immediate use or it may consist of a method of collecting and processing relevant data and transforming it into information tailored to the particular situation.

A management tool is defined here as any means of providing or processing information useful in implementing the different stages of the project cycle. Tools are thus of two types: in their simplest form they are a means of information provision, whose tools are manuals, websites or a portal leading to a range of pertinent sites, or seminars, conferences or courses; Alternatively, tools provide a means of processing local data where the output is the tool for decision-making such as HDM, and RED, or Integrated Rural Accessibility Planning (IRAP), and Logical Framework Analysis (LFA), where both process and output provide the tool. This limited inventory and guidelines for use will concentrate mainly on processing tools, that is, those used by professionals in the respective project cycles of financing agencies and government. Means of cost-effective information provision, although important at the local level, where processing tools cannot be easily applied, are not treated here.

Information requirements vary throughout the project cycle and processing tools should reflect this by providing variants requiring modest amounts of easily collected data to produce broadbrush results at the identification stage, with increasingly stringent demands for data at later stages. Formal complicated tools, often with an optimising function, are necessary for complex systems (for example, national road systems) with large investments, trained managers and available and reliable data. As we move down the scale of complexity through road systems with low volumes of motor traffic and moderate investments in construction and maintenance to those with little or any motor traffic and a large proportion of Intermediate Means of Transport (IMT), formal tools become less pertinent. Optimisation becomes an issue of diminishing importance in an uncertain environment of poor information and low skills. Providing information thus becomes more important than processing it. Manuals, checklists etc with a strong visual treatment, become central, associated with suitable means of dissemination to potential users and transfer/ training structures, whether informal and on-the-job or formal training.

3.2 Analysis of management tools

3.2.1 Processing versus direct information tools

A tool must always be associated with a method of dissemination and transmission/teaching so that potential users can find out about it and confirm its usefulness and then be taught to apply it. Without these, a processing tool, manual or other information source exists in a vacuum.

Tools most relevant to those responsible for managing implementation at the local level generally take the form of direct and practical information, rather than means of data processing or transformation mainly relevant to the project cycles of donors and central governments. Rural road managers have neither the means nor the skills to apply the latter types of tools. In any case, good local data is absent and costs of collection can exceed the usefulness of processing it. Finally in a rural context, where consultation is important, transparency of decision-making is vital and complex processing obscures this.

Information processing tools have a role to planning at planning and programming stages, particularly in the project cycle of the financing agency but also at the level of the local project cycle, whether decentralised or centralised, provided that they have been appropriately packaged and that time and budgets allowed their participation at the planning stage .

3.2.2 Criteria for evaluation

Useful tools are those which fully meets the following three criteria:

- That they be packaged in such a way so that, even they are by definition general or polyvalent in nature, they can easily be understood and applied in different contexts;
- That they have a method or strategy of dissemination associated with it that ensures that it reaches the target group it is supposed to;
- That there is a training strategy associated if necessary to ensure they can be applied by those who need it.

Excellent tools may exist which are not used because of deficiencies in packaging. Target users can't apply them or they are wrongly perceived to be too general, too complicated or inappropriate for a given situation. In any case, as said previously, the nature of decision-making at different stages requires data inputs which become heavier as the project progresses from pre-feasibility through feasibility to implementation. Tool design or outputs do not always reflect this. Again, they may be well packaged but the means of dissemination used means that those who could most benefit do not have access to them. Finally, they may be both effective and known, but the training necessary to apply them is not available at the level which needs them.

3.3 Design and application of tools

At the planning/programming stage, simulation techniques and procedures are needed (not necessarily computer models, although these may be pertinent as aids or for higher level networks where community participation is less intensive), but rather graphical/visual methods to help the participants visualise their networks and thus bring them to appreciate the implications of prioritisation options. Methods to carry out network condition assessment and estimation of resource requirements for improvement are also needed, of increasing simplicity for low level networks, as are techniques to provide objective information during the iterative consultation process with stakeholders on their accessibility needs and options for satisfying them.

Many tools discussed here are simulation models, which provide an image of reality, all else being equal, of a clarity proportional to the amount of data used. They tend to be inflexible in application. Ideally, they should be adapted to different decision levels, so that when rapid analyses are required local data collection can be replaced by greater use of default data and generic analyses. For example, in prefeasibility studies or in situations where a long list of links must be condensed into network subsets, . In such a case, computer simulations can be replaced by charts and graphs.

Also important, given the importance of local level participation, are approaches to consultation that ensure open and egalitarian communication among participants and between them and outsiders. Finally, at the implementation stage, direct management aids together with training are essential for small scale contracting and technical supervision, works personnel training; financial control procedures and revenue raising; condition monitoring and so on. These consist usually of manuals and similar types of documentation and will be covered only generally in this report.

3.4 Problems of dissemination

3.4.1 Unreliable Internet access

The Internet is, in theory, the means *par excellence* for sending information. It eliminates completely the cost and delays of transporting information, whether as printed materials or programs for processing. Paradoxically, although Sub-Saharan Africa is potentially the greatest beneficiary, given its poor physical communication networks and dispersion of its population, it is poorly equipped, compared for example to Asia where cheap high speed connections are generally available

the Internet is the ideal method and has become the favoured method for the dissemination of road management tools,. It is used extensively by those who develop and use them, such as the World Bank, the ILO and DFID, among others. It is almost impossible to imagine now how they managed before. Unfortunately, this reliance comes with a need for greater data transmission and processing capacity. Broadband is now more or less mandatory.

Dissemination of information in any form to or within Africa poses problems, although this statement must again be heavily nuanced, since it varies according to the level of development and the state of the communications network. As a general rule, telephone communication between capitals and the rest of the world is generally adequate, although expensive. However, between the capital and other urban areas, communication can vary from moderate to poor, with seasonal unreliability due, for example, to line interference during heavy rain. The rural areas below district level are generally more or less without telephone communication. For this reason, the Internet is of limited value even in the capital, due to high cost and slow data transmission, and is greatly hindered outside by unreliable telephone connections. The postal system is normally not trustworthy and expensive courier services must be used.

On the positive side it can be mentioned that the situation is improving, at least in the capital cities. In fact, it has probably improved significantly since this was written. Generally, access is becoming more reliable and cheaper. Presently, most public works departments have connections and even web pages. Usually, they are adequately equipped with computers. However, in the authors' experience, these are generally not integrated in day-to-day management, particularly for circulating and receiving information.

Further evidence of this was provided by a rapid survey of seventeen sub-Saharan country administrations revealed that only nine had functioning websites while the rest were down, being maintained or reconstructed, or inexistent. Few public works departments (three only) had hyperlinks within them. A similar number had links to either rural roads or local government. In general the websites were far from being interactive or complete. They provided very basic information only, essentially texts of existing official documents and were of little use as dynamic and timely sources of information about their policies and projects in the area of rural transport.

Government middle management and professionals sometimes have very limited access to the Internet because their administrations control day-to-day expenditure severely. Access charges are time based and costs can mount up quickly, particularly with a low speed connection. Also to be mentioned is the problem of peak overloading during the working day, which prevents access at critical periods and causes broken connections, so as the user must repeatedly start over. This is terminally frustrating if one is trying to download even a modest document at a few kilobytes per second. The result is that access is rationed, both by higher management policy and by systemic limitations.

In conclusion, although the Internet is the preferred, if not now the only way, to disseminate information on management tools, African administrations, certainly an important target group, are poorly equipped for access to it. It is highly recommended that they be encouraged and even funded to expand their Internet use and render it easily accessible.

3.4.2 Multiplicity of target groups

The problems of dissemination to and within Africa are of course serious. However, for better or worse, investment in road transport systems is provided largely by external donors who are also for this reason the main users of management tools. The financial contribution of national road administrations is generally negligible for capital works, and modest and frequently inadequate for maintenance. Normally, the financing agencies propose the road management tools depending on the information needs of their project cycle. In fact many of the existing tools have been developed for it. Sometimes tools may be specified directly, for example, by calling for the mandatory use of HDM-4 which, despite its imperfections provides a consistent measuring scale among competing projects. The choice of tools, if they have not been explicitly specified, will fall to the consultant as an essential part of his prerogative to choose the means to carry out his mandate.

Again, some nuances are called for. The programme financing approach is becoming more widespread, with recipient governments taking greater control of their development spending. It is pertinent in the context of rural transport systems, where the donor/consultant tandem dominates due to the absence or weakness of local structures. The multi-departmental scope of the rural accessibility problem, where responsibility is diffuse, favours donor/consultant control. Embedding the project within a poverty reduction framework, reinforced by the recent attention brought upon isolation as a contributory factor to poverty, further complicates the picture. The resulting gap between external financiers and local recipients, as said previously, dilutes local responsibility, and undermines sustainability.

Rural roads, and the wider questions of mobility and accessibility, concern many stakeholders and many issues, social and economic. Even if there is an accepted best practise, centred on local administrations, it remains that it is not universal. Higher level roads on the other hand benefit from the fact that best practise is generally accepted, due in a large part to the efforts of the World Bank, and well rooted in the agencies which finance and manage them. Dissemination is not an issue here as it is for rural roads. In this context, management of the project cycle of donors/consultants and administrations is well integrated within a solid institutional environment.

The existence of many potential target groups with different needs and capabilities is not taken fully into account. Strategies for dissemination of information on tools assume implicitly that their clientele consists largely of development practitioners, generally experienced in the use of similar tools in different countries, rather than those ultimately responsible for management whose experience is far more limited. This is a problem that must be resolved as it perpetuates dependency or, worse, indifference and lack of implication.

3.4.3 Inadequate sharing of information

Problems of access to information about management tools exist even at the level of dissemination to donors and consultants. Although the former have adequate access (note that the trend to decentralisation of responsibility by donors to more isolated regional offices can limit this), those who prepare the terms of reference are frequently non-specialists, and ignorant of the management tools available. As a result, there may be no time allocated to the consultant to access and apply them, or worse, a mandate can be formulated, which in asking the wrong questions, excludes their use. The problem will be compounded when the consultant is in the field, when he will be hindered or even prevented by poor communications from accessing them. This can be fatal to their use if his time budget is already limited. Of course, a good proposal by the consultant could compensate for this. However, in a context of ever more intense price competition, the room for this type of creativity is limited. Few consultants are prepared to propose changes, especially if they increase the cost.

Again, the information base and the tools, on which management information for rural roads repose is largely built through accumulation of actual field experience. Knowledge is gained through application and evaluation. However, the process where information is accumulated and accessed on what works and all too often does not is random and fragmentary. Networks remain largely informal, some piecemeal dissemination of experience takes place at conferences, but these are not always heavily attended by practitioners.

A considerable communications gap thus exists among researchers, whether academic or informal, and field practitioners and for that matter the financing agencies, possibly the best placed to act as clearinghouses to filter, package and disseminate. Representatives of African administrations of course are largely absent, unless a donor agency finances their implication. Exceptions of course exist. For example the ILO, the World Bank, DFID and PIARC devote considerable efforts to both development and dissemination. These however form only a small fraction of those agencies and firms who accumulate a considerable body of knowledge yet use their sites merely for public relations.

Unfortunately, pooling of experience among African countries, which could yield a knowledge base with an enhanced value by it being indigenously acquired rather than externally imposed, is insignificant. The author had a chance to observe the value of this form of learning when a delegation of public works engineers (French-speaking) visited an English-speaking neighbour to study their approach to rural roads management. The experience was revelatory and very useful to them.

A secondary problem exists in that dissemination of information in English is dominant. French sites concerned with the dissemination of management tools are rare. Many French language pages within largely English language ones are incomplete or even untranslated. Alternatively, they are not updated as frequently. This absence of course excludes the French-speaking administrations of West and Central Africa from access to those management tools available.

It may be concluded that dissemination poses a considerable problem, not just to and within African administrations, but also to and within the many participants in the management cycle. The information on existing management tools does not reach the key actors, or at least not with the momentum necessary to stimulate their use. Much pertinent knowledge, whether it is about new or improved management tools, or simply experience of using existing ones, is not disseminated.

3.5. Analysis of training needs

3.5.1 Need for training

Although the use of simple tools can be self-taught, teaching becomes necessary if tools are more complex or target groups less educated or experienced. The tool may be relevant, well packaged, and accessible, but yet it may not be used. A final intervention is necessary to ensure its application. In the context of tools for rural roads management the experience and knowledge of the ultimate users is a severe constraint to their use just as is their lack of access. Even if the intermediaries, whether foreign or in the capital, can access and apply it easily, knowledge limitations at the local level will either prevent its use during implementation or alternatively, require training to overcome this constraint.

Thus in summary, as we move along the continuum towards the eventual rural users, the importance of training as a complementary activity grows. A computer program or a manual, even if it actually reaches the target group, will rarely be sufficiently self-explanatory at this level. A processing tool certainly will not be. Its applicability to a real life situation may not be obvious without someone to demonstrate it or it may simply be too difficult to use. Moreover, training must be close to the participants and be action-oriented rather than abstract, keyed to the local situation. Groups must be small and reasonably close to the point of application. Consolidation of participants in large courses is difficult. Training will be expensive since transmission must take place “*en cascade*” from foreign expert to local trainer to the target group.

3.5.2 Problems in delivery of training

Training in the context of rural road management has proved to be an expensive and ineffective exercise. Massive investments have been made and remade in training centres and trainers. They have proved generally unsustainable except in rare cases. Training centres fall into disuse, if not ruin and trainers are dispersed with little hope of ever using their skills again. The core problem has been the project orientation of this training, usually single-donor, which limits the generality of the content and the sustainability over time. This problem of course results from the weak institutional environment of rural roads management. The sustainability of training requires a continuous demand for it. If this does not exist, training will be prohibitively expensive on a per capita basis

3.5.3 Notes on a possible training strategy

It must be concluded that, in the African context, it is difficult to reach the critical mass where training becomes viable. Until then it will be expensive, perhaps even impossible, to provide and certainly unsustainable when it is, with the result that follow-up and refresher courses to compensate for staff turnover or for changes in approach will peter out, as will eventually the project. The first step must be a better integration of projects so that resources can be shared. Regionalisation of training among a group of countries so as increase demand to sustainable and ideally self-financing levels can also be an option. This must be linked with rationalisation of output by reaching agreement among member countries on what constitutes best practise in rural roads management (similar to the consensus is forming at the level of national networks) so as ensure that projects and programmes in different countries and for matter, in the same country, possess sufficient commonalities to be able to share training resources. This institution building should be associated with an emphasis on packaging the tools, not only for users but also for local trainers-of-trainers, so that they are equipped to pass on rapidly and cheaply the knowledge and support materials to those who will actually do the training.

Appendix: Analytic summaries of processing tools

Introduction

The following tools (see also the appendix) are representative of those used in the context of rural transport project analysis. The list is not exhaustive. Some are concerned with selection or prioritisation, of individual motorable roads, of core networks of roads, or of non-motorable paths and tracks, or of investments in improved access to services. These include the Roads economic decision Model (RED), the Basic Access Approach, and Integrated rural Accessibility Planning (IRAP). Others are concerned with low-volume road condition inventories, where networks are extensive but investment is too low to justify over-attention to detail: these include Rapid Rural Roads Appraisal (RRRA) and Standard Overall Ultralite Road Care Estimate (SOURCE). Participatory Rural Appraisal (PRA) concerns the participatory process. It proposes tools for interaction with those who must live with the investments whether as users, managers or financiers. Logical Framework (Logframe) Analysis (LFA) provides a useful communications tool to ensure that all participants agree upon problems and the hierarchy of objectives, outputs and inputs intended to solve them. The latter also provides a basis for monitoring and supervision, and eventually evaluation.

Certain tools exist which are not specific to a given stage in the project cycle but rather provide general tools and information useful mainly at national and local levels. The Rural Transport Policy Toolkit, from DFID provide an overview of management tools while my own site Rural Roads provides a summary of the issues surrounding their application.

The purpose of each tool is summarized followed by a brief description of how it is applied. The problems it was intended to solve are then outlined, and the decisions to which it contributes. Finally, some notes are provided about its packaging, dissemination, and availability of training. For more detail as well as a more complete list of tools, the reader is referred to the World Bank site which treats road management tools in considerable detail.

Integrated Rural Accessibility Planning (IRAP)

Presentation

This tool provides a set of techniques to assist local level planners to measure the extent to which households within a given area have access to the services they need. This in turn can be used to determine a prioritised investment programme to improve accessibility either through increased mobility (improvements in roads, paths and tracks, IMT promotion or improved transport services) or in more complete coverage of services within the area. IRAP is applied using a step by step process, beginning with data collection and finishing with target setting, strategy definition, and prioritisation.

Data collection involves in-depth family surveys to determine where members travel to, what accessibility problems are encountered, and what could be done about them.

A database is then set up. This is generally computerised because of the relatively large volume of data involved. This is analysed to generate information on access, such as desire lines etc. Outputs are in tabular or graphical form to help communication with the population involved and with different levels of management

Mapping, a key activity, usually involves preparing transparent overlays showing accessibility for each sector. This allows informed discussion of the overall accessibility situation and helps to identify feasible strategies and prioritise them

These are then validated by a series of community workshops where access problems and possible solutions to them can be discussed

Access profiles are compiled which summarise the conclusions of the analysis. They facilitate a debate about problems and solutions to them, whether derived from the analysis or as perceived by the community.

Sectoral targets are then set (or drawn upon if they already exist in the line ministries) and interventions, whether mobility enhancing or involving spatial planning, prioritised with the communities and administrations involved according to cost-effectiveness criteria and subject to constraints, such as for example, a universal basic access requirement. This will yield a series of strategies for debate, leading to a programme of interventions in accessibility improvements.

Development Context

Development of the tool by the ILO began in the late 1980's. At that time it was noticed that concentration on improving motorable rural roads using labour-based techniques was not having the hoped-for impact on rural mobility. In fact, such programmes were meeting considerable resistance and were often visibly unsustainable. Studies were initiated and it was discovered that in fact motorable roads did not meet local travel needs. People rarely went far from

home. Motor transport was little used, whether because of cost or because, even with an improved road, no service was available.

Research stimulated by these findings continued during the 1990's. It revealed the need to concentrate on the wider problem of lack of access of rural populations to services most used, rather than solely on improving motor roads. It also highlighted the burden of women, to whom roads were of even less pertinence. As the title of Ian Barwells' book succinctly put it, " Roads are not enough". This provoked a new interest in the role of tracks and paths and in the promotion of simpler and cheaper means of transport. Motor roads are by no means excluded in this new paradigm. However, it highlighted the necessity of moving away from externally-defined technical norms for low-volume roads in favour of pragmatic and far lower standards predicated to the level of service really needed.

At the same time the need for a formal evaluation tool was recognised so that a coherent basis for investing in improved accessibility could be applied, by allowing different options for investing in infrastructure, means of transport, or in coverage of services to be compared. This led to the development of IRAP.

Management decisions

IRAP is most pertinent for prioritizing lower level networks, towards the social end of the continuum where cost-benefit trade-offs of the type provided by RED are not applicable. That is, paths, tracks and very low-volume roads. It should be seen as a programming tool for the new paradigm where better accessibility to services for all is the primary concern

Higher level road investments are also concerned, in that IRAP will provide indications of need for them at the community level. However, this is not the only source of demand for these roads so decisions about them cannot be solely based on IRAP findings. Generally, as has been mentioned, an three-pronged approach is preferable, integrating RED at the level of the core motorable network, basic access to determine additions to the core network to meet, for example, poverty criteria, and finally RED to programme investment at the community level. It must be emphasised that IRAP is a decision tool which cuts across many rural sectors. It concerns not only transport infrastructure but also health, education, sanitation and others. It is thus ideally applied in a decentralised structure, where it can be integrated, learned and applied.

Packaging/ Design

IRAP is inevitably a complex tool to apply, a situation somewhat paradoxical in that it also requires extensive local participation, both to provide information but above all to debate and agree upon solutions. It involves household surveys, which must be supervised and subsequently processed electronically to produce travel desire lines. It also involves extensive mapping, of transport infrastructure, topography and spatial distribution of settlements and services. This also requires the contribution of qualified people. The definition of accessibility indices and the confrontation of needs with the actual and the possible, leading to alternative investment plans also requires trained technical personnel as well as local participation. Since all this must be done with the population concerned, tools provided by PRA are also necessary. The result is that, at least at first, IRAP must be applied by experienced technical people, mainly expatriate, supported by technically-qualified local personnel who can be trained for future applications.

There is no complete package so far combining software, applications manuals, training courses and so on for applying IRAP. Prospective users can only rely on the guides mentioned below, which, being based on specific applications have a natural but irritating tendency to resist generalisation.

No effort appears to have been made to diminish the data collection and analysis load and thus the input of experienced people. For example, by integrating the knowledge obtained on needs and solutions for rural mobility and accessibility acquired during the past decade to produce general rule-of-thumb rather than tailor-made solutions.

Means of dissemination

The ILO developed and disseminates this tool. The most pertinent site describes a [case study](#) from Malawi, which also forms the basis of a manual:

[Guidelines](#) based on work in Nepal are also available from ILO/ASIST

Availability of training

Training documents are also available at [ILO/ASIST](#)

The Basic Access Approach

Presentation

This provides a framework by which optional road network improvement programmes can be compared. It is centred on the use of an objectively defined criterion for basic access, for example, a minimal level of year-round access, which can be expressed in different ways. For example, a maximum walking distance to a motorable road which is part of the core network and hence subsequent access to services, or a maximum travel time to an essential service. A prioritised programme of simple road network improvements that ensures this can then be defined. A poverty reduction orientation can be given by assigning differential weights to concentrations of poverty where isolation has been shown to be a causal factor. Service criteria may be defined nationally, so that a coherent national policy is possible. It is particularly important to use simple, operational indices to measure accessibility since it must be applied participatively.

It is best implemented, in conjunction with RED, in two stages. The first, at the district level, to programme investments necessary to raise the core motorable network to a maintainable state. Supplementary works can then be programmed at a lower level with the objective of extending basic access to the entire population through minimum cost links with this network. These supplementary works, although consisting mainly of simple transport infrastructure improvements, can also include investment in means of transport (if a minimum travel time criterion is used) or in increasing coverage of services to reduce travel. IRAP becomes essential at this level.

Development context

Basic Access provision is the subject of much reflection and discussion, not limited only to developing countries as the numerous sites dedicated it bear witness. The questions of social equity it raises are pertinent in all democratic societies.

In the present context it provides a way to programme rural road network investments while steering a course between the multi-departmental complexity of IRAP, on the one hand, and the limiting direct road-user orientation of RED on the other. It has the enormous advantage of being relatively simple to explain and implement at the levels at which it is applied, thus requiring a purely training and monitoring input from consultants. However, the natural desire to expand the definition of basic access to refine, for example, its ability to reduce poverty, can cause explosive increases in complexity and with it, growing difficulties in training, data collection and analysis. A further and considerable advantage is that it can be implemented within a national policy for rural areas, where the criterion is defined as a national policy objective to reduce rural isolation and contribute to poverty reduction.

Management decisions

This tool is very similar to IRAP in its social orientation except that it is only concerned with rural transport. It would greatly impede its simplicity and ease of use were it to attempt to incorporate the range of issues addressed by IRAP. On the other hand, basic access could be very easily incorporated as part of the accessibility indices. Alternatively, it could precede the use of IRAP within a national programme to urgently address rural poverty since it is unlikely to recommend measures that contradict it.

Packaging/design

This tool does not need extensive packaging. Its beauty lies in the simplicity of the concept. If a national policy exists, then simple guidelines must be disseminated so that the concept can be operationalised at the local level. If not, pragmatism must guide the definition of a basic access criterion which reflects local aspirations, can be seen to do so by the population, and which can be operationalised using simple measurable indices.

Means of dissemination

An overview is provided by the [World Bank Technical paper 496](#), available under publications at this site.

Means of Transmission

No training programmes have been identified at the time of writing

Roads economic decision Model (RED)

Presentation

The Roads Economic Decision Model (RED) is a management tool that allows standard indices for economic ranking such as the Internal rate of Return (IRR) to be calculated for low-volume unpaved roads, where the key determinants of Vehicle Operating Costs (VOC) used by HDM are less appropriate. At the extreme conditions of low-volume roads other costs take on a new importance (for example, those imposed by random road closures) and where potential savings for non-motorised traffic can be significant. It is also simpler to apply, in terms of data collection and treatment requirements.

Development context

RED was developed to provide a tool capable of provide a credible proritisation criterion for low-volume roads, based on a better model of reality. It replaced the simple *ad hoc* and crude cost-benefit calculations then used on a project by project basis as well as the Producer Surplus method mentioned in Section 1.3 which reflected the twin evils of heavy data collection input requirements and poor quality information outputs.

It is nevertheless centred on motor-vehicle operating costs and its use is limited to filling the gap between economic national roads and purely social ones, which must be subsumed within accessibility considerations. Use is limited to roads with more than about 15-20 motor vehicles per day. This is not a definitive rule, since more modest investments, for example on spot improvements, reduce this threshold, as will roads where closures are frequent during the rainy season. Heavy IMT use, whose costs are surprisingly high on a per person or tonne basis, can also reduce it.

Management Decisions

RED is suitable at the programming stage, for road networks above tje transition point where such economic methods must yield to social, accessibility-based approaches. It provides an internally consistent method for prioritisation of well-used district roads and most secondary or regional roads. It becomes increasingly imperfect at low traffic levels since it will not take into account accessibility considerations and at higher levels, where HDM provides a progressively better model of reality.

Packaging/Design

It was mentioned during discussions that RED was difficult to apply. In fact, this may not be the real problem. Normally, it is as easy to apply as can be expected from a powerful model. The problem rather resides in that, like any “one size fits all” model, it power is sometimes excessive for the nature of decisions to be taken. As mentioned previously, decisions taken during the project cycle require

programming models which vary in data needs and precision. Analysis carried out early in the cycle, executed rapidly and with few resources, where imprecision is not a major issue, require models that require simple data and produce only indicative results. As the cycle progresses through the feasibility study towards implementation, reality must be respected by using more data about it to produce better results. Specifically, core network investment programmes that have low probabilities of including low-priority roads and excluding good ones.

RED is essentially designed for the feasibility and implementation stages, when there is, or should be, sufficient time available to learn to apply it and to collect the data needed. Certainly, at the prefeasibility stage, and possibly at the implementation stage when the need to involve local administrations, whose capacity to process data could be limited, a simplified version could be useful. This could involve, as was proposed for IRAP, constructing analytic short cuts based on analysis of patterns of results from given sets of data inputs generated by RED in past applications. These could be presented in graphic form.

The need for this has already been recognised by those responsible at the World Bank for its development. Some work has already been done and it is probable that a simplified version will be prepared .

Means of dissemination

The programme can be downloaded free from the publications page of this [World Bank](#) site (Keyword: RED)

Availability of training

Training courses are available. Check with the this [World Bank](#) site

Rapid Rural Roads Assessment (RRRA) and Standard Overall Ultralite Road Care Estimate (SOURCE)

Presentation

RRRA

This tool is at an early development stage. It is intended to provide a rapid and economic means of putting together a Rural Roads Database (RRD) using GIS, covering road condition and their social and economic environment. This will allow the definition of core networks which best meet accessibility criteria.

SOURCE

This provides a low cost technique for rapidly and cheaply monitoring the condition and level of service to users provided by a road network. It is based on the average travel times of light vehicles and samples of their volumes during the dry season. The procedure is carried out according to a protocol that ensures standardized results.

Development Context

RRRA/SOURCE

Management must have an image, even if approximate, whether visual or computer-based, of the network that concerns them. They should know its condition, in terms of the level of service provided and the extent to which it is maintainable. They should also know its usage, in terms of traffic and the services it renders accessible to users. Finally, they must be able to track the progress of maintenance works.

In the context of low-volume roads and tracks, inventories are difficult and expensive to carry out, due to the extensiveness and remoteness of networks. When they have been done, they become rapidly out of date. Tertiary rural roads are by their nature unstable and deteriorate rapidly, and funds are not allocated for periodic updating. For this reason, techniques such as these that can be quickly and cheaply applied are extremely useful.

A further problem has been posed by the fact that technical departments have tended to think in terms of detailed engineering inventories, imposed by the outdated requirement that works meet high technical standards. Good practise at the level of low-volume roads, based on more pragmatic considerations, favours applying variable technical standards, keyed to minimum acceptable levels of service to users in terms of ride quality and frequency and duration of closures. Raising a given network to maintainability is an important objective and works are often planned as a function of this in that they concentrate only on those parts of the network where problems, frequently associated with poor drainage, are endemic. The approach at this level does not demand detailed inventories, but rather a rapid method to collect the minimal data necessary to assess needs,

whether of road improvement or access, and thus prepare investment plans for improvement and maintenance.

SOURCE provides a more limited contribution, in that it is intended only as a consistent measuring scale of surface quality and level of service offered to users. It does not replace or substitute for RRRRA but rather provides a very low cost way (requiring no costly equipment and an expenditure of a few dollars per km) for monitoring condition at more frequent intervals than normally possible. Results can be used to compare the state of national roads and even among a group of countries.

Management decisions

RRRA

This tool contributes to programming investments in motorable roads coming under the responsibility of local road administrations, who are the main target group. It is not applicable at lower levels of network where inventories are better done using local knowledge.

SOURCE

This provides a tool which is mainly applicable to relatively high volume roads to the righthand side of the social /economic continuum since it generates information from empirically derived functions based on the average speed of vehicles. These functions probably break down due to growing variability at very low speeds on poor surfaces typical of low-volume roads, although this has not been specifically stated.

Packaging/ design, Dissemination and Training

RRRA

Little can be said at this stage about packaging, dissemination or training. A [pilot study](#) is in progress in Tanzania at the time of writing, and results will be disseminated.

SOURCE

This tool is aimed at qualified professionals at national or district levels and is packaged appropriately. A CD/ROM or workbook is available from [SSATP](#) Training seems necessary but no strategy has been defined at this time.

Logical Framework Analysis (LFA)

Presentation

This tool, first introduced some twenty-five years ago, is widely used by financing agencies throughout the management cycle. When first introduced it was largely restricted to the initial planning stage. However, more recently, it is more valued for its continued contribution to monitoring throughout the project cycle.

Obligatory in some agencies, it is used to a) provide a clear and concise statement of the key components of a project; b) explain how a given project will contribute to solving the problems identified and demonstrate the hierarchy of objectives and actions implied and the means to attain them; c) show the factors that could hinder project success and thus the steps to take to minimise their impact; d) and provide a factual basis for monitoring and evaluation. It can be used as a tool within Participatory Rural Analysis (PRA). It forms part of Techniques complementary to LFA are also useful, such as participatory problem and stakeholder analyses.

Development Context

LFA can be viewed in two ways: as an obligatory structure for project or programme design within the donor project cycle; or as a means of communication among local participants. Its contribution to project design is well-known. Providing it is systematically updated throughout the project it can help to prevent, or at least signal in advance, catastrophic deviations or at least permit adaptation to them. On a more informal basis at the local level, once participants have had some training in its use, it provides a very useful structure for debate, particularly when key decisions must be taken. Thus, in the widest sense, it provides a means of communication by helping to normalise the varying perceptions of stakeholders and thus permit a meaningful, centred, debate. It is more useful still if it evolves from problem analysis with local participation. Unfortunately, the donor often tends to prepare and apply it in isolation.

Management decisions

In theory, LFA provides an ideal tool for integrating donor and local project cycles. Drawn up at the identification stage with the participation of local national and decentralised administrations, it can progressively incorporate other participants as project becomes firmer and the stakeholders who will implement it are identified.

It is useful at any point in the social-economic continuum, but particularly for projects where accessibility questions become important, and where perceptions among stakeholders of objectives and purpose and the links between them become more prone to numerous interpretations. LFA allows a common ground to be defined and agreed upon.

Packaging/ Design

The principles underlying the application of LFA are relatively simple to grasp. The numerous manuals available present them clearly. However, their application is not always obvious as the underlying concepts are fluid. Practise is undoubtedly useful, as is the debate that comes with a participatory approach to formulation. Local training is mandatory.

Means of dissemination

Versions are generally available on the websites of the many financing agencies that use it. For example, that of [The International Fund for Agricultural Development](#) provides a very complete version. It should be noted that nomenclature and emphasis vary from one agency to another..

Training

Internal training courses are generally provided for donor agency personnel. Consultants generally teach themselves through experience and in turn provide seminars to participants on a project basis. Financing agencies also provide training to country governments. However, it is not known whether this is systematic or universal. Such an approach could become complicated given the slight but confusing differences among versions of different agencies. In addition, learning must be quickly reinforced by experience if it is to be retained.

Participatory Rural Analysis (PRA)

Presentation

These are essentially guidelines for ensuring effective local participation in the planning and programming process. It consists of various techniques that will be required to ensure that local stakeholders participate on equal terms with external interests such as different levels of government and the financing agency. They were formulated to ensure open and equal communication among heterogeneous groups, divided by culture, wealth and power.

Development context

Problems of communication in the field among the people of different backgrounds who participate in development projects, villagers, city dwellers, government employees, expatriate staff, men and women, were more or less ignored until about thirty years ago. They were highlighted in the 1980's by the work of numerous sociologists and anthropologists (who of course drew on older work in other contexts), who highlighted the inhibitions placed on exchanges, not only through linguistic comprehension, but also imposed by such factors as dependence. In a context where more and more participation was sought, they showed that it was totally ineffectual unless these inhibitions were minimised. If the only result had at least been a greater sensitivity to the problem the insight would have been already useful. However, it also resulted in the development of methods of communication, generally used by professionals of similar cultural

background, which have greatly contributed to the two-way learning process that participation requires.

Management decisions

The approaches developed permeate the application of tools across the continuum. They become increasingly necessary at the social level, where community implication is most important

Packaging

This term does not really apply at this stage. PRA involves a body of knowledge, rather than a toolkit.

Dissemination

Much information is available. For example

[The World Bank Participation Sourcebook](#) and the [International Institute for Sustainable Development \(IISD\)](#) are comprehensive sources.

The literature on the subject is very extensive. See also the [Institute of Development Studies \(Sussex University\)](#), which has been a leader in the field.

Training

A superficial knowledge can be obtained by directed reading. However, formal courses are recommended for practitioners and are widely available.