Institutional Considerations in Rural Roads Projects

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ABSTRACT

This paper explores institutional issues that frequently arise in rural roads projects or components. It is based upon a review of experience with some 50 World Bank-financed projects containing rural road components. Its objective is to provide guidance to project designers and program planners on factors which should be taken into account in establishing the institutional framework for rural roads planning, construction, and maintenance. We believe that improved institutional design will result in projects that have a better chance of making an effective long-term contribution to rural development.

Rural roads are different from highways in ways that affect the choice of an appropriate institutional setting for each of the three stages of planning, construction, and maintenance. The preparation of a rural roads project requires inputs from several agencies and from the communities to be served. Frequently it requires rapid screening and appraisal of many proposals rather than detailed study of a few alternatives. In construction, the need to keep costs down and the desire to benefit the rural poor place a premium on the use of labor-based methods wherever feasible. Maintenance responsibilities require the development of community capabilities complemented by effective technical and financial support from the central government.

This paper addresses the institutional issues raised by rural roads projects under three broad headings. First, it considers the place of rural roads within the broader policy environment and the issues which may need to be addressed at this level. Secondly, the paper considers institutional issues that relate to the choice among organizational options for project execution. The third part of the paper deals in greater detail with the role of local participation in rural roads projects.

Conclusions and Recommendations

A. The Policy Environment

1. In preparing rural roads projects or project components, planners should first consider the overall country context, including the degree of political commitment to rural development objectives, the role of the public and private sectors in development activities, the opportunities for introducing labor-based methods of road construction and maintenance, the legal and regulatory framework for rural development, government planning and budgeting procedures, and modes of project formulation.

1/ This review was designed and carried out while most of the projects were under implementation. Consequently, we cannot say that strong scientific evidence supports our conclusions. Such evidence could only be generated through a systematic comparison of otherwise similar projects with a varying set of institutional arrangements over an extended time period.
2. Investment in rural road improvements may be identified either as part of an overall strategy for the transport sector, or as a supporting investment for agriculture, forestry, irrigation, or rural development programs. The first investment in rural roads would normally be regarded as a pilot project with potential implications for the design of a larger rural roads program. Those agencies that are expected to participate in an expanded rural roads program should be involved in the planning and financing of the pilot project.

3. If a government wishes to implement a large scale rural road program using labor-based techniques, it should be aware of policies that indirectly affect the feasibility and profitability of such techniques. Among the policy issues that are likely to be important are the following:

- fiscal policies and use of shadow prices for labor or surcharges for equipment;
- discriminatory tariffs on equipment intended to build roads with equipment-based techniques;
- interest rate policies that do not encourage the use of equipment-based techniques;
- tendering procedures which are not biased towards the use of equipment (e.g., minimum plant holding requirements);
- equal status between staff of technical departments working on labor-based and equipment-based techniques.

4. Regardless of the choice of construction technology, policy makers need to consider support for the following policies:

- special training programs for engineers and technicians involved in rural roads construction and maintenance;
- simplified administrative standards and procedures;
- simplified design standards, contract documents, and bidding and disbursement procedures to be applied in rural roads work;
- development of a domestic contracting industry.

5. In relating road investments to a more general rural development investment strategy, planners face three options: (1) separate single-sector investments; (2) integrated rural development projects focused at the local level; and (3) integrated, time-phased investments at the regional level. Single sector investments appear attractive because they are relatively easy to implement and may bring a rapid, wide distribution of benefits. Integrated rural development projects will maximize the return on resources
in the long run, but are expensive to plan and implement if a large beneficiary population is to be reached. Time-phased investments in related sectors permit flexibility in the allocation of resources, require less stringent intersectoral coordination, and will spread immediate benefits to a wider group of people. Single sector investments seem most appropriate under conditions of low institutional development. Integrated rural development requires a high level of institutional capacity, with time-phased programs occupying an intermediate position.

6. In preparing a program of rural roads improvements, planners must look beyond the technical perspective of the public works ministry to consider the priorities and constraints of the planning and finance ministries, other participating ministries, and the national legislature, as well as those of potential donors. Prescreening criteria may reflect the non-quantifiable but very real benefits derived from assuring an equitable geographic distribution of investments, meeting the transport needs of agency personnel, or serving special population subgroups. Planned rural road construction should not exceed the country's foreseeable maintenance capacity, unless adequate additional resources for maintenance will be mobilized through the project.

7. Planning and budgeting procedures may range from a rigid, formal, centrally controlled process to a flexible, informal approach which can be responsive to local variations in needs and resources. The first is sometimes referred to as a "blueprint" approach, in which every staff action and decision takes place according to a set of predetermined rules. The second is called the "learning process" approach. By allowing agency administrators to make their own decisions and to take independent action within broad general guidelines, the organization can make the most effective use of its physical, financial, and human resources and can respond rapidly to changes that may occur in the project environment. Use of the "learning process" approach is recommended whenever there is uncertainty about the relationships of the project to broader rural development objectives.

B. Organizational Options

8. Where road improvements are planned in support of specific development projects, institutions such as special project units or line agency force account may be most effective in achieving limited project objectives. A nationwide rural roads program, however, will need to have a different institutional framework.

Structural Alternatives

9. The project planner must select a set of implementing institutions to carry out the various tasks involved in the road component. These institutions may include the central government, planning ministry, finance ministry, one or more operating ministries, an executing agency such as a development bank which will receive funds from the government, special project units, parastatal organizations, private contractors, non-
governmental organizations, and community groups. The more links in the chain from sources of funding to implementing institution, the more complex and cumbersome will be the implementation process. The situation will be further complicated by having several sub-borrowers, executing agencies, contractors and/or communities participating in the project. Such complex projects will require a large investment in administrative overhead in order to deal with the multiple demands and delays likely to arise in project implementation.

10. Responsibility for planning, building, and maintaining rural roads should be decentralized to the greatest extent possible, consistent with the availability of qualified staff and the degree of local and regional control over resources. In this way, road programs can contribute to the broader objective of building self-sustaining institutions at the local level.

11. In general, it is better to modify existing institutions to meet new needs rather than to create new institutions, such as special project units, to execute rural roads improvement programs. However, existing institutions need not be limited to the traditional road-building agency. Other sectoral agencies such as irrigation or forestry, regional development authorities, private voluntary organizations, contractors and community groups may all offer viable alternatives in particular circumstances.

12. Many Bank projects have supported the growth of a feeder roads unit within the traditional road-building agency. This approach has been effective in focusing attention on, and allocating resources to, the rural access problem in many developing countries. However, care must be taken to ensure that the growth of a feeder roads unit does not undermine the main mission of the parent agency. The continuity of a feeder road unit depends upon the expansion of the rural economy and the gradual conversion of its capabilities from construction to recurrent tasks.

**Interagency Linkages**

13. Project planners must also pay attention to issues of interagency coordination and control. Coordination should begin at the point where possible rural road investments are identified in terms of their potential contribution to the rural development process. Coordination at the project preparation stage may be limited to an informal cross-checking of facility location and staffing plans, may call for a formal review of the road program by an interagency planning committee or coordinating council, or may incorporate agency criteria and/or staff views in the road pre-screening process. The effectiveness of interagency coordinating committees appears to be inversely related to their organizational level and directly related to the resources which they control.

14. In addition to horizontal linkages between the road building agency and other agencies involved in the rural development process, vertical linkages need to be developed between the project and its sources of
political support, including both the beneficiary communities and the central government. Rural roads projects require strong support from the central government in the form of financial commitments and expedited procurement procedures. Political support can be mobilized through action by regional authorities, community organizations, contractors, and other agencies whose programs depend on the progress of the road component.

15. Projects envisaging rural roads construction through separate project units should specifically include support for the transfer of resources and skills needed for subsequent maintenance to an appropriate institution, whether it be a district office of Public Works, an arm of the regional development authority, or a consortium of communities. This institution must have legal responsibility for road maintenance and should have access to substantial funds. By the end of the project, it should be expected to control the fiscal, material, and staff resources needed to prepare and carry out annual work programs.

Implementation Issues

16. Use of the "learning process" approach requires agency staff to re-think their goals and objectives, to take a fresh look at the potential contributions rural people can make to projects, and to learn to communicate more effectively with their clientele. This process is called "bureaucratic reorientation." To be effective, it requires strong leadership and commitment from senior agency staff, supported by a national philosophy favoring local involvement in development planning.

17. Expanding rural roads activities usually means recruiting and training new staff. Unskilled labor should be hired locally on a temporary basis. Lower level management (crew chiefs and site supervisors) should be selected as much as possible from within the ranks and given the training needed for them to carry out their jobs effectively. Training programs should be designed on the assumption that a certain amount of trained manpower will ultimately flow into the private sector.

18. The staff of a rural roads program need not always be made up of fully trained engineers. Although some engineering knowledge is required to execute a sound road improvement program, management skills and the ability to work well with different kinds of people under difficult field conditions may be even more important. The mix of technical and managerial skills required depends partly on the choice of construction technology, which in turn is conditioned by design standards, type of terrain, and local labor market conditions.

19. Hiring local people as paraprofessionals is one way to improve communications between agency staff and beneficiary groups. Another way is to add socially trained outreach workers to the agency staff. In both cases, these persons assist the project by transmitting information concerning local needs and priorities to agency staff, and by presenting agency plans and proposals in terms which can be understood by the community.
20. Training should not be limited to agency staff, but should also support the development of local contractors and the maintenance management capabilities of local officials. Where community assistance is expected in carrying out the project, specific attention should be paid to the design of communications strategies to mobilize such support, to provide needed information, and to promote skill development among local residents. Broader training programs build public support and provide another channel for feedback from project beneficiaries.

21. In most cases, local workers require prompt, regular, cash payments of wages to remain interested and productive. Wages based on the number of days worked are the easiest to administer but provide the least incentive for high productivity. Task work payment is more flexible, allowing workers to make more productive use of their time by attending to agricultural or household tasks after the daily road work task is completed. Piece work payment results in the highest level of output on road work but requires constant supervision and careful measurement of work completed; this method of payment may work most successfully where small labor contractors are involved.

22. Worker motivation is also influenced by non-monetary factors such as the quality of tools used, the relations among members of a work crew, relations between workers and supervisory staff, participation in work-related decision making, and observance of local customs and traditions. Local crew chiefs should be permitted to select their own workers to ensure compatibility on the job. Employment security and support services on field assignments are important for the morale of skilled workers and other civil service employees.

23. The motivation of higher level staff derives from values inculcated during their formative years, their professional training, and the organizational culture of their agency. Early value orientations are likely to be elitist, positivist, and particularist. Professional training is likely to reinforce these values, adding to them a pride in the technical complexity of work performed. Normally, the organizational culture of a road-building agency will support the same value system. Only if the organizational culture is significantly changed (through "bureaucratic reorientation") will higher level staff be motivated to participate effectively in the process of rural development.

24. Salary levels often hinder recruitment and retention of competent higher level staff. Due to macro-economic constraints, salaries in the public sector may be fixed at levels that are not competitive with the private sector or with those in neighboring countries. However, there are other mechanisms through which financial incentives can be offered to civil service staff. Chief among these are field per diems and travel allowances, flexible use of vehicles, and other "perks" such as subsidized housing and schooling. Although expensive, such programs represent a form of staff remuneration which is almost certainly less costly than the alternative of hiring expatriates.
25. In order for local staff to manage projects effectively, the responsibility for procurement should be decentralized to the lowest level, consistent with availability and cost. Except for major items and within overall budget constraints, off-shelf procurement without formal competitive bidding should be permitted at the discretion of the project manager. Local agency staff should also have access to the funds needed to provide for the prompt cash payment of wages. However, autonomy with respect to management of the project cash flow must be complemented with effective cost accounting and financial control procedures.

26. Monitoring and evaluation of rural road projects or project components should recognize that such programs are part of the broader rural development process. Monitoring will usually focus on the achievement of project progress or "efficiency" objectives, while an evaluation conducted during the project period should focus on the achievement of desired behavioral change or "instrumental" objectives. Evaluation of the socio-economic impact of rural road investments requires a longer time frame than the normal project period, and it is difficult to sort out the effects of road investments from the effects of other changes that take place over this time period. Monitoring and evaluation activities may be qualitative as well as quantitative, and should include the participation of project beneficiaries.

C. Local Participation

27. Local participation in project activities may occur at any time during the three stages of planning, construction, and maintenance. By increasing the probability that local resources will be mobilized for subsequent maintenance, local participation in planning and construction of rural roads projects can make these projects more cost-effective. The executing agency for road improvements should coordinate closely with local authorities and community organizations, as well as with other line agencies, in order to promote effective local participation in rural roads projects.

Planning

28. The projects reviewed for this study illustrate a range of options for community participation in planning rural road projects. The key variable defining this range is community capacity to mobilize and manage resources. Where local institutions are well-established, a community may retain a good measure of control over the planning process, raising and allocating revenues, making policy decisions, and using contractors and consultants to deal with specialized design and implementation issues. A lesser degree of participation is achieved when communities take part in decision making, including subproject selection, but do not have final responsibility for program implementation. Communities may also make important contributions to detailed project design, based on local knowledge of the physical and socio-economic environment. At a minimum, most national rural road programs expect communities to take the initiative in proposing specific roads for improvement.
29. Local participation in construction comes about when a beneficiary community supplies some of the resources needed to carry out a road improvement project. These may include land, labor, tools and equipment, construction materials, support services, and/or funds to pay for these resources. Such participation may occur in equipment-based as well as in labor-based projects.

30. Land acquisition for rural roads improvements, though necessary, may lead to an inequitable distribution of costs and benefits in the community. These costs can be minimized by keeping as much as possible to existing rights-of-way such as paths, tracks and trails. Where land taking becomes necessary and financial compensation is planned, timely public notice concerning the new alignment may help to inhibit speculation by "insiders." Where road improvements will result in a significant increase in adjacent land values, it may be necessary to provide protection for the tenure rights of those owning or working the land.

31. The use of local labor to carry out road projects obviates the need for site camps and minimizes the employer's responsibility for the welfare of workers and their families. It also avoids the social and economic problems that may arise when a temporary work force is introduced into a rural community. Furthermore, it ensures that wages paid for road work circulate within the rural economy, contributing to its growth through a multiplier effect.

32. Many rural communities have traditional methods of construction for minor civil works, using local materials and familiar forms of work organization. Road projects designed to maximize use of these methods can achieve an acceptable standard of performance at considerably lower costs. The use of local materials and familiar forms of technology also makes it more likely that communities will be able to assume future responsibility for road maintenance.

33. In choosing an appropriate technology for road construction, planners need to consider the quality and availability of local tools and equipment. If tools are to be provided by the road building agency, communities can be asked to assume collective responsibility for their security. Communities may also be in a position to supply spare parts, tool maintenance and repair services. Locally owned vehicles can be used to haul select materials and to assist in simple earthworks, either as part of a community contribution or through individual contracts.

34. Generally, rural road programs do not provide an adequate market to support the growth of a specialized tool manufacturing industry in each country. Good quality tools are essential to the efficient execution of construction and maintenance activities. Procurement of tools on the basis of competitive bidding is recommended in most cases. However, specifications
should be drawn up to ensure an adequate standard of performance on the job. Cumbersome central procurement procedures should often be relaxed, and field managers should be permitted to procure tools that meet program specifications from local suppliers.

35. Direct community participation in rural road project financing is rare, except in cases where communities have substantial cash income from remittances or other sources. Additional revenues may be raised by expanding the types of taxes which a rural community is authorized to collect or by stimulating development that will increase the value of the existing tax base. Alternatively, financial resources may be transferred to communities by the central government through general revenue sharing, earmarked taxes, or lending for specific projects. Because local participation in project funding places most of the decision making power in the hands of the community, it requires some technical and financial skill at the local level in order to be successfully implemented.

Maintenance

36. Many projects assume that the maintenance of improved roads will be carried out by rural communities. However, there are few examples of successful implementation of this strategy. The poor past performance of communities on maintenance may be linked to the limited extent of authentic community participation in rural roads planning and construction, combined with the top-down approaches prevailing in most public works departments.

37. There are a number of institutional options for local participation in maintenance. The lengthman system links individuals directly to the road-building agency through a contractual arrangement. This system appears to work well because local people can identify those individuals responsible for maintaining specific road segments. This option is effective where local institutions are less developed but central government institutions have adequate technical and financial resources.

38. Another option is to develop local contractor capability, either to mobilize and manage a labor force for routine maintenance, or for the execution of specific tasks (e.g., bridge repairs). This option requires the government to develop work programs, measures of output, and performance monitoring procedures. Local contractor capacity can be developed through provision of credit, training, and supervised subcontracts. In some countries, parastatal firms may undertake road maintenance on a contractual basis. To be effective, this option requires a government commitment to support the private or parastatal sector.

39. A third option is community self-help, organized by local leaders. This requires a clear understanding of the tasks to be performed and a commitment on the part of the community to carry them out. Such a commitment may be formalized through a written agreement between legally constituted
local authorities or community groups and the Public Works Department. A common division of labor is for rural communities to assume responsibility for routine maintenance, while Public Works or private contractors carry out periodic maintenance activities. This option, though much discussed in theory, shows few examples of successful implementation.

40. The willingness of rural people to participate in road maintenance depends upon their perception of the costs and benefits which are brought to them by the road. An equitable distribution of costs and benefits within the community may be as important as their magnitude in determining community response. An improved understanding of the distribution of project costs and benefits can be gained by involving local people in project monitoring and evaluation activities.

The Participation Process

41. The initiative for local participation in rural roads projects may come either from the central government or from community leaders. Centrally initiated or "top-down" improved financial accountability, and transfer of skills to local leaders. However, plans may be too rigid or inappropriate, local resources may be ignored, and participation may be restricted to an elite group. Locally initiated or "bottom-up" approaches tend to be more politically acceptable, help to relieve pressures on agency staff, and foster the development of self-confidence and skills at the local level. However, such initiatives are more difficult to coordinate and control and are subject to some of the same dangers or co-optation by a local elite.

42. Local participation may be purely voluntary, induced by a system of rewards, or coerced by a system of punishments for non-compliance. Coerced participation is not usually very effective or lasting. Purely voluntary participation is preferable, but it, too, may be hard to sustain over the long run. Planned use of inducements such as cash payments or Food for Work may be the best way to ensure the continuity of cooperative efforts throughout the project period.

43. Participation may take place through formal organizations, informal groups, or individual involvement in project activities. Formal organizations tend to have rules, standards and procedures that prevent them from reaching the rural population. Also, the goals of the project may to some extent conflict with other organizational goals. Local voluntary associations or informal groups are likely to be more flexible and responsive to the needs of rural people, and are therefore more likely to elicit effective participation.

44. While direct participation in project activities by individuals helps to develop local skills and may foster cooperation between different groups, it increases the complexity of project management and may add to the level of conflict in the community. Large projects that reach a diverse population may be more effectively managed through indirect participation,
(e.g., representation), while small projects with a homogeneous target population may accomplish more by adopting direct forms of participation (e.g., community meetings).

45. Three key variables which have a significant influence on patterns of participation are age, sex, and land tenure status. Young persons are more likely to participate in project implementation, while older people have more influence in project decision-making. Women are often excluded, by custom or by decision, from direct participation in project activities, although they may exert considerable influence in an indirect role. Landless persons and others who depend on wage labor to support their families are also at a disadvantage in the participation process. Strategies for successful participation should include specific ways of reaching out to these disadvantaged groups, in order to make the most effective use of all available human resources.

46. The role of local leaders in the participation process should be carefully analyzed at the planning stage, since they can either facilitate community participation or help prevent it from taking place. Use of local people as agency paraprofessionals enhances the prospects for effective communication between agency staff and local leaders. Local paraprofessionals will be more effective in their roles if they are also supported by reliable training and technical supervision.

47. Other actors in the participation process include local line agency staff, central government officials, private voluntary organizations, and donor agency staff. The participation process is also limited by the attitudes and behaviors adopted by each of these groups, reflecting in part the values and objectives of the organizations and cultures to which they belong. Some bureaucratic reorientation may therefore be needed within both donor and implementing institutions in order to make community participation a truly effective tool for development.

48. The following strategies for successful participation in rural roads projects are therefore recommended:

- seeking central government support;
- promoting bureaucratic reorientation in executing agencies;
- supporting local organizations;
- reaching out to disadvantaged groups;
- strengthening local government; and
- overcoming donor agency constraints.
Conclusion

49. The World Bank's role in designing rural road projects for local participation must be limited and indirect. It can be most effective in strengthening the legal and administrative structures that surround participatory projects, and in promoting the attitudes and behaviors of agency staff that will facilitate local participation.

50. The goal of institution-building components in rural road projects should be to develop self-sustaining institutions at the local level which continue to function because they succeed in identifying and meeting community needs efficiently and economically. These institutions should be closely linked to the sources of political support for rural roads programs, including the central government, the line agency responsible for road building, other agencies involved in the rural development process, and the beneficiary communities. Institutional arrangements that work well for the planning, construction and maintenance of rural roads may then serve as a prototype for similar structures intended to mobilize resources in order to meet community needs in other sectors as part of the broader rural development process.
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I. INTRODUCTION

Preamble

1. Rural road improvements have been an increasingly important concern in Bank projects aimed at improving the welfare of the rural poor in developing countries. In the decade from 1965 to 1975, the focus of Bank lending for road construction shifted radically from highways to rural roads. Much of the new road-related investment has been made through agricultural and rural development projects rather than through highway projects. The objectives of rural road projects and components are fundamentally different from those of highway projects. Consequently, they require different institutional frameworks and appropriate organizational structures in order to accomplish those objectives.

2. In considering the objectives of rural road projects, it may be useful to distinguish between efficiency, instrumental, and impact objectives. Efficiency objectives refer to the ways in which resources are used to produce project outputs, in this case the construction and maintenance of particular road segments. Instrumental objectives are measurable trends which are projected to follow from opening up an area by means of new or improved roads. Examples of instrumental objectives would be the provision of employment opportunities for local residents during construction; improved access to markets; reduction of transportation costs for the producer; generation of additional agricultural production; increased provision of credit and agricultural extension services; and a larger volume of trips by rural people to utilize medical and educational facilities. Impact objectives relate to the quality of rural life in general. Here, we are dealing with the ultimate goals of development projects: higher levels of income, health standards, nutrition, education, environmental conditions, and/or social integration.

3. A prime purpose of all rural development projects is to promote the growth of self-sustaining institutions capable of responding to the needs of rural residents through the mobilization of local and national resources. In the case of rural roads, this means that projects should have a set of organizational objectives that will strengthen local capacity to plan, administer and maintain rural road networks in response to local transport needs. The role of maintenance is crucial in sustaining project achievements over time so that the full range of anticipated benefits can be obtained.

4. The different objectives are not absolute, and project "success" derives from achieving some combination of them. A well-built and well-maintained road would not be regarded as a success if indirectly it resulted in impacts such as deforestation, the spread of disease, increasing inequality of land tenure arrangements, or a deterioration in the diets of local residents as cash crops replaced subsistence crops. Moreover, the weight attached to different goals by donor organizations and recipient governments may be different. Project success will be judged according to the priorities set, in consultation or unilaterally. Furthermore, not all implementing agencies will have the same approaches or objectives, so the

1/ World Bank, "Note on Rural Road Lending," Transportation Department, December 1977.
meaning of "success" can vary for this reason. At times, efficiency goals and meeting technical standards may be overriding concerns, while at other times, more weight may be given to a broader range of instrumental and impact objectives.

5. This paper will focus on the institutional aspects of rural road projects and project components, recognizing that rural roads are embedded in the broader process of rural development. Thus, the institutional issues related to rural roads projects cannot be restricted to those organizational issues which only affect the implementing agency. They embrace the full range of rural development planning procedures and the policy environment. Within this context, the organizational options for project implementation can be evaluated in terms of their contribution to the achievement of efficiency objectives. However, rural roads projects are more likely to achieve their instrumental and impact objectives if they are planned and executed with participation by the beneficiary population. In this way they will promote the development of self-sustaining local institutions that can eventually assume the responsibility for managing road maintenance.

Review of Bank Experience

6. The World Bank recognizes that the growth of institutional capacity is a key element in the development process.\(^2\) A recent review of Bank policies and procedures for institutional development finds a broad justification for Bank involvement in this area.\(^3\) However, there is little in the way of practical guidance for the project analyst who wishes to identify and address institutional issues in a specific setting. Present guidance focuses on institutional development to meet the Bank's needs for easier and more efficient execution of projects, rather than on the diagnosis of institutional constraints to development and the working out of a collaborative strategy through which the Bank could support broader institutional objectives.

7. Two Operations Policy Notes (OPN 5.01 on "Policy and Guidelines on Training in Bank/IDA Projects," and OPN 5.02 on "Use of Technical Assistance Loans to Generate Development Projects and to Strengthen Local Project Design Capabilities") provide some specific advice on approaching institutional development objectives through training and technical assistance. More recently, the Bank has begun to issue "Institutional Development Technical Notes" which are intended as guidance for Bank staff preparing project components on institutional development. The first six of these notes address the subjects of project units, interagency coordination, training for management in the social sectors, central monitoring and evaluation units, technical assistance projects, and counterpart relationships. The reader is referred to the "Technical Notes" for more detailed guidance in these areas.


8. In 1981 a review of Bank experience with lending for rural roads projects was conducted, focusing on institutional issues that had arisen in connection with project planning, implementation, and evaluation. The bulk of rural road lending took place in the latter half of the 1970s. It was decided, therefore, to conduct an initial review on the institutional features of projects for which loans were made between FY76 and FY80. A stratified random sample of 50 projects in 40 countries was selected from this list for review.

9. The initial review was based on data provided in the project appraisal reports. From this sample, a sub-sample of twelve ongoing projects was randomly selected for detailed review of supervision reports to identify institutional issues that arose during the project implementation period. In addition, fifteen completed projects were selected for review, based upon the availability of project completion reports and project performance audit reports. In all sample selection procedures, an attempt was made to maintain the distribution of projects by sector and by region which had been determined for the total sample frame.

10. This review of a sample of Bank projects with rural road components identified six major institutional issues faced in such projects. Three of these (centralization vs. decentralization, new vs. existing institutions, force account vs. contractors) have to do primarily with the organization of the road building agency itself, while the other three issues (interagency coordination, political commitment, and beneficiary participation) have more to do with the linkages between this organization and its political and social environment.

11. The formal findings of this review were complemented in succeeding years by a continuing review of rural roads project preparation documents, appraisal reports, supervision reports, and audit reports, as well as by continuing interaction with Bank staff responsible for such projects. Relevant documents generated by other development assistance agencies have also enhanced our understanding of the institutional issues involved in rural roads projects. In addition, we have undertaken general reviews of the literature on development administration and on local participation.

12. Bank experience has shown that where development projects involving rural road components fail to accomplish either their initial or their long-term objectives, this is frequently attributable to institutional weaknesses or to problems which could be addressed through improved institutional design. This paper, based on Bank experience with rural roads, rural development and agriculture projects, explores those institutional issues which appear to be related to project success. It should be recognized, however, that no single institutional arrangement will work well in all situations.

Objective

13. The specific objective of this paper is to provide guidance to project designers and program planners concerning the factors which should be
taken into account in establishing the institutional framework within which rural road improvements are selected, planned, built and maintained. A number of institutional issues are identified and the advantages and disadvantages of alternative solutions in different settings are discussed. The long-range goal of the paper is to facilitate more effective rural roads project design and implementation. This should, among other things, reduce the risk of cost overruns and provide a better chance of realizing project expectations. The paper is intended primarily for professionals engaged in project design and/or implementation activities involving rural roads components of rural development and transportation projects.
II. THE POLICY ENVIRONMENT

14. Institutional issues affecting the success of rural road or rural development projects may be only a reflection of larger issues permeating the entire economy of a developing country. Examples of such issues include: low pay scales for government workers, including engineers, technicians, and skilled craftsmen; disincentives for private enterprise and investment; excessive regulation of the transport industry; high minimum wage levels making it financially unfeasible to substitute labor for equipment in construction; interest rate policies encouraging the use of equipment-based techniques; and design standards and tendering procedures which are biased toward the use of equipment. Normally, resolution of all such major policy issues should not be a prerequisite for undertaking a pilot or small rural roads project. Major policy issues must be identified, however, and substantial progress toward their resolution should be shown, before financing a nationwide rural roads program.

Political and Economic Constraints

15. "The squeaking wheel gets the grease" may be one of the most universally valid maxims of public administration. Unfortunately, the squeaking wheels of ox-carts in the provinces are seldom heard in capital cities where decisions are made. Most poor countries have centralized political systems; consequently, rural interests, which are not prominently represented in the corridors of central government ministries and key decentralized agencies, cannot hope to compete effectively for the limited resources available. Moreover, since the tenure of cabinet ministers is seldom secure, few can afford the luxury of ignoring strong (and thus dangerous) clientele groups in favor of weak ones. Rural people without roads are almost by definition weak. In all but the poorest countries, areas with high agricultural or commercial potential--or with the strongest political "pull"--will be able to secure road investments. This leaves other areas with underdeveloped potential unserved.

16. From a political perspective, the key question is not the extent to which people in a given zone need a road, or even the extent to which a road would make economic sense. Rather, it is the extent to which the central government and particular governmental agencies are motivated to provide such benefits. Given the frequency with which governments are constrained by resource scarcities or face political pressures to perpetuate the status quo, a combination of strong incentives, capable and committed leadership, and appropriate organizational structures will be needed in order to surmount these biases.

17. The task of the project planner is largely to identify or create institutional settings which provide strong incentives to "grease the wheels of ox-carts" in remote provinces. This is not easy because the urban poor are generally better able to make claims on government services than are the

particularly in capital cities, crime, riots and strikes attract press attention and often the support of those who oppose the regime. Rural people are more dispersed, live far from the centers of power, and are less able to make trouble for those who ignore their problems.

18. Exceptions to this rule are important, however. In some countries, internal security problems in isolated areas have prompted governments to build penetration roads and to initiate integrated rural development programs. In nations characterized by strong regionalism, competition between different states, departments, or ethnic groups may require that patronage and investments be distributed proportionally among regions. In the few countries with strong, rural-based political parties, the interests of the provinces are also more likely to be taken seriously. Purely economic considerations may also be important, as when food production for the cities is a critical problem, or when the promotion of cash crops for export is a high priority. In these situations, however, productivity objectives may conflict with the equity concerns of donor agencies. Finally, where the philosophy of governments tends to favor rural interests, an emphasis on popular mobilization may help to create the organizational conditions required for successful rural development.

Role of the Private Sector

19. Countries choose the degree of emphasis they wish to place on public or private forms of social organization to accomplish economic goals. The general policy position on this issue will constrain the choices available with respect to specific institutional designs for rural road projects, i.e., public sector (force account) organizations, parastatals, and private enterprise. Many developing countries have found their public bureaucracy to be growing at a pace that far outstrips the capacity of the more directly productive sectors to support such growth. Parastatals may be crippled by their ambiguous position between the public and the private sector, which often results in ill-defined objectives and contradictory performance criteria. Greater reliance on the private sector may be more helpful.

20. The choice between force account, parastatals, and private contractors as a means of carrying out a particular rural roads program depends on the nature of the underutilized labor force and the state of development of the local contracting industry. The force account alternative for construction and maintenance would preferably consist of a limited cadre


7/ See, for example, the 1983 World Development Report. Also see the special report on Accelerated Development in Sub-Saharan Africa, World Bank, 1981, pp. 35-40.
of planners, engineers, technicians, and skilled workers, relying on locally employed casual labor to meet the bulk of its manpower requirements. Alternatively, in some political contexts it may be seen as desirable to develop the capacity of small-scale, community-based parastatal enterprises to undertake road works, as has been done in Algeria. Special project units staffed by expatriate experts may relieve the government of management responsibility, but usually fail to develop permanent institutional capacity. Should this option be adopted, it will be necessary to have strong government commitment to the provision and training of counterparts at every level of the program and to ensure that strong coordination mechanisms link the project unit activities into the rural development planning process.

21. The use of local contractors for construction and maintenance activities appears to be particularly advantageous in situations where the capability to carry out rural road program exists in the private sector but new institutions would have to be created in order to accomplish this in the public sector. Even when a public road-building agency exists, contractors can often provide the needed labor and equipment at lower cost and with less delay than the public agency. Obtaining services from the private sector reduces the burden on public agencies to procure, operate and maintain equipment, to recruit and manage a large labor force, and to provide adequate pay scales and incentives for good performance. However, the use of private contractors may result in a quality of work below required standards. A well-functioning system for inspection of completed works is therefore important.

22. The use of local contractors should be encouraged wherever there is a real capability to be found. Where this is not the case, specific programs can be designed to identify and increase the capacity of future contractors. Attention should be paid to rules and regulations that may discourage contractors from using labor-based techniques where these would be appropriate. Use of contractors requires prompt payment, in order to avoid incurring unnecessarily high costs to cover contractors' risks. The principal advantage of using contractors, in addition to possible cost savings, is that it relieves the government of responsibility for much of the detailed work planning and logistic support required to mobilize a work force and sustain its employment over an extended period of time.

23. Another option that should be explored is the possibility of using nonprofit, non-governmental organizations (NGOs) to implement a rural roads program. These organizations are often more familiar with local needs and resources and more capable of mobilizing community support for a project than are line agency representatives in rural areas. Because they are nonprofit, they should be able to deliver services at lower costs than contractors; because they are non-governmental, they are somewhat insulated from political pressures and may be somewhat freer to innovate and to experiment than a line agency would be. However, allocating large amounts of resources to an NGO runs the risks of exceeding its absorptive capacity and changing the character of the organization in ways which would tend to reduce its effectiveness in the field. Use of NGOs may be most effective in a pilot

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project which would develop norms and standards and operating procedures that could then be taken over by a government agency, parastatal organization, or private contractors.

Labor-Based vs. Equipment-Based Methods

24. The suitability of labor-based vs. equipment-based methods of construction and maintenance for rural roads can be determined in a general way at the national level, based on labor market conditions, minimum wage levels, demographic features, and cultural constraints affecting the willingness of people to participate. Naturally, this issue will need to be reevaluated at the site-specific planning level, based on additional information concerning terrain, soils, design standards, and local labor availability. However, a general policy position will be helpful in promoting the institutionalization of a labor-based approach. A successful pilot project using labor-based techniques can also be helpful in making the decision as to whether or not this approach would be appropriate on a nationwide scale.

25. Labor-based methods are likely to be less costly and to benefit more the rural poor when: (a) there is a high population density in rural areas; (b) there is a high level of rural unemployment or underemployment; and (c) social mechanisms are in place for the mobilization and support of a large labor force for particular tasks. Such social mechanisms may include, for example, a well-developed petty contracting industry, a tradition of community self-help, or a religious or political movement that can command collective action. Where there is no local tradition of labor-based construction, but demographic and socioeconomic conditions are favorable, a strong political commitment on the part of the central government can help to legitimize labor-based programs within the broader philosophical base for developmental change.

26. A pilot project may be the best way to introduce and test labor-based methods as a basis for formulating future policy on rural roads improvements. There is an abundance of material available to help in planning pilot projects using labor-based techniques. Should a decision be made to implement a labor-based pilot project, then planners will need to select suitable design characteristics, choose appropriate tools, materials, and equipment, plan to meet training and supervision needs, and provide support services for the work force in the field.

27. Based on the resources available and the choice of design standards and construction methods, a number of detailed decisions must be made in planning a pilot project. Specific road links and levels of improvement must be selected and reasonably accurate cost estimates obtained for the proposed works. The demand for skilled and unskilled labor implied by this construction program should be compared to the forecasts of labor supply, taking into account the demand for labor generated by other activities in the

project area, including agricultural and household tasks. Demographic characteristics such as the age and sex structure of the population, settlement patterns and migration patterns, may also affect people's willingness or ability to work on road improvements. The potential productivity of labor in the specific setting needs to be evaluated, taking into account soil and terrain conditions, health and nutrition status of workers, effects of travel on foot to the work site, and the design of tools and equipment. This analysis can help to determine the cost-effectiveness of various support services which may need to be provided to workers at the site.

28. Labor-based techniques have particularly good potential for tasks that do not differ much from normal agricultural activities (clearing, earthworks, and soil stabilization, which normally account for more than 50% of unpaved road construction costs; structures; routine maintenance activities such as ditch clearing, culvert maintenance, and minor road surfacing repairs). Labor-based techniques may be less appropriate to use for compacting of earthworks, surfacing, and spreading of bituminous materials, since these tasks require the achievement of high performance standards.

29. If the pilot project is to be carried out using labor-based techniques, considerably more detailed planning will be needed to address the issues of labor recruitment and training, selection and training of crew leaders, size and location of work crews, allocation of tasks to crews, scheduling and timing, training and placement of supervisory staff, planning for logistic support and transportation of work crews to the work site, methods of payment for casual labor and civil service employees, and procedures for accounting and auditing. Some of these issues would apply in the case of force account work even where the use of equipment-based methods is envisaged; less attention would have to be paid to the needs of workers, but, in contrast, planners would have to be more concerned about optimal equipment utilization, maintenance and repair services, supplies of fuel and spare parts, and security and transport of equipment. A pilot project based on contractors may be designed to include provision of support services if contractors have limited capacity in certain of these areas. 10/

30. Other planning tasks include: forecasting needs for tools and equipment; evaluating materials requirements and availability; staging and scheduling construction tasks so as to minimize fluctuations in labor demand; planning to ensure an even flow of resources to the project; and establishing budget requirements. The principal sources of financing for the pilot project need to be determined at this stage. External assistance in the form of grants or low-cost loans may be obtained for pilot projects, particularly those of an experimental nature. However, it is important that those agencies which are expected to participate in an expanded rural roads program in the future also be involved in the planning and financing of the pilot project. This will increase the probability that pilot project approaches will be incorporated structurally and substantially into the relevant line agency and that the results will be effectively utilized. Finally, the

10/ More specific guidance on these design issues is provided in Coukis, op.cit.
planner must pay attention to the issue of future maintenance responsibility and resources for the road improvements to be undertaken in the pilot project.

31. Pilot projects normally do not create new organizations. However, they may require adjustments to be made in existing organizations; for example, to authorize the creation of new posts, to change staff recruitment criteria or salary structures, to allow for the use of different design criteria, to permit the hiring and cash payment of casual workers, or to change procurement practices. Authority to make such changes can be granted more easily on an explicitly experimental basis. Experience has shown, however, that even if such innovations are found to be positive, it is not automatic or easy to get them accepted on a wider basis. Explicit evaluation measures need to be designed into the project, with line agency leadership helping to specify criteria of "success."

32. The purpose of pilot projects is to gain reliable data on issues of policy and implementation. Major transport policy issues therefore do not need to be resolved before financing a pilot rural roads project, so long as the government is prepared to address these issues once experience is gained from the pilot project. In addition to having agreement on this agenda, it is necessary that the pilot project design include adequate provision for monitoring and evaluation, so that the substantive policy questions can be addressed with confidence at an appropriate time.

Legal and Regulatory Requirements

33. A number of other policy or administrative issues may need to be resolved before a large scale rural roads improvement program can be implemented. For example, national legislation, regulations and administrative procedures may inhibit the growth of small contractors.\footnote{For more detail on this matter, see World Bank, The Construction Industry: Issues and Strategies in Developing Countries (Washington, D.C.: World Bank, 1984).} The economic and social functions of rural roads may be limited by legal and regulatory restrictions on the operation of rural transport services.\footnote{S. Carapetis, H.L. Beenakker, and J.D.G.F. Howe (Consultant). "Rural Transport Services: Comparative Review Study." World Bank Staff Working Paper, forthcoming.} Price controls and restricted purchasing policies for rural products may be creating an unfavorable climate for traffic growth.\footnote{See, for example, H.L. Beenakker and N. Bruzelius (Consultant), "Transport and Marketing of Agricultural Products in the Ivory Coast." World Bank document, March 1984.} Design standards and administrative procedures used by highway departments may be
inappropriate for work in rural areas. Land tenure issues, land use controls, and legal responsibility for road planning, construction and maintenance may need to be resolved before road improvements are undertaken.

34. If a government wishes to implement a large scale rural road program using labor-based techniques, it should be prepared to address the several policy issues. At the level of macro-economic planning and evaluation of the feasibility of alternative investments, the government may wish to adopt shadow prices for labor and/or foreign exchange. In the realm of fiscal policy, governments usually set high tariffs on consumer goods and low ones on capital goods; this provides an incentive for importing construction equipment. The government may wish to change this incentive system by introducing discriminatory tariffs on equipment that would displace labor in road construction or maintenance.

35. In financing contractors' cash flow, lenders are often more willing to extend credit against equipment purchase than to finance a payroll for labor. Furthermore, the official conditions of contracts or methods of evaluating contractors' qualifications may place undue weight on the use of equipment. Finally, the recruitment and reward system within government agencies may actually place a premium on experience with equipment-based construction, rather than on work with labor-based techniques. All of these attitudes and actions will make it more difficult to implement a labor-based rural roads program.

36. Even if a rural road program is not to be labor-based, the government will need to consider providing special training for engineers and technicians to be involved in rural roads work, so that they may become more responsive to the needs and resources of rural communities. Staff can be recruited for such programs with less formal training and on a more temporary basis than for other types of force account work. Administrative standards and procedures related to hiring and firing staff, as well as those for procuring materials, tools, spare parts, and services, may need to be simplified for such programs to be carried out effectively.

37. The government may wish to adopt simplified design standards or to permit spot improvements in place of full scale construction, at the discretion of qualified field staff. If contractors are to be used, the contract documents, bid procedures, and procedures for payment against work completed can also be simplified, in order to encourage small local contractors to participate in the project. Finally, the government may choose to support the domestic contracting industry by allowing a suitable preference in bid evaluation, (particularly for the more expensive rural road works), by promoting contractors' associations and joint ventures between firms, by providing direct services to local contractors such as equipment pools, credit, and training, and by providing a continuous stream of work.

38. The legal and judicial system of a developing country may provide an important buffer for rural people who are suddenly exposed to the forces of the larger society by means of road construction. However, where wide disparities of power, wealth and social status exist, it may be difficult for some persons to get protection from the court system. Traditionally, weak and vulnerable persons have sought protection by becoming "clients" of more powerful local "patrons" in economic and social as well as political relationships. Getting access to the courts and favorable outcomes may still require the influence of such patrons, so simply providing judicial protection and remedies may not produce beneficial results. It is important, therefore, for planners of rural road programs to take into account potential negative impacts and social conflicts that may arise following road construction, and provide in advance to protect the interests of less powerful groups in rural areas.

39. The regulations and procedures of potential donor agencies should also be carefully considered in the planning stage, since otherwise they may tend to distort the purposes of the project. Procurement procedures, limitations on foreign currency uses, discontinuities in personnel between the preparation and implementation phases, for example, can impede plans to utilize local resources or to test certain assumptions through a pilot phase. The combination of donor and borrower constraints can limit project operations in unwanted ways if not adequately explored and modified in advance. Some constraints cannot be eliminated, but addressing from the outset those which can be treated is often crucial to project success, as is the ability and willingness on both sides to deal with such obstacles as they arise in the course of implementation.

Government Planning and Budgeting Procedures

40. The major development strategies for rural areas have been described by one analyst as: 1) single-sector investment on a nationwide basis; 2) multi-sector, integrated rural development on a local basis; and 3) integrated time-phased development undertaken on a regional basis. The choice of development strategy has major implications for transportation planners. The traditional single-sector approach of building a network of roads and highways is relatively easy to conceptualize and to execute. It also appears politically advantageous in that perceived benefits of the projects can be widely distributed. This may be crucial where regions or ethnic groups are competing for scarce resources. However, single sector transportation investment assumes that projects will be identified in areas where there is substantial effective demand for transport. This assumption

15/ A broader analysis of the problems of patron-client relationships is provided in Robert E. Gamer, The Developing Nations: A Comparative Perspective, 2nd ed. (Boston: Allyn & Bacon, 1982), especially Ch. 4.


has often not been justified.\textsuperscript{18} This is important because there will be little incentive to maintain transport facilities which are not important to clientele groups or cannot easily be used for their intended purposes.

41. A survey of the literature on the socio-economic impact of rural roads concludes that "achieving the desired impact(s) of a rural road project is likely to depend as much upon complementary programs to maximize benefits and minimize negative impacts upon the target group as upon the direct results of the road project itself."\textsuperscript{19} This provides a strong argument for adopting the integrated rural development approach and for donor organizations to determine in advance the likely consequences of their investments.\textsuperscript{20} Successful implementation of such programs will increase the utilization of transportation facilities.

42. However, simultaneous integrated development is not always the most appropriate strategy for investment. Both the costs and the level of complexity are high, and the benefits may be concentrated in relatively small areas. Coordinating mechanisms between government ministries and decentralized agencies are typically weak, and the political and economic stability required for synchronization of complex activities is often lacking. Integrated, time-phased programs may thus provide an attractive alternative.

43. Time-phased development in related sectors is less resource-intensive because everything is not done at once. In theory, the benefits may thus be spread over a broader area and the investment costs tailored to local conditions. Fewer agencies are involved in implementation at any one time, so problems of interagency coordination are minimized. Simplicity and moderate costs have been found to be a hallmark of successful


\textsuperscript{20} "Effectiveness and Impact of the CARE/Sierra Leone Rural Penetration Roads Projects," A.I.D. Project Impact Evaluation Report no. 7, June 1980, p. 9. This paper argues for a pre-funding determination of the likely outcomes of complementary activities to transportation projects.
development programs.  This integrated, time-phased approach may be the one which makes the most effective use of development resources, whether in terms of investment funds, agency staff, or the level of community effort.

44. Whatever development strategy is chosen should be an "effective institutionalized response to a generalized public problem which is based upon the best composite professional standards and which fits legitimately into the organizational and political environment of the nation." Single-sector investments implemented by a single government ministry or autonomous project unit seem particularly appropriate under conditions of low institutional development (a highly centralized government with poorly trained personnel at the departmental and local levels). Integrated rural development requires a high level of institutional capability, with time-phased programs occupying an intermediate position.

45. A successful development strategy cannot be created by planners alone. Political authorities and public and elite opinion at all levels must generate agreement on the importance of development policy objectives. Transportation projects often enjoy advantages in this regard. Nearly everyone in rural areas wants better access, although for different reasons. With few exceptions, isolated people tend to be pleased at the prospect of being linked to the larger society.

46. Effective planning of rural roads projects must also take account of national budgetary procedures. The basic problem is that in financial terms, what is good for public works organizations is not necessarily good for the finance ministry, and vice versa. Organizations which build and

21/ Samuel Paul finds that a focus on a single goal or service (such as road building) is a characteristic of successful programs. Managing Development Programs: The Lessons of Success (Boulder, Colorado: Westview Press, 1982).


24/ See ibid., pp. 34-35, on the problem of generating agreement on development objectives.

maintain roads need stable and predictable sources of funding. Special accounts and revolving funds may be useful, although by themselves they do not guarantee the effectiveness of an organization. Loans from development assistance agencies are also very helpful, particularly since such agencies can be instrumental in eliciting counterpart funding from the national government.

47. The situation looks different from the perspective of the finance ministry. An international development loan looks like a "camel's nose" technique for getting additional commitments from the treasury. And "the usefulness of special funds to circumvent the usual bureaucratic routine depends on their being exceptions to the rule." The more they are used, the greater the cumulative impact, and the more difficult the situation of the finance ministry. Sources of revenue are typically scarce and unpredictable while demands for payment—often compounded by devaluations and rapid inflation—escalate rapidly. The annual budget degenerates into "repetitive budgeting," and the entire budget is subject to constant renegotiation. Some of the results are inordinate delays in payments; the use of vouchers, which may create a high floating debt; a politicalization of expenditures; postponement of investments; and ultimately careless budgeting, since the initial figures seem meaningless.

48. For the transportation planner, there is no standard solution to the requirement of obtaining a stable resource base for rural road construction and maintenance. Operationally, the continuing understanding and backing of the public works ministry is crucial, but support needs to be assured from wider sources. Particularly important would be the finance ministry's assessment of a rural roads program—how well-run it is and how much it contributes to an expanding production and tax base. The appreciation of political leaders should also be maintained. They will want to know about direct benefits for their constituents from rural roads and may also value the employment, contracts and other consequences of road projects. It is important for a project's stability and success that flows of support come from a number of sources, administrative, financial and political, and that the structure of support include sources that are concerned about the interests of the rural poor.

Modes of Project Formulation

49. Experience with project planning and implementation increasingly indicates that a "blueprint" approach is less successful than one which proceeds on the assumption that introducing new technologies and infrastructure as well as achieving behavioral change requires a


27/ Wildavsky, ibid., pp. 144-147.
"learning process." This is particularly true for rural roads projects, in comparison with more conventional highway projects, because local capacities for maintenance have to be developed along with the construction or improvement of roads. While a "learning process" approach has only recently been tried in rural roads projects, experience with this approach to building community capacity through irrigation projects in the Philippines indicates that it can be quite successful.

50. In a "blueprint" approach, it is assumed that both the ends and the means to achieve them are known and certain, so they can be specified fully in advance. All efforts in implementation are directed to producing detailed results by prescribed activities and investments. In a "learning process" approach, certain activities and investments are proposed and introduced, but with careful monitoring and continuing evaluation so that appropriate modifications can and will be made in the course of the project. Even objectives may be reassessed in the course of implementation once more experience has been gained with what is possible and desirable.

51. Learning process advocates argue that the search for easily replicable programs or innovations is illusory. Such an approach reduces the dichotomy between project design and implementation, because it recognizes that the latter is not routine. Rather, implementation requires intelligence, creativity and commitment of a high order. It is desirable that there be continuity of personnel between the planning and implementation phases so that learning can be cumulative and modification will be coherent. The learning process has three stages: first, learning how to formulate an effective program design; second, learning how to make this design efficient; and third, learning how to expand it into other settings.

52. Application of the learning process approach is critical to successful expansion of small-scale, pilot projects to nationwide programs. The results of pilot projects cannot be mechanically reproduced at a different scale or in a different environment. A pilot project contributes to an effective expanded project not just through testing workable approaches but also through developing staff who are able and willing to make the necessary adjustments in implementation because they have become subjectively committed to the project's goals. Examples of successful rural road programs that illustrate this process may be found in Mexico, Honduras, Tunisia and Benin.


29/ Jon R. Moris, Managing Induced Rural Development (Bloomington, Indiana: International Development Institute, 1981), p. 21, notes that the sequence of the three stages is crucial. "Any program which aims at cost-effectiveness before it has solved the more basic issue of establishing an effective organizational model will face severe strains and probable failure. Imported models usually do not produce the expected outputs, and it may take several years of experimentation before an adjusted model...is successful."
Blueprint and learning process approaches represent two ends of a continuum. It is rare to find either approach in its pure form, and some elements of both are normally found in any project even if the language of project design and implementation is almost exclusively "blueprint." Blueprint planning is likely to persist because it is orderly and readily understandable; it fits into the hierarchical structure and culture of most government organizations; and it serves the organizational requirements of donor agencies.  

A blueprint approach may be more reasonable for capital-intensive rural road programs in relatively stable institutional environments, where construction needs to be carried out quickly, where roads are planned to serve relatively high traffic levels, or where it has been determined that rural road improvements are a precondition for other economic development initiatives. To the extent that a project seeks to integrate rural roads with other development activities, where low-cost roads, tracks and trails are to be constructed, where labor-intensive methods of construction and maintenance are desired, and when local participation is sought, a learning process approach will be more relevant.

30/ Korten, op.cit. (p. 484), and others have noted the tendency of donors to prefer projects which are large, capital and import-intensive, easy to monitor and inspect, quick to implement, and suitable for cost-benefit analysis.
III. ORGANIZATIONAL OPTIONS

54. Once the decision has been reached to undertake a rural roads improvement program in a particular country, planners will need to consider the organizational options for implementing such a program and linking it into the larger rural development process. The relevant options are related to the objectives of the rural road programs. A number of implementation issues are derived from efficiency objectives, that is, the need to make the most effective use of resources available to an agency. The structure of the implementing agency itself reflects its role with respect to instrumental objectives. Finally, the impact of road improvements on rural development is related to the linkages between this agency and its sources of political support, other agencies involved in the development process, and the intended beneficiaries.

Implementation Issues

55. **Agency Planning and Budgeting.** Following the distinction between "blueprint" and "learning process" approaches, the first step in planning is to decide the extent to which activities should be determined in the initial project documents. If the project is conceived and constructed in a pilot mode, the detailed design of the larger program should be based on the criteria, techniques and capacities developed in the pilot stage. Pilot projects tend to be learning process endeavors, though they can be conceived and carried out with a blueprint philosophy. Even at the earliest stages of planning, attention may need to be devoted to institutional development if improved roads are to benefit the poor. Recognizing that opening up areas for new economic activity may benefit the wealthy disproportionately, it may be desirable, for example, to begin promoting producer groups even before roads are built so that poorer farmers have more access to the new opportunities.31/

56. One important problem in the planning process is how to factor in relevant information. Realistic cost, time, and benefit estimates are obviously required. These figures should be based if possible upon past experience in the project area or similar areas. Relevant information also includes reactions from different sectors of the public to planned construction and maintenance activities. However, this information may be difficult to obtain because interest group participation in policy formulation is often considered illegitimate or inefficient.32/ Typically, interest groups, if they have any influence at all, will try to affect specific actions of government after major decisions have already been made, e.g., to get the quality of paving upgraded, or to divert a particular

31/ This approach was adopted in the Aguana Valley of Honduras, in the context of a nationwide agrarian reform. See "Honduras Rural Roads: Old Directions and New," A.I.D. Project Impact Evaluation Report no. 17, January 1981. Here, as elsewhere, however, larger landowners benefitted disproportionately from rural road construction.

alignment.33/ This results in inefficiencies which could be minimized if interest groups were encouraged to contribute at an early stage in the planning process.

57. Another important consideration is that plans should take account of political and economic cycles. Regular political cycles coinciding with presidential terms occur in some countries with institutionalized political systems.34/ Elections are often times of political and economic upheaval, and programs which are too closely identified with the outgoing government may not survive. Projects will generally be delayed by personnel and policy changes during the transition period. Economic cycles and periodic foreign exchange crises also affect the rhythm of project implementation in ways which are sometimes predictable.

58. A third requirement for realistic planning is that it be closely related to the needs of both budgeting and executing agencies. Little can be accomplished without dependable financing, and this becomes even more important when projects are interdependent or investments require close coordination to be economically justified. A close link between planning, management, and budgeting will often require that key people be involved in each stage of the process. For example, the success of the Accelerated Rural Development (ARD) program in Thailand is partly attributed to the fact that the Secretary General of ARD during its formative years was simultaneously Deputy Director of the Budget.35/

59. International loans are often welcomed by administrative agencies as “free money” in a context of scarcity—particularly if another part of the government is responsible for repayment.36/ There is thus an incentive for loans to be accepted even when the organizations in question are less than fully committed to the project objectives. One way of addressing this problem is to insist that repayment come from the same agency which received the loan. Another tactic is to separate funding for rural roads projects from funding for other purposes. In Tendler's phrase, "house the lion in a


34/ Illustrative examples are found in Mexico, Colombia and Venezuela. For the effects of political cycles in Mexico, see Merilee S. Grindle, Bureaucrats, Politicians, and Peasants in Mexico (Berkeley: University of California Press, 1977), and Richard R. Fagen and William S. Tuohy, Politics and Privilege in a Mexican City (Stanford, California: Stanford University Press, 1972).


36/ Tendler, Inside Foreign Aid, op.cit.
separate den, with sharply diminished access to the lamb." 37/ This strategy helps to assure that loan funds are actually used for the intended purposes.

60. The crucial problem of road maintenance merits special attention. It is now widely recognized that the political and organizational dynamics of public works ministries and highway departments favor construction over maintenance, which is considered a mundane, low status, and unrewarding activity. Roads are frequently allowed to deteriorate until reconstruction is required, since maintenance expenditures come out of a department's own budget while "capital expenditures" are financed elsewhere, often by external donors. Routine maintenance of rural roads often occurs only prior to elections or visits by national or foreign dignitaries. In the absence of strong incentives, a public works ministry is not likely to assume effective responsibility for the maintenance of "low-priority" rural roads, especially if these were constructed by a different organization.

61. Staffing and Training. Staffing and training are major institutional issues in the implementation of rural roads programs. Often the agencies responsible for such programs are not in a position to provide the incentives needed to attract and retain a sufficient number of competent personnel. Staff seconded from other departments are not likely to view participation in a rural roads program as the key to professional success. The lack of qualified local staff has meant that many rural road programs in the past have depended heavily on expatriate technical assistance for implementation.

62. It has been hoped that technical assistance would provide on-the-job training for counterparts, but training objectives have often been sacrificed under pressure to increase productivity. 38/ Delays by host governments in nominating counterpart staff and failure to assign such staff to the project on a full-time basis also contribute to the difficulties experienced by expatriates in trying to transfer their technical and administrative skills to local staff. Some expatriate staff, though technically well qualified, simply do not command the communication skills required for effective transfer of their knowledge. The social distance often maintained between expatriate and local counterpart staff also inhibits effective communication and cooperation between the two groups.

63. These obstacles can only be overcome through time, by the development of well-designed recruitment, incentive, and training programs. Such programs should be designed on the assumption that a certain amount of trained manpower will ultimately flow into the private sector. The special skills required for the management of a rural road program should also be taken into account in planning for training activities. Training also presents an opportunity to develop a sense of commitment to program objectives among the staff that will both improve their performance on the job and increase the probability that they will stay with the program.

37/ Tendler, "Rural Projects Through Urban Eyes," op.cit.

64. One of the lessons that has been learned from Bank projects is that it is not always necessary or desirable to staff a rural roads program with fully qualified engineers. For example, in Honduras a labor-based program has been successful in recruiting and retaining staff who have started, but not completed, an engineering training program. Some engineering knowledge and technical expertise is, of course, required for the execution of a sound road improvement program. However, advanced engineering training seems to inculcate career aspirations and norms of professional behavior that make rural road work appear unattractive to the more able candidates. It appears desirable to develop a rural road program's staff as much as possible by promoting from within, based on experience and demonstrated ability to diagnose specific road construction requirements and to organize and direct labor to accomplish these tasks in the field, rather than on paper credentials.

65. Rural roads work largely involves unskilled labor which must be organized and supervised by trained staff, as well as skilled labor by artisans, mechanics and equipment operators. The mix of technical and managerial skills required is related to the choice of construction technology, which in turn will be conditioned by design standards, type of terrain, and local labor market conditions. Unskilled labor should be locally recruited on a temporary basis, and lower level management (crew chiefs and site supervisors) should be selected as much as possible from within the ranks and given the necessary training to carry out their jobs. Skilled workers may be locally recruited, if available, but are often placed on an agency's permanent payroll if there is sufficient demand for their skills. Laborers who demonstrate mastery of the road building task may also be retained as road maintenance workers or encouraged to form small contracting enterprises. The goal should be to minimize fluctuations in the supply and demand for labor while promoting future use of the skills acquired through road work in the developing rural economy.

66. Rural development projects in general have found that the use of paraprofessionals can help to bridge the gap between agency professional staff and beneficiary groups. Such persons usually come from a background similar to that of the intended beneficiaries and have limited formal education or technical training. They serve primarily a communication function, collecting and transmitting information concerning local needs and priorities to agency staff, and translating agency plans and proposals into terms which can be understood by the community. In the case of a rural roads program, the role of paraprofessional may be played by community officials, small contractors or crew leaders. In Mexico and Colombia, rural roads programs have added socially trained outreach workers to the agency staff. Program planners should take into account the opportunities offered by such roles to promote improved communication between agency staff and members of the communities they serve.

67. Training concerns should not be limited to agency staff needs, particularly if a rural roads program is to be implemented by contractors or by community labor. Small contractors can be assisted through short courses or seminars on the technical, financial, and managerial aspects of rural roads work. Communities often need assistance in understanding the criteria used for project selection, the technical requirements for community participation, and the ongoing needs for rural road maintenance. This educational function can be an important part of a good public relations program which also serves to build political support and to provide a channel for feedback from project beneficiaries.

68. Motivation. Another issue in the institutional design of a rural road improvement program is the motivation of people who are expected to participate in the program. In the case of local workers, this motivation may be assumed to consist of the direct rewards to labor (wages, payments in kind, and support services provided) plus the benefits to the community of having an improved road in the future. Training received may also be perceived as a benefit if it improves the individual's future opportunities for remunerative employment or increases personal productivity in future tasks.

69. In most cases, local workers require prompt, regular, cash payment of wages to remain interested and productive. Wages based on the number of days worked are the easiest to administer but provide the least incentive for high productivity. Task work payment is more flexible, allowing workers to make more productive use of their time by attending to agricultural or household tasks after the daily road work task is completed. Piece work payment results in the highest level of output on road work but requires constant supervision and careful measurement of work completed. This method of payment works most successfully where small labor contractors are involved and piece work payments can be made to a crew as a whole rather than to individual workers.40/

70. Worker motivation is also influenced by non-monetary factors such as the quality of tools used, the relations among members of a work crew, relations between workers and supervisory staff, worker participation in work-related decision making, and observance of local customs and traditions. Where possible, local crew chiefs should be permitted to select their own workers to insure compatibility on the job. Skilled workers and civil service employees, who are more likely to come from outside the local community, may be motivated by the prestige accorded to their positions and the social benefits they afford as well as by their relatively high wage levels. Provision of adequate support services is particularly important for these people. If their skills are in short supply, a certain amount of turnover should be expected as the more capable and experienced individuals move into other agencies or the private sector.

40/ Coukis, op.cit., p. 98.
Higher level staff also need to be motivated to take seriously the issues surrounding rural road improvements. Engineers may perceive this as a low status task with little prospect for career advancement. In the short run, this problem is often circumvented by hiring costly expatriate staff. In the long run, however, it can only be solved by changing the recruitment pattern, the reward system, and/or the career structure of the agency that will be expected to carry out a continuing rural roads program. This may mean hiring only technical staff willing to work and live in rural areas, linking promotion to such service, or reversing the career paths so that more senior persons end up with responsibility on "the periphery" rather than only in "the center." In countries such as Mexico, Colombia and Benin, creation of a separate Feeder Roads Service has permitted the establishment of a parallel career path for civil engineers engaged in rural road work. In Ethiopia, financial incentives have been provided for staff whose work requires them to spend substantial amounts of time living under harsh "bush" conditions.

The motivation of higher level staff derives from values inculcated during their formative years, their professional training, and the organizational culture of their agency. Early value orientations are likely to be elitist, positivist, and particularist. Professional training is likely to reinforce these values, adding to them a pride in the technical complexity of work performed. Only if the organizational culture is significantly changed (through "bureaucratic reorientation") will higher level staff be motivated to participate effectively in the process of rural development.

Salary levels are often a problem in recruiting and retaining competent staff. Due to macro-economic constraints, salaries in the public sector may have to be fixed at levels that are not competitive with the private sector or with those in neighboring countries. However, there is a variety of other mechanisms through which financial incentives can be offered to civil service staff. Chief among these are field per diems and travel allowances, flexible use of vehicles, and other "perks" such as subsidized housing and schooling. However expensive these programs may be, when viewed as a form of staff remuneration they are almost certainly less costly than the alternative of hiring expatriates.

Procurement and Disbursement. Rural roads programs may be severely hampered by cumbersome central disbursement and procurement procedures. These problems seem to be particularly acute when project funding runs through a central planning, financial, or political ministry rather than through a sectoral agency. Such problems make it difficult enough for a line agency to carry out a program through force account. They may be absolutely disastrous in the case of programs designed to be carried out by local contractors or communities.

To the greatest extent possible, goods and services should be locally procured, both to minimize costs and to promote a favorable impact of the project on the local community. Appropriate tools and spare parts for equipment may be locally available or suitable for local manufacture, if adequate quality control can be assured. Many items may only be needed in
small quantities. Responsibility for project-related procurement should be decentralized to the lowest possible level, and off-shelf procurement without competitive bidding should be permitted at the discretion of the project manager, except for major items and within overall budget constraints. Project managers should also have the power to release funds for payment to contractors and casual laborers upon evidence of satisfactory performance. A high degree of autonomy with respect to management of the project cash flow must, of course, be complemented with effective cost accounting and financial control procedures at the project level.

76. Monitoring and Evaluation. The need for monitoring and evaluation of projects designed to contribute to the rural development process is well established. Such projects are often multisectoral in nature, making it difficult to distinguish cause and effect relationships between particular project inputs and outputs. Project monitoring systems will usually address the rate of implementation and the costs incurred for each component, and may help to highlight interdependencies among components through critical path analysis. Thus, frequently rural road improvements are seen as a precondition for delivering other types of project assistance, or as a key factor in promoting project success through improved crop collection and marketing.

77. Project monitoring is part of the control process through which project-specific information is generated and communicated to decision makers. Control mechanisms include output measurements, accounting and audit procedures, calculation of labor productivity and equipment utilization rates, and any additional work undertaken under the heading of monitoring. The design of data collection and processing procedures should be based on the assessed capacity of project management to adjust ongoing activities and approaches in the light of new information, in order to provide feedback to managers in a timely and appropriate form.

78. Monitoring during the implementation stage is particularly important because, as noted earlier, interest representation in Third World countries tends to occur as programs are executed rather than during the planning process. USAID concludes its survey of rural roads evaluations with the recommendation that monitoring be "continuous and performed jointly with the host institution," noting that the agency "must recognize the staff requirements for adequate supervision and site visits." Careful monitoring not only allows problems to be corrected as they occur, but also facilitates meaningful post-project evaluations.

41/ See Dennis J. Casley and Denis A. Lury, Monitoring and Evaluation of Agriculture and Rural Development Projects (Baltimore: Johns Hopkins University Press, 1982) for a comprehensive treatment of this subject.

42/ Smith, Lethem, and Thoolen, op.cit., p. 6.

79. Most of the impact evaluations done on Bank-funded rural road projects have addressed situations where road investments have been combined, either formally or informally, with investments in the agricultural sector. In Upper Volta, road improvements were planned in parallel with complementary investments in cotton and foodcrops production through other projects. In Tunisia, complementary investments in credit and extension services were planned as part of a road project. Because there is no practical way of separating road investments from related agricultural investments, even in these situations, project evaluations must always address the effects of the total investment package.

80. In the past it has been difficult to attribute causality to empirically determined relationships among input and output variables on rural road projects, because the design of evaluation studies has not been sufficiently rigorous to exclude alternative explanations of these effects. Successful monitoring and evaluation of rural roads projects would either have to remain in place over an extended period of time, say ten years or more, or else would have to take into account changes over time in comparable control groups. Both approaches are expensive to implement and governments are often reluctant to allocate adequate resources for such studies. Thus, projects usually fall back on monitoring progress toward efficiency objectives, with some attention to such instrumental objectives as can be observed during the project period.

81. Rural road projects are often designed with explicit or implicit organizational development objectives as well as objectives for physical outputs, instrumental outcomes, and long-range impacts. Monitoring and evaluation of these organizational objectives would focus on a number of non-quantifiable variables such as, for example, the quality of leadership or the relations between the implementing agency and its external environment. Such objectives call for a qualitative approach to project evaluation, one in which beneficiaries as well as project staff should be involved.

82. Qualitative evaluations are potentially more flexible and may be better able to trace the unexpected and idiosyncratic causes of project outcomes. They are particularly important to discover the reasons for success, which should not be assumed to be the product of good project design. Socio-political or organizational factors are not likely to be emphasized if evaluation teams do not include personnel with training or experience in these areas. The differences in organizational objectives between administration of capital-intensive road projects by a public works ministry and the coordination of labor-based construction by a rural roads organization is very substantial. The first is largely concerned with the operations of a single bureaucracy; the second is largely concerned with interorganizational relationships and problems of organizing or adapting to the environment. A qualitative evaluation by appropriately trained field
staff and beneficiaries may provide the best approach to assessing project success or failure with respect to such organizational objectives.  

Structural Alternatives

83. **Subjective vs. Objective Responsibility.** Responsibility is a basic organizational value which may be defined in both objective and subjective terms. The personnel of rural roads organizations are objectively responsible in the sense that they are accountable or answerable to their organizational or political superiors. They are subjectively responsible to the extent that they have internalized a sense of obligation and feel responsible for doing their jobs and for furthering organizational objectives. Both varieties of responsibility are important. Accountability is often lacking when political controls over the bureaucracy are weak, or conversely, to the extent that personnel are appointed on a patronage basis and cannot be removed for failure to perform their duties.

84. Accountability alone cannot assure that performance will be adequate since there can be objective barriers to performance. Administration in developing countries may be a bit like trying to run a machine with key parts missing or without spare parts to back up operation. Public administration specialists now recommend accepting a certain amount of "redundancy" in staffing, support services and facilities. Contrary to appearances, it can be "efficient," if the costs of delay are reckoned, to have alternative channels or capacities for getting a task done when the standard ones fail. In more developed countries, "redundant" capacity is taken for granted and used frequently. However, for such objective conditions to contribute to performance, they must be matched with subjective ones. Even when alternative possibilities exist—for example, to obtain spare parts for equipment maintenance—they will not be explored if staff members do not feel obligated to do more than follow the rules.

85. Subjective responsibility is made more difficult to the extent that organizations are legalistic, the status hierarchy is fixed, communication flows only in one direction, and incentives for innovative behavior are lacking or negative. This is frequently the case in class-stratified organizations in which social and professional status reinforce one another.


This observation supports the use of paraprofessionals rather than engineers in rural roads agencies. Paraprofessionals may have less aversion to work in isolated areas and, identifying with the condition of rural people, may feel more subjectively responsible for project success.

86. **Choice of an Executing Agency.** A decision has to be made as to the type of agency through which the project should be carried out. It can be implemented by a central planning agency, a line agency responsible for road construction, a line agency responsible for agricultural development, a line agency which deals with local affairs, a parastatal enterprise, or a non-governmental organization. Most of these options have been tried in Bank projects. A central planning agency is often the most flexible and receptive to new ideas. However, it cannot provide a strong administrative base for an expanded program, and it may encounter difficulties in trying to spin off a successful program to a line agency that has not been involved in its development.

87. Among line agencies, Public Works Departments usually have the greatest experience with road building and the best capacity to plan and implement a rural road project from a technical point of view. Their success in rural areas, however, will depend on their willingness to deal with rural roads differently from highways, their ability to recruit and retain the right kind of staff for a rural roads program, and their willingness to coordinate with other agencies involved in the rural development process. Agriculture Departments should have a better perspective on the relationship between road improvements and agricultural production, and should understand well the "fit" between road building tasks and other agricultural activities. However, these agencies often lack the engineering expertise required and may not have the organizational mandate needed to undertake an expanded program if the pilot project is successful. Local Government Departments may lack current resources to devote to the project, but they offer the best long-term prospects for a program that will ultimately be based on local participation. They may also be in a better position to deal with problems of land titles and rights-of-way and to impose special taxes to finance maintenance activities.

88. In some countries, donors have decided to alleviate the burden on line agency staff by working directly with local communities. In northern Nigeria, for example, special project unit staff are supposed to be working with municipal authorities in the planning and management of routine road maintenance. A similar approach is being tried in the Amazonian regions of Peru and Brazil. It remains to be seen if this approach can prove effective in the absence of strong donor support. Local authorities will then have to deal with state highway authorities, which may not be fully sympathetic to their problems.

89. **Centralization vs. Decentralization.** Traditionally, transport planning has focused mainly on the development of national and international networks designed to serve major commodity flows. Such systems have been planned and designed by central government agencies with a small, highly competent technical staff, or by expatriate experts, using complex analytic techniques applied to detailed data on a relatively small number of
investment alternatives. For rural road programs involving a large number of potential projects which are not mutually exclusive, comparable levels of detail in data collection and analysis are simply not feasible in the light of the limited total investment resources available for rural roads and comparatively small costs per kilometer of improvement. Thus, central planners often rely on inadequate or inappropriate data in making decisions regarding rural roads. In addition, centralized agencies frequently fail to develop a broad base of skills at the lower levels of the organization. The lack of strong patterns of local control and coordination makes such programs unresponsive to local needs and priorities.

90. A second model that has been tried is the planning and execution of rural road improvements in the context of specific rural or regional development projects. Such projects are usually carried out through sectoral agencies such as agriculture, forestry, or irrigation, or by ministries with broader responsibilities such as planning, rural development, or interior. This approach to planning is more decentralized. It provides a more flexible response to variations in local conditions, and may be more appropriate to the local situation in terms of design standards, unit costs, and use of local resources. On the other hand, it may result in a wide variety of design standards, duplication of services to some areas and total neglect of others. Most such projects have assumed that the central government agency will take over responsibility for maintenance of the improved roads. This is often difficult to accomplish in practice, due to differences in design standards, conflicts over agency “turf”, and resource constraints.

91. Too rapid decentralization of a small but capable organization can undermine its ability to carry out works effectively. In Upper Volta, a Rural Roads Project was designed to strengthen the capacity of the centralized Secondary Roads Maintenance Service (SERS) within the Directorate of Public Works. However, in the middle of the project, SERS operations were decentralized and merged with those of the regional Public Works Directorates. This change led to a loss of efficiency and a lack of coordination among programs sponsored by different donors.48/9

92. Countries that have developed successful rural road programs (e.g., Mexico, Colombia, Tunisia, Benin, Kenya, Korea) seem to have arrived over time at a set of institutional arrangements combining the benefits of both models. Rural road needs are identified locally, and the evaluation of economic priorities takes into account local resource availability and development prospects, including the need for complementary investments in other sectors. Proposals made for different parts of the country are then evaluated using common technical and economic criteria, to assure an effective and equitable distribution of resources and the integration of planned improvements with ongoing maintenance programs. Improvements are then carried out by community labor or small contractors under technical supervision of the Ministry of Public Works. This partially decentralized model for project planning and implementation comes closest to the objective of building self-sustaining institutions at the local level through rural road programs.

New vs. Existing Institutions. An important issue in using rural road projects to build up a nation's institutional capacity is whether to try to strengthen existing institutions or to create new institutions for this purpose. There are advantages and disadvantages to both approaches. Existing institutions carry with them pre-existing definitions of institutional objectives, norms of professional and bureaucratic behavior, and established relationships with other agencies, clients and funding sources. New institutions can be more easily tailored to meet the needs of rural road projects, but must negotiate new relationships with other agencies involved in the rural development process, with the beneficiary communities, and with the planning and budgeting authorities.

Agricultural and rural development projects in the seventies showed a strong tendency to create special project units, often with expatriate technical support, to execute road improvements. Such units sometimes proved to be politically vulnerable because of their identification with specific project activities and their dependence on outside support for success. Despite their often excellent technical performance, they generally failed to show any lasting effect in terms of developing institutional capacity to implement and maintain improved rural roads.

In Malawi, the Lilongwe Land Development Program built substantial lengths of rural roads in the late sixties, with local labor directed by expatriate engineers using an equipment intensive approach. The project failed to establish strong vertical linkages either to the national administration or to local beneficiaries. Opportunities to encourage local contractors were foregone because of the project management's risk-minimizing approach. Design standards adopted for project road construction were lower than those required by the Ministry of Public Works; consequently, the Ministry refused to accept maintenance responsibility for these roads. At the same time local district councils did not have sufficient revenues to discharge this responsibility.49/

In general, Bank experience indicates that it is better to try to modify existing institutions to meet new needs rather than to create new institutions, such as special project units, with attendant stresses and strains on the social system. Existing institutions are not limited to the traditional road-building agency, however. Other sectoral agencies whose resources and management systems are compatible with rural road work, such as irrigation or forestry agencies, may be appropriate focal points for action. Regional development authorities, if they are well established with a secure mandate to coordinate sectoral programs, may also provide an appropriate institutional base, as demonstrated in Burkina and Tunisia. The domestic contracting industry may be capable of undertaking rural road works with or without technical assistance. Private voluntary organizations may also be suitable structures to implement minor road improvement programs. Finally, community structures for making decisions and mobilizing resources may offer models which can be incorporated into the design of rural road programs, particularly for maintenance.

97. **Feeder Road Units.** One institutional arrangement which has been found effective in many cases is to create a separate branch within the traditional road-building agency for the maintenance and improvement of rural roads. Examples include the Directorate of Rural Roads within the Secretariat of Communications and Transport in Mexico; the National Neighborhood Road Fund in the Ministry of Public Works in Colombia; the Feeder Road Service in the Directorate of Roads and Bridges in Benin; the Rural Engineering Organization in the Highway Construction Department in the State of Bihar, India; and the Special Branch of the Ministry of Transport and Communications in Kenya which is responsible for the implementation of the Rural Access Roads Program. This approach provides a channel for allocating funds exclusively to rural road improvements and permits the development of new methods for planning, construction and maintenance. It can help create an *esprit de corps* among the professionals assigned to the program, particularly if it receives strong political support and gets good leadership from the top. Such an organization enjoys the legitimacy and the channels of communication of the larger agency, while at the same time becoming a focal point for introducing institutional change.

98. There are dangers, however, in shifting resources too rapidly away from the main task of the road building agency to a rural roads branch. In evaluating the first Feeder Road project in Senegal, Bank staff concluded that the creation and rapid growth of a Feeder Roads Subdivision within the Road Maintenance Branch of the Ministry of Public Works may have encouraged too great an emphasis on new construction at the expense of the agency's ongoing maintenance responsibilities.\(^{50}\) When economic circumstances failed to justify further investment in rural roads, the country was left with a large labor force that proved difficult to absorb in the activities of the equipment-based Maintenance Branch. The project had not included measures to develop the maintenance capabilities of local communities, so the roads gradually deteriorated for lack of maintenance and much of the value of the initial investment was lost.

99. This example suggests that donor agencies need to be careful about the signals they send to developing country governments regarding the relative importance of rural road construction and maintenance. Balanced development of capabilities in both areas is needed. In the long run, the activities of feeder road units should be focused on helping to develop community capabilities in the areas of rural road construction and maintenance.

100. Bank lending has sponsored the establishment and expansion of feeder road units in the Public Works services of several countries, particularly in sub-Saharan Africa. In their initial years, these units responded to a clearly felt need on the part of local people, government officials, and donor agencies for improved rural roads that would facilitate

the delivery of other types of development assistance in rural areas. However, a problem arises when the salient needs are largely met by new construction, and road transport no longer appears to be the major constraint on increased agricultural production. Should agriculture fail to expand in response to road improvements (as occurred, for example in Senegal), the corresponding levels of road traffic may also fail to materialize, leaving both donors and local officials to wonder if there is any justification for further investment in rural roads.

101. The problem is particularly acute where feeder road programs have been designed exclusively for execution by force account. This creates expectations of more or less permanent employment opportunities financed from central government or external donor resources. It can become politically difficult to discharge a large group of staff, even if the activity for which they were hired no longer appears to be an economically viable use of government funds. Furthermore, feeder road programs which have received substantial external support and technical assistance may acquire a degree of bureaucratic "clout" that tends to siphon resources away from higher priority programs such as main road maintenance.

102. The problem of providing for the continuity of a feeder road unit is largely one of converting its capabilities to the execution of recurrent tasks. In Kenya, for example, the brigades formed for execution of the Rural Access Roads Program are gradually being converted into graveling units. In Benin, crew chiefs hired to work on road improvements are being encouraged to form small enterprises with local workers that can contract for routine road maintenance. In Burundi, specialized units headed by skilled masons have become capable of subcontracting for work on a broader range of tasks.

103. Some feeder road units seem to survive because of a special relationship with a particular donor, often mediated by externally financed technical assistance. Others succeed by building a broad base of donor support, taking advantage of differences between donors to assure a continuous flow of funds from a variety of sources. Still others work closely with agricultural authorities to make sure that rural development funds are allocated for road improvements. These strategies make sense in terms of organizational survival, but they are not always in the best interests of the country when viewed from a macro-economic perspective.

104. Feeder road units can probably only be successfully institutionalized under conditions of expanding economic activity in rural areas. Such activity brings real benefits to rural residents, who then become a strong clientele group supporting the unit. Programs such as Caminos Rurales in Mexico and Caminos Vecinales in Colombia have become major political forces in their respective countries. Feeder road units also gain strength from an increasing political recognition of their professional skills and responsiveness to rural development needs. This does not mean that feeder road programs should build up a large bureaucracy. Rather, they should focus on creating a small, highly skilled cadre of specialists capable of managing and monitoring rural roads improvements carried out by contractors, and providing technical assistance to rural communities in the execution of their road maintenance responsibilities.
Interorganizational Linkages

105. The complex human factors involved in managing a rural roads program place special emphasis on the issue of external linkages. If it is assumed that additional investments in other sectors such as agriculture will be made in order to more fully realize the benefits of road improvements, project planners will want to coordinate closely with planners from other sectors to make sure that these investments are appropriately sized and timed in relation to the planned road improvements. Even if additional investments are not part of a rural roads project justification, it is likely that other agencies active at the local level will want to participate in subproject selection, since they will be among the principal beneficiaries of road improvements. They will also need up-to-date information on the implementation of the road program as an input to their own resource allocation and work programming activities.

106. In addition to building horizontal linkages to other line agencies, a rural roads program needs to create vertical linkages with, on the one hand, local government officials and project beneficiaries, and on the other hand, the central sources of political and financial support. Coordination with local officials and project beneficiaries can be largely achieved through providing for local participation in the planning process. Lines of communication with the central planning, political, and budget authorities should also be established early in the project, and should be kept open through periodic feedback in the form most acceptable to each of these authorities, e.g., cost effectiveness and productivity data for the financial analysts, expressions of popular support for the political authorities, and evidence of socio-economic impact for the planners.

107. Interagency Coordination. Generally, Bank-financed rural road projects in the highway sector have involved little interagency coordination. Where transport linkages to other agencies have been sought, the road-building agency has usually taken the lead to solicit approval for a feeder road program from other sectoral and planning agencies at the national level. This approach has been taken in a number of feeder road projects serving sub-Saharan Africa. There has been little feedback to these agencies and few attempts to provide formal coordination of agricultural and social service delivery in other sectors with the completion of rural road improvements. Where such attempts have been made, coordination is not effected "from the top" so much as at the provincial planning level. In some countries (e.g., Indonesia), road-building agencies have attempted to expand their role to include leadership in all rural development planning activities, but these efforts have met with resistance from other sectoral agencies with vested interests in rural development.

108. In contrast, rural road components in certain types of agricultural development projects are usually designed to serve specific production objectives. This category includes plantation projects, land settlement for planning and executing the rural road component rests primarily with the

51/ An exception is Tunisia, where two Bank-financed projects in the transport sector are providing assistance to the Ministry of Agriculture in improving its extension services and credit programs in the areas of influence of the improved roads.
lead agency or institution. This can result in major delays and/or cost overruns if the implementing agency does not have the capacity to evaluate rural road investments in detail. The component may be executed by a special project unit, by force account within the lead agency, by force account through contract arrangements with the traditional road-building agency, or by contractors. If responsibility for the road component is delegated outside the lead agency, it is usually confirmed through a written agreement or contract.

109. The Johore Land Settlement Project in Malaysia, executed by FELDA, encountered delays in the construction of access roads which had been assigned to the Public Works Department. The problem was resolved by an inter-agency agreement through which the roads were constructed by private contractors under Public Works supervision. In contrast, in the First Mangoro Forestry Project in Madagascar, roads originally planned to be built by contractors were completed at substantially lower costs using agency force account. These examples show that there is no single solution or "right" way to build rural roads, but that the agency which is most appropriate and likely to be most effective in carrying out the job has to be selected taking into account the specific country context. Furthermore, the comparative advantages of different types of organizations may change over time, so project planners should remain flexible in order to achieve in each case the solution which best suits the country's long-term interests.

110. Rural roads executed as part of a multisectoral program for rural development necessarily involve some form of interagency coordination. Frequently an interagency coordinating committee is set up to ensure that this occurs. The effectiveness of such committees seems to be inversely related to the organizational level at which they are established and directly related to their resources in terms of technical staff and control over funding. Interministerial coordinating committees rarely exercise any real control over rural road programs, whereas coordinated planning at the project level may be extremely effective.

111. Some of the more far-reaching and innovative rural development programs of the seventies involved participation by several agencies in planning for service delivery, including roads, in rural areas. Examples of such programs include the PIDER Program in Mexico, the Rural Development Fund in Upper Volta, the Caqueta Land Colonization Project in Colombia, and the Minimum Package Program in Ethiopia. Lateral linkages among the


participating agencies were established through coordinating committees at the national or regional level, although these did not always function effectively. These programs also had strong vertical linkages with the sources of national political power and with beneficiary groups. Such projects often had more difficulty than others in executing planned road programs, due to the lesser degree of direct control exerted by the lead agency. However, they were more likely to be successful in improving the lives of large numbers of beneficiaries from the target population of the rural poor. This success may have been due in part to their greater flexibility in shifting resources between sectors in response to changing perceptions of needs and priorities.

112. Political Commitment. A number of rural road programs have run into problems due to macro-economic forces over which they have little control. Currency devaluations, unanticipated price increases, and war and civil disorders have often caused shortfalls in the resources available for project implementation. In such circumstances, all public programs are forced to compete for the scarce resources available. Strong political support is necessary for a rural roads program to survive in this situation.

113. Important sources of political support may be found in other sectoral agencies, in regional development authorities, and in beneficiary communities. All of these groups stand to benefit from the successful completion of a rural roads program. The key factor, however, is control over resources. Resolution of the policy issues described in paras. 34-37 above, and recurrent budget allocations for rural roads operations and maintenance, provide the ultimate test of a country's political commitment and support for rural road programs.

114. Beneficiary Participation. Central government support is essential to the success of any rural roads program, but it usually does not affect the specific issues of project design and implementation. Beneficiary participation, on the other hand, may have limited impact on the program as a whole, but provides a critical contribution in planning and carrying out specific road projects. It serves to mobilize local resources and also provides a channel for feedback so that project designs can be tailored to local needs and priorities. It creates a sense of commitment to the project on the part of the community, and facilitates future maintenance activities. In order for this process to work effectively, opportunities for beneficiary participation need to be built into the institutional design of a rural roads program from its very beginning.

115. Participation in project activities may occur at any time during the three stages of planning, construction, and maintenance. It includes both direct participation in decision making and in carrying out project-related tasks, and indirect participation through representation or resource mobilization (e.g., provision of land, tools, materials, or money) in support of project activities. Participation may be organized by individuals or families, by local voluntary associations or informal social groups, by local authorities through the political process, or by the private sector through contractors and suppliers. Generally, the executing agency for road improvements must coordinate closely with local authorities and influential people, as well as with other line agencies active at the local level, in order to promote effective community participation in rural roads projects.
IV. LOCAL PARTICIPATION

116. This section explores some of the ways in which participation in rural road project activities by people living in the area served by improved roads can be increased. Current trends show that there is little hope of meeting the mobility needs of rural people in the developing world through conventional administrative and financial approaches in this century. If these needs are to be met, it will be necessary to mobilize additional resources, which can only come from local sources, and to operate rural roads programs in ways that devolve more responsibility to local levels.

117. Realization of the potential benefits to be derived from rural road improvements, and their broad distribution among the intended beneficiaries, depends to a large extent upon positive action by these people. Local participation can help planners determine levels and spatial distribution of mobility needs, identify alignments that will ensure future utilization, and promote the use of methods that will economize on construction costs. Maintenance of an existing road network is generally a more cost-effective investment than new construction; determining the appropriateness of these different alternatives should preferably be done by involving the users.

118. When rehabilitation, upgrading, or new construction are proposed, it is even more important that beneficiaries become involved in the planning process, as well as in the execution of project activities and the evaluation of project results. Local people are familiar with their present and potential transport requirements. They can easily identify tracks and trails where minor improvements would facilitate local flows of people and goods. On existing rural roads, they can help to identify short stretches which could benefit from spot improvements. Local people can also provide information on currently used transport technology, and may offer a forum for testing the acceptability of any innovations planned under the project.

119. Maintenance of rural roads is largely the responsibility of local authorities, and the recurrent costs associated with this work must generally be met from local revenues. It has frequently been suggested that community participation in financing and carrying out road maintenance depends partly on prior participation in project planning and

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construction. Since the benefits achieved from rural roads investments over time are contingent on sustained and proper maintenance, such participation often holds the key to project payoff. For this reason, and for the reasons cited above, local participation in rural roads projects can make foreign and domestic financing of such projects more cost-effective.

The World Bank has financed a number of rural road projects with participatory components. Yet little has been done so far to evaluate the results and learn from this experience. This section reviews Bank experience with local participation in rural roads planning, construction, and maintenance; presents an analytical framework drawn from the literature on local participation; and assesses the potential for applying particular strategies for local participation in specific economic and sociocultural settings.

Definition of Terms

The term "participation" can refer to any of three broad types of participation: (a) participation in decision-making, whether in planning or in operations; (b) participation in implementation, that is, in project construction or in maintenance activities; and (c) participation in project costs and benefits. These three forms of participation are separable analytically and in practice, though they may be inter-related in significant ways, such as the connection between participation in planning and subsequent participation in maintenance activities.

Local participation in decision-making may address project planning issues, including needs assessment, subproject identification, selection, and design; may include involvement in operational decision making over the course of a project; and may extend to community activities after a project is completed, including participation in project evaluation. Such participation requires channels of communication to be set up or strengthened between local people and other people involved in the decision process. To be effective, it usually requires a much greater decentralization of decision-making authority than is found within most implementing agencies. If the intended beneficiaries of a project include the rural poor, participation in decision-making should not be limited to local government officials or organizations representing the rural elite. A number of political, social, and cultural factors may inhibit the free flow of information between the parties involved in the decision process.

The discussion of participation in rural roads projects includes, but should not be restricted to, projects that involve the use of labor-based construction techniques. Where community labor is involved, it applies both to projects where labor is provided free of charge by the community and to projects where local workers are paid for their efforts. Participation in project activities may occur either in equipment-based or in labor-based projects, though its contribution to project cost-effectiveness may be greater in labor-based projects.

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The meaning of the term "local" varies according to the category of road involved. Farm-to-market roads link one or a few villages to a market town or to the improved road network; feeder roads may link several villages and small markets to regional centers or the main road network; and major rural access roads form part of the main road network, linking rural areas to major urban centers. The appropriate local institutions in each case would be those legally responsible for the maintenance of the improved roads and politically responsive to the needs of people living in the areas served by the improved roads. Local structures for participation would include public and private organizations, formal and informal groups, and coordination with local leaders and influentials, as well as with other line agency staff.

Review of Bank Experience

The 1981 review of appraisal reports for a sample of Bank-financed projects with rural road components, described in paras. 8–10 above, showed that some form of local participation in planning was envisaged in about 25% of all highways projects with rural road components, and in only about 15% of the agricultural and rural development projects with rural road components. Some other projects involved institutional structures for planning which could potentially be used to promote local participation; these were mainly projects prepared by regional development authorities and/or reviewed by interagency committees on which the agency responsible for local affairs is represented. Still, more than half of the projects reviewed made no provision whatsoever for local participation in the planning stage.

About one-fourth of the projects reviewed envisaged the use of labor-based methods for rural road construction. Only 10% of the projects placed even partial responsibility for project execution with local authorities; in these cases, local authorities were to mobilize unskilled labor to work under the supervision of technically qualified staff from a line agency, regional development authority, or project management unit. However, about 35% of all projects anticipated the use of local contractors for at least part of project implementation. Such use may or may not be associated with the planned use of labor-based methods.

Over 25% of the projects reviewed expected some form of local participation in future maintenance of the roads to be improved. The majority of the projects expected maintenance to be provided by the agencies responsible for constructing the improved roads; these may or may not imply the use of local labor, either on a force account basis or through the use of local contractors to perform maintenance tasks. Nearly 20% of the sample projects provided no information whatsoever on plans for maintenance of the improved rural roads.

Participation in Planning. Bank projects illustrate a range of options for community participation in the planning of rural road projects. The key variable defining this range is community capacity to mobilize and manage resources. Where local institutions are well-established, a community may retain control over the entire planning process, by raising and allocating revenues, making policy decisions, and using contractors and consultants to deal with specialized design and implementation issues. A lesser degree of participation is achieved when communities take part in
decision making, including subproject selection, but do not have final responsibility for program implementation. Communities may also make important contributions to detailed project design, based on local knowledge of the physical and socio-economic environment. At a minimum, most national rural road programs expect communities to take the initiative in proposing specific roads for improvement.

129. An example of the first type of project is the Brazil Secondary and Feeder Roads Projects, a series of three projects aimed primarily at developing institutional capacity in the national development bank, national and state highway authorities, and municipal administration. Funds are on-lent from the national development bank, upon approval by the national highway authority, to states or municipal consortia, based on submission of satisfactory proposals. The states or municipalities select the roads to be improved, hire consultants to prepare designs and contractors to carry out the improvements, and assume responsibility for contract administration and loan repayment. The state highway authorities may provide technical assistance to communities as needed for proposal preparation.

130. A different type of community control is illustrated by the road improvements undertaken under a number of "rural infrastructure" projects, mainly in East Asia. These programs allocate small amounts of funds directly to communities to undertake works of their own choosing. In such projects, the government usually underwrites only the cost of imported materials and sometimes provides technical advice; communities are expected to contribute labor and local materials and to organize and supervise the works. Many small roads were successfully built by villagers under the Korea Rural Infrastructure Project, for example. These roads were economically viable because they responded to a felt need by farmers; once the roads were improved, production and marketing patterns changed dramatically, and traffic grew rapidly on the improved roads. 59/

131. An example of community participation in decision making is provided by the Kenya Rural Access Roads Project. In this case, proposals for rural road improvements are identified by District Development Councils (DDCs) within general guidelines established by the Ministry of Transport and Communications. The proposals are screened by the District Engineer and subjected to preliminary technical and economic analysis, based upon data provided by the DDCs. Successful roads are then prioritized and programmed for improvement within the constraints imposed by the resources available to each district. The final work program is submitted to the DDCs for approval, providing an opportunity for feedback between agency staff and community representatives.

132. Where communities do not participate in subproject selection, they may nevertheless be given an opportunity to contribute to subproject planning, especially with regard to issues where members of the community possess relevant information the executing agency lacks, or could obtain only at considerable cost. Examples of locally specific information which may enter into design decisions include local variations in soil types, local

drainage and flow patterns, the properties of local construction materials, the skills and availability of local labor, the ecological value and the potential productivity of alternative corridors, and the characteristics of local traffic. While rural communities are not usually capable of making design decisions on their own, local people can often improve project plans if consulted. Such consultation should also help develop the understanding and cooperation necessary for communities to agree to provide resources such as land, labor, and materials, which may be needed to carry out the project.

133. This collaborative approach to project design may be illustrated by the Rural Roads Program in Mexico, which the Bank has been supporting through a series of rural development projects. The implementing agency in Mexico (SCT) has been successful in decentralizing its activities to the state level and in promoting community participation through staff training programs and continuing contacts with communities. Centrally determined design standards are kept to a minimum, and each engineer is encouraged to exercise professional judgment in adapting the norms to the needs of the local terrain and traffic. By spending a lot of time in the community and working closely with community leaders, these well-trained engineers and their paraprofessional staff are able to make more effective use of the agency resources available to them, complemented by community resources.

134. A minimum level of local participation in planning occurs when communities suggest specific roads for inclusion in the program, but do not participate in design decisions. This approach may be illustrated by the rural roads program which is being implemented in the State of Bihar, India, with Bank financing. Road improvement proposals are put forward by Block Development Committees and are screened by the State Planning Department before being passed on to the Rural Engineering Organization (REO), a branch of the State Department of Highway Construction. The roads are then evaluated according to a methodology which requires the collection of additional data at the village or district level. This process permits agency planners to establish priorities among the proposed road works based on economic criteria, which helps to improve program effectiveness in a situation where resources will never be adequate to meet all the perceived needs of communities.

135. Another example of this approach is the Colombia Rural Roads Program. In this program, road proposals are presented by petition from municipal authorities and are prescreened by district officers of the rural roads agency (FNCV). Roads that pass this prescreening are subjected to further technical and economic evaluation by the program's national staff. Additional data are collected through interviews with local officials and farmers. These interviews address, among other things, the availability of local labor for construction. The final technical and economic analysis of roads proposed for Bank financing is performed by FNCV national staff.

136. Sometimes, local participation in planning is limited to the provision of specific information requested by planners on roads that have already been identified or selected. In the Benin Feeder Roads Program, for example, the need for feeder road improvements is identified in the first instance by regional development agencies (CARDERs). These agencies provide the preliminary data on each proposed road and its zone of influence which is
used in the screening process carried out by the Feeder Road Service (SRDR). Only after a road has been programmed for improvement does the Service make direct contact with local authorities, mainly for the purpose of recruiting labor. Because the roads are selected to serve areas of greatest agricultural potential, they are also in the areas where the opportunity cost of labor is highest. The record of community response to requests for labor shows that the road program is perceived as a central government initiative and not as a direct response to felt community needs.

137. The level of feasible local participation in planning for rural roads projects appears generally correlated with a country's ability to call upon a broad base of financial and human resources. Progress in poor countries toward the goal of community responsibility for rural roads, especially maintenance, will be slow, since it is linked to the growth of the resource base. Participatory planning for road construction in Yemen Arab Republic has shown that formal education is a less important requirement than the ability to mobilize local resources (in this case remittances from overseas employment) and direct them into local investment.

138. This experience suggests also that the talents of uneducated people in project management should not be underestimated. The higher the rate of illiteracy in rural areas, the more likely it is that persons of high intelligence and managerial aptitude will still be found there. In situations of greater educational opportunity, there will have been more outmigration of highly capable rural residents. Rural communities may, however, lack the capacity to deal with requirements for financial management and accounting associated with external sources of funding. These are more complicated than managing construction work itself, which draws on skills already learned or which can be learned fairly easily by observation and experience.

139. Participation in Construction. Local participation in construction comes through beneficiary contributions of resources needed to carry out a road improvement project. These may include: (a) land, (b) labor, (c) tools and equipment, (d) construction materials, (e) support services (including work organization and management skills), and/or (f) funds to pay for these resources. The value of non-financial participation will vary depending on the extent to which such contributions are paid for by the project. If fully compensated, such contributions may not be considered as "participation." Even with paid labor, it should be noted that there are usually some supporting activities locally which assist in project performance. Voluntary contributions are often undervalued in project designers' and managers' eyes because they represent a zero financial cost to the project. It is

60/ There can be some debate over what share of the resources contributed from the community should be regarded as "participation." This is analogous to disputes over how large is the "aid" component in a particular donor loan (or grant, if its use is restricted to procurement from the donor). If labor is paid, for example, one may decide that local participation exists to the extent that the rate is below the prevailing market price of labor, or if it is less than the legal minimum wage. The main point is that "participation" is a matter of degree rather than simply of kind.
unrealistic to estimate their value in terms of some hypothetically negligible "opportunity cost," since they represent very real costs to the persons making them, and thus will not be made unless sufficient benefits are anticipated from the project activity.

140. In the past, Bank research has addressed the issues of local participation largely through studying the effects of using unskilled labor for construction. A second theme has been the development of technical, managerial and entrepreneurial skills through promoting the use of local contractors. However, opportunities for local people to participate in the provision of goods or services are largely limited by the attitudes and beliefs of donors and/or central agency staff. They may also be constrained by procurement procedures imposed by donors, national financial authorities, or line agency administrators. These problems have been identified by the Bank mainly in the context of large, labor-based, employment-generating road projects. Financial participation by communities is rare and limited by lack of fiscal resources, lack of administrative skills, and the complex bureaucratic procedures involved in coordinating local funding with entities financed by the central government or external donors.

141. Land. Land is an important resource for every rural community. Rural road improvements imply a partial allocation of this resource to meet mobility needs. Paths, tracks and trails generally exist even in remote areas. Many rural road improvements require the taking of additional land, however, either for widening, for straightening, or for new construction. In addition, access must be provided to the sites of local materials used for construction. Land must be temporarily allocated for labor camps (if needed), site supervision, and equipment storage and maintenance. Finally, road improvements may affect the productivity and use of adjacent lands through drainage and dust effects (which may be either positive or negative) and through increasing land values.

142. In sparsely populated or in well watered areas where land and vegetation are relatively abundant resources, public land acquisition, whether temporary or permanent, rarely presents a problem. There are cases, however, where land or particular sites have a special significance to local people or the land in general is regarded as a limited local resource. In these cases, it can be helpful for planners to explore with the community its perceptions of the potential impacts of the road improvement and to take action to mitigate negative impacts whether possible. This can usually be done readily at the design stage, by making slight alterations in the alignment, road width, or the design or placement of drainage structures, whereas such concerns may be more difficult to accommodate during the course of construction.


Where land is a relatively scarce resource, and/or where individual rights to land are well established, it becomes necessary to negotiate with local people over the specific parcels of land to be acquired. In some cases, individuals or communities will be willing to give up some productive land in exchange for an access improvement, capitalized through an increase in the value of their remaining lands. In other cases this expected value may not be viewed as sufficient compensation for the loss suffered. The planner will need detailed information regarding the local valuation of different types of land and land uses, in order to select a minimum cost alignment both in financial terms and in terms of costs that must be borne by the community.

Land acquisition procedures may also lead to an inequitable distribution of either costs or benefits within a community. Where land taking becomes necessary and financial compensation is planned, timely public notice concerning the new alignment may help to inhibit speculation by "insiders". Where road improvements will result in a significant increase in adjacent land values, it may be necessary to provide explicit protection for the tenure rights of those owning or working the land, or to institute controls on the alienation of land by non-local interests.

Labor. For many people, "local participation" is limited to the use of labor-based methods, employing local labor to make road improvements. Generally it is assumed that such labor will be unskilled and needs to be organized and supervised to be effective. This is certainly true if road improvements are to be made using machine-based methods, which require skilled operators supported by unskilled labor crews working to fairly precise schedules and standards. While it is often also true in the case of labor-based methods, there is more room to explore possible community contributions in the form of local technical skills and local forms of work organization and management.

Conversely, labor-based methods do not always mean local participation. Some countries have established permanent civil service labor-based brigades which are moved en masse from one site to the next. In other countries, specialized road crews operate in the private sector, selling their services through labor brokers to contractors or communities. In these situations the employer, whether a government agency or a private contractor, is usually responsible for providing non-local workers with temporary housing, water and fuel near the work site.

Labor may not always be locally available in the quantities and at the times desired. Checking on this at the planning stage will help in scheduling construction activities to maximize the use of local labor. Such advance consultation is also helpful to local people who can plan ahead with the potential labor demand in view. This may affect, for example, the selection of crops to be planted, the allocation of work responsibilities within the household, or the commitment of community resources to alternative projects.

The temporary nature of local labor participation has several implications. Unless transport to the work site is provided, individual workers can only work on the portion of the project which is within a reasonable walking distance of their residence. Thus, as work progresses,
there will be a constant turnover in the work force. This means that training activities must be nearly continuous. Productivity will be lowered, as the majority of workers at any given time will still be learning how to do their jobs. Work organization and supervision may be made more difficult by the constant flow of new faces and the lack of opportunity to develop personal relationships between supervisors and staff. Furthermore, workers cannot devote their full attention to the job, as they remain responsible for performing agricultural and household tasks necessary for subsistence.

149. Many rural communities have traditional methods of construction, using local materials, which can be used to make road improvements. Their skills in using these work methods may be superior to those of the supervising agency or contractor. In addition, they will have developed an appropriate and familiar form of work organization to carry out these tasks. If projects are designed to maximize use of such methods, particularly those developed in connection with irrigation and drainage works (which are similar in concept to road works), they may be able to achieve a high standard of performance at considerably lower costs than would be the case with imported methods, materials, and supervision.

150. Even if a local technology is not directly transferable, the forms of local organization for collective work can be useful in planning and carrying out road projects. Farmer cooperatives, water user groups, political organizations, youth groups, etc., may provide vehicles for organizing community efforts. Informal local organizations, such as family or kinship groupings, will have their own authority structure in place and may have a great capacity to mobilize labor. Private sector mechanisms for mobilizing labor, such as small contractors or building societies, may also be used. These organizations provide more than just labor; they provide an acceptable authority structure, a time-tested process for decision making, and a potential channel for conflict resolution. They can also provide ways to incorporate influentials of various types, thus generating greater community commitment to the project.

151. For example, road building in Nepal with Chinese assistance utilized local labor by setting a low minimum size of contract (compared to other donors) and giving out contracts on a piecework basis. Community groups could accept these contracts and carry them out under their own leadership, involving any and all community members to get the work done. Work norms were established by Chinese engineers based on experience in mountain road construction in their own country. If the task proved greater than expected, because of bedrock or other problems, the value of the contract would be increased by mutual agreement; if it proved easier, the community groups got the agreed compensation for less work than anticipated, which made the work more attractive and their enthusiasm greater. Chinese supervision was fairly close (one supervisor for every two kilometers, compared with one for every seven kilometers on other donor-assisted road projects), with the result that some on-the-job training was combined with the supervision. Payment was made only with a number of witnesses present to testify to the amount handed over to the group leader, to minimize diversion of funds away from those who did the work. Morale was understandably higher on the Chinese-assisted project than in the mass labor camps supported by other donors, where thousands of laborers were brought in from far away without family or amenities, for work on large-scale contracts.
The World Bank has been involved in a number of labor-based road construction projects over the last ten years. It has concluded that labor-based construction is both technically feasible and cost effective for certain types of infrastructure works, including rural roads, under suitable physical and socioeconomic conditions. Because of their beneficial secondary effects on rural development, the Bank seeks to promote the institutionalization of labor-based methods, wherever these are appropriate. Labor-based programs of road construction usually imply the use of local unskilled labor hired on a temporary basis. A labor-based road maintenance program generates fewer but more permanent jobs for local people and may contribute even more than construction to the growth of the rural economy.

The use of local labor to carry out road projects obviates the need for site camps and minimizes the employer's responsibility for the welfare of workers and their families. It also avoids the social and economic problems that may arise when a temporary work force is introduced into a rural community. In Lesotho, for example, it was found that large labor camps located next to small villages created some problems. Food prices became inflated and local water supplies were insufficient to meet rapidly expanding needs. In Burundi, where the Bank is providing technical assistance for the labor-based rehabilitation of a secondary road, non-local employees have not been accepted well by the community. The project has found it necessary to provide lodging and transportation for these non-local workers.

In Honduras, a Labor-Based Roads Construction Department (DLRC) has been set up within the Directorate General of Roads, following a Bank-financed pilot project. Labor is recruited through contacts with community leaders, who prepare lists of interested and available workers. DLRC provides assistance to workers in completing the paperwork associated with government employment. Local officials may be hired as supervisory staff; use of this procedure has had a positive effect on worker productivity. The rapid expansion of the program has generated career opportunities for good workers, which has proved to be a powerful incentive for performance.

The Malawi District Roads Improvement Program is based upon a successful labor-based pilot project carried out with Bank financing. Supervisors and skilled workers come from the staff of the Ministry of Works and Supply (MOWS), while unskilled labor is locally recruited. The work program is planned to be compatible with seasonal constraints on labor supply. High productivity has been achieved in all aspects of the project except gravelling, due to this operation's greater dependence on the use of equipment. It has been noted that labor-based activities can be carried on during the rainy season when equipment-based brigades would be unable to operate.

A government's decision to introduce the use of labor-based construction methods is usually based on socio-political considerations. For

example, the Rural Access Roads Program (RAR) in Kenya was launched mainly because the government was concerned with growing unemployment. In Lesotho the Labor Construction Unit was established in order to have an organizational structure capable of employing a large number of men if South Africa were to suddenly repatriate Lesotho miners. In the case of Mexico, the economic and political problems of the early 1970s brought about a need to employ the rural poor by increasing the use of labor in the construction of rural roads.

157. However, in countries where labor-based construction has been introduced, the essential ingredient for success has been a clear and consistent commitment by the government towards the application of labor-based technology as a cost-effective construction method. This commitment translates into the provision of adequate funds, appropriate organizational structures, and career opportunities for staff employed in labor-based programs. With such support, the use of local labor in road construction and maintenance can make a significant contribution to the growth of the rural economy.

158. **Tools and equipment.** Sometimes project planners expect to make use of locally available tools and equipment for road work, particularly if local labor is to be employed. However, agricultural implements often prove inadequate for some tasks of road work, particularly excavation. Appropriate local tools can usually be found for brush cutting and clearing, since this is a common agricultural task. Local means of transport can also be used to bring construction materials to the site and to carry out earthwork operations of limited magnitude. In more advanced agricultural economies, farmers may possess power tools and agricultural equipment (e.g., tractors) which can be used in road building activities.

159. In making a choice of the appropriate technology for road construction, planners and communities need to consider the quality and availability of local tools and equipment, including any opportunity costs associated with alternative uses of these implements during the planned construction period. If tools are to be provided by the road building agency or contractor to local laborers, the community may be asked to assume collective responsibility for their security. Under some conditions, the agency or contractor will need to bring in equipment (trucks, rollers, etc.) and will need to provide for its operation and maintenance through the use of resources external to the community. In other situations, however, much of the needed equipment, fuel, parts, skilled operators, and repair and maintenance services can be obtained through the local market.

160. In Honduras, for example, all tools and equipment used in the rural roads program are imported. The size of the program is not sufficient to justify major investments by local manufacturers or suppliers. Most tool and equipment maintenance is performed by DLRC. However, on remote sites, tool maintenance and repair are contracted to local blacksmiths. Short distance haulage is also provided by local means of transport (oxcarts) hired from farmers.
161. The Kenya Rural Access Roads program involved considerable research to develop appropriate tools for local manufacture. The Government wished to use the apparently substantial market created by the program to support the development of a local tool manufacturing industry. Standard specifications were developed for tools to be used in road work, and successful prototypes were produced by local manufacturers. However, in the end the quantities of tools required for the Rural Access Road Program were not sufficient to support the investments which would be required for large scale local manufacture, particularly since the government failed to change its centralized procurement policies. Regulations have recently been changed to allow local engineers greater freedom to procure replacement tools and parts "off the shelf" from local suppliers.

162. **Construction materials.** Because the cost of materials transport represents a large share of road construction costs, planners usually pay considerable attention to the location of sources of suitable materials as close as possible to the planned alignment. Locally available materials may include rock, stones, gravel, suitable soils, sand, water and wood. Communities can provide much information on the location and availability of such materials at the planning stage, and can often make substantial contributions to project costs in the form of donated materials at the construction stage.

163. If the intended construction materials are the same as those used in other types of local construction (irrigation works, buildings, etc.), there will be local mechanisms in place for their supply in usable form. For example, rock quarries or lumber mills may be in operation. Where a traditional construction technology is used, the necessary skills can also often be found locally: rock crushing and sorting, brick manufacture, carpentry, masonry, etc. Again, good communication at the planning stage should result in an effective use of these resources in construction.

164. **Support services.** Even when a road improvement is constructed entirely by external forces, there is a need for support services which can often be provided more efficiently by the local community than by an agency or contractor. Such services may include the supply of food, fuel, and water to road workers and their families; provision of fuel, spare parts, and maintenance services for equipment; labor camp and worksite security services; labor and materials transport; and labor recruitment and supervision. Rural road projects can stimulate the growth of the local economy by expanding the market for local goods and services as well as by helping to remove bottlenecks in supply. Procurement regulations may need to be made more flexible and procurement authority may need to be decentralized in order for this type of benefit to local communities to be realized.

165. **Financial contributions.** In most developing countries, rural communities have limited powers to raise revenues and a limited resource base with which to work. In addition, local fiscal administration is usually very weak and local taxes are often collected in an inconsistent and inequitable way. Communities may receive funds from higher levels of government.  

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64/ Some interesting work in this area is being done under USAID's Local Revenue Administration Project being carried out by staff of Syracuse University in Peru, Upper Volta, and Bangladesh. A series of country-specific reports and working papers reporting this research is available from the Publications Officer, Syracuse University.
through revenue sharing arrangements, but such funds are not always earmarked for specific expenditure purposes. Although rural communities frequently have legal responsibility for rural road maintenance, their fiscal resources are generally inadequate to meet this need. The communities that are most effective in planning and implementing rural road programs are likely to be those that exercise the greatest control over resources, including responsibility for raising the necessary revenues. As communities contribute a lesser share of total resources, their control over the decision-making process declines and they are less able to be effective.

166. In some cases, cash contributions have been mobilized from the private sector through voluntary donations from influential members of the community who stand to reap benefits from road improvements. Roads built by the Local Development Associations in remote areas of Yemen Arab Republic offer a good example of this process. The success of such efforts depends on the presence of excess cash in the community (e.g., from migrant remittances) and on the lack of alternative uses (e.g., in some cultures accumulated capital should not be loaned out at interest). Participation in community fund raising ventures may be a way for individuals to gain prestige. It may also provide a way for wealthier individuals to escape the more onerous responsibility of direct participation in the road building labor force.

167. However, local revenue administration may also provide opportunities for local elites to increase their power at the expense of poorer segments of the community. In Bangladesh, for example, it has been found that landowners (who are the prime beneficiaries of road improvements) often manage to avoid paying local taxes which are earmarked, in principle, for rural road maintenance. At the same time, these elites make large contributions to local funds for new construction, which enables them to exercise greater control over project selection. Meanwhile, community contributions in the form of nominally voluntary labor are provided mainly by the landless poor. Efforts to capture some of the benefits of construction for the landless laborers (e.g., by allowing them to plant crops on the newly formed embankments) have met with substantial resistance from landowners, backed up by local authorities.

168. Additional public revenues may be raised by expanding the types of taxes which a rural community is authorized to collect and by providing the type of development stimulus that will increase the value of the tax base. However, these solutions take time to implement and may therefore be more appropriate to funding the recurrent costs of maintenance than to covering the capital costs of construction projects. In the short run, communities can be authorized to borrow from a development bank in order to finance a project that is expected to generate sufficient revenues to pay back the loan.


in the long term. This is the approach which has been adopted, for example, in the Brazil Secondary and Feeder Roads Projects. Local participation in project funding places most of the decision making power and supervisory responsibility in the hands of the community. It requires a relatively high level of financial and technical sophistication at the local level in order to be successfully implemented.

169. Participation in Maintenance. The maintenance of infrastructure investments is an issue of very general concern throughout the developing world. This problem is often particularly acute with respect to investments made in rural roads. Many projects simply assume that the maintenance of improved roads will be carried out by communities. However, there are few examples of successful implementation of this strategy. Other projects assume that maintenance will be provided by the agency executing road improvements. This may lead to the development of a large permanent staff in several agencies which will be ineffective without substantial material and logistic support. A third alternative is to expand the network for which the Public Works Departments (PWDs) are responsible. This alternative also calls for the allocation of substantial additional resources from public revenues, and may pose a problem if roads are not constructed to standards suitable for maintenance by PWD forces and equipment.

170. If communities have contributed less to rural roads maintenance in the past than is hoped for now, this may be due largely to the way roads planning and construction have been carried out. Too often administrators have approached rural people with the assumption that they are not competent or responsible. Such expectations have a way of becoming self-fulfilling. If competence and responsibility are not looked for and invited, they are unlikely to be seen. In a World Bank paper on village water supply systems, it is stated that systems are better maintained with a higher level of financial support from the communities when there has been participation in decisions about installing the systems and in their installation itself. If rural roads present analogous challenges and opportunities for design, construction and maintenance with local participation.

171. There are a number of reasons why community participation in planning and construction are likely to contribute to greater local participation in maintenance. First, local participation encourages the belief that the road "belongs" to the community. Secondly, participation at the planning stage helps ensure the best "fit" between the road's design characteristics and community needs. Participation at the construction stage enables the transfer of necessary technical and supervisory skills to the community for use in maintenance. Finally, participation in either or both of these stages gives the community a "stake" in subsequent project success.

172. Current Bank efforts focus on the development of community capabilities to plan and supervise road maintenance, using local contractors to execute specific tasks, and drawing upon central government funds through

revenue sharing arrangements. Attempts to transform local organizations established for the purpose of rural road construction into organizations that will assume responsibility for ongoing maintenance have been largely unsuccessful. The organizations may persist, but their sense of common purpose and their creative energies are likely to be turned toward new, more visible infrastructure projects. It seems that in order for communities to assume real responsibility for maintenance (as opposed, perhaps, to new construction), there needs to be a more formal, more fully embedded, more legitimate local power structure with a permanent resource base which can be held accountable for its performance on a continuing basis.

173. The activities undertaken for rural road maintenance are not drastically different from those used in construction. The specific tasks required and the frequency with which they must be performed depend largely on terrain and climate conditions, traffic levels, and road surface type. Routine maintenance, which must be carried out at regular intervals during the year, generally involves operations which can be done using a labor-based approach. Periodic maintenance, mainly reshaping and resurfacing, more often requires use of mechanical equipment. Thus a common division of labor is for rural communities to assume responsibility for routine maintenance, while the local Public Works Department or private contractors carry out periodic maintenance activities.

174. Local participation in rural road maintenance requires, first of all, acceptance of the task as a community responsibility. This concept needs to be introduced to the community early in the planning stage, with a clear understanding of the tasks to be performed and of the consequences to the community if these tasks are not performed correctly and at the appropriate time. The community may need to be convinced that road maintenance is essential to the success of its development efforts, and that no other agency is willing or able to assume this responsibility. In some countries, a written agreement between duly constituted local authorities and the central government may be helpful in securing future cooperation.

175. Many things can be done at the construction stage to facilitate later assumption of maintenance responsibility by communities. If local labor is used, on-the-job training can be provided by pointing out the frequency with which certain operations should be repeated and the standards which should be achieved. Potential local contractors can also be identified and their capabilities developed through credit, training, and supervised subcontracts. Tools and light equipment can be provided to communities and training provided in their use, maintenance and repair. Surplus quantities of surfacing materials can be prepared and stored by the side of the road for use in future maintenance. It is important that some person or group assume formal responsibility for tools and materials delivered to the community, since if these are lost or stolen, they may become a source of conflict within the community that would weaken its maintenance capacity.

176. Maintenance differs from construction in that it is a continuous and repetitive activity rather than a one-time effort, and its benefits are less visible to the community than are those of new construction. It offers a steady but small source of employment, which may depend very much on the availability of funds. Successful local participation in road maintenance
thus requires a strong and lasting commitment at the local level backed by consistent support from the higher levels of government in the form of funds, technical assistance, and periodic equipment-based interventions.

177. Some countries (e.g., Kenya, Burundi, Dominican Republic) have adopted one or another form of the "lengthman" system, where individuals, under contract, assume responsibility for the routine maintenance of short stretches of road adjacent to their agricultural lands. These individuals are often former road construction workers. They are provided with basic tools and transport and are paid on a part-time or flat rate basis. This system appears to work well because people in the community can identify those individuals who are responsible for particular parts of the road. However, unless the community has also participated in selecting these individuals, it may be difficult for them to bring pressure to bear for improved performance where needed.

178. Other possible forms of local participation include the execution of routine and/or periodic maintenance by petty contractors who can mobilize a labor force and meet the logistic support requirements; community-based group efforts of a self-help nature; and formation of community consortia to support the development of a force account capability or a parastatal enterprise at the local level. All of these approaches require, to a greater or lesser degree, the development of managerial and technical capabilities within the community. Public Works inspectors can provide limited technical assistance, but must make every effort to transfer their administrative and supervisory skills to those community officials who are legally responsible for seeing that road maintenance is properly carried out.

179. The Bank-financed Rural Roads Project in Liberia initially expected that routine maintenance of improved roads would be carried out by local communities under the Ministry of Local Government. However, a post-appraisal mission identified a number of factors constraining community willingness and ability to participate in road maintenance. These included low population density, increasing labor demands in agriculture, lack of cash to cover the community's share of labor costs, coordination problems between the Ministries involved, negative attitudes toward road work as a familiar form of involuntary servitude, and awareness that the long-term benefits of road improvements would probably be appropriated by outsiders. The mission proposed several measures to make the road maintenance program more acceptable, but local authorities (who were not consulted in the planning phase) successfully resisted the implementation of the program. Since the basis for a dialogue had never been established, there was no chance of using the project to improve the managerial and technical capabilities of community leaders.

180. In Kenya, the Rural Access Roads Program initially assumed that the Ministry of Works would provide maintenance for the improved roads. Maintenance operations were ineffective because of low equipment availability and the need to support a large permanent work force living in camps. The

alternative of the lengthman system for routine maintenance was implemented on a trial basis by one unit. Its success led to the eventual adoption of this system for the entire rural road network. Supervision, payment and tools are provided by the provincial offices of the Ministry of Works (now MOTC). Current efforts now focus on the development of the capacity of small contractors to undertake periodic maintenance activities.

181. A recently designed food crop project for Madagascar included support to rural communities to develop their capacity for rural road maintenance. During project preparation, local authorities were invited to give assurances of their collaboration in future road maintenance in exchange for road improvements to be financed under the projects. Design standards and construction methods were selected so that the improved roads would be maintainable by labor-based methods. Additional surfacing materials would be stockpiled during construction. The project was planned to include technical assistance and training for local officials in maintenance management, as well as for local contractors, and the development of communication strategies and materials to make local participation more effective.

182. Under the Fourth Highway Project in the Central African Republic, a pilot scheme to carry out routine maintenance by contract is being implemented. A feasibility study was first prepared by consultants, who identified potential local contractors and their training needs. In a second phase, long-term technical assistance will train workers, evaluate and select contractors, and assist in supervision, management and monitoring of the pilot project. It is expected that useful diagnostic and training tools will be developed as a result of this project.

183. Some rural development projects in Peru and Brazil now include measures aimed at the development of community capabilities in road maintenance. Communal decision making and communal labor on public works projects form part of the cultural heritage of rural communities in Peru. It is customary for them to prepare written petitions for government assistance, specifying the contributions which will be made by the community (land, labor, materials, funds) as well as the amount of assistance requested from the central government (technical assistance, tools, explosives, etc.). Cash contributions are solicited from former residents who have moved to urban centers, and contributions are also sought from local groups such as sport clubs, district councils, religious and educational institutions (all of which, it may be noted, represent direct beneficiaries of the project). Other activities to raise funds include contributions from individual households, fiestas, lotteries, and communal gardens.69/ A written agreement records exactly what will be contributed by each community as well as by the executing agency, including a schedule of works.

184. However, local organization for road maintenance is weak in communities on the once isolated eastern slopes of the Andes. This area is now the focus of special development efforts, including two Bank-financed rural development projects. Under these projects, road improvements are being followed up by efforts to strengthen community capabilities in road maintenance. Each community may nominate representatives for training under the project. Tools and light equipment will be provided to district staff. Maintenance materials will be stockpiled during construction. The maintenance support unit (heavy equipment and workshops) established under the project will eventually be turned over to an appropriate level of local administration, expected to be an authority created by a consortium of the participating municipalities.

185. A somewhat similar system is being implemented in the context of several rural development projects in Brazil. However, municipalities are reluctant to assume maintenance obligations unless they have a clear idea of what works will be required, the costs involved, and how they can be carried out with their own forces. State highway departments, on the other hand, are not very interested in providing training or supervision of maintenance on what they regard as low standard roads. Technical assistance may be required to bridge the gap by providing training to municipal workers and supervising their initial efforts.

186. In Bolivia, highway maintenance is provided through a system in which each adult male must contribute either three days' labor or a corresponding cash payment. Some communities may supply additional labor on a voluntary basis or in exchange for additional equipment hours provided by the Public Works Department. The Highway Maintenance Project for Bolivia was designed to address a situation where, with an increase in the amount of the cash contribution required, it was expected that the labor supply for road maintenance would substantially increase. Local labor is mostly unskilled and untrained, and farm tools are used that frequently prove inadequate for road work. The project provides technical assistance to district engineers for more efficient utilization of the labor resource. It also provides for an adequate supply of hand tools and light equipment, and includes investigation of intermediate technology methods for road maintenance.

The Participation Process

187. Concern with "participation" in development planning goes back to the community development programs of the early sixties. One of the problems with these "participatory" programs was the ease with which they could be turned to serve the interests of rural elites. Thus they often helped to widen the gap between rich and poor in rural areas, rather than enabling the rural poor to take greater control of their own destinies. In recent years, considerable attention has been paid to the development of participatory strategies that take into account the structure of rural societies and the
bureaucratic imperatives of development agencies.\textsuperscript{70} Some of the most interesting work in this area sees rural development as a learning process in which rural residents and agency staff interact to produce adaptive strategies for particular physical and socioeconomic environments.\textsuperscript{71}

188. In the earlier stages of project planning, participation may involve local people in generating or adapting new ideas, defining project goals, specifying project components, and experimenting with innovations.\textsuperscript{72} Local participation in project identification is necessary to ensure that projects serve the needs and priorities perceived as important by local people, so that projects will be viewed as relevant and appropriate in the socio-cultural context. Participation in operational planning decisions may also be important in determining the amount of control that rural people can exercise over a project. Such decisions include those made about the continuation of a project, the need for expansion or change to meet new needs, and decisions on implementation and management arrangements.\textsuperscript{73}

189. Participation in planning and decision-making is closely related to project execution, since successful implementation depends on an appropriate project design. People are more motivated to participate in implementation if they have been involved in identifying the problem and in designing the project.\textsuperscript{74} Participation in this stage of the development project helps mobilize local resources, generates information required for and relevant to


the project, and involves the community in bringing about change.\textsuperscript{75}/ Depending on the nature and requirements of the project, participation in implementation may involve resource commitment, administration and/or coordination, and enlistment in program activities.\textsuperscript{76}/

190. One of the important potential contributions of local participation is in managing project activities at the local level. Government agencies frequently have weak management capabilities at their lower levels, which can be usefully supplemented through the mobilization of management skills in the community. Of course, local management capacities are likely to be found among the more educated and influential members of the community. This opens the possibility that relying on local management could contribute to some inequities in implementation. However, such undesirable outcomes are less likely to occur in rural roads projects than with other kinds of development activities.\textsuperscript{77}/

191. Participation in both decision-making and implementation is conditioned by the extent to which local people expect to be participating in project costs and benefits. People will be more inclined to expend time and energy on a project if they believe that the benefits of participation will be tangible, reasonably certain (i.e., when the risk factor is not too high), immediate (i.e., when the pay-off period is relatively quick), and evenly distributed.\textsuperscript{78}/ Therefore, analysis of the potential for beneficiary participation in a project should include not just the amount of benefits but also the distribution and quality of benefits. Improved understanding of the true distribution of project costs and benefits can be obtained by involving local people in project monitoring and evaluation activities.\textsuperscript{79}/

192. Several themes emerge in the literature on local participation, which provide an analytic framework applicable to the case of rural road


\textsuperscript{76}/ Cohen and Uphoff, op. cit., p. 40.


\textsuperscript{78}/ Cohen and Uphoff, op. cit., pp. 127-133.

\textsuperscript{79}/ Cohen and Uphoff, Ibid., p. 55.
These themes have to do with initiatives, incentives, organizational structures, channels of communication, duration and scope, and roles played by people in the participatory process. Each of these themes has relevance for project decision-making, implementation, and impact analysis.

193. Initiative: top-down or bottom-up? Top-down strategies for local participation are those that originate from donors, central government, local government or project staff, without consulting rural people, reflecting the perception and priorities of bureaucrats or technicians rather than those of local communities. If there is any local participation in such cases it is more likely to be prompted, imposed or "mobilized" by officials in these agencies. The bottom-up approach, on the other hand, seeks to elicit or respond to ideas originating from rural people themselves, generating activities that better reflect local needs and capabilities. In such cases, participation is voluntary or "autonomous" and involves local people acting in recognition of their own interests. It is useful to think of these approaches as end points on a continuum; often the initiative for participation may be shared. Further, the degree to which a project's participation strategy is top-down or bottom-up may change over time.

194. Positive as well as negative aspects are associated with each approach. Top-down approaches theoretically have the advantages of access to greater resources, more detailed technical planning, more formal financial accountability, training provided for local leaders, and the initiation of contacts with the community. At the same time, however, there are problems associated with such a strategy: plans may be too rigid and/or inappropriate in the local context; local skills, knowledge and perceptions of problems may not be utilized; funds may be misallocated, political patronage may favor a few, and participation may be restricted to an elite rather than involving all members of the community.

195. The bottom-up strategy, on the other hand, attempts to utilize and increase the competence, experience and management skills of beneficiaries. Moreover, an emphasis on self-help often serves to relieve economic and administrative constraints on government agencies. Also, bottom-up approaches may offer a political advantage since they give people the satisfaction of exerting greater control over their own lives. Yet, the bottom-up strategy has been criticized by those who argue that the problems of control and coordination are inordinate, that local people do not command adequate resources and administrative skills, and that this leads to problems

80/ Cohen and Uphoff, Ibid., pp. 85-88.
82/ Johnston and Clark, op. cit.
83/ Chambers, op. cit., pp. 88-100.
of implementation, duplication, and unsystematic development. Further,
although bottom-up approaches may start off with the local inhabitants'
interests and efforts in mind, they can, over the course of time, suffer from
authoritarianism and come to be dominated by an elite group. 84/

196. Inducement: voluntary or coerced? An understanding of the role of
inducements, or incentives, is important for successful design of a
participation strategy. The distinction between initiative and inducement
may be unclear, since top-down approaches often involve some amount of
coerced participation while a bottom-up strategy should be based on more
voluntary participation. However, this is not always the case: initiatives
from the people may in fact involve coercion, while initiatives from the top
may depend on voluntary involvement. Coerced participation is not usually
very effective or lasting. However, voluntary participation may to some
extent be encouraged through the use of "rewards" such as free food or
fertilizer or through less tangible incentives. When people are given a
choice in the matter, they are likely to be most responsive to a rewarded
participation strategy. 85/

197. Structure: individual or collective, formal or informal?
Participation in the various stages of a project may take place on an
individual basis or on a group basis. For example, in order to obtain
project benefits, a person may be required to be a member of a group such as
a cooperative, an association, or a formal organization. If participation
occurs on a group basis, the extent of "organizational complexity" is an
important factor in analyzing the process of participation. Structural
complexity may in some cases hinder participation, especially if the
organization is not relevant in the context of the local community. Often,
rules, standards, and procedures that are typical of organizational
structures in developed countries are exported to developing ones on the
assumption that what works in the former will be suitable for the latter.
Although formal organizations offer certain advantages, they are likely to be
unfamiliar to the rural people they are meant to serve, and may over time
come to limit local participation by establishing rules and standards.
Informal organizations that can be flexible and cater to the needs of the
local people are more likely to elicit participation and to be seen as
appropriate in the socio-cultural context of the local community. 86/

198. Channels: direct or indirect? The channels through which
participation takes place may be directly accessible to individuals (taking
part in meetings, construction activities, etc.) or they may be indirect, as

84/ John D. Montgomery, "The Populist Front in Rural Development: Or, Should
We Eliminate the Bureaucrats and Get On with the Job?" Public
Administration Review, no. 1, Jan/Feb 1979, 58-65.

85/ Cohen and Uphoff, op. cit., pp. 90-94. The distinction between
voluntary, rewarded, and coerced participation is drawn to parallel the
typology of compliance relations (normative, remunerative, and coercive)
identified by Amitai Etzioni in A Comparative Analysis of Complex

86/ Cohen and Uphoff, op. cit., p. 96.
when an individual is represented by another person (or through other indirect means such as cash contributions). Indirect participation is more likely to occur with respect to decision-making, especially when the area and population covered are large. Then it makes sense for individuals to participate through representatives of their household or interest group. Direct participation is relatively more common with implementation and impacts, though these can be indirect as well.\(^\text{87}\)

199. Direct participation in planning and implementation is often assumed to be better since it involves people in project activities, thereby developing their skills and experience and fostering cooperation. However, this type of participation can also increase the degree of complexity and conflict in a project. Direct participation by many people can result in competing strategies, conflicts of interest along the lines of income, ethnicity, religion, or caste, and even open conflict between groups that may threaten project success. Large projects that reach a diverse population may be more effectively managed through indirect participation, while small projects that have a more or less homogeneous target population may accomplish more by adopting direct forms of participation. In many cases, a combination of the two approaches will be most useful.

200. \textit{Duration and Scope: permanent or intermittent?} The duration and scope of local participation depends to a large extent on project design. Some projects may call for participation that occurs only once and some may call for local participation on a regular and continuous basis. Needs may change over the course of a project, so that what started out as permanent participation may become intermittent over time and vice versa. The range of activities that are undertaken by participants is also determined by the scope of the project itself. It is useful to determine whether project procedures make participation in one activity a precondition for participation in other activities.\(^\text{88}\)

201. \textit{Who Participates?} Participants may be distinguished on the basis of whether they are "insiders" or "outsiders". "Insiders" are local residents, including local leaders. Local residents, often loosely described as the "poor majority", do not constitute a homogeneous category. People in this category may be differentiated on the basis of personal characteristics such as age, sex, education, occupation and income. Since this category has been designated as the major target of local participation efforts, planners should focus on the extent to which these intended participants are likely to be the actual participants, and the extent to which they will participate in the different phases of project activity. Often, by virtue of their economic and social status, members of the poor majority do not have the resources necessary for participation in project activities and do not have the power and influence needed to participate effectively in project decision-making. The planning process should take the specific characteristics of this target group into account and may need to make special provisions to insure that their views are heard.

\(^{87}\) Cohen and Uphoff, \textit{ibid.}, p. 100.

\(^{88}\) Cohen and Uphoff, \textit{ibid.}, p. 104.
202. Three key variables which have been shown to have a significant influence on patterns of participation in rural development projects are age, sex, and land tenure status. For example, young persons are more likely to participate in project implementation, while older people have more influence in project decision-making. Life cycle events such as having young children or leaving the rural community for work or study in a larger town also affect the propensity of different age groups to participate in project activities. In some traditional societies, road maintenance may be one of the responsibilities assigned to a particular age set. In others, such activities may be seen as inappropriate for particular age classes.

203. The participation of women in project decision-making, implementation, and impacts is often limited to comparison to that of men. Their role in the family unit, their responsibilities in the areas of agricultural production and marketing, and the constraints imposed by their socio-cultural environment often preclude them from participating effectively. They are regarded as reproducers rather than producers; their access to technology, credit and local organizations is limited; and they are less likely to be employed in project activities. All of this is compounded by the fact that planning, mostly carried out by male policy makers, tends to exclude women from development activities and reinforces prevailing stereotypes.\textsuperscript{89} The analysis of participation by gender is complicated by the interactions between gender and other factors such as social class, ethnicity, and religion. Women also have to contend with traditional views of male authority which are often built into all phases of project activity.

204. Participation may be influenced as well by economic factors such as land tenure arrangements, types of production, and existing infrastructure arrangements.\textsuperscript{90} For example, the participation of the rural poor, the landless and near-landless, in decision-making and implementation is especially difficult to achieve since this group is usually powerless, subordinated to landlords, local patrons and political bosses, and more or less isolated from local organizations. Moreover, if the local elite controls access to project benefits, such benefits may never reach the rural poor. Participation of the landless in project benefits may have to be actively promoted by people in more important positions outside the local community.

205. Local leaders play an important role in the participation process. This category includes several different kinds of leaders, ranging from informal leaders - those with ties to important families, large landowners, clan and religious leaders - to more formal leaders such as heads of trade associations and cooperatives, village headmen, and local office-holders.


\textsuperscript{90} Morss, op. cit., p. 338.
Local leaders can provide valuable skills and organizing capabilities and they may act as links between the community and the national government. Moreover, dynamic and charismatic leaders can provide effective mechanisms for mobilizing people. On the other hand, local leaders may sometimes be part of an elite that is primarily interested in advancing their own interests and objectives. A major issue to be analyzed, therefore, is the extent to which local leaders, by virtue of their authority and influence, may enhance and facilitate local participation in a project or may in fact prevent widespread local participation from taking place.

206. Use of local people as agency paraprofessionals provides one way of incorporating "insiders" into the project implementation process. With limited training and relatively modest compensation, and maintaining direct contact with the public, paraprofessionals provide an "interface" between government agencies and the local population. However, in view of the limited skills and knowledge that paraprofessionals possess, participation by such insiders may make it more difficult to achieve project technical objectives. Therefore, the participation of paraprofessionals will be more effective if it is supported by training and reliable supervisory and logistical arrangements.

207. "Outsiders" include central government personnel and foreign personnel. Government personnel may be officials from other parts of the country who are posted to the area, or they may be local people employed by the government. The latter, if they are permanent residents of the project area, should have a good rapport with project beneficiaries. The former, who are likely to be transferred after a period of time and who are more likely to be educated, have higher incomes and come from different cultural backgrounds than project beneficiaries, may have more difficulty in establishing a good working relationship with local people. Government employees are apt to be more responsive to the demands of the central government than to those of the local people, since they have less of a stake in the development of the community.

208. Foreign personnel are found in a number of different roles such as international donor agency staff, consultants, project employees, missionaries, expatriates and immigrants, all of whom are bound by certain culturally determined rules, standards and expectations. These, too, can have only a limited stake in rural community development. Moreover, the "belief of foreign and host government staff members that they know what is best for small farmers" may lead to restrictive participation, or unwillingness to encourage local people to contribute ideas towards the development project.

91/ Korten, David C., op. cit.
92/ Johnston and Clark, op. cit.
94/ Cohen and Uphoff, op. cit., p. 66.
95/ Cohen and Uphoff, ibid., p. 346.
Participation in Rural Roads Projects

209. The range of options for local participation in a rural roads project is limited by the characteristics of the project itself, by participant characteristics, and by situational factors in the physical and socio-cultural environment. It may also be limited by external factors such as the structure of the project implementing agency, the political relationships of project area residents to influentials on the national scene, and the place of the project in the nation's development priorities.

210. **Project Characteristics.** The extent to which local participation in project decision-making, implementation, and impacts can be successful depends to some extent on the characteristics of the development project.\(^96\) For instance, the scope for local participation in a rural roads project depends on the technological complexity of the project. If a project calls for the use of unfamiliar construction methods or materials or an organizational technology that is complex relative to technologies used in the local community, the capacity for participation in project activity by local people will be restricted. Participation may also depend on the degree to which a project design is flexible, so that it can respond to changing local perceptions and priorities. Finally, the potential for local participation will also be affected by the resource needs of the project. Local control over project inputs such as land, labor or capital may be essential for some kinds of participation to take place. The availability of external project resources such as staff, materials, and funds also has an impact on the potential for participation. Where external project resources are scarce, then participation in project activities may be either extensive but thin, or intensive but limited - that is, a minimum level of participation may be provided to a large number of people or full participation to only a few.\(^97\)

211. **(a) Complexity.** Rural roads projects need not be complex from a technological and organizational point of view. In principle, they should permit substantial beneficiary participation in all phases. Large programs imply a need to select, using an appropriate screening and selection methodology, among a larger number of candidate roads. They involve the mobilization of large labor forces and equipment fleets, with a consequent need for large-scale planning, supervision, and logistic support. Use of equipment-based methods requires special skills as well as careful planning, training and supervision of the work force so that equipment can be used with maximum effectiveness. Labor-based methods are sometimes viewed as being organizationally complex, but this need not be a problem if effective use is made of local forms of work organization.

\(^{96}\) Cohen and Uphoff, *ibid.*, pp. 112-138.

\(^{97}\) Lele, *op. cit.*
212. (b) **Flexibility.** Rigid adherence to a predetermined set of technical or economic criteria in project design also works against the prospects for local participation. Certain criteria offer useful guidelines for decision-making in the field, but they must be adaptable if the project is to make efficient use of resources and to meet the perceived needs of the intended beneficiaries. Design standards, for example, should be flexible enough to permit the engineer on the ground to make adjustments to conserve community resources or to avoid or mitigate potential negative impacts. Procurement procedures also need to be flexible in order to take advantage of opportunities for the local provision of goods or services.

213. (c) **Resource needs.** Rural roads projects require land, labor, equipment, materials, technical design and supervision, money, and maintenance. Some of these inputs will be provided by the community and some by the central government. To keep project costs to a minimum, rural roads project planners should try to maximize the use of local resources and minimize the use of external inputs. However, the use of local resources, whether land, labor, or leadership, needs to be discussed and agreed with local authorities during the planning stage. The full opportunity costs of these resources to the community, and the distributional effects of their use, should be taken into account when appraising the project. Furthermore, project planners should consult with the community in assessing the prospects that resources needed for road maintenance will continue to be made available after the project is completed.

214. **Participant Characteristics.** Participation in rural roads projects is often limited by cultural norms regarding participation in development projects in general. Rights of participation in discussion and decision-making are culturally patterned at the household and community level. Participation in rural roads planning and decision-making will normally reflect these patterns. The project planner needs to be sensitive to local norms of behavior when seeking information and consent from the community. At the same time, he or she should be aware that local decision-making structures may not give effective voice to those whose welfare will be most seriously affected by planned project actions. For example, landowners of one ethnic group in an African country were able to demand high prices for their land taken for a rural road improvement, while those of another ethnic group had little recourse when the value of their lands was destroyed by dumping.

215. When participation involves interaction with outsiders, other factors may come into play; either influential leaders or marginal members of the community may play key roles as brokers, enhancing their status within the community by controlling its contacts with the outside. In Benin, for example, co-opting the local party representative in each community became important in assuring a steady supply of labor for road work. The project essentially altered the balance of power between traditional and modern leaders within the rural community by placing resources (jobs) under the control of the party representative. The project helped to legitimize his authority and to demonstrate the effectiveness of his connections to the decision-making structure for the country as a whole.
216. Participation in rural roads projects also involves a certain time cost which may be more easily met by some members of the community than by others. Language barriers may be a major constraint on interaction with outsiders. Some types of participation require a fairly high level of formal education, restricting participants in these tasks to a small group of community members. For example, in Colombia the requirement that communities present a written petition to be included in the rural roads program meant that in practice the literate local leaders controlled the decision to participate, and the success of the project depended largely on their skills in mobilizing resources from outside the community.

217. (a) Role of women. It is frequently but by no means universally felt that participation in rural roads construction and maintenance should be limited to men. The heavy earthmoving tasks involved often appear to be more analogous to agricultural tasks performed by men than to those traditionally carried out by women. That this is not necessarily the case, however, can be shown by several examples. In Lesotho, women working for payment in kind (through Food for Work) construct road formations, which are later surfaced by the exclusively male Labor Construction Unit forces (paid in cash). In India and Bangladesh, many women find permanent employment in stone crushing and brick making which provides the basic construction material for rural roads. In Kenya, women have been employed in the labor-based brigades when male labor became scarce. No differences were found between their productivity and that of the male laborers.

218. In general, we have found that for women, road work is a low status activity that is resorted to only by the poor and unprotected. Generally, women are significantly less well paid (as in Lesotho) or, when pay scales are equal, they find employment only when prevailing wages are unattractive to men (as in Kenya). In Burundi, it is deemed unsuitable for a woman to engage in road work for wages (for which full-time employment would be required); however, women are expected to contribute their share to unpaid community road construction activities (one day a week). Women road workers are handicapped by household responsibilities and frequently by having sole responsibility for child care; many are household heads or single parents. They are also less likely than men to be educated and therefore have restricted access to training programs and promotion opportunities.

219. (b) Role of landownership. In the rural socio-economic environment, an understanding of the structure of land tenure is essential to any assessment of the potential impact of rural road improvements, which in turn relates to the potential for local participation. One of the major impacts of road improvements is a rise in adjacent land values. The benefits decrease sharply for landholdings at a greater distance from the improved road. Thus, farmers living close to the road alignment may be more willing than those living some distance away to participate in construction. Recruitment of laborers for road maintenance also tends to focus on people living near the improved road. If, on the other hand, increases in land values are likely to be captured by the local elite or by outsiders, there will be little motivation for mass participation in the project, as shown by experiences in Liberia and Bangladesh.
220. Landless laborers make up a significant part of the population in many rural areas, particularly if those whose land holdings are too small to feed a family are included in this category. Landless laborers may benefit from the employment consequences of road improvements in several ways: first, from direct employment in road construction and maintenance; second, from generated opportunities for additional farm labor resulting from increased production in the road influence zone; and third, from the indirect effects of rural road improvements that help to remove distortions in local labor markets. Care must be taken, however, in assessing the willingness and ability of landless laborers to participate in rural road projects. They are less likely to take an active part in project decision making and more easily coerced into a passive role, which is not likely to be very productive. They are least able to afford any "voluntary" contribution toward project costs. Both agency staff and local leaders are likely to regard their views as of little account. A strategy that includes participation by landless laborers will require strong institutional support and leadership for this group, which may have to be provided from outside the community.

221. Situational Factors. In addition to the characteristics of rural road projects themselves, and the characteristics of the people who may be asked to participate in such projects, elements of the physical, social, and institutional environment of a rural roads project may affect the success of a strategy based on local participation. The institutional environment includes both local institutions (local government and other local organizations) and non-local institutions that may play a role in project implementation. These institutions, in turn, include the project implementing agency, the central government, non-governmental organizations at the national level, and external donors. All of these elements in the project environment may limit the feasibility of local participation in rural road planning, construction, or maintenance in a particular setting.

222. (a) Physical environment. It seems intuitively likely that physical factors such as climate and terrain would have a direct bearing on the ability of people to participate in rural road projects; for example, mountainous terrain or rainy seasons might pose constraints in mobilizing local participation. More difficult terrain requires the use of more diversified methods and materials and frequently makes the use of construction equipment more cost effective. Also, in more difficult terrain the population density is frequently lower, settlement patterns more scattered, and community social structures consequently less developed. All of these factors would appear to affect the possibility of people's participation in project activities. Recent quantified cross-national studies have shown, however, that such environmental factors may have less of an effect than is commonly supposed on the capacity of local organizations to mobilize participation in project activities. Indeed, it would appear

98/ Milton J. Esman and Norman T. Uphoff, Local Organizations: Intermediaries in Rural Development (Ithaca: Cornell University Press, 1984). The reasons for this result are not well understood. There may be some kind of "challenge-response" dynamic operating. It may be easier to mobilize people to participate in rural roads projects in areas where mountainous terrain creates an obvious constraint on development, so that road-building becomes a priority for the community. See the data analysis and discussion in Frank C. Young, Mary Hebert and Jon C. Swanson, "The Ecological Context of Local Development Participation in Yemen", Yemen Research Project Working Paper no. 14, Cornell University, 1981.
that local organizational performance is somewhat more successful under adverse physical conditions.

223. (b) Sociocultural setting. Of vital importance in explaining participation is the prevailing pattern of stratification—the dimensions along which society is divided into groups on the basis of class, caste, kinship, religion, or language. The potential for participation may be increased if beneficiaries are generally homogeneous in terms of social groups and economic class, whereas heterogeneous communities may, on account of these very differences, find effective participation more difficult. This does not mean, however, that socially and economically homogeneous groups always present favorable opportunities for participation. There may be other bases for conflict within homogeneous groups such as lack of consensus over needs, objectives and strategy, usurpation of power by minorities, factionalism, or unequal distribution of benefits, all of which can act to prevent effective participation.99/

224. The ability to elicit effective local participation also depends to a large extent on the existing institutional framework. Local participation in projects is more easily achieved if local institutions are able to provide the channels and linkages through which such participation takes place. Organizations that cater to the needs of local people, that are receptive to bottom-up efforts and that are perceived by local people as legitimate and credible, have greater potential than other organizations to increase community decision-making capabilities.100/ Further, the more organizationally flexible and responsive to change these institutions are and the greater their capacity to negotiate between their members and other elements of the social structure, the more effective they will be in bringing about local participation.

225. (c) Local government. Local government can help to mobilize local participation by extending institutional procedures, by expanding the responsibility and scope of rural bureaucracies, by providing more opportunities for local leadership, and by tying rural areas more closely to the national center.101/ However, local government may also be inefficient and prone to problems of lack of supervision, inadequate staff training, and lack of technical and financial resources.102/ These problems may tend to undermine the confidence of both rural people and central governments in

99/ Johnston and Clark, op. cit.

100/ Millikan et al, op. cit., pp. 28-30.


102/ Millikan et al, op. cit., p. 113; Robert Chambers, Managing Rural Development: Ideas and Experiences from East Africa. (Uppsala: Scandinavian Institute of African Studies, 1974), Chapter 4.
local government as an effective instrument for local participation.\textsuperscript{103}\ If local government is to become a more effective institution through which local participation can take place, then national level policies must be geared toward overcoming some of its weaknesses. Thus, tax collection systems and revenue-sharing mechanisms must be improved, local government dependence on the central government for funds and decisions must be lessened, and improved staffing and training programs should be provided.\textsuperscript{104}\  

226. (d) Local organizations. An important component of the local institutional framework relates to voluntary organizations such as local development associations, cooperatives, interest groups, social clubs and political organizations.\textsuperscript{105}\ Local organizations are defined as organizations accountable to their members and involved in some developmental activities. Membership may be open or based on criteria such as ethnicity, occupation, residence, and/or gender. Such groups can act as effective means of promoting local participation by performing certain functions: provision and administration of social services; distribution of benefits; mobilization of local resources (labor, capital, materials); establishment of communication between the association and the national government and among association participants; and "the empowerment of local publics" through the capacity of organizations to make demands on those who control important resources. The extent to which the national government is willing to permit, encourage and accommodate local organizations in the overall development process varies with the type of regime and the extent to which it perceives local organizations to be a threat to the pursuit and attainment of its own objectives. The extent to which local organizations can facilitate participation in project activity will therefore depend on the economic, social and political dimensions around which the community is organized. 

227. Structural and design features of local organizations may have an impact on their suitability for local participation. Membership composition, multiplicity of functions, formality and complexity, size, and incentives for participation affect the performance of local organizations and the extent to which they are able to make local participation a viable and effective strategy in the process of rural development.\textsuperscript{106}\ Organizations with multiple functions and a fairly wide membership base appear to function most effectively as vehicles for local participation. Such organizations are able to integrate diverse services and if, for some reason, the organization is prevented from delivering one service, it may continue to support local participation through its other services. Multi-functional organizations often start off as single-function organizations and their diversity in functions may often be a consequence rather than a cause of their success.\textsuperscript{107}\  

\textsuperscript{104}\ Rondinelli and Ruddle, op. cit., pp. 126-128.  
\textsuperscript{105}\ Esman and Uphoff, op. cit.  
\textsuperscript{106}\ Esman and Uphoff, ibid.  
\textsuperscript{107}\ Esman and Uphoff, ibid.
228. Although local organizations have great potential to facilitate local participation, they also face certain constraints in involving local people in the process of development. First, local organizations may encounter resistance from several sources: from local elites, national government officials, and sometimes from rural people themselves. Local elites may try to prevent local organizations from gaining popularity and strength if they find that such organizations pose a threat to their economic and political control. Also, local elites may often have ties to the national elite who, especially if they operate in authoritarian regimes, may be unwilling to tolerate local organizations that appear to threaten the stability of the regime. Further, although they may seem to be independent operating institutions, local organizations may really be subordinated to or dependent in many ways on the national government.

229. Finally, if the community within which the local organization is trying to operate is highly stratified and the organization itself is identified with a particular segment, resistance may come from other segments of the community. The factionalism and internal politics that prevail in some communities is a major factor impeding the success of local organizations in promoting project participation. The basis of such factionalism may be economic, social (ethnic, racial, religious, caste), or political. The greater the extent of factionalism or internal cleavage in the community, the more likely it is that some segments of the population will not benefit from local participation.

230. (e) Implementing agency characteristics. If agency representatives are to deal effectively with local people, they will need first of all to feel that this is part of their job, part of the mission of the agency. It is helpful if the agency's objectives can be defined within the framework of a national philosophy which supports the concept of popular participation. Decentralization of decision making responsibility to local staff also helps to enhance their self-image and makes them more effective in negotiations with local leaders. Local line agencies, acting as channels for policies and plans set up by the national government, may become involved in planning, coordination, budgeting and allocation of resources, and in establishing communication links between national and local institutions. However, "improving the effectiveness and responsiveness of decentralized units of the central government apparatus may also reinforce the simple hierarchy, a degree of paternalism, and the resistance of line agency staff to local autonomy." With greater decentralization, local participation may be enlisted through local governments and representative local groups.

108/ Esman and Uphoff, op. cit.; Johnston and Clark, op. cit.; Johnston and Clark have a good discussion of local elites.


231. (f) Central government support. The success of local participation in rural roads projects also depends on the support of outside institutions like the central government. Receptivity and commitment on the part of the central government to local participation will make a difference in the extent to which local people are actually drawn into the development process. Such commitment may vary with the political philosophy of the prevailing government and some regimes may be more inclined than others to accept local participation as a strategy for project execution. 111/

232. (g) Non-governmental organizations. Another element in the institutional framework for participation is the non-locally based, non-governmental organization active in community development. 112/ Such non-governmental organizations (NGOs) include private voluntary agencies, domestic and international; church groups and charismatic movements; organizations dedicated to social welfare objectives such as literacy or family planning; and a wide variety of other organizations that share the characteristics of being active at the local level but drawing their primary source of support from outside the community. Such organizations may seem to be less "authentic" vehicles for participation than purely local organizations, but they often command considerably greater resources than local organizations in terms of funds, administrative and technical skills, and contacts with influentials outside the community. NGOs often place special emphasis on developing good communication skills and developing programs in response to local perceptions of needs and priorities. Therefore, they can function effectively in a mediating role. However, such organizations must ultimately step aside if their long-range goal is truly to empower local communities.

233. In Sierra Leone, feeder roads complementing Bank-financed secondary roads have been constructed by CARE, a non-governmental aid agency which planned to organize community efforts. However, this agency was not able to mobilize local labor within the expected time frame and eventually the roads were constructed using equipment-based methods and to design standards that may be inappropriate in the light of local needs. This example illustrates the fact that non-governmental organizations may be subject to external pressures that make them, in some circumstances, inappropriate vehicles for community participation.

234. (h) Donor constraints. When projects in developing countries are undertaken by organizations such as national governments and international donors, the potential for local participation also depends on capacities and constraints of these organizations and the degree to which they "fit" with the needs and conditions of the rural people they are designed to serve. The

111/ For a discussion on the impact of the political-administrative structure and nature of the regime on local participation, see Millikan, et al, op. cit., pp. 101-110.

112/ A good treatment of NGOs is provided in Goran Hyden, No Shortcuts to Progress: African Development Management in Perspective (Berkeley: University of California Press, 1983).
extent to which such organizations allow local input to influence decision-making or are bound by time constraints, for instance, will help to determine the scope for local participation in the project. In the final analysis, successful local participation is contingent upon a close correspondence or "fit" between project requirements and objectives, the local situation or context within which projects will operate, and the structure of the assisting organization.\textsuperscript{113/}

\textbf{Strategies for Successful Participation}

235. A successful participation strategy for rural roads projects may be defined as one which enables project activities to meet real needs, makes effective use of local resources, and strengthens community capabilities to plan, construct, and maintain rural transport infrastructure. Such a strategy will be tailored to particular project and participant characteristics, and will address the socioeconomic and cultural constraints inherent in each specific situation. In strengthening the capacities of local communities, it will also support the broader institution-building objectives of rural road projects and of rural development programs in general.

236. \textit{Seeking central government support}. In order for a participatory strategy for a rural roads project to be successful, it must first of all have the support of the central government. The government must be prepared to accept initiatives coming from the "grass roots" and must be willing to delegate at least some aspects of project decision-making and implementation responsibility to local communities. Often the central government must also be prepared to offer some technical or financial assistance to communities in order for them to be able to use their resources effectively. Changes in the legal status and administrative authority of local institutions may also be required in order for such a strategy to become effective.

237. \textit{Promoting bureaucratic reorientation in executing agencies}. Agency staff at all levels need to learn how to work together with community groups in order to design and carry out projects that are truly responsive to local needs. Finding staff who are willing and able to do this is not just a matter of persuasion or philosophy. Organizational structure and incentives play a major role in shaping staff orientation toward intended beneficiaries. Getting agency staff and local people better acquainted through continuing contacts is important. Time and facilities as well as encouragement by superiors are needed for this to happen. Training agency staff in communications skills and the use of participatory planning techniques will help to make them more effective in this new role. Success in such interactions needs to be recognized by the agency and rewarded in some way. Rewards should be more than token, so they will be taken seriously

\textsuperscript{113/} Korten, David C., \textit{op. cit.}, p. 496.
by all, but they need not be only monetary; commendation, visibility and mobility can be valued non-monetary incentives. The agency's doctrine and professional self-image may need some change to encourage performance that supports beneficiary initiative and responsibility.\footnote{114/ Hiring of paraprofessionals from the local community is another way to promote improved communication between professionals and project beneficiaries.}

238. **Supporting local organizations.** Bank-financed rural roads projects have made relatively little use of local organizations. Some countries in Latin America and in the Far East have a tradition of community self-help that has been used in some cases as the basis for designing rural infrastructure projects. However, these efforts tend to be sporadic and oriented towards the achievement of a specific goal; they are not very reliable as a means of assuring regular maintenance. To make more effective use of local organizations, it will be necessary for project planners to develop skills in identifying and analyzing these organizations to see which ones would provide a suitable framework for undertaking road work. These could be organizations whose objectives include a commitment to public service, beneficiary interest groups that might be willing to underwrite the costs of road maintenance, or labor exchange groups looking for additional employment. Private sector organizations such as cooperatives or building societies should not be overlooked. Consultation with local leaders should help to identify such groups and provide a forum for discussion of their potential contributions to the project.

239. **Strengthening local government.** One of the major objectives of many rural roads projects is to strengthen local government capacity to plan, construct, and maintain the rural road network. The strategy employed to achieve this objective is usually one of providing training and technical assistance to local government officials, and sometimes underwriting a portion of local maintenance costs as well as the costs of construction. This strategy often has the appearance of a "top-down" approach to local participation. It is not likely to be very successful unless there is a felt need at the community level for improved rural roads, that can be transformed into a willingness on the part of local government officials to find new resources and acquire new skills for this purpose. To insure that a roads program is responsive to such felt needs, local government officials should be involved in the road selection process. Even more importantly, local governments should be given a certain degree of autonomy in raising and allocating resources for rural roads, as well as support from the central government for their initiatives.

\footnote{114/ To the extent that the professional orientation of foresters, for example, is to protect trees from people, some reorientation will be needed to get their cooperation in "social forestry" projects. If engineers see consultation with rural people as inappropriate to their status and as a threat to their "expertise", participatory rural roads projects will have difficulty in implementation. On this general subject, see David C. Korten and Norman Uphoff, *Bureaucratic Reorientation for Participatory Rural Development*, Working Paper no. 1, National Association of Schools of Public Affairs and Administration, Washington, 1981.}
Overcoming donor agency constraints. When rural road improvements are funded from an outside source, the characteristics of the lending agency may constrain the potential for local participation. Projects may not last long enough to build institutional capacity in the executing agencies, let alone in the communities concerned. Lack of continuity in lending constantly threatens to undermine the success of a slowly growing participatory program. Finally, the political importance attached to some projects makes it less likely that they can be designed and carried out as truly participatory programs at the community level. To overcome these constraints and to promote local participation in rural roads projects, it will be necessary for donors to develop confidence in the ability of borrower staff and beneficiaries to assess their own needs and to devise cost-effective ways of meeting these needs. Project documents should therefore be made as flexible as possible within the context of a commitment to continued funding for the development of local capacity.
V. CONCLUSIONS

241. In the preparation of rural roads projects or project components, planners should first consider the overall country context, including the degree of political commitment to rural development objectives, the role of the public and private sector, the opportunities for introducing labor-based methods of road construction and maintenance, the legal and regulatory framework for rural development, and government planning and budgeting procedures. In relating road investments to a more general rural development investment strategy, planners must look beyond the technical perspective of the public works ministry to consider the priorities and constraints of the finance ministry, other participating ministries and the national legislature, as well as those of potential donors. In addition to horizontal linkages between the road building agency and other agencies involved in the rural development process, vertical linkages need to be developed between the project and its sources of political support, including both the central government and the beneficiary communities.

242. Because of the different mix of skills and activities needed for a rural roads program in comparison to a traditional highway program, the Bank has often supported the establishment of a separate organizational unit for rural roads within a traditional public works organization. There are both advantages and disadvantages to this arrangement. It permits the establishment of a separate salary scale, career ladder, training program, and incentive structure for engineers involved in rural roads works and fosters the development of an "esprit de corps" among its staff. It may promote more effective integration of rural roads planning with other disciplines, other agencies and communities. A separate administrative arrangement may also make it easier to handle contracting, procurement and disbursement procedures. However, such an organization may also be perceived as a threat by powerful interests in the parent agency. It may become isolated from the central planning process through which resources are allocated to line agencies to meet recurrent costs, especially if its programs are funded by external donors. Finally, however effective such an organization may become, it should never be seen as a substitute for developing community capabilities to the greatest extent possible.

243. Projects envisaging rural roads construction through special project units should specifically include support for the transfer of resources and skills needed for subsequent maintenance to an appropriate local institution, whether it be a district office of Public Works, a division of the regional development authority, or a consortium of communities. This institution should be clearly identified at the appraisal stage. It must have legal responsibility for road maintenance and the authority required to raise revenues. By the end of the project, it should be expected to control the fiscal, material, and staff resources needed to prepare and carry out annual work programs.
Local participation in project activities may occur at any time during the three stages of planning, construction, and maintenance. The evidence so far indicates that local participation in rural road construction is facilitated by, but does not depend on, local participation at the planning stage. For maintenance, the conclusion is similar: communities that have participated in rural road planning and/or construction may be more willing to assume responsibility for road maintenance, but they are not always able to do so. Rural communities often simply do not have the funds to cover maintenance costs, and under present legal and administrative arrangements they have little prospect of collecting additional funds. Some form of revenue sharing will probably be needed, in addition to the transfer of technical and managerial skills to community leaders.

Political and institutional factors are of prime importance in structuring the potential for participation at the stages of planning and maintenance. They seem less important for construction; here, technical and economic constraints come to the fore. Local people are generally willing to participate in projects when they feel that their efforts will be adequately compensated. People are understandably much more reserved about contributing their own resources, whether land, labor or funds, to a project that does not seem likely to bring them any tangible benefits.

We conclude that the Bank role in designing rural road projects for local participation should be limited and indirect. It can be most effective in strengthening the legal and administrative structures that surround participatory projects, and in promoting the attitudes and behaviors that facilitate local participation among agency staff. Participatory projects (and, indeed, rural road projects in general) should only be considered where there is clear evidence of a felt need for rural road improvements at the local level, and commitment to the project and subsequent road maintenance should be sought from local as well as central government officials at an early stage.

Although project designs are developed as part of a long-term strategy for institution building in the country, they should be seen as flexible arrangements which can be adapted during the implementation period in response to changing resource patterns and new information concerning the project environment. Project officers should avoid the temptation to attribute implementation problems to poor performance by individuals, whether government staff, technical assistance, or consultants, in situations where individual performance is largely constrained by structural or systemic factors. By reallocating project resources among the different project tasks, including not only money but also staff time and political support, it may be possible to bring about improvements in project performance.

Projects with specific institution-building objectives need operational targets and milestones established at appraisal and systematically monitored during project execution. At present, few projects state what is expected to be achieved under the heading of "institution building." Some potential indicators of progress could include: numbers and types of persons trained, interagency agreements signed, planning procedures established and made operational, resources allocated and
disbursed for project activities, beneficiary groups involved in project planning, etc. Most of these data are already collected but are not often evaluated in terms of progress toward the achievement of institutional development objectives, mainly due to the lack of a clear statement of these objectives.

249. The goal of institution-building components in rural road projects should be to develop self-sustaining institutions at the local level which continue to function because they succeed in identifying and meeting community needs efficiently and economically. These institutions should be closely linked to the sources of political support for rural roads programs, including the central government, the line agency responsible for road building, other agencies involved in the rural development process, and the beneficiary communities. Institutional arrangements that work well for the planning, construction and maintenance of rural roads may then serve as a prototype for similar structures intended to mobilize resources in order to meet community needs in other sectors as part of the broader rural development process.
ADDITIONAL REFERENCES


World Bank Publications of Related Interest

The Economic Analysis of Rural Road Projects
Curt Carnemark, Jaime Biderman, and David Bovet
Stock Nos. WP-0241-E. $3.

NEW

Economic Appraisal of Rural Roads: Simplified Operational Procedures for Screening and Appraisal
H. L. Beenakker and A.M. Lago
Operational approaches simplify screening and appraisal of rural road components and rural development projects. Eight economic appraisal methods in simple step-by-step procedures especially useful for rural development planners and managers of road construction projects. This paper is based on a review of 15 "traditional" Bank rural road projects, five rural development projects, and relevant literature.

The Economics of Road User Charges
A. A. Walters
Marginal cost pricing and consumer surplus criteria for investment decisions.
255 pages.

Institution Building for Traffic Management
Urban areas face rising demand for transport which they must meet with low cost solutions. This guide offers a flexible approach for organizing the traffic management function in city governments. Gives procedures easily adapted to different needs.

Port Pricing and Investment Policy for Developing Countries
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The Road Maintenance Problem and International Assistance
Examines the road maintenance problem in developing countries and describes the Bank's experience in this field.
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Edited by Michael M. Cernea, John K. Coulter, and John F.A. Russell
Captures nearly ten years of experience with the Training and Visit Extension System. Addresses five issues: farmer participation, the research-extension linkage, training, system management, and monitoring and evaluation. Within this framework, extension system managers and evaluators from six Asian countries and six discussants present their experience and analyses. Notes the World Bank's strong commitment to agricultural development in its member countries and to helping least advantaged farmers to improve their productivity. Valuable to policymakers, project designers, rural sociologists, extension workers, and other agricultural researchers.

Agricultural Extension: The Training and Visit System
Daniel Benor, James Q. Harrison, and Michael Baxter
Contains guidelines for reform of agricultural extension services along the lines of the training and visit system. The central objective—making the most efficient use of resources available to governments and farmers—is achieved through encouraging and facilitating feedback from farmers to research workers through extension personnel who visit and advise farmers on a regular, fixed schedule, thus helping research to solve actual production constraints faced by the farmer.
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source poor areas.
Sector Policy Paper. 1981. 110 pages (in-
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A World Bank Glossary—Glossaire de la Banque mondiale
1984. 48 pages.

Land Tenure Systems and Social Implications of Forestry Development Programs
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Managing Elephant Depredation in Agricultural and Forestry Projects
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Outlines procedures for managing elephants in and around project areas as part of the project design. Helps project designers plan activities that will protect wildlife and prevent financial loss from damage by animals. Illustrates methods used to investigate elephant behavior and ecology. Notes that careful scheduling of project activities is required to ensure that elephants are not isolated in production areas.

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This innovative study develops quantitative methods for measuring the direct and indirect effects of agricultural projects on their surrounding regional and national economies. These methods are then applied to a study of the Muda irrigation project in northwest Malaysia. A linear programming model is used to analyze how a project changes the farm economy, and a social accounting matrix of the regional economy is then estimated. This provides the basis for a semi-input-output model, which is used to estimate the indirect effects of the project on its region. Thereafter, a similar methodology is used to estimate the project's effects on key national variables, thus permitting a full social cost-benefit analysis of the project.
The Johns Hopkins University Press. 1982. 336 pages (including maps and index).

Rethinking Artisanal Fisheries Development: Western Concepts, Asian Experiences
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Winrock International Livestock Research and Training Center

Sheep and goats are viewed as an integral component of complex agricultural systems. This comprehensive analysis leads to recommendations on the need for a balanced production system approach for research, training, and development programs. Assesses the role of sheep and goats in food production systems by examining advantages and disadvantages, aid/donor support, constraints on contributions, and overcoming constraints. Emphasizes the need for a combination of support activities and marketing and pricing policies for small ruminants and their products. Reviews ongoing projects.


Sociocultural Aspects of Developing Small-Scale Fisheries: Delivering Services to the Poor
Richard B. Pollnac


Some Aspects of Wheat and Rice Price Policy in India
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Sub-Saharan Agriculture: Synthesis and Trade Prospects
Shamsher Singh

Agricultural production, the single most important determinant of overall economic growth, has been sluggish in Sub-Saharan African countries during the past two decades. This overview takes a three-pronged approach to understanding the problems of agricultural production in the 47 countries that make up the region. It outlines domestic and global constraints; summarizes price, trade, and consumption forecasts for major agricultural exports; and project trends.


A System of Monitoring and Evaluating Agricultural Extension Projects
Michael M. Cernea and Benjamin J. Tepping


Thailand: Case Study of Agricultural Input and Output Pricing
Trent Bertrand


Traditional Land Tenure and Land Use Systems in the Design of Agricultural Projects
Raymond Noronha and Francis J. Lethem

The feasibility of agricultural projects and their intended impact are often determined by traditional patterns of tenure and land use. This paper provides agricultural project designers with an analytical basis and rationale for examining systems and suggests how to use such information in designing projects.


Training and Visit Extension
Daniel Benor and Michael Baxter

Contains a comprehensive explanation of the organization and operation of the training and visit system of agricultural extension. Emphasizes simplicity and decisiveness. Defines organization and mode of operation and allows continuous feedback from farmers to extension and research workers. This method has been adopted in some 40 countries in Asia, Africa, Europe, and Central and South America. Useful to extension staff at all levels, agricultural research personnel, trainers, and staff of agricultural organizations, as well as universities and training institutions involved in agricultural and rural development and public administration.


Women and the Subsistence Sector: Economic Participation and Household Decisionmaking in Nepal
Meena Acharya and Lynn Bennett

Fascinating analysis of the complex social, demographic, and economic factors that affect women’s decisionmaking role in the subsistence sector. Data collected from seven villages show women play a major role in agricultural production, both as laborers and managers. Bringing women into the market economy would make better use of local resources and improve their status and economic security in Nepal.

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