

Implementation of Rural Road Infrastructure: Lessons from Sub-Saharan Africa

Introduction

The gravity of rural transport bottlenecks across Sub-Saharan Africa has been underscored by the Bank's Long Term Perspective Study (LTPS) which states that "improving rural infrastructure is an essential requirement for the modernization and growth of agriculture. Better market incentives to farmers will be blunted if the physical barriers and economic costs of transporting goods to and from local markets are too high". Recent experience indicates that supply response of structural adjustment operations has been stifled by rural transport deficiencies. The effectiveness and sustainability of past programs for rural roads have been hampered by the lack of a coherent policy framework and institutional focus for planning, funding and maintenance.

Sub-Saharan Africa has approximately 700,000 kilometers of rural roads, with half of them in poor condition. Road densities per km are generally much lower than those of Asia or Latin America. Low population densities, low levels of income and weak road planning and maintenance capabilities combine to make Sub-Saharan Africa altogether under-equipped and overburdened in terms of rural road infrastructure. Total needs for rehabilitation of existing roads and for expansion of rural road networks are enormous and have generally not been recognized by planners and policy-makers.

During the past 25 years, the Bank has provided about US\$ 1.7 billion (in constant US\$ of 1988) in loans and credits for 127 projects to construct, rehabilitate or maintain over 160,000 kms of rural roads in SSA. The review of these projects as well as the analysis of the experience of the six MADIA countries provides an adequate basis to recommend several new directions for improved policies and operational strategies. These analyses also point out critical areas where further research and policy analysis will be needed; in particular, maintenance, local resource mobilization and rural transport services. The outcome of the study is discussed under the main headings of: planning, design and technology, resource mobilization, and sectoral organization and institutional performance.

Design and Technology

The scarcity of resources, the low traffic flows and the fact that all-year vehicular access is not always essential, all indicate that conventionally engineered rural roads are in many instances neither necessary nor possible. This points out the need to design and maintain rural roads in relation to specific levels of serviceability defined in terms of access by specific types of vehicles during various seasons. The prime considerations in defining rural road improvements should be reliability and durability rather than width and speed. This

would lead to concentrating expenditure on essential access, spot surface improvements in critical sections (poor subsoil, gradients), on surface drainage and essential structures, rather than on geometric characteristics determined by design speeds.

Considering the lack of income opportunities in many rural areas and the intractable problems inherent in the deployment and operation of mechanical equipment for small scattered works, labor-based methods should be considered as the normal choice for rural road works. Conditions inappropriate for labor-based methods may be found in very sparsely populated areas, and also for specific tasks, e.g., long distance earth movements.

The development of labor-based capability for road works is a long-term undertaking requiring considerable up-front inputs in technical assistance and training. Successful efforts supported by the ILO have typically been sustained over a period of ten years starting with pilot projects and leading to the development of countrywide programs relying on a critical mass of trained engineers, field supervisors, etc. The future development of labor-based capability would benefit greatly from transfer of expertise between SSA countries. It would be useful in this respect to support the preparation by African experts of guidelines concerning the range of application of labor-based methods and the employment of women in such operations.

Problems of supervision, the poor motivation of workers and the inherent lack of flexibility of public sector operations, has proven very difficult to overcome in force account work-Contract operation, although not without problems, is generally a preferred alternative. The weakness of domestic contracting capability is a major obstacle. A long term rural road program would provide the opportunity to build up the capability of the domestic construction industry. A policy decision to favor the use of contractors is necessary. Specific measures to facilitate their development and to improve their operation should be part of rural road projects. The experience gained under ongoing rural road projects in Ghana which include training of domestic contractors in the use of labor-based methods should be useful in designing similar programs.

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