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Self-Help Barrio Roads

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Road construction is a primary requirement for the promotion of economic development. The construction of roads is a potent catalyst opening the way for isolated people to join the main stream of society, broadening the market for exchange of goods and services and permitting the overall "development" of a given area.

The construction and maintenance of roads poses problems because there are seldom enough funds available to construct first class roads in all places where they are needed. Furthermore there are generally not enough technicians available for the planning and construction of the needed roads or the operation and maintenance of heavy road equipment. Generally the problem of how to construct a road network is resolved by establishing a central highway authority for construction and maintenance of "national" or main roads and the lesser subdivisions of government are then responsible for secondary, feeder and village roads. The difficulty with this scheme is that the units lower than national level have insufficient funds for road construction and the national bureau has its "hands full" with the primary road system, since they too have limitations of funds and personnel.

In the Philippines a plan was implemented to help relieve the stagnant road construction program which prevailed at the provincial and barrio (village) level. In essence it consisted of utilizing free labor of barrio residents to construct roads in their immediate neighborhood. Heavy equipment was to be detailed from the Bureau of Public Highways and funds for its operation and for processed materials were to be supplied by the national office of community development (PACD).

The purpose of this report is to evaluate on the basis of actual experience whether such a scheme, founded on participation of unskilled labor has merit.

Cases Studied

All of the twenty-four self-help barrio roads projects in one province, Batangas, were inspected to gain a perspective as to how the program has been implemented. Since this province has a rolling terrain it serves as a relatively typical example under which rural roads are built in the Philippines.

The most significant finding of the investigation was that of the ten completed projects all are in serviceable condition at the present time!

Some are more extensively used than others and maintenance varies from good to fair. On several of the roads, where mere trails existed previously, regular bus, jeepney and truck service has been established. The remainder are desirous of such service and one group of farmers expressed hope that they could asphalt their road. These events and aspirations indicate that, as expected, the roads have had an economic and social effect desirable for overall development of the province.

The less successful aspect of the barrio road program concerned the twelve projects which have been started but are incomplete due to lack of equipment for finishing the grading or rolling of surfacing material. Of these twelve roads, ten are serviceable on the portion where construction has been finished. This ranges from 1/3 to 100% of major construction (a bridge being lacking in two cases but traffic is bypassing the bridge site by fording the stream). Two roads are failures. On one the surfacing material was not adequately spread or rolled and consequent maintenance was impossible. On the other, surfacing material was not rolled, the project was inadequately funded and the grade was too steep.

Without exception the reason the projects have not been completed is that adequate road equipment has not been available to the program. Use of equipment has been on an infrequent, haphazard basis. Equipment has been provided through private rentals or borrowing and renting from provincial equipment pools, municipal equipment pools, Bureau of Public Highway pools and the Philippine Army.

Two road projects which have been approved are being held in abeyance until such time as the use of equipment is assured. This is probably a wise decision in view of the two failures which were caused by partial construction and subsequent abandonment due to lack of equipment.

The cost of the completed roads to the national and local government was ₱4,259 per kilometer. The remainder of the costs, which include the value of the right of way, local materials and the necessary hand labor was supplied by barrio residents.

Summary of Findings

- A. Barrio people can build serviceable access roads when supplied a road plan and use of road equipment for grading, compaction, hauling of surfacing material and rolling of surfacing material.
- B. Cost of roads on a barrio self-help basis are considerably cheaper than roads constructed by the road departments or by contractors.^{1/}

^{1/} Joint Project Completion Report, Highway Improvement, Philippine Bureau of Public Highways and USOM/Philippines, June 1961, p. 56, Report cites Barrio Self-Help Road @ ₱4,000/km. vs. ₱10,000 Bureau of Public Highway costs.

- C. There is considerable value in having the barrio people work on their own roads. They learn something of duties and responsibilities as citizens of a developing nation, they gain experience in managing their own affairs and have a keener interest in maintaining the roads. (There are several instances where barrios have passed ordinances against the use of carabao-drawn sleds on "their own" roads).
- D. Without access to equipment it cannot be expected that a barrio council will (or should) attempt to build roads. Proper grade, compaction and surfacing materials are essential in road construction.
- E. It is unlikely that barrio people would cooperate with a contractor in the building of roads. They reason, "why should we give free land and labor while the contractor gets rich". Furthermore the contractors would probably be unwilling to depend on barrio volunteer labor as a prime source of labor because of its day-to-day uncertainty and lack of training.
- F. A barrio self-help road program should have its own equipment rather than be dependent on other agencies. It could enter into operation and maintenance contracts with competent private or public agencies.

Recommendations

At the present time there are very few barrio roads being constructed though they are badly needed. Maintenance on municipal and barrio roads is not systematically carried out. As more national roads are added to the responsibility of the Bureau of Public Highways the construction/maintenance problem is aggravated at the municipal and barrio level because proportionately more resources must be allocated to the principal highway network. To alleviate this situation the following recommendations are submitted.

- A. Provincial construction teams should be established for the purpose of building self-help barrio roads. The cost of the equipment, amortized over a ten year period, should be borne by the province. The road projects would be organized by the barrio people with assistance from the community development agency for engineering services, operations and maintenance costs of the road equipment and for purchased materials.

In the early stages of the program one team per province is recommended although larger provinces could utilize more teams as they gain experience in road construction. The following basic equipment is suggested: One bulldozer, D-7, or equal; One construction grader, 115 h.p. approx.; One 5-8 ton surfacing roller; One 3-5 ton sheepsfoot roller; One "low boy" trailer; Two dump trucks (additional trucks are available for hire in many municipalities); and, One 3/4 ton service pick-up.

- B. Selected municipalities should be supplied with reconditioned U.S. excess or surplus military road building and maintenance equipment. The primary purpose of this equipment would be for the maintenance and improvement of municipal and barrio roads. A secondary purpose would be to provide training experience to a corps of local equipment operators and mechanics. As the overall road network of the Philippines expands it will become administratively more difficult to maintain the roads through a central bureau and such a corps of trained operators will be essential to an efficient, decentralized road maintenance system.
- C. After construction of the roads, the maintenance problems can be minimized through a systematic, inexpensive program planned and directed through the barrio councils. A short section of an old Bailey bridge or a log faced with worn out logging cable or iron plate can be off-set and dragged by carabao going or returning from the fields. Trucks or jeeps may be utilized in some cases. This program will keep a crown on the road to facilitate drainage. It will keep ruts and holes filled which become worse when water collects in them.

Barrio councils should be assisted to construct simple animal or jeep drawn drags or scrapers for minor or preventive maintenance on barrio roads. Such equipment can be made locally and could be included as a grant in the original construction project or given to barrios which show interest in self-help road maintenance programs.