

H. EVALUATION ABSTRACT (do not exceed the space provided)

SEE FOLLOWING PAGE

ABSTRACT

I. EVALUATION COSTS

COSTS

1. Evaluation Team Name	Affiliation	Contract Number OR TDY Person Days	Contract Cost OR TDY Cost (US\$)	Source of Funds
Olivier Carduner	USAID/PDE	6	180.00	OE
Mike Calavan	"	6	180.00	
Sadrul Ameen	"	6	180.00	
Manir Uzzaman	"	6	180.00	
		<u>24</u>	<u>\$720.00</u>	

2. Mission/Office Professional Staff Person-Days (estimate) 40 (+16 days to write/ present report) 3. Borrower/Grantee Professional Staff Person-Days (estimate) 0

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Part I

"Rapid Rural Appraisal of the Feeder Roads Maintenance and Improvement Project" - July 1987

H. Evaluation Abstract:

The project purpose is to develop district local government institutional capability to maintain and improve feeder roads. This interim rapid rural appraisal was initiated and conducted by USAID staff through field trips and interviews with project personnel, and through summary statistics provided by the contractor, Wilbur Smith & Associates. The purpose of the appraisal was to provide an assessment of project status and to identify major issues to be addressed in the next implementation phase. The major findings and conclusions are as follows:

- * Little discernible progress has been made in institutionalizing a routine annual maintenance program.
- * There is a lack of consensus on and commitment to feeder road maintenance by central and district level officials.
- * The institutional framework for project implementation at the local level is inadequate to achieve the project purpose.
- * There is little incentive at the local level to adopt higher road maintenance and improvement standards.
- * There is no strategy to link road investment decisions to maintenance cost financing or to address significant recurrent cost constraints.

Lessons learned:

- * Developing a sustainable feeder road system requires technical, institutional and financial inputs. The FRMIP addressed the maintenance aspect primarily through technical means, by building higher standard, more costly roads. This was done without making certain in advance that the institutional and financial components to establish and support a maintenance system were in place.
- * The current government implementation and policy environment could not support the institutional and financial requirements for sustaining a high quality bituminous carpeted road system. In this case, the level of road paving technology and standards need to be scaled down to match existing institutional and financial constraints.

* The textbook theory that greater investment in paved higher standard roads will reduce maintenance costs does not seem to hold true in the current situation in rural Bangladesh. Few of the feeder roads under FRMIP sustain the traffic volume to justify more than a good quality dirt surface. Premature paving of some of these roads has resulted in an increase rather than a decrease in maintenance costs, since not maintaining paved roads is much more expensive than maintaining them. Unmaintained paved roads in the project area deteriorated to worse than dirt road condition in a period of two to five years.

A.I.D. EVALUATION SUMMARY - PART II

J. SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

1. PURPOSE OF THE ACTIVITIES EVALUATED

The purpose of the project, as defined by the Grant Agreement, Amendment 3, is "to improve rural access by institutionalizing an effective annual routine maintenance and improvement program for type B feeder roads. . ." Type B feeder roads connect selected rural markets, or "growth centers", to upazilla (sub-district) headquarters or to the nearest regional highway. They are the highest category of road under the responsibility of local governments. The project began in 1981, with a five year project budget of \$9.2 million. In 1986 the project was extended by an additional 4 years, with a funding increase of \$11.8 million. This raised the total project cost to \$21 million and extended the project completion date (PACD) to August 1990.

2. EVALUATION PURPOSE AND METHODOLOGY

The purpose of this appraisal was to provide an assessment of project status and to identify major issues to be addressed in the next implementation phase. The appraisal was carried out by USAID staff through field visits and semi-structured interviews with project personnel, government officials and local road contractors. Field findings were supplemented by summary statistics provided by the contractor, Wilbur Smith & Associates (WSA) in Dhaka.

3. MAJOR FINDINGS AND CONCLUSIONS

The appraisal raised a number of design and implementation problems which seriously affect the ability to achieve the project purpose. These problems focus around the following major issues: 1) a lack of consensus on the project purpose, 2) an inadequate institutional framework for implementation and 3) the absence of a strategy to address severe constraints in financing road maintenance. The major findings and conclusions related to these issues are described below.

1. Little or no discernible progress has been made in institutionalizing a routine annual maintenance program. This is partially due to a lack of consensus on and commitment to feeder road maintenance by personnel at all levels, and a general lack of consensus on the purpose of the project. Although the grant agreement gives equal weight to maintenance and improvement, field level staff identified the paving of roads connecting growth centers to the nearest regional highway as the primary project objective. Local officials also described the project solely in terms of improvement, i.e. the paving of dirt roads, ignoring maintenance completely. This is a fundamental shift from the purpose described in the original agreement.

2. Although decentralization policies formulated in 1983 delegated road selection, maintenance and improvement decisions to the upazilla level, local participation in FRMIP road selection is almost non-existent. This is primarily because the Planning Commission, (within the Ministry of Planning) through its rural development strategy, has jurisdiction over all donor-funded projects. The Planning Commission priority in road selection is to link growth centers to regional highways. The result is that FRMIP road selection has been structured to match the project purpose as understood by district officials and the Planning Commission. Since these roads may not meet local government road priorities, local officials feel little sense of obligation for maintenance or improvement.

3. Efforts to upgrade road improvement standards within the FRMIP have been successful, however these standards have not been adopted outside of the project. Initial construction costs are higher, with more supervision required to ensure quality construction.

4. Although it is recognized that maintenance of these higher quality FRMIP roads is less costly than maintaining conventionally built roads in Bangladesh (Tk 80,000 vs. Tk 183,000), a routine annual maintenance system has not been put in place. Local officials, with limited budget allocations for road construction and maintenance, have little incentive to adopt the higher standards, in spite of lower recurrent costs over time.

5. Of the 270 km of feeder roads improved or maintained by the project, none has been maintained for more than one annual work season, and some not at all. Of the 123 km of roads partially or completely improved (from dirt to paved), only 21 km (17%) have received any maintenance so far.

6. There is no strategy to address recurrent cost constraints and no mechanism to link investment decisions to maintenance financing. The new districts created under the national reorganization in 1983 have limited revenue collecting authority. The Planning Commission appears committed to invest in infrastructure, but has made no provision to invest in maintaining that infrastructure.

MAJOR RECOMMENDATIONS

1. USAID, the Ministry of Local Government (MLG), the Local Government Engineering Bureau (LGEB) and the Planning Commission should review the FRMIP project purpose and reach agreement on its definition and on methods and indicators of achievement, and communicate the agreed upon purpose to local officials.

2. A mechanism should be established to transfer road selection responsibility to local government units that are responsible for maintaining completed roads.

3. A feeder roads sector assessment should be undertaken 1) to identify the key institutional factors affecting the adoption of improved road standards and routine annual maintenance programs, 2) to determine the most cost effective allocation of funds between road investment and maintenance, and 3) to recommend strategies and policies that could increase the project's long term impact on road improvement and maintenance standards.

4. FRMIP should concentrate the next phase of implementation on the maintenance portion of the project purpose. Investment in paving new roads should be highly restricted until such time as higher road improvement and maintenance standards are accepted and adopted.

5. In the overall goal of developing a financially sustainable feeder road network in Bangladesh, efforts should be made to encourage the adoption and application of higher road standards for all maintenance and improvement, irrespective of funding source.

LESSONS LEARNED

1. Developing a sustainable feeder road system requires technical, institutional and financial inputs. In the course of implementation, the FRMIP made the error of addressing the maintenance aspect primarily through technical means, by building higher standard, more costly roads. This was done without making certain in advance that the institutional and financial commitments to establish and support a maintenance system were in place.

2. The implementation and policy environment could not respond to building the institutional and financial requirements for a sustainable high standard road system. With this as a given, the technical solutions needed to be scaled down to more realistically reflect the existing constraints.

3. The textbook theory that greater investment in paved higher standard roads will reduce maintenance costs does not seem to hold true in the current situation in rural Bangladesh. Few of the feeder roads under FRMIP sustain the traffic volume to justify more than a good quality dirt surface. Premature paving of some of these roads has resulted in an increase rather than a decrease in maintenance costs, since not maintaining paved roads is much more expensive than maintaining them. Unmaintained paved roads in the project area deteriorated to worse than dirt road condition in a period of two to five years.

K. ATTACHMENTS (List attachments submitted with this Evaluation Summary; always attach copy of full evaluation report, even if one was submitted earlier)

1. RAPID RURAL APPRAISAL OF THE FEEDER ROADS MAINTENANCE AND IMPROVEMENT PROJECT - July 1987 ATTACHMENT A - ACTION DECISIONS
2. FEEDER ROADS MAINTENANCE AND IMPROVEMENT PROJECT - Action Plan - August 1987
3. HOW RURAL DEVELOPMENT POLICY DISCOURAGES FEEDER ROADS MAINTENANCE IN BANGLADESH, by Olivier Carduner - January 1989

ATTACHMENTS

L. COMMENTS BY MISSION, AID/W OFFICE AND BORROWER/GRANTEE

Extensive discussions took place during the transition period from July 1987 to August 1988. Ultimately the Government of Bangladesh was not interested in re-designing the project to conform to the original project priorities. The project was terminated May 1989, and all of the phase-out activities will be completed by September 30, 1989.

MISSION COMMENTS ON FULL REPORT

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ATTACHMENT A

AID Evaluation Summary - Part I

Rapid Rural Appraisal of the Feeder Roads Maintenance
and Improvement Project - July 1987

E. Actions Required	Name of Officer responsible for Action	Date Action to be Completed
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I. PROJECT RE-DESIGN

- | | | |
|--|-----------|-----------|
| 1. Engage government in re-design of FRMIP to address issues defined in appraisal. | USAID/MLG | 9/87-6/88 |
| 2. Carry out roads sector assessment. | USAID/MLG | 6/88 |

II. TRANSITION PERIOD ACTIVITIES

1. Road Improvement and Maintenance

- | | | |
|---|--|--|
| - Prepare detailed plan for all road improvement and maintenance work for 87/88 work season, based on the action plan guidelines. | Consultant
MLG project
manager/
district
officials | 11/87 |
| - Provide on-site TA and on-the-job training to local government personnel involved in planning, designing and carrying out the above work. | Consultant | On-going |
| - Design and implement a pilot maintenance and improvement program in one to three upazilas. | Consultant/
MLG Project
Manager | Design 12/87
Implement
1/87-6/88 |
| - Provide technical certification for USAID reimbursement. | Consultant | On-going |

2. Road Equipment Maintenance

- | | | |
|---|------------|---------------------------|
| - Develop and implement program to develop district equipment maintenance capability. | Consultant | 11/87 - End
of Project |
|---|------------|---------------------------|

- Procure necessary spare parts for previously procured project equipment and deliver to districts. Consultant 6/88
- Complete assessment of current condition and use of all road related equipment in project area, with special focus on FRMIP financed equipment. Consultant 3/88
- Develop and implement strategies to improve utilization and reduce down time for equipment. Consultant 11/87 - End of Project

3. Special Studies and Assessments

- Conduct and economic feasibility study on previously improved FRMIP roads; complete previous work relating to road classification surveys and development of road selection methodologies. Consultant 3/88
- Conduct recurrent cost analysis for long term planning purposes. Consultant 3/88

4. Training

- Prepare and implement training plan for transition period. Consultant 11/87 - End of Project
- Conduct evaluation of all training carried out under FRMIP. Consultant 7/88

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RAPID RURAL APPRAISAL OF THE

FEEDER ROADS MAINTENANCE AND IMPROVEMENT PROJECT
(388-0056)

Prepared by:

Office of Project Development and Engineering

USAID, Dhaka

**** D R A F T F O R D I S C U S S I O N O N L Y ****

July 19, 1987

I. Introduction

In May 1987, USAID's Project Development and Engineering Office staff conducted a Rapid Rural Appraisal of the Feeder Roads Maintenance and Improvement Project (FRMIP). The purpose of this appraisal is to provide a brief assessment of project progress and identify significant issues which should be addressed in the next phase of implementation. Two field trips of three days each were conducted in greater Rangpur and Sylhet districts by Mike Calavan, Olivier Carduner, Manir Uzzaman, Manjurul Alam and A.Z.M. Bashir. Semi-structured interviews were held with Deputy Commissioners, Executive Engineers, Upazila Chairmen, Members of Parliament (in Rangpur), Wilbur Smith & Associates field staff, and local road contractors. Field findings were supplemented with summary statistics on FRMIP road activities provided by Wilbur Smith & Associates (WSA) staff in Dhaka. These statistics are provided in Attachment A. Major findings, conclusions and recommendations resulting from this appraisal are organized under six topical headings in section III below.

II. Summary

Initiated in August 1981, the Feeder Roads Maintenance and Improvement Project was designed and funded with the purpose of institutionalizing an effective routine annual feeder road maintenance and improvement program in local governments at the district level. The rapid rural appraisal conducted by USAID's Project Development and Engineering Office concludes that while significant progress was made in accelerating the pace of road improvements, little or no discernable progress has been made in institutionalizing any kind of routine annual maintenance program. This is illustrated by basic FRMIP statistics. Of the 266 Km of paved type B feeder roads in the greater Rangpur, Faridpur and Sylhet area, 83 Km or 31 % were paved by FRMIP.¹ However, of the 270 Km of dirt or paved feeder roads affected by the project, none has been maintained over more than one annual work season. Of the 123 Km of roads partially or completely improved by FRMIP in the past five years, only 21 Km (17 %) have received any maintenance

1 "Type B" feeder roads are defined as roads which connect selected rural markets known as growth centers to upazila headquarters, another growth center or to the nearest regional highway. They are the highest category of road under the responsibility of local governments. "Type A" feeder roads connect Upazila headquarters to the nearest regional highway and are under the jurisdiction of the Roads and Highway Department.

so far.2

The lack of progress on maintenance is attributed to:

9.4
- A lack of consensus on and commitment to feeder road maintenance by central and district level officials.

1. District
2. Comm
- A series of major changes in implementing entities at field levels prompted by decentralization policies, which removed the element of stability needed for effective institution building. The "suspension" and reorganization of district governments during the past three and a half year has resulted in a shift in the balance of implementation responsibilities from districts to the center which has traditionally been oriented towards road improvement rather than maintenance.

- The Planning Commission's gradual assumption of a key role in project implementation and imposition of a strongly centralized approach to road selection which effectively precludes the type of local government participation needed to permit development of local commitment and capacity to carry out routine maintenance.

- Insufficient analysis and understanding of institutional factors at the local government level which create incentives or disincentives to adoption of higher road improvement standards and routine maintenance practices, and a resulting absence of effective strategies to address the problem of adoption.

- Absence of a strategy for addressing recurrent cost constraints, and linking investment decisions to maintenance financing.

- Excessive focus on the engineering problems related to paved roads at the possible expense of dealing with less complex but more widely felt local concerns centered on maintenance of dirt roads. The effect of this is to limit participation in substantive project activities to trained technicians and diminish the project's influence on other local officials who may have a greater impact on adoption of improved standards and practices.

2 The term "improved" refers to roads which have been upgraded from a dirt or brick surface to a sealed bituminous pavement surface. These roads are also commonly referred to as "pucca" roads.

III. Findings, Conclusions, and Recommendations

A. Project Purpose

Findings:

1) When asked to describe the project purpose, all respondents, including WSA field staff, explained that connection of growth centers was the primary objective. After some discussion, one deputy commissioner mentioned maintenance as a secondary objective. The Grant Agreement defines the project purpose as: "to improve rural access by institutionalizing an effective annual routine maintenance and improvement program for Type B feeder roads..." (Amendment 1, Annex 1, page 1).

Conclusions:

1) The understanding of the project purpose by those responsible for implementation at field level, differs substantially from the Grant Agreement statement. Although the Grant Agreement gives equal weight to maintenance and improvement, local officials describe the project solely in terms of improvement, i.e. paving dirt roads. This suggests that the project purpose has not been adequately communicated to the field, and that, for a variety of powerful systemic reasons, the improvement objective has been allowed to take substantial precedence over maintenance. The net effect is a significant divergence from the grant agreement purpose.

Key Messages:

1) USAID, the Ministry of Local Government (MLG) and the Planning Commission should review the project purpose and reach agreement on its definition, methods of achieving it, and indicators of achievement.

2) The MLG and Local Government Engineering Bureau (LGERB) should take a leadership role in communicating the agreed upon project purpose to local officials.

3) The project consultant, Wilbur Smith and Associates (WSA) should brief all its staff on project goals, purpose and outputs as described in the Grant Agreement and the USAID project paper logical framework (Amendment 1, Annex 1).

B. Road Selection

Findings:

1) The primary criteria used in selecting roads for improvement or maintenance work is whether they connect one of the Planning Commission's identified "growth center" markets to a regional highway in the shortest possible route. Type B feeder roads not meeting this requirement are excluded. Every road scheme selected in a given year is individually assessed by the Planning Commission.

2) A number of growth centers have clearly lost their original importance since the Planning Commission's original 1979/80 survey. The assessment team found one which was relocated to a nearby regional highway (Parar Hat in Rangpur) and was shown the former site of another which was washed away by a river (Honimukh Hat in Sylhet). These and presumably others, are still listed in the latest EDG project proforma as priority points for determining road selection.

3) While both elected and appointed local officials generally agree that many designated "growth center" markets are important, virtually all interviewed strongly feel that this should not be the sole criteria for road selection. Other criteria given include a connection of markets which are of equal importance to those designated as growth centers; improving access to schools, family planning and health clinics, union parishad headquarters and areas where high value crops are grown. Officials point out that other type B feeder roads exist which provide better overall connection to these points as well as to designated growth centers.

4) In three of four upazilas visited, locally controlled resources allocated to feeder road improvement and maintenance were almost always spent on roads other than those selected under FRMIP. These other roads were selected because they match local priorities better than FRMIP roads. All upazila chairmen interviewed described extensive, and mostly unsuccessful efforts they had made to modify the FRMIP road selection process.

Conclusions:

1) Road selection has been structured to match the project purpose as understood by district officials, and the Planning Commission. Although the Planning Commission is not considered an implementing entity and is not mentioned in the Grant Agreement or USAID Project Paper, it plays a predominant role in selection of roads.

2) The list of growth centers has not been updated to reflect

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changes since the original survey.

3) The project has failed to generate a broad sense of local ownership or obligation with respect to the road work it has financed. To the extent that roads improved under FRMP do not match local priorities, it is unlikely that local governments will be willing to allocate funds and carry out work for routine annual maintenance. This problem is principally attributed to the lack of meaningful local participation in road selection.

Recommendations:

- 1) Same recommendation as A.1) above; USAID and the BDG should review and agree on the project purpose and strategies for achieving it.
- 2) In order to improve the chances of long term maintenance and protect USAID's and the BDG's investment in road improvement, the procedure for selecting roads for future FRMP improvement work should be substantially modified to transfer responsibility for road selection to those local government units responsible for maintaining completed roads. Local government units should be provided with, and trained in use of basic selection methodology and guidelines which ensure technical and economic feasibility of selected roads. The concept of giving priority to selected "growth center" markets could be used along with a simple methodology for identifying such growth centers.

C. Road Improvement and Maintenance

Findings:

- 1) WSA efforts to improve the standards used on road improvement and maintenance work seem to have been successful: FRMP improved roads have a reputation for greater durability; Executive engineers and contractors interviewed seemed convinced that application of WSA developed road specifications results in longer lasting roads; Contractors felt that WSA training in road work was very beneficial.
- 2) Contractors stated that they typically increase their bid prices by 15% to 20% when WSA specifications and contract supervision is present in order to cover for the additional costs of meeting higher standards.
- 3) In Rangpur, contractors reported that WSA developed road specifications were only used on FRMP financed road improvement tenders, and never appeared on other road tenders

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issued by the Rangpur Executive Engineer.

4) Of the 270 Km of feeder roads improved or maintained by the project, none has been maintained over more than one annual work season. Of the 123 Km of roads partially or completely improved (from dirt to paved), only 21 Km (17 %) have received any maintenance so far (see statistics in Attachment A).

5) The average annual cost of providing routine maintenance to one Km of improved feeder road is estimated to be Tk 80,000 for roads built to FRMP standards, and Tk 183,000 for roads built following conventional standards and practices. The same cost for dirt feeder roads is about Tk 8,000 (see Attachment A, item 6).

6) Depending on construction standards used, a paved feeder road receiving no maintenance can deteriorate to worse than dirt road condition in two to five years.

7) Executive Engineers reported that the WSA manual describing maintenance standards and procedures was too long and too complex for them to absorb without specific training. They implied that little contained in the manual had been put to use.

Conclusions:

1) While improvements in road work standards have been achieved, the long term impact of WSA's work in this area appears to be limited by the fact that the standards have not been adopted on other district road tenders. The reasons for lack of adoption is in part due to lack of timely official endorsement by LGER headquarters. It may also be that local executive engineers don't bother to include the additional specifications because they don't have the capability to deliver the level of supervision which adoption of higher standards require. Higher bid prices also mean that fewer roads can be improved with a given budget allocation when higher standards are applied. The combination of the latter two factors may cause an effective dis-incentive to the adoption of higher standards.

2) A higher level of road improvement standards is critical to future maintenance efforts because recurrent maintenance costs are much lower when roads are originally built to higher standards. The current practice of stretching the budget to improve more roads at lower standards is effectively undercutting local government efforts to keep roads maintained, because it imposes maintenance costs which will greatly exceed available funding. It is therefore critical to the project purpose, and the goal of developing a

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usable feeder road network in Bangladesh, that steps be taken to increase the adoption and application of higher road standards for all road paving work, regardless of funding source.

3) The project has made little or no discernable progress in achieving the maintenance portion of the project purpose; i.e., institutionalizing an effective annual routine maintenance program. This suggests that the lack of consensus on the project purpose described above, probably existed since the beginning of implementation. While there must have been at least some level of commitment to the stated purpose by BDG officials involved in negotiating the original grant agreement, that commitment has clearly not been sufficient to overcome prevailing practices. Another major factor has been the changing role of district governments which removed the stability needed to develop maintenance capability. Over the past three and a half years, district governments have been subjected to a series of drastic changes in their geographic areas and implementation responsibilities as a result of evolving government decentralization policies. After being legally "inactivated" to allow new elected upazila governments to take root, they were divided into 64 units from an original list of 22. New legislation has recently been passed by parliament to create an elected district government system which would substantially change the nature of district government.

4) Experience in other countries as well as this project suggest that achieving routine road maintenance is often much more difficult than it first seems because the institutional constraints are often not understood or recognized. Initial feasibility studies for FRMIP did not adequately address the question of institutional feasibility. Even if they had, the government structure in rural areas has been sufficiently transformed in the past few years to invalidate previous assumptions.

Recommendations:

1) Until effective solutions are found for increasing the adoption of higher road improvement standards, the Bangladesh Government should minimize investments in paving new feeder roads and focus on improving the standards used for dirt road construction and maintenance.

2) More information is needed concerning institutional constraints to adoption of higher standards for both road improvement and maintenance. A feeder roads sector assessment should be undertaken to 1) identify the key

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institutional factors which affect adoption of improved road standards and routine annual road maintenance programs, ii) determine the most cost effective allocation of funds between road investment and road maintenance, iii) recommend strategies and policies which could increase the project's long term impact on road improvement and maintenance standards.

2) FRMIP should concentrate the next phase of implementation on the maintenance portion of the project purpose. This could be started by a) establishing a routine annual maintenance program on FRMIP improved roads and other feeder roads of equal standard, b) Developing and establishing a maintenance program for heavily used dirt roads which could be adopted by local governments until funds become available for maintaining more paved roads.

D. Recurrent Cost Financing

Findings:

1) The only apparent source of maintenance financing for improved feeder roads is the old zila parishads which have continued to function with their own revenues. The new districts do not yet have a parishad system and have no investment fund allocations or revenue collection authority. We did not assess upazila allocations to maintenance of improved roads. These are generally thought to be minimal although some upazilas are known to be implementing improvement programs for both type A and type B roads. Rangpur officials reported spending an average of Tk 90 lacs annually on all types of road work, while Sylhet reported spending Tk 120 lacs. The assessment team estimated that not more than 15% of those amounts were spent on road maintenance activities. Most is spent on surfacing dirt roads and building bridges and culverts.

2) FRMIP road improvements in Rangpur (26 Km) and Sylhet (17 Km), have increased the annual recurrent cost budget by at least Tk 22 lacs and Tk 12 lacs for each respectively (assuming low routine annual maintenance costs from line 6d in Attachment A). This is equivalent to 163% and 67% of Rangpur's and Sylhet's estimated annual road maintenance budgets (assuming 15% of their road funding goes to maintenance). Project efforts to address the recurrent cost issue stopped in March 1984 with completion of the Syracuse University local public finance studies.

3) Given the extent of the existing feeder roads network in Rangpur and Sylhet (1120 Km of which 219 Km (20 %) is

currently improved), and current practice of emphasizing investments in new road improvements rather than maintenance, it seems unlikely at best, that FRMIP improved roads will receive adequate funds for maintenance from currently available sources.

4) Executive engineers and Deputy Commissioners in Rangpur and Sylhet Districts recommended that the share of project funds allocated to maintenance should be greatly increased (see below). Rangpur officials reported getting requests from local citizens to remove damaged blacktop from unmaintained roads on the argument that returning the road to a dirt surface would make it more passable.

Conclusions:

1) The critical linkage needed between infrastructure investment planning and recurrent cost financing has not been made in this project, and there is no evidence that the linkage is being made outside of the project framework. Local governments dependent on external investment financing are constrained from enlarging their revenue base to permit financing of recurrent costs, and the central government has apparently failed to increase operating expense budgets to match increases in recurrent costs. Although the project did have a public finance component until early 1984, this effort did not appear to influence road improvement planning or increase recurrent cost financing.

2) Using figures in Attachment A (lines d, and e), we estimate that the cost of routine annual maintenance for the current network of improved type B feeder roads in greater Rangpur and Sylhet combined is Tk 321 lacs per year. A high estimate of the amount currently available to meet this cost is Tk 32 lacs (15% of Tk 90 lacs + 120 lacs). Therefore, only 10% of recurrent cost financing appears to be met at this time. If all improved roads were originally built to FRMIP standards (only 20% are at present), the cost of annual maintenance would drop by half to Tk 164 lacs and the proportion of available maintenance funding would rise to 20%. In either case, this percentage figure is declining gradually each year, because more roads are being improved but maintenance financing is not increasing. The difference in cost according to road standards illustrates the importance of higher road improvement standards in reducing recurrent costs.

Continuing investments in improving roads when the present deficit in maintenance financing is as high as it appears to be in Rangpur and Sylhet, may well lead to a worsening rather than improvement in rural road access because unmaintained paved roads eventually become less passable than dirt roads

which can be at least minimally maintained with Food For Work programs. Moreover, after four or five years, unmaintained paved roads become a major financial liability because reconstruction must begin with the expensive process of removing broken pavement. Deputy Commissioners and Executive Engineers in the "old" districts are aware of this problem and recommend, as a temporary solution, that the ratio of FRMIP road maintenance funds to improvement funds be increased from the current 25 % to 100 % or 150 %.

Recommendations:

1) New efforts to address recurrent cost constraints must be initiated as soon as possible. This should begin with a detailed analysis of actual maintenance funding from all sources and a cost analysis to verify if the conclusion presented above is accurate. Second, a review of all feasible options for increasing recurrent cost financing should be undertaken with participation of the Ministry of Finance and other government bodies responsible for making policies on local government revenue generation and central funding of local operating budgets. This effort should be coordinated with other donors involved in feeder road development efforts.

2) USAID and the MLG should agree on and establish a clear linkage between investment financing for new road improvements and planning for long term recurrent costs. This could be done by requiring that districts proposing new feeder road improvement schemes must also prepare a convincing recurrent cost financing plan for their existing road networks and proposed new roads. TA should be provided to assist districts in preparing these maintenance financing plans. Districts who are unable to demonstrate adequate levels of financing for recurrent costs should be limited to road maintenance funding only and TA to assist in maximizing use of existing maintenance funds.

3) In order to protect the project's previous investments in road improvements, and to demonstrate and test the capability of local governments in delivering routine annual maintenance, all roads improved under FRMIP should be put under a special maintenance program (see recommendation C.2 above).

E. District Road Development Committees

Findings:

1) District Road Development Committees (DRDCs) were created during negotiation of the Grant Agreement extension in August

1986, to serve as local implementing bodies for FRMP. They represented an alternative to the officially inactive district governments and the active but limited capacity upazila governments. The Grant Agreement is silent on membership of the DRDCs, and the BGS proforma only indicates that they would include the district executive engineer, an engineer from the Roads and Highway Department (who have currently no authority over type B feeder roads) and "public representatives". In the field, we were informed that the DRDCs were headed by the Deputy Commissioner and included Members of Parliament and Upazila Chairmen from within each district. In practice, it seemed that only the "concerned" upazila chairman was invited to attend, and MPs were relegated to "advisory" status. In greater Rangpur only two DRDC meetings had been held up through the time of our visit. In Sylhet, there had been two or three meetings.

Upazila Chairmen and Members of Parliament whom we interviewed were universally dissatisfied with the DRDC system. Their main complaint was that road selection decisions had previously been made and their presence was only requested for concurrence. Some executive engineers voiced dissatisfaction with the arrangement because they felt it was not practical to use a committee system to tender for road development work and because they anticipated that elected representatives would be unlikely to agree with each other unless funding allocations were distributed equally between all constituencies. Everyone interviewed felt that the DRDCs would soon be replaced by new zila parishads in every district.

Conclusions:

1) The viability of DRDCs for project implementation at district level is questionable. They are ad hoc committees with no previous operational experience, and no real decision making function. They serve the purpose of providing a legitimate implementation body at the district level, but in fact are controlled by appointed district officials and are dependent on district office support facilities for carrying out their function. Since they have no operational role outside of the project framework, there is little chance that any kind of lasting institutional capacity can be developed through the DRDCs.

Recommendations:

1) The DRDCs should be viewed as a temporary vehicle for limited implementation efforts until the new zila parishad system is put in place. If this latter system is not put in place, USAID and the MLG should agree on an alternative local implementation framework before considering major new

funding. The only plausible alternatives are the currently inactive new districts or the upazilas.

F. District and Upazila Capacities in Road Development

Findings:

1) Functionally, the current local government structure can be thought of in terms of three different categories of local governments: a) "old" new districts which incorporate the seat of the old district headquarters, b) "real" new districts which were carved out of the territory of the old districts, and c) upazilas. The first are, for all practical purposes, identical to the old districts in staff and administrative capability. They still collect and spend their own revenues. The main difference is that their geographic area has been greatly reduced. The second category of local governments, the "real" new districts, have a core staff and some office facilities, but have so far been inactive in that they have no central funding other than that necessary to maintain their staff, and have no revenue collection authority. The staff was mainly recruited from the lower ranks of the old districts and is of significantly lower caliber than their colleagues in the "old" new districts. Their organizational or implementation capability is so far untested. The upazilas are the smallest units but on the whole appear to be the most dynamic and administratively capable. This quality stems from the fact that their elected government structure and relatively small population seem to cultivate fairly responsive local leadership, and that this leadership has greater control over revenue and development funding from the center than even the old districts. In addition they have significant sources of local revenue.

2) At the district level, the assessment team found that only executive engineers in the "old" districts were fully conversant with road development work in their area. Deputy Commissioners and other officials clearly relied on the executive engineers to answer our questions on feeder roads development planning. In contrast, the team found that all four Upazila Chairmen interviewed had some kind of plan for road development in their upazila. This became apparent during our questioning of FRMP road work, as all knew exactly which road work we were referring to, had an immediate opinion to offer on the relative merits of the road in question as compared to other roads, and could describe in detail their upazila's road development efforts for the preceding years as well as future efforts. One upazila chairman provided us with a detailed plan for feeder road development in his upazila which included a map showing each of the selected roads with a priority ranking and a basic

written description of main public facilities connected by each road.

3) In the course of questioning, it became increasingly clear that most of the current maintenance work and significant improvement work on type B feeder roads is currently being undertaken on dirt roads at the upazila level. Between Food for Work programs, the USAID/CARE Bridges and Culverts program, the CIDA funded Rural Maintenance Program and their own block grant funds, upazilas have substantial resources to conduct road maintenance and improvement work. Although some upazilas have been found to undertake road paving work, this is currently limited by block grant funding constraints, and most of the improvement work involves construction of bridges and culverts.

Conclusions:

1) In term of overall administrative and planning capability, the assessment team felt that upazilas were strongest followed by "old" districts who are in turn more distantly followed by new districts. In terms of overall technical capability for more complex activities such as improving entire stretches of roads, the "old" districts clearly ranked first, with upazilas and new districts about equal.

2) When FRMIP was started, only about 5% to 6% of all type B feeder roads were paved. The proportion in the three old districts is now 15%. Of that, 31% or 83 Km was surfaced by FRMIP. Another 10% have a Herringbone Brick surface (HBB). The high proportion of type B feeder roads which are earth rather than surfaced (74% in the three old project districts), and the large amount of resources which seems to be devoted to maintenance of earth roads most likely has a major impact on the attitude of local officials towards road surfacing and maintenance of paved roads. The FRMIP project has concentrated most heavily on the maintenance of paved roads as the key problem to be solved, and has found that paved roads are generally in such bad shape that major repairs are necessary before routine maintenance programs can be started. It seems however that local officials probably see paving principally as a solution to the problem of maintaining earth roads. Because the mileage of earth roads is so much larger than that of paved roads, and that until recently districts have had limited experience with paved roads, there has been little effort to focus on the more limited, costly and complex problem of maintaining paved roads. In this sense, the project may have been somewhat premature and limited in scope in terms of dealing with locally perceived road maintenance problems.

Recommendations:

1) The validity of the conclusions outlined above should be tested through more extensive field investigations. Ideally this should be done as part of the planned feeder roads sector assessment/project evaluation. If it is confirmed that: a) most feeder road maintenance efforts are conducted at the upazila level, b) these efforts are mostly financed by FFW and FFW related programs, and central government block grants, c) local officials are more pressed with the need to maintain dirt roads, d) investment and recurrent cost constraints are found to be a significant limiting factor on the amount of road paving which should be undertaken, then USAID and the MLG should consider adjusting the project efforts to assist upazilas in improving the results of their existing efforts in improvement and maintenance of dirt roads and reduce the focus on augmenting the stock of paved roads.

2) Pilot efforts in selected upazilas as described in the grant agreement should be initiated with the idea of testing less capital intensive, and more gradual approaches to road improvement such as the idea of phased construction where a series of gradual improvements are made along a complete stretch of road over several years. Coordinated use of existing FFW, upazila block grants, and locally generated revenues should be encouraged to cover annual maintenance costs.

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	District Area			Total
	Rangpur	Faridpur	Sylhet	
1. (a) Total KM of Feeder Roads	2067 (XW)	950 (XW)	793 (XW)	3810 (XW)
(b) Total KM of Type A Roads	1458 (XW)	447 (XW)	282 (XW)	2187 (XW)
(c) Total KM of Type B Roads	609 (W)	503 (W)	511 (W)	1623 (W)
(d) Total KM of Other Types (Not A or B if they exist)	NA	NA	NA	NA
2. (a) Total KM of pucca Type B Feeder Roads	75.62 (W)	48.15 (W)	142.60 (W)	266.37 (W)
(b) Total KM of HBB Type B Feeder Roads	60.04 (W)	50.90 (W)	39.45 (W)	150.39 (W)
(c) Total KM of Kutcha Type B Feeder Roads	473.61 (W)	404.35 (W)	329.07 (W)	1207 (W)
3. (a) Total KM of feeder roads completely improved by FRMIP	26.42 (W)	40.12 (W)	16.87 (W)	83.41 (W)
(b) Total KM of feeder roads partially improved by FRMIP	13.64 (W)	13.62 (W)	12.50 (W)	39.76 (W)
(c) Total KM of feeder roads improved (line 3a + 3b)	40.06 (W)	53.74 (W)	29.37 (W)	123.17 (W)
(d) % KM of FRMIP improved roads to total feeder road KM (line 3c/1ax100)	2% (XW)	5.6% (XW)	3.7% (XW)	3.2% (XW)
(e) % KM of FRMIP completely improved roads to total pucca road KM (line 3a/2ax100)	35% (XW)	83% (XW)	12% (XW)	31% (XW)
4. (a) Total KM of feeder roads maintained under FRMIP	21.12 (W)	61.77 (W)	64.40 (W)	147.25 (W)
(b) % FRMIP roads maintained to all feeder roads (line 4a/1ax100)	1%	6.5%	8%	3.86%
(c) Total KM of pucca feeder roads maintained under FRMIP	16.88 (W)	58.42 (W)	4.7 (W)	80 (W)
(d) % FRMIP pucca roads maintained to all pucca roads (line 4c/2ax100)	22% (XW)	121% (XW)	3% (XW)	30% (XW)
(e) Total KM of HBB feeder roads maintained under FRMIP	-	3.35 (W)	-	3.35 (W)
(f) % FRMIP HBB roads maintained to all HBB roads (line 4e/2bx100)	0% (XW)	7% (XW)	0% (XW)	2% (XW)
(g) Total KM of kutcha roads maintained under FRMIP	4.29 (W)	-	59.71 (W)	64 (W)
(h) % FRMIP kutcha roads maintained to all kutcha roads (line 4g/2cx100)	1% (XW)	0% (XW)	18% (XW)	5% (XW)
5. (a) Total KM of pucca roads improved by FRMIP which received FRMIP maintenance	2 (W)	19 (W)	-	21 (W)
(b) % of total FRMIP improved road KM which received FRMIP maintenance (line 5a/3cx100)	5% (XW)	35% (XW)	0% (XW)	17% (XW)

	<u>Sangpur</u>	<u>Faridpur</u>	<u>Sylhet</u>	<u>Total</u>
6. (a) Average Taka cost per KM for improvement work on FRMIP	1,200,000(W)	1,200,000(W)	1,050,000(W)	1,150,000(W)
(b) Average Taka cost per KM for pucca maintenance work on FRMIP	85,000(W)	85,000(W)	70,000(W)	80,000(W)
(c) Average Taka cost per KM for kutchha maintenance work on FRMIP	8,000(W)	8,000(W)	8,000(W)	8,000(W)
(d) Estimated annual cost of routine maintenance for pucca roads improved by FRMIP				
(i) In Taka per KM	85,000(W)	85,000(W)	70,000(W)	80,000(W)
(ii) Total (line 6d(i)x3c)	3,400,000(W)	4,568,000(W)	2,056,000(W)	10,024,000(W)
(e) Estimated annual cost of routine maintenance for all pucca roads				
(i) In Taka per KM	200,000(E)	200,000(W)	150,000(E)	183,000(E)
(ii) Total (line 6e(i)x2a)	15,124,000(E)	9,630,000(E)	21,390,000(E)	46,100,000(E)
7. (a) Total road KM maintained more than once on FRMIP	0	0	0	0
(b) Total pucca road KM maintained more than once on FRMIP	0	0	0	0
(c) Total kutchha road KM maintained more than once on FRMIP	0	0	0	0
(d) % of all road KM maintained more than once on FRMIP (line 7a/lax100)	0	0	0	0
(e) % of all pucca road KM maintained more than once on FRMIP (line 7b/2ax100)	0	0	0	0
(f) % of all kutchha road KM maintained more than once on FRMIP (line 7c/2cx100)	0	0	0	0
8. (a) Total No. of bridges & culverts less than 40 ft. built under FRMIP	11(W)	15(W)	98(W)	124(W)
(b) Total No. of bridges & culverts greater than 40 ft. built under FRMIP	0	2(W)	7(W)	9(W)
(c) Total No. of bridges & culverts less than 40 ft. maintained under FRMIP	1(W)	-2(W)	0	3(W)
(d) Total No. of bridges & culverts greater than 40 ft. maintained under FRMIP	0	0	0	0
9. (a) Total No. of different roads receiving improvement work only under FRMIP	10(W)	6(W)	8(W)	24(W)

	Old District Area			Total
	Rangpur	Faridpur	Sylhet	
(b) Total No. of different roads receiving maintenance work only under FRMIP	10(W)	6(W)	8(W)	24(W)
(c) Total No. of different roads receiving both improvement and maintenance work under FRMIP	0 (W)	0 (W)	0 (W)	0 (W)
(d) Total No. of new districts benefiting from road improvement only under FRMIP	5	4	3	12
(e) Total No. of new districts benefiting from road maintenance only under FRMIP	3	2	2	7
(f) Total No. of new districts benefiting from both improvement and maintenance under FRMIP	3	2	2	7
(g) Total No. of new districts benefiting from either improvement or maintenance under FRMIP (line 9d+9e+9f)	5	4	3	12
(h) Total No. of upazilas benefiting from road improvement only under FRMIP	7	9	10	26
(i) Total No. of upazilas benefiting from road maintenance only under FRMIP	7	6	7	20
(j) Total No. of upazilas benefiting from both improvement and maintenance under FRMIP	7	6	7	20
(k) Total No. of upazilas benefiting from either improvement or maintenance under FRMIP (line 9h+9i+9j)	7	9	10	26

NOTE: W - Figure based on actual WSA measurement or verifiable FRMIP figures.
 XW - Figure extrapolated from actual WSA measurements or verifiable FRMIP figures.
 E - Educated guess by WSA staff.
 N/A - Figure not available and educated guess not available.

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ISA 67680

FEEDER ROADS MAINTENANCE AND IMPROVEMENT PROJECT
(388-0056)

ACTION PLAN FOR
JULY 1, 1987 TO AUGUST 31, 1988

August 4, 1987

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I. Summary

The Feeder Roads Maintenance and Improvement Project (FRMIP), has been under implementation since August 1981. The project purpose is to develop local institutional capability to maintain feeder roads and to increase the pace of feeder road development. As of June 30, 1987, \$14.2 million in USAID funds have been obligated for the project and \$9.1 million has been spent. Three years of road improvement and maintenance activities were completed in the three old districts of Rangpur, Faridpur and Sylhet. For the past two years, implementation has been at a virtual standstill due to difficulties in reaching agreement on a four year extension. A rapid rural field appraisal was completed in July 1987 and raised a number of design and implementation issues. This Action Plan was prepared to address these and other issues and propose specific corrective actions for the short and long term.

Three strategic issues are identified. They include: 1) A lack of consensus on the project purpose; 2) An inadequate institutional framework for implementation; 3) Absence of a strategy to address severe constraints in financing road maintenance.

Significant modifications to the current project design are necessary to address these issues, and allow further progress to be made in reaching the project purpose. The Action Plan proposes that the period from July 1, 1987 to August 31, 1988 be considered as a transition period during which the following activities would take place:

- A redesign effort would be initiated to provide a basis for implementation of a follow on "phase II" of FRMIP.
- Limited road improvement and maintenance activities would take place to complete previously started improvement and maintenance work.
- The project consultant, Wilbur Smith and Associates would be extended through August 31, 1988 to supervise road work and complete a number of special studies.
- A comprehensive feeder roads sector assessment would be carried out.

If agreement on a project redesign can not be reached, the project would end in September 1988 after termination of the transition period.

Sections II and III below discuss the project's current implementation status and the strategic issues mentioned above. Section IV outlines the specific design and implementation activities which would take place during the transition period.

II. Current Implementation Status

The Feeder Roads Maintenance and Improvement Project started on August 20, 1981, when the first Grant Agreement was signed. A five year life of project and \$9.2 million in USAID funding was authorized. On August 31, 1986, Amendment No. 3 to the Grant Agreement extended the implementation period by four years to June 30, 1990 and obligated an additional \$5 million. Total obligations to date equals \$14.2 million out of a planned total of \$21 million. As of June 30, 1987, \$9.1 million was expended.

Physical implementation of road work and related technical assistance are constrained by the monsoon to work seasons which start in October and last until the following June. Since the original project signing, six work seasons have passed. The first season was taken up by procurement of technical assistance and meeting of conditions precedent. The following three work seasons (82/83, 83/84, and 84/85) saw significant activities during which 83 Km of feeder roads were improved to all weather, or "pucca", standard specifications, another 40 Km were partially improved, and 147 Km of paved and dirt roads received some maintenance repairs. Several training programs took place focusing on local government engineers and road building contractors. A major study of local government public finances was completed in 1984 in an effort to identify sources of financing to meet long term recurrent maintenance costs.

For the past two work seasons, from about October 1985 to the present, no significant new project activities have taken place. During this time, the project has been stalled essentially because of difficulties in designing and negotiating the four year extension. Late in the negotiations, the National Implementation Committee for Administrative Reform (NICAR), requested major changes in central and local implementation entities to make the project conform with decentralization policies. This included creation of a new project implementation office at the Ministry of Local Government (MLG) to replace the Local Government Engineering Bureau (LGEB), creation of fourteen District Road Development Committees to replace the original three old districts and initiating a pilot maintenance effort at the upazila level in three of the fourteen new districts. After the Grant Agreement Amendment was signed, the Planning Commission requested significant modifications in the Ministry of Local Government's (MLG) version of the Project Proforma which were inconsistent with the signed Grant Agreement. The emphasis was shifted to improvement rather than maintenance, rural market development was added as a new component, and the geographic area was reduced from three to one old district. After eight months of negotiations and redrafting, a revised Project Proforma was approved by key government bodies, allowing the MLG to proceed with implementation while waiting final approval by the Executive Committee of the National Economic Council (ECNEC). A copy of this revised Project

Proforma has yet to be officially transmitted to USAID. Actions to meet three Conditions Precedent to disbursement cannot take place until the final Project Proforma is operative.

An audit of the project was completed in December 1986. Five recommendations were made which required twenty two separate actions for closure. Of these twenty two "sub-recommendations", five have been closed. The audit recommended among other things, that USAID freeze further disbursements, except for necessary TA, until nine specific actions are completed. Of the nine, three have been completed and closed. Three to six months may be required to complete actions necessary to close the remaining open recommendations.

Over the past two years, the technical assistance contractor, Wilbur Smith and Associates (WSA), has been granted a series of short term extensions of three to five months duration in an effort to maintain their presence so that implementation could resume quickly once agreement was reached on the project extension. At the time the Grant Agreement Amendment was signed, it was intended that the WSA contract be extended to cover the remaining four years of the project. Subsequently, the government requested that a new TA contract be competed, and that WSA only be extended until a new TA team was put in place. The last WSA contract extension terminated on June 30, 1987. WSA's ongoing work will be financed by a two month extension to the existing host country contract. During that time, AID will obtain the documentation necessary to execute a direct AID contract with WSA for the one year transition period. It is estimated that about one year will be required to mobilize a new TA team in the field once a revised project design is agreed upon.

USAID has hesitated to commit itself to a TA contract extension and further project activities, because of concern over a number of unresolved strategic issues which substantially affect the possibility of attaining the project purpose. The following section summarizes these issues.

III. Strategic Issues

A. Lack of consensus on project purpose

The recent rapid appraisal of FRMIP conducted by the USAID Project Development and Engineering Office, found a significant lack of consensus on the project purpose among officials responsible for implementation at the district level. The project purpose described in the grant agreement calls for "institutionalizing an effective annual routine road maintenance and improvement program for type B feeder roads...". Local officials seemed unaware of the maintenance objective and defined the project purpose solely

in terms of paving roads which connect selected rural markets known as "growth centers". This view reflects that expressed by the Planning Commission in its requested modifications of the FRMIP project proforma and its rural development strategy statements.

USAID views development of maintenance capability as an essential condition to financing road improvement, on the argument that the large investments involved in road improvement will be wasted if roads are not maintained. The Ministry of Local Government (MLG) and Local Government Engineering Bureau (LGEB) seem to basically agree on the importance of maintenance, but feel that roads must first be improved before maintenance can be started and that local governments will somehow automatically take up the maintenance work when a basic stock of improved roads is completed. They argue that improvement work is so urgently needed that we should not delay it for the sake of building maintenance capability.

Since at least early 1984, the Planning Commission has played a predominant role in shaping government policy on feeder road development, and in many ways, the MLG and LGEB views are a response to this policy. In January 1984, the Planning Commission published a document entitled "Strategy for Rural Development Projects (A Sectoral Policy Paper)" which presented what appears to be an official government strategy for rural development. This strategy describes a 10 year plan which, among other things, would result in paving 4000 miles of feeder roads and developing 1400 "growth centers". The document mentions that previous rural development efforts had not fully succeeded in part because of a lack of local participation in planning and implementation, and goes on to state that local government bodies, namely upazilas, would be responsible for planning and implementing physical infrastructure projects (see pages 40, 47 and 49). It also states that all future rural development efforts would follow the strategy outlined in the plan. For feeder roads, this means giving first priority to those connecting upazila headquarters and "growth centers" to regional highways (pages 47 and 49).

Growth Centers were selected by the Planning Commission using a national survey completed sometime in 1981. This survey collected infrastructure and economic data on 66 variables for each union in the country. Details on methodology has not been released by the Planning Commission, but it seems that rural markets in each upazila were somehow ranked according to the results of the survey. Depending on the size, population and number of unions in each upazila, the top two to five markets on the rank ordered list were designated as "growth centers". These growth centers are to receive priority government and donor funding for various infrastructure improvements such as installing tube wells, sewerage and drainage, paving market streets, installing food godowns, electrification etc..

Sometime after the January 1984 rural strategy document was published, the Planning Commission developed a new system for categorizing feeder roads. Basically, two types of roads are identified: "Type A" connect upazila headquarters to the nearest regional highway. These are given highest priority for development and were assigned to the Roads and Highways Department which is also responsible for national and regional highways. Roads and Highways Department staff have indicated unofficially that given their present budget levels, it would take 30 years to complete repair and upgrading of Type A roads. "Type B" feeder roads connect selected rural markets designated as "growth centers" to upazila headquarters or to the nearest regional highway. Between these two, the Planning Commission has given priority to roads providing growth centers with the most direct connection to a regional highway.

It now appears that the Planning Commission's basic strategy in rural infrastructure development is to develop a series of donor supported projects, eventually covering most of the country, which would provide funds to upgrade growth centers and improve priority type B feeder roads which connect those markets to the nearest regional highway. On the argument that other donors are proposing to take up feeder road efforts in the greater Rangpur and Faridpur areas, USAID has been requested to limit future FRMIP activities to Sylhet. The BDG pro forma for FRMIP is now officially called "Rural Development Project No. 3 : Infrastructure, Old Sylhet District". This proforma includes government funds to finance growth center improvements, while USAID funds are reserved for road maintenance and improvements.

There are two basic problems with the approach to feeder road development adopted by the planning commission. First, it does not deal with the problem of maintaining roads once they are built. For example, given current road improvement standards, it would cost approximately Tk120 crore or \$40 million annually to maintain the planned 4000 miles of feeder roads once these are paved.^{1/} The strategy does not discuss how this cost would be financed nor does it discuss how local government capacity should be improved to manage the increased maintenance work load. Second, the approach to planning and implementation actually used appears to be in significant conflict with the government's decentralization policies, and the statements on local participation in the strategy document. The decentralization policy has, since the Local Government Ordinance was issued in

1 This estimate was calculated using the FRMIP consultant estimate of Tk 183,000 as the average annual cost of maintaining 1 Km of paved type B feeder roads. See item 6e in Attachment A of the FRMIP appraisal report dated July 1987. This amount is roughly equal to half of the total annual upazila block grant budget in the government's Annual Development Plan.

1983, given responsibility for feeder road maintenance and improvement to upazilas. Using support from a number of activities such as Food For Work and Bridges and Culverts Programs, the Rural Maintenance Program, and their own block grant funds, upazilas have been actively involved in improving and maintaining type B and even type A feeder roads. The creation of new zila parishad governments at the district level may result in the transfer of some or all responsibility for type B feeder roads development to districts.

Despite existing legislation, the Planning Commission has used its control over BDG project proformas which define donor projects, to effectively retain substantial decision making power at the center rather than allowing it to devolve to local government. Unfortunately, the resulting lack of participation in decision making by local governments is greatly reducing the chances that local governments will maintain the roads once they are completed (see USAID rapid appraisal of FRMIP). As this effect becomes increasingly clear, donor support for improvement of feeder roads is likely to be greatly diminished.

To resolve the current divergence of views on approaches to feeder road development, discussions must be initiated with the MLG, LGEB, the Planning Commission, the Ministry of Finance, USAID and other interested donors, to arrive at a basic understanding and agreement on strategy. Until such agreement is substantially reached, it will be difficult or impossible for USAID to resume full funding of feeder roads efforts. Section V below proposes specific steps to initiate such discussions.

B. Inadequate Institutional Framework for Implementation

Assuming a consensus is reached on a strategy for feeder roads development, the next issue to be dealt with is the question of a structure or framework for implementing project activities. The recent appraisal of FRMIP discusses this issue in some detail. Basically, it was found that the current system of District Road Development Committees that was proposed as an alternative to the zila parishad/LGERB implementation mode, is not viable for supporting significant road improvement or developing maintenance capability. When the new zila parishads are functioning, responsibility for feeder roads may well be transferred to them. The appraisal concluded however, that newly created districts are weaker than upazilas in terms of planning, administrative, and recurrent cost financing capacity, and about equal in terms of technical capability. Furthermore, it appears that most feeder road maintenance work currently being done is on dirt roads at the upazila level.

For these reasons, and others discussed in the appraisal report and the recent report by Management Systems International

("Institutional Assessment of Food for Work and Feeder Roads Programs in Bangladesh", May 1987), it may well be preferable to develop a two track, integrated effort to develop road maintenance and improvement capacity at both the upazila and district levels. Such a strategy may call for coordinated use of Food for Work resources, bridges and culverts programs and the nationwide Rural Maintenance Program currently implemented by CARE with CIDA financing. USAID proposes that efforts be undertaken immediately to develop alternative project implementation strategies. A key part of this effort will be to conduct a feeder roads sector assessment as recommended in the appraisal report.

C. Recurrent Cost Constraints and Implications

A principle determinant and measure of local government road maintenance capability is the ratio of available maintenance financing to actual maintenance costs. Until recurrent costs are substantively met, and revenues for maintenance are allowed to grow in proportion to road improvements, there can never be more than limited maintenance capacity. Because unmaintained paved roads soon become less passable than dirt roads and improved roads are ten to twenty times as expensive to maintain as dirt roads, it is critical that investments in road improvement be directly linked to availability and growth of maintenance financing.^{2/} This issue is especially critical to FRMIP which has financed 31% of the improved roads in the greater Rangpur, Faridpur and Sylhet areas.

The recent FRMIP appraisal estimated that the cost of routine annual maintenance for the current network of improved type B feeder roads in greater Rangpur and Sylhet combined is Tk 321 lacs per year. It further estimated that the amount currently available to meet this cost is Tk 32 lacs (see page 9, FRMIP Appraisal Report). Therefore, only 10% of recurrent cost financing appears to be met at this time. If all improved roads were originally built to FRMIP standards, the cost of annual maintenance would drop by half to Tk 164 lacs and the proportion of available maintenance funding would rise to 20%. In either case this percentage figure is declining gradually each year because more roads are being improved but maintenance financing is not increasing. The difference in cost according to road standards illustrates the importance of higher road improvement standards in controlling recurrent costs.

2 Depending on the construction standards used, a paved road with no maintenance can deteriorate to a worse than dirt road condition in two to five years. Attachment A in the FRMIP rapid appraisal indicates that the average annual cost of maintaining 1 Km of road is Tk 8,000 for dirt roads, Tk 80,000 for FRMIP standard paved roads and Tk 183,000 for the average paved road.

Given this situation, it becomes difficult to justify any level of road improvement work. While reasonably effective programs are in place to finance and carry out maintenance of dirt roads (Food for Work and CIDA/CARE Rural Maintenance Program), no similar situation exists for improved feeder roads. Appropriate government policies to address this problem need to be developed and the FRMIP design must be modified to reduce the risk that project activities actually results in a worsening rather than improvement of the feeder roads network. Until there is reasonable assurance that the latter is not likely to happen, USAID should refrain from making significant investments in road improvements.

IV. Transition Period -- July 1, 1987 to August 30, 1988

A. Purpose of Transition Period

This Action Plan defines "phase I" of FRMIP as all activities from August 20, 1981 to June 30, 1987. The "transition period" started on July 1, 1987 and would continue until about August 30, 1988 when a new long term TA consultant would be mobilized in the field. "Phase II", involving a return to full implementation, would start at the end of the transition period and continue until the agreed upon project termination date.

The basic purpose of the proposed transition period is to permit limited but essential activities to continue where feasible, while a revised project design and implementation strategy for phase II of FRMIP is developed and put in place. This limited activity will help prevent a potential disruption in continuity of BDG counterpart funding which may result if no funds are expended for an extended period of time. During this period, studies and other actions required to close audit recommendations can be completed, as well as a project evaluation and sector assessment. Project implementation during the transition period could begin as soon as a formal agreement is reached on the activities to be included (see below). Assuming that agreement on project design changes is reached in the next three to six months, the transition period would last until a new TA team is mobilized in the field, marking the beginning of phase II of FRMIP. If no agreement is reached, the transition period, and the project, would end in August 1988, with termination of the one year TA contract proposed below. A process for designing phase II is discussed in the next section. This is followed by specific proposals for implementation activities during the transition period.



B. Design of Phase II Activities

1. Implementation Objectives for Phase II

The major objective of FRMIP during phase II would be to demonstrate the feasibility of making significant progress in institutionalizing effective road maintenance and improvement practices at the local government level. Achievement of this objective would open the door to substantially increased donor commitments to feeder road development in Bangladesh. Given the importance of a functional road network to rural development, and relief efforts, it is essential that progress be made as quickly as possible. The experience of FRMIP over the past six years leaves one less than optimistic about the possibility of achieving this goal in the short time period left. Even if the project is extended by one year to the USAID ten year implementation time limit (August 20, 1991), only three work seasons would be available to reach this implementation goal (88/89, 89/90, and 90/91). If there are delays in reaching agreement on a revised strategy, and delays in procuring a new TA consultant, the project could easily lose impact during the critical first few months of the 88/89 work season when road schemes are planned, designed and contracted out. In this case, only two work seasons would be left, and it would become more difficult to justify a project extension for the last season. It is essential therefore that a concerted effort be made over the next three months to open discussions with all concerned parties and reach substantial agreement on, and commitment to a new strategy.

2. Design Process and Schedule

Designing phase II activities will involve the following steps:

- a. Reaching agreement with all involved parties on addressing the strategic issues outlined above;
- b. Designing new implementation strategies for achieving the project purpose;
- c. Revising project documents as necessary to permit implementation of new strategies, including the USAID project paper, the BDG project proforma and the Grant Agreement;
- d. Drafting a new TA scope of work and procurement of a new consulting team.

The first step will be started via discussions of this Action Plan and the FRMIP Appraisal Report with the Ministry of Local Government, the Planning Commission, the External Resources Division, and the Ministry of Finance (on recurrent cost issues). Other donors involved in feeder road activities would be briefed

through the Local Consultive Group to share relevant experiences and encourage appropriate coordination. During this time, a scope of work for the sector assessment would be agreed upon and tendered. USAID would propose that a working committee be established involving representatives from the MLG, Planning Commission, Ministry of Finance and USAID to collaboratively develop and approve a concept paper for phase II of FRMIP. Approval by all parties of the concept paper would set the stage for design of detailed implementation strategies. September 30, 1987 is proposed as the target date for approval.

Step "b", designing new implementation activities will require information from several studies. These include the feeder roads sector assessment discussed in section "G" below; a recurrent cost analysis, and road equipment utilization study which would both be completed by WSA under items 2 and 3 of the scope of work proposed in section "D" below; and an analysis of decentralization policies which will be conducted separately by USAID. The target date for completion of all studies is February 1988. Sufficient information should be available earlier to permit initial drafting of new implementation strategies and a scope of work for technical assistance. This would take the form of a USAID project paper supplement which would include information necessary for revision of the MLG project proforma, and a request for proposals (RFP) for a TA contract.

Step "c", revision of project approval documents and the Grant Agreement would be kept to the minimum necessary to permit implementation of revised phase II strategies. Continued use of the working committee established for step "a" would help reduce approval times and reduce the chances of major changes late in the design period.

A key question for step "d", TA procurement, relates to how far the project may proceed in making commitments to prospective consultants without requiring changes in existing USAID and BDG project documentation. This could presumably only be determined once a clear picture of a revised strategy emerges. Assuming that the need for formal approval of project documents and possibly a revised Grant Agreement does not hinder initial procurement steps, notice of a TA contract would be published in December 1987 to accelerate the procurement process, and a complete RFP made available by March 1988. Signing of a contract could take place by June if necessary project amendments have been fully approved. Barring unforeseen procurement difficulties, this should permit mobilization of new TA staff by late August or early September 1988.

C. Transition Period Road Maintenance and Improvement Activities

A number of factors argue against pursuing new road improvement or significant road maintenance activities for the coming 87/88 work season which falls during the transition period. First, the three strategic issues outlined above will take some time to resolve. Disbursing significant sums of money without properly addressing the strategic issues will diminish the project's ability to achieve its purpose. Continuing lack of progress in developing maintenance capability at the local level will, even in the short term, reduce willingness of donors to fund feeder roads activities.

Second, the disbursement freeze recommended by the audit and the fact that three conditions precedent to disbursement have not yet been met, make it impossible to provide reasonable 87/88 work season funding commitments to local implementing units. With the introduction of Members of Parliament into key decision making roles in the project, funding allocation decisions are likely to become increasingly politicized. In this situation, it would be unwise to make tentative commitments which may later have to be delayed or changed.

Finally, it is impossible at this late date to recruit additional expatriate resident engineers in time to provide on site technical assistance and supervision for significant road maintenance and improvement activities in 87/88.

For these reasons, it is proposed that road improvement and maintenance be limited to the following activities during the transition period:

1. Limited improvement work would be continued on road segments which were partially improved in previous work seasons. This work will be limited to minimum surface improvements and drainage structures needed to ensure year round access on the complete road segments. No bituminous paving work would be included. The project consultant will prepare a recommended work plan detailing specific improvement work which should be undertaken given TA staff constraints and relevant audit recommendations concerning feasibility studies.
2. Maintenance would be carried out on all road segments previously improved by the project. Although some of these roads were completed up to four years ago, none are under a routine annual maintenance program. At minimum these roads should serve as demonstration sites for the effects of routine annual maintenance work. This would include maintenance or repair of bridges and culverts.

3. Maintenance work on roads previously maintained by the FRMIP would also be eligible. The amount of such work will be limited by current TA staff constraints. Despite the fact that the FRMIP is trying to develop the concept of routine annual maintenance, project records show that no road has received more than one year of routine maintenance work during the last five years. Focusing on these roads would again help serve as a demonstration effect.

4. A pilot feeder road maintenance and improvement program would be designed and implemented in one to three upazilas in old Sylhet district to test strategies for improving feeder road maintenance capability at the upazila level. The consultant will be responsible for design and implementation of this effort.

5. Funding could be made available to help support multi-donor funded road surfacing trials aimed at finding more cost effective road improvement techniques. Such a proposal is currently being developed by the Swedish, Norwegian and Swiss bilateral aid programs (SIDA, NORAD and the SDC).

D. Transition Period TA Scope of Work

A one year technical Assistance contract is proposed to complete the following tasks during the transition period:

1. Road Improvement and Maintenance Works

a. In coordination with the MLG project manager and responsible district officials, prepare a detailed plan for all road improvement and maintenance work for the 87/88 work season according to the guidelines outlined above. This plan will be submitted to USAID and the MLG for approval prior to committing funds for road work.

b. Provide on-site TA, and on-the-job training to local government personnel involved in planning, designing and carrying out the road improvement and maintenance work described above.

c. Design and, following USAID and MLG approval, implement a pilot maintenance and improvement program for feeder roads in one to three selected upazilas.

d. Provide the necessary technical certification required for USAID reimbursement of road maintenance and improvement work.

2. Road Maintenance Equipment:

a. Assist the three districts who now control FRMIP funded road equipment to develop their equipment maintenance capability by ensuring that a basic spare parts inventory control system is in place and by providing basic training in routine maintenance and diagnosis of equipment failure. This effort will focus on, but not be limited to, equipment procured under FRMIP.

b. Procure necessary spare parts for road rollers, trucks and other equipment previously procured by the project and deliver to districts responsible for maintenance.

c. Complete an assessment of the current state and use of all road related equipment now controlled by local government units in the project area, with special focus on FRMIP financed equipment. This study will include a detailed description and analysis of current management practices for use and repair of road equipment. The consultant will develop and implement strategies to improve utilization and reduce down time for this equipment during work seasons.

d. Assess road maintenance equipment needs for future equipment procurement; prepare specifications and act as procurement services agent for importing those items of equipment agreed to by USAID and the BDG.

3. Special studies and assessments:

a. Conduct an economic feasibility study on roads previously improved during FRMIP as required by the project audit, and complete previously started work relating to road classification surveys and development of road selection methodologies.

b. Recurrent Cost Analysis. Using actual cost figures from FRMIP and other sources, conduct a study to determine the validity of the conclusions reached by the USAID rapid appraisal on the state of recurrent cost financing for road maintenance in the three old project districts. This will include a historical assessment of all resources allocated to feeder road maintenance, a projection of likely future allocations based on current revenue sources, and estimates of annual maintenance costs assuming a variety of maintenance practices. This study will include a cost benefit analysis to recommend the most cost effective allocation of funds between maintenance and improvement assuming current, and a range of improved, maintenance practices. This

study will also provide basic planning and budgeting figures for road maintenance work which can be used by any local government unit in planning long term recurrent cost budgets for road maintenance.

c. Provide full field, technical and administrative support as needed, for short term consulting team responsible for carrying out project evaluation and feeder roads sector assessment.

4. Training

a. Prepare a training plan for implementation during the transition period. This training will be limited in scope and content to the minimum necessary to support road improvement and maintenance work carried out during the transition period. Participation will be limited to upazila and district officials, appointed and elected, from the 12 new districts who have been involved in FRMIP activities to date. Training will include the following subject areas: a) planning and design for a stage or phased approach to road improvement; b) maintenance of dirt and paved roads; c) maintenance of road equipment; d) planning and budgeting for recurrent costs of road maintenance.

b. Implement training activities agreed to by USAID and the BDG.

c. Conduct an evaluation of all training carried out during the transition period and submit an evaluation report to USAID and the MLG.

5. Other tasks

a. Assist as requested by USAID and the BDG, in re-designing FRMIP to address the strategic issues outlined in section II. above, and other implementation issues.

b. Assist in mobilization efforts for long term FRMIP phase II consulting team. This will include serving as procurement agent for new project vehicles and identification of new field office space for TA staff.

c. Complete other tasks required under the project as requested by USAID and the BDG.

E. Transition Period TA Contracting

In order to expeditiously complete a new TA contract with WSA for the transition period, and follow the new TA contracting policy agreed to between USAID and the BDG, USAID will negotiate a direct AID contract with WSA. This contract would be a cost plus fixed fee plus award fee contract, with award fee payments tied to satisfactory performance of objectively identifiable performance indicators. This USAID direct contract would take effect on September 1, 1987. Consultant costs during the period between July 1 and August 31, 1987 would be covered under an amendment to the existing host country contract between WSA and the MLG.

F. Equipment and Spare Parts Procurement

Spare parts for previously procured equipment will be procured directly by the consultant. Future equipment procurement may be initiated after completion of the equipment studies by the consultant (items 2c and 2d in section C above), and after agreement is reached between USAID and the BDG on resolving the strategic issues discussed in section II above. Future equipment would be procured using USAID direct contracts with the suppliers.

G. Project Evaluation and Sector Assessment

A major evaluation of the FRMIP project will be conducted in the fall of 1987. This effort will be part of an overall feeder roads sector assessment which will evaluate the USAID/Title III Bridges and Culverts program and assess the impact of other donor activities on maintenance and improvement of feeder roads (including Food For Work and the CIDA/CARE Rural Maintenance Program). The assessment will analyze technical, financial and institutional factors affecting acceptance and adoption of improved road improvement standards and road maintenance practices, and recommend policies and strategies to improve local government capacity in planning, budgeting and implementing road maintenance and improvement.

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HOW RURAL DEVELOPMENT POLICY DISCOURAGES
FEEDER ROAD MAINTENANCE IN BANGLADESH

EXPERIENCE AND LESSONS LEARNED FROM THE
USAID FEEDER ROADS MAINTENANCE AND IMPROVEMENT PROJECT
AND COMMENTS ON THE ROLE OF THE PLANNING COMMISSION
RURAL DEVELOPMENT STRATEGY

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January 19, 1989

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I. Introduction

This paper was prepared for presentation at the Seminar on Road Maintenance organized by the Local Government Engineering Bureau (January 22-23, 1989). The paper has two objectives: 1) to summarize experience and lessons learned on the USAID assisted Feeder Roads Maintenance and Improvement Project (FRMIP); and, 2) to review the role of the Planning Commission's Rural Development Strategy in relation to road maintenance. The paper concludes that the Feeder Roads Maintenance and Improvement Project failed to achieve its maintenance objective because key institutional and financial constraints were not adequately addressed. The Planning Commission's Rural Development Strategy, which governs projects such as FRMIP, promotes the type of road investments for which the institutional and financial conditions for maintenance do not exist. There is a high risk that projects implemented under the present circumstances may inadvertently result in a negative contribution to rural economic growth. Unless the Planning Commission Strategy is substantively modified to address maintenance, it will not be a viable tool for promoting rural development. Modification of the policy environment and increased awareness of the issues by senior policy makers is critically needed to correct this situation.

The next two sections of this paper provide an overview of FRMIP strategy and implementation efforts. Some readers may wish to skip directly to section II.C. on page five, which summarizes findings of various project assessments and leads to a discussion of lessons learned.

II. Experience and Lessons learned from the Feeder Roads Maintenance and Improvement Project

A. Background

The Feeder Roads Maintenance and Improvement Project (FRMIP) was initiated in August 1981. It was the first, and to date the only, major donor funded project with the primary objective of increasing the institutional capability of local governments to maintain feeder roads. The second and, in USAID's view, secondary objective was to accelerate the pace of feeder road development. The three old districts of Rangpur, Faridpur and Sylhet were selected as the project area. Project duration and cost were originally planned to be five years and US\$ 11.5 million.¹ The Local Government Division of the Ministry of Local Government, with its Works Programme Wing (latter renamed Local Government Engineering Bureau) was the implementing entity along with the three district governments.

¹ Of this amount, USAID was to finance US\$ 9.2 million, and the Bangladesh Government Tk 6.9 Crore.

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The following four prong implementation strategy was adopted:

- 1) Strengthening the capacity of the three district governments through improved staffing and organizational structures, development of maintenance standards and procedures, and modernization of road maintenance equipment pools;
- 2) Improving road maintenance and construction techniques through on-the-job training of road contractor personnel;
- 3) Identifying and mobilizing additional local revenues to finance road maintenance;
- 4) Carrying out limited but strategic improvements on selected road segments to increase road usability.

A US consulting firm, Wilbur Smith and Associates (WSA), was engaged with its partner, Bangladesh Consultants Limited (BCL), to assist the Bangladesh Government in implementing the project. WSA/BCL prepared a number of inception reports which analyzed staffing requirements, equipment needs and training needs. They then developed several manuals on maintenance and improvement standards and developed training programs for district officials and road contractors. A major part of their effort also involved monitoring and certifying road work quality to ensure that standards were maintained. Finally, WSA/BCL acted as procurement agent for importation of new road equipment.

A separate contract was made with Syracuse University in the US to carry out a comprehensive two year study of the local government revenue system and recommend ways to generate increased revenues for district level road maintenance.

B. Early Implementation Progress and Difficulties

The first year of the project was taken up with mobilization of the consulting teams and other implementation preparation. During the next three years, 83 Km of feeder roads were improved to all weather bituminous carpeting standard, another 40 Km was partially improved, and 147 Km of paved and dirt roads received some repair work classified as maintenance. Several training programs took place with participation of local government staff and road building contractors. The distinction between maintenance and improvement work was clarified with establishment of practical working definitions. Some modifications in the engineering staff organization at the district level also were made which integrated two separate engineering units into one organizational structure. After lengthy discussions on equipment needs, a list of equipment for

each district was agreed upon. The equipment was procured, but due to the initial selection delays, did not start arriving until 1986.

The two year local revenue study by Syracuse University culminated in a widely attended workshop in early 1985, during which findings and recommendations were presented. Twelve reports were produced analyzing the additional income generating potential of the land development tax, the immovable property transfer tax, union, upazila and zilla revenue sources, and the possibility of instituting toll payments on roads. An executive summary with recommendations was also produced and widely distributed.²

In the early years of implementation, a modification in the project's road improvement strategy was made which ultimately had a major impact. A determination was made that most of the feeder roads in the project area were in such bad condition that significant improvement was required before a routine annual maintenance program could be effectively carried out. Hence, the original project strategy of limiting improvement work to a large number of small but strategic road segments was abandoned in favor of upgrading entire roads to full bituminous carpeting standard. Twelve roads were selected to receive this level of improvement and other roads received only limited attention. The assumption was that routine annual maintenance programs would be put in place once the full scale improvement work was completed.

The result of this change in strategy was that in the fourth year of the project it became clear that improved maintenance capacity was not yet institutionalized because attention had been focused chiefly on improvement work. Routine annual maintenance was not yet being performed on any roads. This factor, in addition to equipment procurement delays, meant that more time was required to achieve the primary project objective.

Another event occurred which complicated timely achievement of project objectives. In 1982, one year after project start up, the government began implementing a new decentralization policy which involved creation of the upazila system and a temporary "suspension" of activities at the zilla parishad level. The 22 existing districts were to be divided into 64 "new" districts. This meant that the institutional level the project was designed to support was rendered administratively irrelevant and sapped of its previous power and legitimacy. Nevertheless, since the roads in question were still important and district

2 Copies of the Syracuse University reports are available at USAID.

level staff was still in place, it was felt that road improvement work could be continued and that, given more time, the project's institution building strategies could be gradually adjusted to the new framework.

These two factors ultimately led to a decision to extend the project for another four years, to 1990, and to provide an additional US \$11.8 million in USAID funds and Tk 9.7 crore in BDG funds to raise the total project cost to US\$ 27.6 million (Tk 88.3 crore). New documentation was prepared and a revised agreement signed in August 1986. In this agreement, the project implementation entities were modified to conform to the new decentralization policy. A Project Implementation Office (PIO) was created to assume implementation responsibilities at the center in lieu of the LGEB. The government urged USAID to shift implementation to the upazila level, but USAID was not prepared to do so without a researched determination of upazila capacity. It was agreed however, that pilot maintenance efforts be initiated in several upazilas. To provide a legal basis for issuing road contracts at the district level (the "suspended" districts had no authority), fourteen "District Road Development Committees" (DRDCs) were created to substitute for the three original districts. No new road work was taken up during the 1985/86 work season while discussions on this extension were underway.

Just as it seemed a new agreement had been reached, it was found that the project design conflicted with another major new government policy, the Planning Commission's Rural Development Strategy. This strategy had been announced in 1984, but it was only in 1986, when the revised project proforma documentation was circulated, that FRMIP became affected. In the area of rural infrastructure, the policy required that new projects focus exclusively on upgrading selected rural markets identified as "growth centers" and improving the "type B" feeder roads which provided the shortest possible connection from these markets to the national road network. The policy included a target of 4000 miles of feeder roads to be improved to bituminous carpeting standard over a 10 year period, but road maintenance was not discussed.³ It was generally assumed that the newly created upazilas would be capable of, and accept, all maintenance responsibilities.

The Planning Commission wanted all donors to conform to this strategy and planned to assign each project to a separate

3 See Bangladesh Planning Commission, "Strategy for Rural Development Projects - A Sectoral Policy Paper" (Rural Development and Institutions Division, January 1984).

geographical region in order to eventually implement the policy nationwide. Several months of discussion ensued concerning the extent to which FRMIP, a previously existing project, should be revised to conform to the new policy. A compromise eventually was reached giving, on paper at least, equal emphasis between road maintenance and road improvement. A growth center development component was also added.⁴

Unfortunately the additional delay created by this discussion resulted in loss of a second work season (86/87). Although some previously started road work was being completed, no new work was initiated, and the project lost substantial and valuable momentum. An external USAID audit was performed during that time which highlighted the lack of overall progress, and questioned whether the original objectives were being met.

Concerned that the project environment may have changed to the point that original strategies, modified to suit a variety of new concerns, might no longer be viable, USAID undertook a rapid field appraisal of the project in May 1987. In the ensuing year, special assessment of the training programs and equipment use were also made. The main findings of these reviews follow.

C. Findings of Project Implementation Reviews

The major finding of the May 1987 field appraisal was that, after six years of implementation, little or no discernable progress had been made in achieving the original project objective -- institutionalizing routine annual maintenance at the district level -- although significant progress had been made in accelerating the pace of road improvement.⁵ In other words, after six years of implementation, the project had not made a visible dent in achieving its original objective.

More critically, the risk of building paved roads that would not be maintained became quickly apparent while visiting

4 This growth center component was financed exclusively from Bangladesh Government funds.

5 Of the 270 Km of type B feeder roads in the project area, none had been maintained over more than one annual work season. Of the 123 Km of roads improved by FRMIP, only 21 Km (17%) had received any maintenance. See page 1, "Rapid Rural Appraisal of the Feeder Roads Maintenance and Improvement Project" dated July 19, 1987. Copies available at USAID.

non-project roads paved in the previous five years. It was found that roads built to bituminous carpeting standard and not maintained often quickly deteriorated to worse than dirt road condition in as little as two to five years. This unusually rapid deterioration was said to be caused primarily by poor construction practices combined with high rainfall. Because of this situation, road improvement efforts can inadvertently result in a negative development impact and significant financial liability because unmaintained roads become unusable to all but pedestrian traffic, and repairs have to begin with expensive removal of broken pavement. In some areas, local residents had requested district deputy commissioners to remove broken pavement and return roads to dirt surface condition in order to make these roads, which had been "improved" only three to five years earlier, passable by rickshaw. These worrisome findings showed that financing continued road improvements without a corresponding increase in maintenance capacity would result in a worsening rather than improvement of the road system in rural Bangladesh.

Moreover, the assessment identified several major problems which made it clear that the maintenance objective could not be met without substantial changes in project design and the overall implementation environment. Three strategic issues emerged which need to be addressed: Lack of consensus on the maintenance objective; lack of adequate institutional framework for road maintenance; and, insufficient local resources to finance maintenance costs.

1. Lack of consensus on the maintenance objective

When interviewed, virtually all local officials involved with FRMIP explained the project objective in terms of improvement of type B feeder roads. None mentioned institutionalization of maintenance as a primary objective. The views of these officials, ranging from Upazila Chairmen to Deputy Commissioners and Executive Engineers, reflect the project's shift in emphasis from maintenance to improvement, both as a result of the new Planning Commission Strategy and the early shift in project strategy towards instituting a maintenance routine only on roads that had reached final bituminous carpeting standard.

It also appeared that many officials saw the application of bituminous carpeting pavement as a solution to the problem of maintaining dirt roads and were not yet concerned about, nor aware of the significant problems and costs involved in maintaining paved roads. This perception is not surprising given that about 74% of type B feeder roads (and probably about 98% of all roads) in the project area are still dirt and that

most (about two thirds) of the bituminous roads had only been completed in the preceding three years.⁶ By shifting the project strategy to start with full bituminous carpeting improvement rather than institution building for maintenance of existing roads, the type of problem addressed by the project shifted from one that was familiar to local people (dirt road maintenance) to one that was unfamiliar (paved road maintenance). With the assumption that pavement would be a type of permanent solution, any interest in the problem of maintenance that may have existed had disappeared.

The clear lack of consensus between project documentation, on the one hand, and views of local officials on the other, regarding the major problem to be addressed by the project made rapid resumption of implementation progress virtually impossible.

2. Lack of adequate institutional framework for road maintenance

At the time the appraisal was completed (July 1987), the future status and role of the new districts was still unclear and the technical capacity of upazilas for maintaining paved roads was untested. What did become clear was that the road development committees (DRDCs), although adequate as a temporary mechanism for issuing road improvement contracts, could not be expected to take over routine maintenance work. A major problem in this regard was their temporary nature and limited role in road selection. DRDCs were expected to be active only as long as a donor financed project provided funding. Most of the upazila chairmen and MPs interviewed did not like the DRDC system, and some stated they would refuse to participate because their roles in the DRDC were too limited and they were left out of key decisions, such as road selection. Hence, it appeared unlikely that DRDCs could coordinate general planning of maintenance or improvement work that might be financed by the Government outside of a donor project framework or after project completion.

In looking for alternatives, the appraisal team sought to assess the relative capability of upazilas, "new" new districts, and "old" new districts. "Old" new districts refers to the 22 newly created districts which were the headquarters seat of the old districts and which still retained stronger staffing, equipment, and financial resources than the "new" new districts converted from earlier sub-districts. The conclusion

⁶ See page 13, USAID, "Rapid Rural Appraisal of the Feeder Roads Maintenance and Improvement Project" (July 19, 1987).

was that, of the three, upazilas were strongest in overall administrative and planning capability, followed by "old" new districts, followed at considerable distance by "new" new districts. In terms of overall technical capability for large scale activities such as improving entire stretches of road, the "old" new districts clearly ranked first, with upazilas and "new" new districts about equal. All in all, the "new" new districts were clearly the weakest of the existing government units.

Given the additional facts that the 1982 Local Government Ordinance had given upazilas authority to carry out type B feeder road maintenance and improvement, and that they managed much larger shares of local and centrally generated resources than districts, the strategy of focusing long term institution building on new district governments was seriously put in question. The alternative of shifting entirely to the upazila level was not obvious however, because of road equipment constraints and the sheer number of upazilas involved in relation to remaining project resources. Finally, it became increasingly unclear how a project which was in the last years of an implementation effort originally structured to develop the institutional capacity of just three government units, could possibly be successful in quickly redirecting its efforts to work with over 30 upazilas, let alone 14 new districts.

In the year following the USAID appraisal, two other studies on equipment utilization and training program effectiveness were completed. These studies further revealed the complexity and difficulty in achieving the project's institution building objectives. The equipment study reviewed the usage and condition of all road equipment available at the district level in the project area, including that which had been purchased under FRMIP. It was found that overall utilization rates were less than a fifth of actual capacity. Simple preventive maintenance steps such as regular changing of oil was not being performed. WSA/BCL equipment experts estimated that if all unused but repairable equipment currently in the districts (including R&H, BWDB, and LGEB owned) were rehabilitated and made available, this could meet most or all road equipment needs for the next five to ten years. The major problems hindering greater use of equipment were found to be lack of spare parts, lack of maintenance and repair capability in local workshops (both private and government run), lack of maintenance funds, lack of interest in keeping equipment maintained, lack of spare parts standardization due to the multiplicity of equipment brands from different donor countries, lack of trained manpower, and near total absence of equipment dealer support.

These findings cast serious doubt on the near term success of instituting a road maintenance system that is dependent on effective equipment operation. Unfortunately, maintenance of paved roads is much more equipment intensive than maintenance of lower standard roads. Much stronger institutional support at the local government level is needed to maintain heavy road equipment in usable condition. Hence it appears that the strategy of first improving roads to bituminous carpeting standard had the effect of greatly increasing the burden of project success on one of the weakest links - institutional capacity.

Training was used in the project strategy as the major component to effect systematic institution building. An evaluation of the training programs was undertaken in 1988 to determine to what extent training was effective in improving work output and increasing capacity for road maintenance. The training evaluation interviewed 125 of the 306 individuals who had benefited from FRMIP training. These ranged from foremen and surveyors to executive engineers. The evaluation found that training had generally been good and that broadening of knowledge and perspective as a result of the training was significant and would be beneficial over the long run. On the other hand, "very few trainees could show that they had specifically used something of what they had studied. It was commonly said there was no system, no scope, or no order to specifically implement what they had learned, or insufficient funds, equipment, or personnel.⁷ A basic problem identified in the evaluation was the lack of incentive to change existing systems and practices which would have to be modified if the content of training courses was applied. Of several recommendations to address this problem, the evaluation emphasized strongly the need for greater commitment and support from top government officials and Ministries to the objectives of the training.

In sum, the task of institutional strengthening remains formidable. Drastic changes in the local government structure had the effect of creating a moving target which the project was not flexible enough to respond to. Maintenance of heavy road equipment, emerged as a major bottleneck which is not cured by new equipment procurement, and which will require much stronger institutional capacity to solve. A major tool of institution building - training, was found to be generally ineffective in promoting maintenance practices when a vacuum of commitment exists at higher levels of government.

7 See page 2, Clarence Maloney and Mahfuzar Rahman, "Evaluation of Training Component; Feeder Roads Maintenance and Improvement Project" (July 1988).

3. Insufficient Local Resources to Finance Maintenance Costs

Maintaining roads is expensive. Actual experience in FRMIP shows that the average annual cost of maintaining one kilometer of road is Tk 8,000 for dirt roads, Tk 80,000 for FRMIP-standard paved roads, and Tk 183,000 for the average paved road.⁸ The lower cost of maintaining FRMIP paved roads is due to higher design and construction quality which makes the roads more resistant to deterioration. This dramatic difference illustrates the importance of good construction techniques in limiting maintenance costs. The project achieved these standards by strict monitoring and certification of quality by the consultant (WSA/BCL) prior to reimbursement of road work costs.

Not maintaining paved roads was found to be much more expensive than maintaining them. As discussed above, roads in the project area which were built to common bituminous carpeting standard and not maintained, were found to deteriorate to worse than dirt road condition in a period of two to five years.

The USAID appraisal found that FRMIP road improvements in Rangpur (26 Km of new bituminous carpeting) and Sylhet (17 Km) had increased the annual maintenance budget requirement by at least Tk 22 lacs and Tk 12 lacs for each district respectively. The total current annual budget requirement for maintaining all type B feeder roads in those two districts was estimated at Tk 321 lacs. Unfortunately, it appeared that only about 10% this total was currently available.⁹ It was clear that the critical link between budgeting for new investments and budgeting for maintenance was not being made. Given the disastrous results of no maintenance, it seemed quite possible, indeed likely, that the feeder road network would be left in worse shape after the FRMIP project than before.

Unfortunately, since completion of the Syracuse University studies in 1984 with its extensive recommendations for raising revenues, no further effort was made on the problem of long term financing of road maintenance. The 1986 FRMIP project amendment added a road maintenance budget with gradually increasing BDG contributions, but because these funds are provided through the projectized development budget (ADP) rather than the revenue budget, this can only be considered as

8 Paved is used here to mean full bituminous carpeting. See Attachment A, "Rapid Rural Appraisal of FRMIP", op cit.

9 See pages 8 and 9, "Rapid Rural Appraisal of FRMIP", op cit.

a temporary band-aid measure that can not ensure maintenance funding; after project completion. The main problem of establishing a stable and protected revenue source at central or local government level is still unsolved. Until substantial progress in this direction is made, the potential economic growth resulting from road investments will remain largely unrealized. Moreover, it appears that the net result will be negative growth as the economic liability of unmaintained, unusable roads is added to the opportunity cost of investing in other more productive sectors of the economy. Such negative development will make it even more difficult to raise revenues for future development purposes, thus promoting a downward spiral which saps efforts toward overall economic self-sufficiency and growth.

D. Current Status and Lessons Learned

The three major issues outlined above proved too much for FRMIP to address in its final years and within existing resource and time constraints. After some effort to consider a major redesign, USAID and the Local Government Division decided to phase out FRMIP ahead of schedule, upon completion of previously started road improvement work. To reduce risk of negative development impact, a ban was imposed on use of bituminous carpeting for completing final road work. At the same time it was decided that development of a new project would be initiated to continue USAID support for rural roads and local government capacity building.

The basis of this latter decision was grounded in recent studies showing the potentially dramatic impact that infrastructure, especially roads, can have in developing rural areas, and the sense that an apparently increasing awareness of the maintenance issue at senior government policy levels could improve the chances of future success.¹⁰ It was also felt that lessons learned from FRMIP and other programs could be applied

10 See R.Ahmed and M.Hussein, Infrastructure and Development of the Rural Economy of Bangladesh (International Food Policy Research Institute in collaboration with Bangladesh Institute of Development Studies. February 1988). This USAID financed study found that villages ranked high in infrastructure had 31% to 42% greater crop production, and 33% higher household income levels than those with little infrastructure. Most of these benefits accrued to lower income groups. This means that effective investments in infrastructure such as roads can have a significant poverty alleviation effect. Copies of this study are available at USAID.

to design more effective and less risky implementation strategies that could help provide a framework for new road development efforts in the 1990's. As the first effort in developing the new project, a Rural and Feeder Roads Sector Assessment is being undertaken in collaboration with the Planning Commission, which will analyze in detail the major strategic issues discussed above and seek to identify the most effective approaches to building greater long term infrastructure maintenance capacity at the local government level.

In anticipation of more complete findings from the Sector Assessment, the lessons learned so far through the FRMIP project can be summarized as follows:

1) Developing a sustainable feeder road network is akin to building a stool to sit on. Three legs are required. If any one is missing the result is painful. For a road network the three legs of the stool are technical, institutional, and financial. In the course of implementation, FRMIP made the error of seeking a solution to the road maintenance problem through mainly technical means - i.e. building higher standard, more costly, and in theory more durable bituminous carpeted roads. This technical solution will not work unless the other legs of the stool, institutional and financial, are also built to the corresponding length and strength. In other words, it will take more than engineers to build a feeder road network. Without the public finance economist, institutions experts, policy makers and local politicians, as well as bureaucrats, the necessary structure cannot be built.

2) Until the implementation and policy environment can adequately support building the institutional and financial supports for a sustainable high standard road network, the technical solutions will have to be scaled down to more realistically match existing institutional and financial constraints. The idea here is to keep all three legs of the stool at the same length even if they have to be shorter.

In practical terms, this would mean explicit adoption of a stage approach to road improvement in which the first stage is limited to bridging critical gaps and building a good quality dirt surface. Stage two would involve partial hard surface treatment such as water bound macadam and perhaps addition of some structures to permit year round access and proper flood drainage. Only the final stage three would involve bituminous carpeting. Progression from one stage to the next would not take place unless at least two preconditions are met: i) actual traffic counts reach a defined threshold calling for the next

stage of improvement; ii) the institutional and financial capacity to maintain the road at the next higher stage is in place. If the second condition does not clearly exist while the first is met, then restrictions on road use need to be imposed such as prohibiting overweight vehicles or closing roads after heavy rains or flooding. Such an approach would greatly reduce the risk that overambitious improvement efforts result in negative development impacts.

3) In the current conditions of rural Bangladesh, the textbook theory that greater investments in harder, higher standard roads will reduce maintenance costs does not seem to hold true. This phenomenon is illustrated by the large ten fold disparity in cost of maintaining dirt roads compared to that of maintaining paved roads under FRMIP (see figures on page 10). While further investigation is needed, the following factors may explain this phenomenon;

i. The textbook case assumes that roads are paved only when traffic has reached such a level that continuous maintenance becomes cumbersome and very costly. Hardening the road with pavement will, at this point, reduce maintenance costs. By contrast, actual traffic surveys conducted under FRMIP show that few type B feeder roads sustain the traffic volumes to justify much more than a good quality dirt surface. Premature paving in this case will result in an increase rather than decrease in maintenance costs if the minimum maintenance required to protect the roads from rain and flood is more costly for bituminous carpeted roads than dirt roads. Analysis of labor costs involved in moving and compacting earth compared to the cost of bitumen, heavy equipment, and higher skilled technicians may show that such is the case.

ii. Poor construction quality is a major problem on most feeder road improvement work. This results in a road surface that is actually much "softer" and more fragile than the standard textbook case assumes. Such a surface will be much more expensive to maintain as the improvement work will in fact have to be repeated, even if gradually, under the guise of maintenance. FRMIP experience shows that poorly constructed roads can be more than twice as expensive to maintain than those of the same design that are constructed properly. While dirt roads also suffer from construction quality problems, the cost of maintenance repairs appears to be much less.

If these two factors operate simultaneously, and there is substantial indication that this is often the case, then we have the perverse result that increased investment in road improvements causes general increases rather than decreases in maintenance budget requirement. This effect would further

contribute to the downward spiral tendency discussed above whereby unsustainable investments are made which sap resources and undermine resiliency and growth in the economic base. Avoiding this effect is possible if a stage construction policy is adopted and effective means for ensuring construction quality are insisted upon. The latter would not be easy to institutionalize given the limits of trained technical staff and resources at local government levels and common practices of bribery in exchange for acceptance of substandard work.

III. Comments on Current Planning Commission Strategy

A. Importance of the Rural Development Strategy

Dissatisfied with the slow progress of rural development efforts, the Planning Commission in the early 1980's sought to revise current government strategies with a view toward simplification and focusing of objectives. In January 1984, a new comprehensive policy was announced and introduced to donors. The official policy document is entitled "Strategy for Rural Development Projects - A Sectoral Policy Paper". This strategy describes a ten year plan which, among other things, would result in paving 4000 miles of feeder roads and developing 1400 "growth centers". The document states that all future rural development efforts would follow the strategy outlined in the policy document. Subsequently, all donor and government projects involving rural development efforts were reviewed in terms of adherence to this policy.

In the area of rural infrastructure, growth center development became the cornerstone concept of the new policy. A national survey was completed some time in 1981 collecting infrastructure and economic data on sixty six variables for each union in the country. Using this data, rural markets in each upazila were rank ordered. Depending on the size, population and number of unions in each upazila, the top two to five markets on the rank ordered list were designated as "growth centers". Upazila headquarters were automatically designated as growth centers. The growth centers were to receive priority government and donor funding for various infrastructure improvements such as installing tube wells, sewerage and drainage, paving market streets, installing food go-downs, electrification etc. Feeder roads were defined to be those roads which connected the growth centers to the closest possible regional or national highway. Special priority was given to "type A" feeder roads which connected the upazila headquarters. Improvement of type A roads was made the responsibility of the Roads and Highway Department. All other feeder roads were designated as "type B", and were to be given priority by donor projects. All feeder roads were to be paved to bituminous carpeting standards.

As discussed earlier, the FRMIP project proforma and grant agreement had to be modified to reflect this new policy. In order to insure correct implementation, the Planning Commission required that each project proforma list the specific type B feeder roads which would be improved. Changes in the list could only be made with prior Planning Commission approval. Since 1984, all new or revised donor projects involving rural infrastructure activities were made to follow the policy. To date, close to \$250 million in donor funds, plus corresponding government counterpart funds, have been programed in projects which implement the policy.

Since its inception five years ago, sufficient time has passed to permit a review of the effectiveness of this policy. The preceding discussion of experience under FRMIP has identified several major difficulties with the Rural Development Strategy as currently conceived and implemented. The final section of this paper will briefly present these major issues as they affect infrastructure development.

B. Major Policy Issues with Rural Development Strategy

There are at least four major problems with the current policy which need to be urgently addressed if the Rural Development Strategy is to make a sustainable contribution to the rural infrastructure development of Bangladesh.

1) The first major difficulty is that the policy involves major new investments in infrastructure, but makes no apparent provision for maintenance of this infrastructure.

By default, it is assumed that local government units will absorb the maintenance burden with their own resources. However simple calculations show that the cost of maintaining the proposed type of infrastructure would be prohibitively expensive given the current financial position of local governments. For example, if the planned 4000 miles of feeder roads were improved to full bituminous carpeting standard using existing standards of construction, it would cost approximately Tk 120 crore or US\$ 40 million annually to maintain these roads after completion.¹¹ This amount is roughly half of the total

11 This figure was calculated using the FRMIP consultant estimate, based on actual experience, of Tk 183,000 as the average annual cost of maintaining one Km of paved Type B feeder road. This figure represents 1987 prices. An inflation adjustment to 1989 price levels would raise the cost by 15% or more. See item 6e in Attachment A of the FRMIP Appraisal Report, op cit.

annual upazila block grant budget in the government's Annual Development Plan. Costs of maintaining other investments, such as the growth center, and the upazilas' own infrastructure investments would be additional. Of course the cost of replacing these investment if they are not maintained would be several times higher.

Even if we assume that money becomes available, institutional constraints affecting equipment use, availability of sufficiently skilled and organized staff, and presence of adequate incentives to ensure a major change in orientation towards maintenance would still have to be addressed. None of these issues seem to have been adequately appreciated, and the very lack of discussion regarding maintenance in the policy is itself a major inhibiting factor to its occurrence.

Like FRMIP, the policy appears to be a stool with only one leg. The institutional and financial issues related to maintenance must be addressed if this policy is to become a viable tool for development.

2) The formula for road selection excludes reasonable economic considerations and too often results in poor investment choices.

Although the methodology for selecting growth centers has not been released by the Planning Commission, one may assume that economic data gathered in the 1981 survey was a guiding factor. From any given growth center however, there is usually more than one road and sometimes also a boat landing or train station as well. Rather than considering possible alternative economic benefits from selecting among available choices, the policy requires that only the road providing the shortest, most direct connection to the national highway system may be selected to receive priority funding as a type B road. This approach of cost minimization may provide the simplicity needed for a central planning exercise. However, this simplicity is bought at the cost of economic efficiency.

In one example in greater Rangpur district, a type B feeder road selected for FRMIP funding was found to rank last on an economic priority ranking of 13 roads in the new district. The number one ranked road connected the same growth center to the same regional highway. This first ranked road could not be selected because it was about 20% longer than the defined type B feeder road. Along its path the desirable road connected union headquarters, schools, a clinic and a cash crop agricultural area, while the selected road connected no such points. The upazila parishad recognized the obvious economic benefits of investing on the longer road and had devoted

substantial resources to improving it while ignoring the FRMIP selected road. It is unlikely at best that the upazila will devote resources to maintaining the type B road after it is improved. Many examples of this sort can be found. In three of four upazilas visited during the FRMIP field appraisal, locally controlled resources allocated to feeder roads were almost always spent on roads other than those selected under FRMIP.

3) Unintended windfall benefits to local elites

Recent studies on the current status of local revenue generation by the "Like Minded Group" of donors reveal that an average of up to 90% of revenues generated from growth center type markets is retained as profit by private market managers.¹² For an average upazila this 90% may amount to as much as Tk 36 lacs per year. It is generally expected that investment in growth centers, including improved market stalls, food storage go-downs, and roads significantly increase the value of the market to vendors. This provides an opportunity for managers to substantially increase their profits. Unfortunately, no mechanism is presently in place which would capture the incremental income generated as a result of the infrastructure investment so that it may be directed to public use such as maintenance of the infrastructure. Typically, the market managers are influential and wealthy local elites and there is known to be considerable collusion and other practices which defeat free market mechanisms and ensure a monopoly situation. Occasional efforts by upazila bureaucrats to manage the markets directly is said to usually result in even lower revenues to the upazila. Through this presumably unintended effect, the Rural Development Strategy contributes to increasing income disparities in rural areas while missing an opportunity to capture a portion of the benefits generated by investments.

12 Each year upazilas, who are responsible for rural markets, auction off each market to the highest bidder. The winning bidder collects rental fees from vendors who sell their produce at the market. Average revenue to upazilas from such auctions ranges around Tk 3 to 5 lacs. This is the most important "own" revenue sources for upazilas. Results of the Like Minded Group study were discussed at a workshop on January 8th, 1989. A consolidated written report is currently being drafted.

4) Conflict with Decentralization Policy

As alluded to earlier, there exists a potentially serious conflict between the current Rural Development Strategy and the Decentralization Policy over the questions of road maintenance and selection of investment priorities.¹³ It should be clear that each of these two national policies directly and independently affect development of rural infrastructure. The Decentralization Policy created the existing local government structure and set the terms and limits of local government authorities in all fields, including rural infrastructure development.

The Rural Development Strategy, on the other hand, provides the framework for donor and national level investments in rural infrastructure which are not directly controlled by local governments. This latter policy has been applied by the BDG to FRMIP and similar donor projects, while Food For Work related activities more closely follow and support the Decentralization Policy (i.e. resources have been more directly controlled by local governments). Of the two, only the Decentralization Policy provides a clear context for addressing maintenance issues, because the Planning Commission Strategy focuses exclusively on new investments and does not address the question of maintenance except to say that it is the responsibility of local governments.

As discussed above, achievement of the Planning Commission's feeder road improvement targets would add an annual recurrent cost burden on upazilas which would be roughly equal to \$ 40 million or more than 50% of their annual central block grant allocations for all development activities. Unless modifications are made which cause a parallel expansion of maintenance budgets, local governments risk being incapacitated by recurrent cost burdens which they cannot fully control. The lack of control stems from the extremely limited role local governments have in determining investment priorities under the Planning Commission Strategy. These combined factors clearly undermine the intent of the Decentralization Policy. In turn, the lack of substantive upazila participation in determining investment priorities from the center only decreases the likelihood that they will be willing to maintain centrally made investments. Hence the potential benefit of the Planning Commission Strategy would also be undermined.

13 The Decentralization Policy has been implemented through the 1982 Local Government Ordinance and the 1988 Zilla Parishad Bill.

Resolution of these conflicts is not clear cut. The decentralization policy has devolved substantial responsibilities for infrastructure planning and maintenance to local governments, but the capacity to effectively use the large amounts of resources which are needed to meet current development needs will take some time to develop. This point may justify continued existence of a Planning Commission Strategy as a means to channel supplementary resources.

Donors and the government are becoming increasingly aware of the complex linkages between infrastructure investments, recurrent cost financing, and local government capacity, but more analysis and experience will be needed to put in place practical solutions. At this point, it seems that the two national policies affecting rural infrastructure cannot be pursued independently, but must be implemented in a mutually supporting way. The Planning Commission Strategy will need to incorporate specific initiatives to address budgetary and organizational constraints to maintenance, and the decentralization policy will need to be sustained with continued efforts to increase local government capacity to deliver infrastructure related services.

C. Conclusion and Recommendations

Experience over the past few years has demonstrated that the present Planning Commission Rural Development Strategy, as currently promulgated and implemented, is not viable for development of a sustainable feeder road network. There is a real risk that unless the major gaps are addressed, projects in this sector may inadvertently result in a negative contribution to rural development. Over the past year and a half, the government and donors have increasingly recognized this problem and have taken a variety of measures. These measures can be categorized as follows:

1. Chipping away at the margins of policy. Recent examples of this include: requiring confirmation or modification of road selection by upazila parishads, reducing levels of infrastructure investment in growth centers, giving greater priority to other rural roads, and avoiding bituminous carpeting. These deviations from the prescribed approach have been implemented unevenly depending on decisions taken for individual projects. Over time this ad hoc chipping away on a project-by-project basis may result in a blurring of strategy so that it may not always be clear what priorities are being pursued in the sector as a whole.
2. Using funding conditionalities to compensate for critical gaps in policy. This is exemplified in the newly approved

World Bank and ADB projects which have linked major portions of infrastructure investment to satisfactory resolution of institutional and financial issues. Such conditions are intended to limit risk on the part of the donor, but in themselves neither substitute for nor ensure that well thought out and effective solutions will emerge.

3. Shifting resources to other sectors which appear to pose lower risks of failure. Given the current concern with the pace of project aid utilization, the problems encountered in this sector provide an example of situations which discourage greater donor investment in Bangladesh's development.

Development can be seen as the progressive loosening of successively appearing constraints. New constraints emerge and gain salience as old ones are overcome and fade from view. There are times for concentrated efforts on achieving planned strategies and times for reviewing progress and direction. Ten years ago discussions were probably starting which ultimately led to the existing strategy and policies. It now appears time to once again review direction and use the experience and knowledge gained in the past few years to synthesize new approaches to on-going problems. In the feeder and rural roads sector the challenge for the 1990's is to develop new strategies and policies which will achieve a breakthrough on the problem of road maintenance. Such a breakthrough can be realized if a concerted effort is made and a commitment to achieve it is clearly expressed at the most senior levels of government.

The following recommendations are proposed:

1. A special senior level committee or task force should be organized to review the Rural Development Strategy and its implementation. This task force should be charged with presenting specific policy changes for formal consideration and adoption by the government. Membership should be constituted to permit participation of all concerned government entities and donor organizations.

2. Until a revision of policy is formulated and in place, the government should encourage current and planned projects to initiate creative new efforts to develop and test strategies which address the maintenance issue.

3. On-going projects should be reviewed to ensure that infrastructure is planned, designed and built in a way which minimizes recurrent costs. For road work, this should include adoption of a staged construction approach as described earlier, combined with stringent measures to ensure quality of all improvement work.

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