

WORLD EMPLOYMENT PROGRAMME

**THE KENYA RURAL
ACCESS ROADS PROGRAMME**

Report of the Joint Donors Review and Evaluation

Geneva, June 1978

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Review and Evaluation Report of the
Kenyan Rural Access Roads Programme

Preface

The Ministry of Works, recognising the need for a consolidated approach to the review and evaluation of the Rural Access Roads Programme (RARP), requested all donors providing funds to the Programme to come together in a joint meeting. They further requested that a joint review and evaluation report should be prepared which would reflect the consensus view of all donors. To this end they suggested that the ILO, through Dr. G.A. Edmonds, should co-ordinate the production of this report.

It was implicit in the MOW request for a joint donor report, and made explicit at the Preliminary donors meeting held in early February 1978, that the report would be the authoritative and authentic consensus view of all the donors. It was further accepted that a joint donor review and evaluation would minimise the number of individual donor evaluations so as to reduce the burden on the RARP management.

All donors readily agreed to these requests and a meeting was convened between 13 and 23 March 1978. Appendix 1 presents the list of participants at the meeting.

The meeting was structured to provide maximum opportunity for discussion and assessment of all aspects of the RARP. The first two days were spent on a review of the work to date and a discussion of the present position of the RARP. This was followed by a series of site visits which provided an opportunity for donor representatives to see the work in progress and to discuss the Programme with the RARP field staff. The final stage of the meeting was concerned with a detailed evaluation of the RARP. This consisted of a full examination of those aspects of the RARP which all donors felt were of importance. A summary of the conclusions and recommendations is presented at the beginning of this report.

Finally the donors wish to express their appreciation for the efficient way in which the Ministry of Works organised the meeting. The background documentation was comprehensive and well presented, the site units provided an excellent opportunity for donors to experience the Programme at first hand and the Ministry of Works officials were extremely helpful in responding to requests for information.

Part I is a review of the RARP incorporating as appendices the background documentation presented by the Ministry of Works. Part II is an evaluation of the Programme.

APPENDIX III

Breakdown of Targets and Key Events April 1978 - February 1979

- a. Target number of units to bring into operation (specify which month each unit to begin operation) - total target kilometrage to be completed per month.
- b. Planned departure and arrival of individual engineers in the field and at HQ - specify whether expatriate or Kenyan.
- c. Target output of numbers of staff trained - overseers, Officers-in-charge. (STD already have this in a form which could be easily incorporated into this schedule).
- d.
 - (i) Planned completion of pre-investment reports by individual district;
 - (ii) Planned implementation of Impact Study - arrival of Development Economist, target number of farm and traffic surveys per three months.
- e. Procurement of tools, equipment, vehicles, etc.
 - (i) Planned month for preparation of tender documents - specify total amount and for how many units.
 - (ii) CTB decision
 - (iii) Arrival of goods.
- f. Planned finalisation and implementation of administrative, planning and reporting and other procedures.
- g. Status of financing for all units that will be operational during the year, and targets for obtaining necessary financing if not already committed.
- h. Mention external events that may effect implementation of programme.

We recommend that the dates of the above critical events are shown (by month only) in a schedule that is attached to every quarterly report. No doubt, the progress report will enlarge on the reason for any "critical events" that were not met during the previous quarter, and the repercussions of such delays on program targets in the future.

Attachment 1

Rural Access Roads Programme
Quarterly Progress Report
Proposed Format

A. Brief report on the Programme including the following:

1. Introduction
2. Status of External Aid (a) Capital Assistance
 (b) Technical Assistance
3. Construction (a) Progress
 (b) Costs
4. Maintenance (a) Progress
 (b) Costs
5. Administration (a) Procurement
 (b) Accounts
 (c) Personnel
6. Appendix A. (1 for each unit)
 Length constructed (KM.)
 Length gravelled (KM.)
 Expenditure. (Wages, tools, construction materials,
 accommodation materials, POL, Service and Repair,
 Miscellaneous, Crop Compensation)
 - Total/per kilometre
 Man days worked - Total/per kilometre
 Tractor hours worked - Total/per kilometre gravelled
7. Appendix ~ for each donor) - Summary.

APPENDIX I

Rural Access Roads Programme
Annual Review and Evaluation Meeting
List of Participants

UNITED KINGDOM

1. Mr. K. Philipps
2. Mr. B. Dolton
3. Mr. J. Cashin
4. Dr. H. Bofinger

NETHERLANDS

1. Mrs. E. Badon Ghijben
2. Mr. J.G. D. Hoogland

WORLD BANK

1. Ms. M. Mason
2. Dr. C. Harral
3. Mr. C. Willoughby
4. Mr. B. Bjelogrljic
5. Mr. H. Kaden

USA ID

1. Mr. W. Jones
2. Ms. L. Douris
3. Mr. S. Shah

MIN. OF FINANCE AND PLANNING

1. Mr. B. Obama
2. Mr. J.H.O. Kipenda
3. Mr. J.O. Obobgo
4. Mr. O.A. Wafula

MIN. OF LABOUR

1. Mr. F.M. Nwibia
2. Mr. C. Wangia
3. Mr. J.M. Otenyo

MIN. OF AGRICULTURE

1. Mr. J.K. Gachui

NORAD

1. Mrs. E. Bjordal
2. Mr. R. Sorensen
3. Ms. M.N. Johansen

EEC

1. Mr. Rook

ILO

1. Dr. G.A. Edmonds

UNDP

1. Mr. R.W. Kitchen
2. Mr. T. Cox

SWITZERLAND

1. Mr. P. Rohner
2. Mr. A. Wiederkehr
3. Mr. W. Harder

MIN. OF WORKS

1. Mr. S.J. Mbugua
2. Mr. N.P. Radier
3. Mr. P.H. Dennis
4. Mr. J.A. Simpson (ILO)
5. Mr. P. Wambura
6. Mr. L. Corbett
7. Mr. B. Nilsson (WB)
8. Mr. K. Butcher (ILO)
9. Dr. J. Rolt (TRRL)

DANIDA

1. Mr. J. Muller
2. Mr. B. Nielsen

APPENDIX II

Proposed Donor Participation by District

UNITED KINGDOM

1. Nyeri
2. Kwale
3. South Nyanza
4. Nyeri 2
5. Nyeri 3

NETHERLANDS

1. West Pokot
2. Trans Nzoia
3. West Pokot 2
4. Elgeyo Marakwet
5. Kitui
6. Kitui 2

WORLD BANK

1. Kirinyaga
2. Nakuru
3. Meru
4. Embu
5. Muranga
6. Kericho
7. Kiambu
8. Nandi

USA ID

1. Kisii
2. Bungoma
3. Kisumu
4. Kakamega
5. Busia
6. Siaya
7. Kakamega
8. Bungoma

DANIDA

1. Kwale
2. South Nyanza
3. Machakos
4. Uasin Gishu
5. Kirinyaga
6. Nakuru
7. Nandi
8. Trans Nzoia

EEC

1. Machakos

NORAD

1. Embu
2. Meru
3. Kwale
4. Machakos
5. Kisii
6. Kitui
7. Elgeyo Marakwet
8. Embu
9. Meru
10. Muranga
11. Kiambu
12. Kisumu
13. Siaya
14. Busia
15. Uasin Gishu

Summary and Recommendations

1. General

All the donors are very much aware that the RARP is a new type of Programme not only for the Ministry of Works (MOW) and Kenya but also for Africa. The use of effective and efficient labour-intensive methods of road construction is a concept that is alien to many engineers and planners. The donors would therefore like to express their admiration for the way in which the Ministry of Works have committed themselves to this Programme and have attempted to make it as successful as possible.

The build-up of the Programme has been slow but it is accepted that at the same time as dealing with the day to day management of the Programme the MOW has also had to modify and adapt its existing management and administrative systems to the needs of the RARP.

The Programme is now in a major growth period. It was therefore very timely that the donors should meet with the Ministry of Works to assess the present and possible future status of the Programme. It is fair to say that all donors have been concerned to evaluate the Programme in a spirit of support for the MOW's efforts. Whilst each donor has his own criteria to fulfil, the recommendations that have emerged from the review and evaluation discussions are orientated towards assisting the Ministry of Works in their task of implementation of the RARP.

The donors are generally very satisfied with the way in which the Programme is developing and they would like to record their general satisfaction with the way in which the MOW is managing and implementing the Programme.

2. Specific

Whilst the recommendations presented here are generally listed under certain headings, there are two issues which the donors felt were of such over-riding immediate importance that they should be presented separately.

Headquarters Staff

The headquarters staff of the Rural Access Roads Programme is presently heavily overloaded and it seems clear that in the coming months, with the loss of certain staff and the rapid growth envisaged, the headquarters staff will be stretched to a limit. Efforts are being made to fill the presently vacant posts. However the donors feel that the build-up of the full headquarters staff for the RARP is extremely important and that this should take precedence over the achievement of the presently planned growth rate of the RARP for the year 1978.

The MOW have stated that the existing staff structure when fully operational will be capable of dealing with the growth in the Programme. The donors would wish to be informed, at the earliest opportunity, of any deterioration in the situation and if extra personnel are considered necessary.

Procurement of Tools

The donors recognised the importance that the Ministry of Works attaches to this issue. They also appreciate the efforts that the Permanent Secretary has made to try and solve the existing problems. Furthermore the donors are unanimous in their support of the Ministry of Work's principle of requiring good quality specified hand tools for the Programme. They share the MOW's concern that MOW's recommendations on this issue may be rejected or modified. They therefore wish to be informed as soon as a decision is taken on this issue and if a negative answer is received a local donors' representatives meeting should be called immediately to discuss the implications with MOW. The donors are fully aware that this issue could drastically limit the growth of the RARP.

The remainder of the recommendations are now discussed under the headings presented in Part II of this report.

Target Number of Units and Output

- (a) The donors wish to be informed by the time of the next meeting of the total number of units, the expected total output, and the implementation period then envisaged for the Programme.
- (b) In relation to (a) the donors recommend that the Government should reconsider how far to go beyond the number of units for which finance is already requested (i.e. 52 units). They further recommend that the annual output of the Programme should be related to the satisfactory setting up of units, the efficient operation of headquarters staff, the smooth take-over of maintenance of the RAR and last, but not least, the actual demand.
- (c) The donors request that an Implementation Schedule should be prepared by the Ministry of Works which would indicate the main events and decisions to be taken for the Programme so that bottlenecks and obstacles to the growth of the Programme can be foreseen.
- (d) The donors are pleased to note that it is MOW's policy to consider the use of labour-intensive methods in other programmes apart from the RARP. The donors fully support this policy and would be willing to assist it.
- (e) As the RARP has a defined life the donors request that by the next review meeting the MOW draw up plans for the future construction programme to be carried out by the RARP organisation when the present rural access road construction programme is completed particularly in respect of the organisation and resources that will still be available at that time.

Road Maintenance

- (a) Whilst being quite satisfied with the maintenance system that has now been implemented for the RARP, the donors are concerned by the implications of the hand over of this maintenance system to the provincial engineers offices in view of the fact that the existing maintenance organisation of the MOW is already severely struined. Although the maintenance of the classified

road network is outside the scope of the RARP, the donors wish to ensure that the present efforts being made to increase the capacity of the maintenance organisation of the MOW fully takes account of the consequences of the maintenance of the 14,000 Kms. of rural access roads.

- (b) To ensure the complete integration of the maintenance of the RARs the donors recommend that the Provincial Engineers offices and the Maintenance Branch are fully involved in the selection of roads for the RARP.

Tools and Equipment - Procurement and Maintenance

The procurement of hand tools has been dealt with above.

- (a) The donors recommend that, in the quarterly progress report, the MOW should report on the adequacy of the supply of tools to the individual RAR units.
- (b) It is recommended that at such locations where no local facilities for maintenance of hand tools are available the units could be equipped with simple equipment for routine maintenance of hand tools.
- (c) In view of the amount of expensive equipment now being provided for the programme the donors would support the suggestion that a master mechanic should be posted to the RARP headquarters. It would be his responsibility to ensure proper maintenance of the equipment and to monitor the timely supply of spare parts to Programme.

Selection and Evaluation Criteria

This was one of the few issues where there was not total consensus amongst the donors. This lack of consensus relates more to the actual content of the selection criteria. In general the donors feel that the orientation is great but there is a disagreement upon detail.

- (a) The donors feel that it is extremely important that the selection criteria are well explained to the District Development Committees and to the RAR engineers. This should be done either in the field or by way of meetings at the Ministry of Works Headquarters.
- (b) It was felt that the present format of the guidelines for the selection and evaluation criteria does not adequately explain the criteria in a comprehensible fashion and should be improved.
- (c) It is recognised that the Government sees the RARP as part of an over-all rural development strategy and that efforts are being made to integrate it at the grassroots with complementary activities. They strongly support this policy and urge that every effort is made in the selection process to ensure that the construction of RARs are integrated with the proposed complementary activities.

- (d) It is recommended that efforts should be made to identify roads in all divisions of each district by March 1979 so that there is an equitable distribution of roads in all areas of the district.
- (e) It is recommended that MOW should review the timing requirements for the on-site inspection by the Planning Unit engineers of proposed roads for the Programme. This will ensure that sufficient time is given to this important part of the selection process.

Staffing

- (a) Whilst recognising that the number of Kenyan engineers in the programme is related to the number available in the MOW, the donors are pleased to note the policy of putting graduate trainees through the RARP is to be continued. Donors would like some indication of how many this will involve in the coming year.
- (b) It is also suggested that one way of making Kenyan engineers more aware of the efficient use of labour-intensive methods and RARP in particular, was at the university. The first step in this direction could be made by discussing with the university authorities the inclusion of this aspect as part of the under-graduate courses.
- (c) The donors have recommended that the quarterly progress report should provide information on the output of OICs and overseers from the staff training department.

Planning and Reporting

The donors were pleased to note that an effective system of planning and reporting has now been developed and that this will be implemented throughout the RARP as from 1 July 1978.

Report to Donors

- (a) With the modifications detailed in Section B of Part II of this report, the donors accept the format of the quarterly progress report proposed by the MOW.
- (b) The donors request that each donor should receive copies of the various technical reports prepared by the technology unit.

The Impact Study

- (a) All donors feel that this study could be of value to the RARP and the Government. They therefore feel that it should commence as soon as possible so that the results can be of value to the RARP.
- (b) In the light of the above they urge that efforts should be made to obtain the services of a development economist at the earliest possible date. They recommend that other donors be approached if SIDA are now unwilling to provide the services of this expert.

Disbursement Procedures

With the exception of USAID, who have their own agreed disbursement system, and the EEC and World Bank, who need to receive clearance from their respective headquarters, the donors accept the revised disbursement procedures as proposed by the NOW.

Design and Construction Standards

- (a) The donors endorsed the standards developed and now proposed for the RAKP. (These are detailed in appendix S, Table 2). The donors believe that these standards are particularly appropriate to the Programme.
- (b) It is recommended that the NOW's policy of graveling all RARs should be modified. The donors feel that the roads should be gravelled where required to bring them up to an all-weather standard. It is however recognised that the on-going work of the TRRL will provide explicit criteria to determine the necessity for graveling.
- (c) The donors urge that the design standards and construction work methods presently proposed should be standardised for the whole of the RARP at the earliest opportunity.

Date of Next Meeting

The donors recommend that the next Review and Evaluation Meeting should be held in February 1979.

PART I

A Review of the Rural Access Roads Programme

1. Introduction

This review is based upon the background documents presented by the Ministry of Works. These are appended as appendices 2-10. It is not intended, therefore, in this part of the report to reproduce a précis or parts of these appendices. They are considered as an integral part of the review report. The main text of the review report provides the consensus opinion of the donors on matters arising out of these appendices.

2. Present and Future Financial Assistance¹

On the assumption that donors will continue the financing of units to which they are presently committed up until 1982, there will be 52 units in operation at that time. By the end of 1982 the Programme will have constructed 10,102 Kms. of road based on a unit output of 45 Kms. per annum.

The target output of the Programme is still 14,000 Kms.² The implication therefore is that either additional units will have to be established so that this target can be reached by the end of 1982 or the Programme will have to be extended with the present level of commitment until the end of 1984. The latter seems the more likely because even if finance was obtained now for additional units it would not be possible, due to administrative and organisational constraints, to spend that money for another 18 months. Furthermore additional units, over and above the present commitment, set up in 1980 or 1981 would have a limited impact on the over-all output.³

To ensure that the UCR can plan effectively for the development of the Programme the donors will, in the near future and to the extent possible, provide a clear indication of whether their present commitments will be extended.⁴

3. Progress to 31 December 1977⁵

In general, progress has been good and, whilst output is somewhat lower and costs some 14% higher than originally envisaged, it appears likely that the original targets will be achieved. The trend over the calendar year 1977 has been for costs per kilometre

¹ See Appendix 3.

² See Part II section 1.

³ It should be noted that the United Kingdom commitment, bracketed in Appendix 3, Table 1, is now firm up to 31 March 1980.

⁴ See Appendix 4

constructed to fall and for output to rise. Nevertheless certain points are worth elaborating further.

Gravelling - Only 23% of the roads constructed have so far been gravelled. Measures now being taken by the MOW should improve this situation. It is presently MOW policy to gravel all roads. This policy may be modified in the light of the work presently being undertaken by the Transport and Road Research Laboratory (TRRL). (This is discussed in Section 7 and Part II Section 11). Even if the policy is relaxed however the MOW are confident that they will not be over-committed in terms of the purchase of equipment for the gravelling operation.

Maintenance - The maintenance system for the RARP described in Appendix 6 is now being established and finance has been allocated. When the system is fully operational it is intended to transfer maintenance activities and organisation to the Provincial Engineers offices.

Procurement - The procurement of equipment continues to be a problem as the equipment cannot be ordered until donor financing is secured. There is a considerable time lag of as much as 6-9 months between placing the order and receiving the equipment. This naturally creates a time lag between commitment of funds and the actual execution of work.

The procurement of tools has been a major problem for the Programme. The supplies branch of MOW has been unable to supply the quantity and quality of tools required. For this reason the Permanent Secretary has decided to allow the Programme to let tenders directly. The Chief Engineer (Roads) now calls for tenders. When they are received recommendations are then made to the Central Tender Board (C.T.B.). It is, however, the final responsibility of the CTB to accept or reject tenders. To date most of the tenders received have been of an acceptable standard. However there is still some doubt whether CTB will accept the principle of paying a higher price for a better quality tool. Studies carried out by the Technology Unit have clearly indicated that a well designed and manufactured tool has a much longer life than those generally supplied to the MOW.

Engineering Staff - The situation as regards the provision of engineers to the programme has improved greatly since the last review meeting. Of the 14 posts required for the Programme only 2 are vacant. However there will be a large turnover of expatriate engineers during this calendar year. Furthermore it is likely that the number of Kenyan field engineers in the Programme will decrease. This, to a certain extent, is a function of the MOW training programme for graduate engineers. Further, as discussed in Part II, Section 5, the staffing at headquarters is a major problem.

Maintenance of Equipment - This is presenting problems as the RARP itself does not have the capacity to deal with it. It is presently suggested by MOW that this should be carried out by the Provincial Engineers Workshop.

Output - The actual output in terms of kilometres built is very satisfactory. However there have been rather major variations both between units and in particular units from one year to the next. The reasons for this have been the turnover of engineers, labour supply problems and heavy earthworks in certain areas. The reporting system between headquarters and the units presently being implemented should provide the means to monitor and control these variations.

4. Development of the Training Programme¹

In general this has been very satisfactory and the Staff Training Department (STD) is certainly capable of meeting the demands laid upon it. The problems here are more in relation to recruitment and career development. As far as recruitment is concerned it has been difficult to find suitable candidates for the Officer-in-Charge (OIC) courses.² This is less of a problem for the overseer's courses.

It should be noted that whilst an allowance has been made in the planning of courses for a wastage due to failure of the courses, no allowance has been made for the loss of overseers and OICs to the private sector or other areas. There has, however, so far been very little wastage to the private sector.

Discussions are presently taking place with the Personnel Department of the MOW to ensure that the staff policy and career development structure can incorporate RARP overseers and OIC's more equitably.

5. Work of the Technology Unit³

The work of the Technology Unit has clearly contributed a great deal to the effective running of the Programme. The details of that work is well covered in Appendix 6 and only a few additional points are raised here.

The labour supply study has indicated that the great majority of those employed on the RARP are from the lowest income groups. Furthermore there is generally no shortage of labour for the Programme except in specific areas at specific times of the year related to harvesting of crops. This is presently being overcome by careful planning and phasing of the work.

The work on tools and equipment has indicated that there is capacity within Kenya to produce the majority of hand tools required. This will involve not only large manufacturers but medium and small ones as well.

¹ See Appendix 5.

² Efforts are now being made to recruit potential OICs from the private sector. However this will require clarification with the Personnel Department.

³ See Appendix 6.

6. Maintenance of Rural Access Roads¹

Whilst maintenance has been discussed earlier in this report it is worth emphasising the uniqueness of the system that has been developed for the RARP and described in Appendix 7.

The question of maintenance is also discussed critically in Part II, Section 2 of this report. Tentative figures for the cost of maintenance for the RARP are given in Appendix 7 and, although they are indicative only, they do indicate that serious thought must be given to the question of the organisation, financing and administration of RARP maintenance.

7. Characteristics of Rural Access Roads²

The design standards of rural access roads have evolved over the life of the RARP. In general the standards are high except in the case of camber and depth of drainage ditches. Steps are now being taken to rectify the latter problems.

The question of gravelling policy has already been touched upon and, again, is dealt with more extensively in Part II of this report.

8. Compaction for Rural Access Roads³

The studies carried out so far by the TRRL indicate that indirect compaction, i.e. that produced by the effect of climate and traffic, can achieve a suitable standard as long as an appropriate construction schedule is adhered to. At the present time there is no evidence to suggest that the level of maintenance for a road constructed with indirect compaction need be any different from that required when direct compaction is used.

9. Selection and Evaluation Criteria for Rural Access Roads⁴

In addition to the information provided in Appendix 9, certain other points regarding the selection procedure are relevant. The zone of influence of roads assessed varies from 52 hectares to 320 with an average of 160. The population in the zones of influence is on average about 200 with an upper and lower limit of 510 and 70 respectively. In densely populated areas the length of road is around 5 Kms. whilst in sparsely populated areas the length can be as high as 25 Kms.

¹ See Appendix 7.

² See Appendix 8.

³ See Appendix 9.

⁴ See Appendix 10.

It is worth noting that emphasis has been placed on the selection of roads at the District level coupled with selection criteria which are orientated towards the needs of the mass of the population. The selection criteria are based on: (a) economic and social benefits; (b) engineering standards; and (c) integration with other development projects. The emphasis of the selection procedure is upon the needs, both economic and social, of the rural areas. The procedure is deliberately simple and only uses cost/benefit analysis for groups of roads and then specifically for the purpose of final verification of the need for the roads.

The idea of each District Developing Committee (DDC) providing a list of 600 Kms. of road to be assessed in the first instance has now been abandoned as being impractical. Furthermore revised guidelines are now in preparation to assist the DDC's in their selection of roads.

It has been assumed that 60% of the benefits identified in the selection procedure are attributed to the road. The rest is attributed to the complementary rural development activities. An attempt is being made to ensure that the complementary activities do take place. Close liaison is envisaged with the Rural Works Programme, administered by the Ministry of Finance and Planning and the Integrated Agricultural Development Programme, administered by the Ministry of Agriculture.

The DDCs play a vital role in the selection of roads for the RARP. Because of this and the fact that the selection criteria being used are pioneering in their concept, these issues are discussed more fully in Part II of this report.

With regard to the evaluation of the roads being built under the RARP, this is to be carried out under the so-called Impact Study financed by the World Bank, USAID and CCK. This study is not yet under way. Nevertheless it is clear that all donors have an interest in the results of this study. For example, it is already known that the average daily traffic on the roads constructed so far is 18 vehicles.¹ It is not yet known however from what activity they originated and to whom, therefore, the benefits of access are accruing.

10. Disbursement:

Until now the RARP management has been able to deal with disbursement and reimbursement from donors adequately on a quarterly basis. However to ease the cash flow situation the Ministry of Finance and Planning has instructed that disbursements should be made on a monthly basis. To overcome the consequent problem the MOW has suggested the following solutions:²

¹ This comprises: 7 cars, 8 light goods, 3 medium goods. It should however be recognised that this average is taken from a very small sample and is therefore indicative only.

² This procedure relates to running costs only.

- (a) 80%¹ of the monthly cost figures received by NOW Headquarters from the RAR units would be submitted directly to the Ministry of Finance and Planning and thence to the respective donor for reimbursement.
- (b) The donor would be welcome at any time to check the vouchers at RARP headquarters against the sum that he has been requested to reimburse.
- (c) Every four months the NOW will submit a detailed breakdown of the running costs incurred as is done presently.

The implications of this proposal are discussed in Part II of this report.

11. Reports

Presently the NOW submits a detailed report to each donor of the progress and situation with regard to the units that he is financing. With 7 donors in the Programme this will become a heavy burden on the management. NOW has suggested that they will prepare a detailed report on the whole of the RARP every three months. This will be sent to each donor with an Annex which describes the situation in relation to those units which the donor is financing. This will reduce the amount of time and effort required of the RARP management and could be a satisfactory solution for the donors.

¹ In the case of the World Bank this would be 60%.

PART II

Evaluation of the Rural Access Roads Programme

1. Target Number of Units and Output

The revised loan application¹ prepared by the Ministry of Works states that the Rural Access Roads Programme has as its objective the construction of 14,000 Kms. of road. This will be executed by a total of 74 Rural Access Road Units. It is proposed that 600 Kms. of access road will be constructed in each of the 23 districts where the RARP will be operational. It is presently envisaged that the Programme will be completed by 1982.

Whilst recognising that it was useful in the initial stages of the Programme to set out various targets the donors feel that these targets should be reappraised in the light of financial commitments made and requested.

The targets have been set by the Ministry of Finance and Planning and the Ministry of Works will, in the near future, be discussing with them whether the targets originally set are still realistic.

So far, firm commitments from donors have been obtained for the financing and operation of 40 construction units, equivalent to 1574 unit-months, according to information from the MOW². The decision whether the Government will stand by the initial figure of 74 as the total number of units or whether it should be reduced, rests with the Ministry of Finance and Planning. But the experience so far with the Programme indicates that the Government should reconsider how far to go beyond the number for which finance is already requested, i.e. 52 Units. In the donors' opinion, the annual production or output of roads in the Programme should be limited to comply with the continuous operation of units, with the satisfactory establishment of a full headquarters organisation with a smooth take-over by the maintenance organisation of completed roads, and last but not least, with the actual need for this category of roads in the districts. Furthermore, the implementation period for the Programme presently envisaged assumes that the Programme will grow at the original rate laid down in the loan application. It is suggested that this should not be considered as a fixed date and in fact should be related to the total number of units that are finally put into operation and their efficient implementation.

The figure of 600 Km. of roads to be constructed in each district is considered by MOW as an average planning figure and the actual output will conform with the projected demand in each district.

¹ Revised Loan Application in Respect of Rural Access Roads Programme, Ministry of Works Roads Department, Kenya, July 1975.

² The distribution of these commitments by district is shown in Appendix 11.

Variations in the range of as much as 50% of the average can be foreseen. The MOW believes that the results of the Impact Study will provide useful guidance and may also in many cases be decisive when it comes to determining the actual output per district.

The donors are somewhat concerned with regard to the rate of planned increase in the number of construction units, particularly the target of setting up 36 units by the end of 1978.

MOW have stated that this figure is a realistic estimate provided that the necessary resources, such as equipment, tools and supervisory personnel, are made available. A sufficient number of field engineers can be recruited, but most of them will lack experience for this type of work. There is still some considerable uncertainty as to the practical results of the new procedure for procurement of tools. Therefore, the donors feel that it might be advisable to review the programme for the expansion of number of units in the districts to take account of the limiting factors mentioned above.

In brief, the donors feel that the Programme is now developing well. It would be unfortunate therefore if a rigid adherence to targets set out in the original loan application jeopardised the smooth running of the Programme. Whilst accepting that the total output target of the Programme in terms of kilometres constructed could remain, it is considered that this requires a reappraisal of the total number of units to be set up and the implementation period.

Because of their interest in the Programme donors wish to follow more actively the planning and monitoring of the Programme. A proposal was put to the MOW that an Implementation Schedule be prepared and issued to the donors on a semi-annual basis or as agreed. The Schedule would include the main events of the Programme and indicate the main decisions to be taken and at what time.¹

The long-term objective of using labour intensive methods also in other sectors was discussed with the MOW. It is evident, both from the pilot projects of the initial stage of the Programme and from the regular operations so far, that labour intensive methods in the construction of rural roads gives satisfactory results, both with regard to productivity and economy.

It is the view of the donors that, if the RARP is an successful as they believe it will be, the experience and expertise should not be confined to the RARP.

The donors are therefore pleased to note that it is the intention of the MOW to consider the use of labour-intensive methods in other programmes apart from the RARP. Thought should also be given now to expanding the work of the RARP into other infrastructure programmes.

¹ An outline of the proposed implementation schedule, prepared by the World Bank, is attached as Appendix J.

In relation to programmes of other ministries they suggest that the two engineers to be seconded from the Special Projects Branch of MOW to the Rural Works Programme of the Ministry of Finance and Planning be given a full briefing and explanation of the RARP so that they are fully aware of the potential and problems of effective labour-intensive programmes.

The donors recommend that, by the next review meeting, the MOW draws up plans for the future construction programme to be carried out by the RARP organisation when the present rural access road construction programme is completed. This would be particularly concerned with the organisation and resources that will be available at that time.

2. Road Maintenance

Donor representatives studied and discussed the maintenance system adopted for the RARP, whereby ex-labourers from the construction units are contracted to carry out routine maintenance operations on sections of road varying from 0.5 to 2.5 Km. in length and near their homes. They also observed the initial results of the system as practised on a number of completed roads in the various districts visited during the field trips.

Donors cannot over emphasise the importance with which they regard the provision of an adequate maintenance system. In general they are satisfied that the present system is working well and is currently considerably less costly than machine orientated methods.

Not unexpectedly the effectiveness of the system varies from road to road and even on adjoining sections of the same road. However, it is accepted that the method of "payment-by-results" ensures, to a reasonable degree, that the work can be effectively controlled. The donors further accept that there is only limited experience of operating the system to date and that future allocations of road length and the level of supervision will be reviewed on the basis of performance as monitored under the programme being implemented by the UK Transport and Road Research Laboratory (TRRL).

Any substantial emergency and/or seasonal maintenance requirement is currently undertaken by co-ordinating the efforts of all the maintenance workers on the affected road or by a special task force from the construction unit. Work of this nature has not been significant and has not been considered in determining the average annual maintenance cost to date of K.Shs. 1100/Km. It is understood that the anticipated allocation in the Recurrent Budget for 1978-79 is equivalent to approximately K.Shs. 1600/Km. and as such the Special Projects Branch are confident that this is more than adequate to cover anticipated costs, including the non-routine work referred to previously.

The donors are rather more concerned, on a number of counts, at the implications of handing over the maintenance of the RAR's to the existing maintenance organisations administered at Provincial level.

The maintenance of the classified system is generally unsatisfactory and the donors' concern is focussed on the fact that the effectiveness of the RARP might be reduced by a failure to

properly maintain the classified roads to which the RARs give access. Whilst recognising that it is outside the scope of the RARP management's responsibility donors would like to stress the importance of proper maintenance of the classified system in ensuring the effectiveness of the RARP.

It is understood that the present intention is to hand over a 'working package', including supervisory and administrative staff. The Maintenance Branch is currently responsible for some 50,000 Km. of classified roads, countrywide. When completed the present RARP target of 14,000 Km. would increase this by approximately 30% and whilst it is accepted that the additional staff requirements up to Senior Inspector level will be more than met by redundancies from the RARP. The donors are conscious of the implications of the increased work load on existing professional staff.

The donors are aware that both the central administration of the Maintenance Branch and representatives of the PREs offices are involved in the planning of the Programme to a certain extent. In view of the significance of their future role in the maintenance not only of the RARs but, equally important, of the classified roads into which they lead, donors would like to see more involvement, particularly in respect of the selection of roads, to ensure effective integration of the RARP and other on-going betterment programmes.

The present estimate of recurrent expenditure on the maintenance of the entire 14,000 Km. RARP is K.Shs. 50 million, representing a sizeable increase in the Recurrent Budget. The donors are concerned at the magnitude of this increase, particularly when compared to the present allocation of about K.Shs. 160 million to the Secondary and Minor road network, but accept the Special Projects Branch's assurances that the Treasury are wholly committed to the Programme and completely aware of the extent of funds required for future maintenance.

The labour intensive maintenance system adopted for the RARP would appear to be suitable for application to other roads within the classified network. Donors were therefore encouraged to learn that a 4-year programme of investigation is already underway in Western and Nyanza provinces and that the intention is to implement pilot scale labour-intensive operations on other classes of roads with a view to subsequently extending this system as far as possible. The donors request that MOW keep them informed of the progress of this study.

The consensus of opinion amongst donors is that a phased hand-over during the currency of present financing agreements would be desirable. However, it is recognised that the Maintenance Branch is currently under considerable stress and that to commence hand-over of the maintenance of RARs would be an unnecessary additional burden at this time. It was therefore suggested that the hand-over be deferred until the gravelling and culverting programme and present efforts to improve the efficiency of the Maintenance Branch have been at least partially completed, but that a report of the proposed handover system, including an implementation schedule, should be presented at the next review meeting.

A further suggestion was that the maintenance of the roads should be handed over to the local authorities. This could ensure that the popular participation in road construction was carried over into their maintenance.

It was suggested that a member of the Maintenance Branch would be a useful additional participant in future review meetings.

3. Tools and Equipment - Procurement and Maintenance

General Observations

At the annual review meeting in January 1977 it was noted that the RARP, being a new type of Programme for the Ministry of Works, was experiencing a certain amount of conflict between the type of administration and organisation structure within the Ministry of Works.

Whereas many of the conflicting matters have been resolved during the past year one, in particular, has, as yet, not found a fully satisfactory solution. This concerns the procurement of hand tools. One other problem that needs to be resolved is the establishment of a satisfactory system for the maintenance of the RARP gravelling equipment.

This section of the donors evaluation, therefore, goes into these points in some detail.

Procurement of Tools

Although only accounting for approximately 5% of the cost of the RARP, hand tools make up an extremely important component of this labour-intensive programme. In fact, it would be equally justified to call the programme tool-intensive as opposed to equipment or plant-intensive.

This fact was recognised in the original design of RARP, and particularly in the terms of reference for the Technology Unit (TU) which made provision for 2.5 man-years of advisory input on hardware development and manufacture. A wide range of designs and qualities of tools has been tested and improved designs have evolved, supplemented by protracted work study trials. The result of these efforts is now laid down in a series of detailed tools specifications and blue prints. Production capacity and capability in Kenya to comply with these specifications was also identified.

However, and this was no surprise to the RARP and TU personnel, tools made to the specifications so developed, invariably turn out to be more expensive than seemingly similar tools traded in the country. For example, a wide range of jembes (hoes) are traded, but most of these are made for all kinds of agricultural purposes, most of which, cannot be compared to the heavy and hard jobs of road and gravel-pit excavations. Wheelbarrows are another case in point; it should be evident that in general the cost of a wheelbarrow for earth-haulage would tend to be higher than the cost for one meant for, say, cow-dung moving.

The range of cost differences in question is of the order of 20% (for shovels) and up to 400% (for wooden handles for jembes etc.). These differences must, however, be viewed against the reversed differences in durability (life time) of the tools in question. These range between 50% (for jembes), 200% (for wheelbarrows and shovels) to as much as 1000% (for handles).

Cheap tools have a shorter life and limited durability. A rough estimate suggests that buying the cheap tools will result in a yearly extra direct cost to the RARP (with 57 units in operation) in the order of 2 million K.Shs. (The TU is in process of detailing this estimate). The donors were equally concerned with the consequent loss of productivity due to the use of sub-standard tools.

The whole point of conflict, and our reason for detailing it as above, stems from an established and otherwise perhaps sound principle of the MOW Supplies Branch of buying the cheapest tools available on the market. Firstly, the RARP and the Roads Department have not succeeded in convincing the Supplies Branch to make an exception to their principle. Secondly, the Supplies Branch have been unable to supply even sub-standard tools in the requested quantities.

After a procurement delay of some 6 months the Permanent Secretary consequently decided to permit the Roads Department to go to tender itself (January 1978). By the end of February 1978 bids were received and the Roads Department is now submitting its recommendations to the Central Tender Board (CTB) for final adjudication.

If CTB also adhere to the principle of cheapest purchase they might still decide against the RARP recommendations. CTB could either reject the tenders completely and refer the matter back to the Supplies Branch, or make alternative recommendations in favour of sub-standard tools.

A complete rejection would result in RARP not being able to expand towards its targeted 36 units by the end of 1978. In fact, it is likely that some of the units presently in operation would have to stop working. The donors noted that bringing 30 units to a halt, corresponds to a loss of 9000 jobs. (Incidents of halts in operation have already occurred in some units for lack of tools).

CTB alternative recommendations will inevitably result in loss in productivity and higher construction costs as explained above. Certainly, more jobs will be created, but in an unacceptable, unproductive manner.

In view of these possible prospects, the joint donors therefore express their grave concern and request MOW to report back before 1 May on the outcome of CTB's decision, and in case the answer is negative, to convene an immediate meeting of donors local representatives for discussions on possible alternatives, to prevent RARP collapse or frustration.

Another important point pertaining to tools procurement concerns the time deliveries of tools. The magnitude in question is of the order of 30,000 items of hand tools (e.g. shovels, jembes and pangas) 150,000 wooden handles and 2,000 wheelbarrows. Thus, even if CTE replies in the affirmative to RARF recommendations, the problem of actual supply of these between July 1978 and July 1979 remains to be solved.

The donors therefore request *MOF* to report specifically on this question in the quarterly progress report.

Maintenance of Hand Tools

Even high quality tools need maintenance and repair. It is recommended that, at such locations where no local facilities for maintenance and repair are available, the units in question may be equipped to cater for their needs. For example, the sharpening of many of the tools could be facilitated by the provision to the units' base stores, of grinding wheels and honing stones.

Even hand tools need spare parts at times, e.g. rivets, washers and handles. These could be kept in store as well.

Procurement of Equipment

The procurement of equipment has been adequately dealt with through *CMTE* tenders. However, delays in actual deliveries were experienced, and may still be.

In addition to the 16 tractors in operation at the moment, 204 new 45 HP tractors (International Harvester) have been delivered to the yard of the Chief Mechanical and Transport Engineer. Their actual delivery to the RARF units can therefore take place at short notice.

Of the 300 new trailers, 50 have been inspected and approved, and 40 others have been delivered. The remaining 210 will be delivered at an approximate rate of 40 per week from 1 April. (3 different manufacturers are involved in these deliveries).

In other words, all tractors and trailers could be despatched to the existing construction units by 1 July, and immediately to the new units to be established between 1 July and 31 December 1978.

Maintenance and Repair of Equipment

So far the tractors and trailers in operation have been maintained in a relatively satisfactory manner, making use of the District *MOF* workshop facilities.

However, as the number of tractors is about to rise from 16 to 220, with a corresponding increase for the trailers, severe availability problems are likely to crop up if better maintenance and repair arrangements are not made.

A first step has been taken in that direction. This concerns supplies of spares which the RARF organizes and stores itself. It has not been deemed feasible to post mechanics to the units, for anything more than minor maintenance because of the problems of adequate supervision. The arrangement is that repairs, other than minor items, should be undertaken by the workshops of the Provincial Engineers.

Delays are likely to occur, and the RARP should therefore make a major effort to detect defects prior to breakdowns.

The donors strongly support the suggestion that a master mechanic be posted to the RARP Headquarters. It would be his responsibility to inspect all the units as frequently as possible to spot and make good defects, and to supervise the maintenance of the equipment in general. He would also ensure that the supply of spare parts to the Units was carried out satisfactorily.

The donors are pleased to note that the supply of spare parts for equipment for the programme has, so far, been effectively dealt with.

4. Selection and Evaluation Criteria

The donors have studied and discussed the selection and evaluation procedures presently used for the determination of the roads to be included in the RARP. While there is general agreement on the importance of establishing appropriate and adequate guidelines for the selection and evaluation of roads, there is some differences in opinion among the donors with respect to the degree of specificity and level of analysis which should be provided in these evaluations. These differences are primarily a factor of varying donor requirements for information upon which approval of programme implementation must be based. There is also some divergence of opinion amongst donors as to the actual criteria to be applied. Such aspects as access for small farmers and to market centres were suggested to be included. However, when donors have studied the new guidelines in detail they will send their comments to the MOW with a view to further discussion.

Revised identification and selection criteria have just been made available by the MOW. The donors feel that the way in which the criteria are presented in these guidelines is not clear and explicit and will not provide DDCs with clearly defined criteria with which to work.

MOW Planning Unit engineers will be responsible for explaining the new criteria to the DDCs. This requires that sufficient time will be allowed in each District for appropriate discussions and/or explanations of the selection process. It is recommended that meetings should be held in Nairobi between Special Projects Branch and the DDCs and also the RAR engineers to explain the criteria to them in detail and to discuss them with them. Discussions should include both the process by which the roads should be selected (i.e. maximising "grass roots" involvement to the extent possible) and the specific criteria for considering individual roads. The RAR engineer will be responsible for the evaluation of the technical feasibility of each road proposed by the DDC. This hopefully will avoid disappointment and frustration brought about by the subsequent disapproval of roads which may be inappropriately included in an evaluation report. The technical feasibility of the road should be related not only to the amount of

earthworks, provision of structures and haul distance for gravel but also to the road's location and proximity to other roads in the area.

Presently six to eight days are allocated for each field trip by Planning Unit engineers for on-site inspection of up to 300 kilometers of proposed roads under consideration. The NOW are confident that this provides sufficient time. It is recognised that six to eight days is an average figure, and additional time is allocated if found necessary. Nevertheless the donors encourage the MON to review the timing requirements of these trips frequently to ensure that this important part of programme implementation is being given sufficient priority.

The donors note that it would not be feasible for a DDC to select approximately 600 kilometers of roads in a District in a short time period. Therefore, a DDC first looks at the needs of an area which has "high economic potential". It is recommended that efforts should be made to identify roads in all divisions of each District by March 1979, so that there is an equitable distribution of roads in all areas of the District.

The donors wish to see more consideration given during the selection of RARs to the complementary investment activities, such as the provision of agricultural extension services and other rural works programmes, which need to be undertaken to maximise the impact of the roads and ensure the achievement of projected economic changes. Such complementary activities will be discussed further in another section of this report.

The donors discussed the usefulness of the pre-investment evaluations reports. They accepted that the information contained in these reports will form the basis for assessments made in the Impact Study, and is therefore of value.

The donors discussed the question of whether the utilization of cost-benefit analysis as one part of the criteria for roads selection would still allow construction of RARs in all the Districts originally included in the programme. It seems clear that the development needs of the areas where the RARP is being implemented are large enough that it is unlikely that an area will be eliminated on the basis of economic criteria before 1980. It is anticipated that the Impact Study, discussed in Section 9, will provide pertinent feedback both on the appropriateness and adequacy of the selection and evaluation criteria and on the inter-relationship of the RARP with other development activities being undertaken in the same District.¹

5. Staffing

In general the field staffing situation of the RARP is satisfactory. There are presently sufficient engineers to run the field units and the staff training department is meeting the demands laid upon it. The staffing situation at headquarters however does give cause for serious concern. It is worthwhile discussing the future staffing situation in relation to the fact

¹ It should be noted that the UK and USAID intend to carry out their own evaluation of the roads which it is proposed should be constructed by the Units they are financing.

that whilst only 8 units are presently considered operational it is planned to have 36 units operational by the end of the year. This rapid growth rate will put a great strain on the RARP and, in particular, on the staff of the Programme.

The various aspects of staffing are discussed below:

Headquarters Staff

The Special Projects Branch of the Ministry of Works is responsible for the implementation of both the RARP and the Gravelling Programme. A Chief Superintending Engineer is in charge of the Special Projects Branch. Under him are two Senior Superintending Engineers who are responsible for the RARP and Gravelling Programme respectively. Special Projects Branch also has an Administrative Services section which serves both the RARP and Gravelling Programme. It should be recognised that, to date, this section has been concerned mainly with the RARP.

The Senior Superintending Engineer in charge of the RARP has, in theory, two Superintending Engineers responsible to him. One deals with construction, the other with planning and records.

There is presently some doubt whether the present incumbent of the Chief Superintending Engineer's post, Mr. P. Denis, will be staying with the Ministry of Works. This naturally gives cause for concern for if a change is made at this vital period of growth of the Programme the planned increase may not materialise.

The Senior Superintending Engineer responsible for the RARP is a UNDP-financed, ILO Expert, Mr. Simpson. Finance for his post is assured from UNDP until the end of 1979. It is likely that UNDP will be prepared to finance his post beyond that date. The post of Superintending Engineer (Construction) has never been filled. UNDP are prepared to finance this post and finance is available under the UNDP/ILO project. It is vital that this post is filled at the earliest opportunity.

The post of Superintending Engineer (Planning and Records) is also presently vacant. Mr. K. Butcher, an ILO expert financed by UNDP has been advising MOW on systems and procedures. He will leave the Programme in May of this year and it is envisaged that a Kenyan engineer, presently working on the Programme, will take up the post of Superintending Engineer. Nevertheless it will take time for him to adjust to his new post. To ensure that, during this time of change of personnel at the RARP headquarters, there is no reduction in efficiency the ILO has agreed to provide two Associate Experts at Headquarters. One is already working at the Programme headquarters, the other is expected at the beginning of June.

The Ministry of Works have stated that, as long as the Construction Engineer's post is filled soon, the staff level at headquarters will be sufficient to cope with the rapid expansion during this year.

Field Engineers

Of the 14 field engineers posts required for the Programme when it is fully operational, 12 are presently filled. Four of the posts are presently filled by expatriate engineers who will be leaving in the near future. It is understood that replacements have already been found for them. There are presently 5 Kenyan engineers running units of the RARP. One of these is expected to come to RARP headquarters as mentioned above. It is also likely that two more will leave the Programme.

Donors have found difficulty in the past in finding the number of engineers to which they are committed to provide. One solution, proposed by the Dutch Government, is to allow the selection of engineers who are not nationals of the donor country. They have also requested the ILO to advise them of suitable candidates.

Kenyanisation

Whilst the Programme is presently predominantly expatriate in terms of engineers it is not considered that this is a problem peculiar to the RARP. The supply of Kenyan engineers to the MOW from the universities is not high and it would be unreasonable to expect that the RARP should obtain preferential treatment.

The MOW has a 3-year training programme for graduate engineers. MOW have stated that it will still be their policy for these graduate engineers to spend part of this training period with the RARP. The donors would like an indication of how many Kenyan engineers it is expected to put through the Programme in this way in the next 18 months.

The donors suggest that it would be useful to give undergraduate engineers an understanding of labour-intensive methods and in particular the RARP. This would help to eradicate any in-built bias against working with a labour-intensive programme. Discussions with the relevant authorities in the universities should be set in motion to ascertain the modalities of introducing this element into under-graduate courses. The donors request that the results of such discussions be reported back to them.

OICs and Overseers

The only problem envisaged in this respect is in the supply to the Staff Training Department of trainees. With the proposed increase of units it is however likely that only 3 Overseers per unit rather than 4 will be available for the 36 units envisaged by the end of 1978.

The supply of trainee OICs is perhaps more of a problem than that of the supply of trainee Overseers. Furthermore it is hoped that the problems of promotion of OICs can be resolved quickly.

Efforts are being made to look more closely at the potential supply of Overseer and OIC trainees. This includes Overseers from the maintenance branch, school leavers and, in the case of OICs, trainees at the Kenya Polytechnic.

The MOW have stated that the staffing organisation presently proposed for the Programme should be able to deal with the rapid growth of the Programme. The donors however have serious reservations that, with the possible turnover and change of staff at Headquarters, the management will be severely strained. Neither of the two Superintending Engineer's post are presently filled, the systems and procedures adviser is leaving in May, the Technology Unit personnel will be leaving shortly afterwards and thus, in the next 6 months, there will be a net reduction in headquarters staff. In the short term the donors feel that the issue of headquarters staff could be crucial to the development of the Programme. The MOW have stated that the present level of staff at headquarters will be adequate, as long as the Construction Engineer's post is filled. The donors, however, wish to be informed by 1 July if the situation deteriorates and extra personnel considered necessary. They also wish to be informed in the quarterly progress report of the output of OICs and Overseers from the Staff Training Department.

It was suggested that with the problems of procurement of tools it would be useful to have one engineer at headquarters totally concerned with this problem. However, it is accepted that, if the present problem is resolved then there may be no need for this post.

It is understood that there may be a reduction in staff in the Planning Unit in the early part of next year and this, of course, would put a severe strain on the Unit. The donors wish to be informed if the MOW require assistance in this area.

6. Development Activities Complementary to the RARP

For the RARP to achieve the optimum results of the investments made it is vital that all levels of Government actively participate in the complementary rural development activities. The donors feel that it would be possible for the RARP to stimulate, both within the Ministry of Works and to the extent possible, other central Government agencies, and the provincial and district authorities, activities and investments complementary to the rural roads constructed under its programme.

Attention should continue to be paid to the state of maintenance of the road system to which the rural access roads are or will be connected. It is also recommended that the MOW, via the RARP, could make known to other central Government agencies and the Government provincial agencies, where and when rural access roads will be constructed, and what complementary action, as suggested in the first instance by the DDC, is considered instrumental for the over-all success of the programme and for efficient rural development in the areas covered. The DDCs should, if necessary, be stimulated to formulate plans for activities and investments to be undertaken in the areas where they themselves have proposed rural access roads to be constructed. By such a decentralised concentration of activities it is hoped that development efforts may be more efficient in stimulating the growth of welfare in the rural areas of Kenya.

Donors realise that it may be hard for regional authorities to give attention exclusively to one sub-division only, concentrating both road construction and complementary activities in this sub-division alone; they hope and expect, however, that the DDCs in particular, will strike a balance between growth and distribution of welfare, the more so as the RARP will continue in the years to come and an appropriate phasing of the development efforts seems to be a possible solution to this problem.

7. Planning and Reporting

Adequate planning and reporting is essential to effective work management and financial control. However, planning and reporting systems for the Rural Access Roads Programme should be kept as simple as possible to avoid overburdening management and to permit the delegation of basic work scheduling and control procedures to the lowest unit.

Work Planning, Reporting and Control

The Technology Unit has developed a comprehensive system for planning and reporting from the site level. ("Project Planning and Reporting for Site to Engineer - Alternative I", October 1977). This system encompasses procedures for the selection of alignment and for simple survey to establish work quantities to which are then applied standard taskwork norms to establish resources requirements and work schedules. Standard forms are then used to record progress on a daily, weekly, monthly basis from overseer to OIC to Engineer respectively which permit timely control of the progress of work. It is the understanding of the donors that this system has been successfully tested and established in Kwale and Kitui districts, and is incorporated in the Overseer and OIC training courses by the Staff Training Department (STD). However, the planning system has not been extended to all units as expeditiously as possible. In the interim the simplified version (Ibid. - Alternative II) which dispenses with the need for survey technicians may be used where current staff limitation necessitate. Every effort should be made to implement the preferred system (Alternative I) for all units to the extent possible.

8. Reports to Donors

The MOW has suggested that it will prepare a joint Quarterly Progress Report for all donors (Attachment 1) with a separate annex as may be required by individual donors with respect to the particular units being financed. Recognising the need to limit the reporting burden of the MOW, the donors accept the proposal of the MOW with the proviso that it should include (i) a rolling one-year advance plan of critical steps, staffing, resource requirements, etc. (as suggested in Section 1); (ii) a brief report on progress of (a) pre-investment evaluation and project selection and (b) impact studies; (iii) a report on the output of the Staff Training Department. It is the donors view that these reports should be sent to them not more than 45 days after the end of the reporting period to which the report refers.

The donors also request that each donor receive copies of the various technical reports of the Technology Unit including the reports on hand tools and equipment, labour supply and the forthcoming Technical or Operations Manual.

9. The Impact Study

The donors note with concern the long delays over implementation of the Impact Study. Given that USAID have still to make modifications to the study, which will probably be done by April/May, the first farm surveys are unlikely to begin before the end of May/beginning June, and not in mid-March/April as presently scheduled. The donors urge that the study begin as soon as possible, and certainly no later than June. Financing for the remaining US\$ 200-250 thousand should be obtained, either from local or external sources, as soon as possible, and a definite commitment should have been obtained from some source by no later than the next review meeting.

Greater efforts should be made to obtain a development economist to head the Impact Study. It is necessary to immediately establish whether SIDA is willing to provide the development economist. The donors suggest that the RARF approach such donors as the World Bank, who might be interested in providing such assistance.

The donors suggest that greater emphasis be given to complementary investment in the areas surveyed. This type of information could probably be obtained through the community survey.

10. Disbursement Procedures

The donors have accepted the proposal¹ put forward by the MOF for disbursement on a monthly basis except for USAID, who already have an agreed disbursement system with the MOF, the EEC and the World Bank who need to receive clearance from their respective headquarters. The EEC and the World Bank will inform the MOF of the acceptability of the proposed disbursement procedure as soon as possible.

The World Bank would like to review the RARF auditing system but is not able to provide auditing services as requested by the RARF management.

11. Design and Construction Standards

Introduction

In the "Revised loan application, July 1975",² general design and construction standards were outlined. After several years of RARF activities it can be seen that a variety of standards have been used (see Appendix 8). At the same time the technology unit has, on the roads under construction or completed, carried out experiments, performed work studies and gathered useful information from individual engineers in order to devise uniform and effective

¹ See Section 10, Part I of this report.

² op.cit.

standards and work methods which could be introduced throughout the programme.

It is clear that no road construction programme can be executed smoothly unless uniform design and construction standards are introduced:

- to guide supervisory staff (field engineers, officers i/c, overseers) in their daily work;
- to provide Staff Training Department with a base on which the training can be built up;
- to allow the RARP H.Q. to effectively monitor the construction aspects of the programme.

Owing to its size and special requirements, a very elaborate organisation had to be established within the MCW to carry out the RARP. In contrast to this one particular point should be stressed:

The technology used on the level of actual road construction should enable a trained RAR supervisor to have a comprehensive understanding of all stages of construction. Given the chance and some experience he should be capable of building a road entirely by himself. The RARP has therefore an excellent chance to promote appropriate technology at the grass-root levels.

Standards and Work Methods

The construction standards of RARs so far constructed are very good and appropriate. The proposed design standards (see Appendix 8, Characteristics of RARs, table 2) are accepted and endorsed by all donors.

The work methods proposed to the Technology Unit should also be standardised for the whole Programme. These steps are considered to be an important precondition for setting up a uniform planning and reporting system covering all levels of implementation.

Implementation

During the next few months most of the RAR field engineers who have worked with the Programme from its initial stages will be replaced and the total number will be enlarged. Furthermore, considering that the RARP has now been operational for 3.1/2 years and that the work of the TU is coming to an end it now seems to be the right time to introduce and standardise the design standards and work methods, as devised by the TU and TRRL, throughout the RARP.

It is understood that the standards can still be modified in the light of new knowledge arising out of the practical work or out of the results of ongoing research programmes by TRRL.

It would be advisable for new field engineers to be made totally familiar with the design standards and construction methods of the programme as well as the administrative aspects.

Gravelling

The present MOW policy is to gravel all roads. Generally the donors agree that RARs should be gravelled where required to bring them to an all-weather standard. Explicit criteria should however be introduced to determine the necessity of gravelling roads.

The TRRL is presently conducting a research programme to establish gravelling guidelines for the RARP. In the meantime the donors suggest that the following points should be taken into consideration in order to decide whether gravelling is appropriate or not:

- economic hauling distance from the quarry to the road
- suitability of in-situ material
- standard of classified road linking the RAR
- transport demand concentrating over a short time of the year only (harvesting season).
- the disruption to anticipated traffic if gravelling is not done.

In cases where gravelling is necessary for technical reasons but is found to be uneconomical, that particular road should be dropped from the programme.

The donors also suggest that every effort is made to co-ordinate the activities of the RARP with those of the regravelling programme which was recently introduced by MOW in some districts to improve the classified road network.

PROJECT EVALUATION SUMMARY (PES) - PART I

1. PROJECT TITLE PD-AAK-284-D1 RURAL ROADS SYSTEMS PROJECT	2. PROJECT NUMBER 615-0168	3. MISSION/AID/W OFFICE USAID/KENYA
	4. EVALUATION NUMBER (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY) <u>79-1</u>	

5. KEY PROJECT IMPLEMENTATION DATES			6. ESTIMATED PROJECT FUNDING		7. PERIOD COVERED BY EVALUATION	
A. First PRO-AG or Equivalent FY <u>77</u>	B. Final Obligation Expected FY <u>80</u>	C. Final Input Delivery FY <u>84</u>	A. Total	\$ <u>21,248,000</u>	From (month/yr.)	<u>July 1, 1978</u>
			B. U.S.	\$ <u>14,748,000</u>	To (month/yr.)	<u>June 30, 1979</u>
					Date of Evaluation Review	<u>July 19, 1979</u>

8. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR

A. List decisions and/or unresolved issues, cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., telegram, SPAR, PIO, which will present detailed request.)	9. NAME OF OFFICER RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
<p>Two projects have been evaluated concurrently: Roads Gravelling Project 615-0170 and Rural Roads Systems Project 615-0168. This summary sheet pertains to the Rural Access Roads portion of Project 615-0168; a complementary summary sheet pertains to the Roads Gravelling Project 615-0170 and the GEC portion of Project 615-0168. Items 13 thru 23 are presented jointly for both projects.</p>	M.O.W.	June 1980
a) The requirement to gravel all roads is being reexamined.	M.O.W./USAID	31 Oct 1979
b) Annual Construction Rate revised to 36 km per unit. Revise Implementation Plan.	J. Pastic	31 Oct 1979
c) Selection criteria require revision.	J. Pastic	N.A.
d) Fixed Amount Reimbursement (FAR) to remain unadjusted.	J. Pastic	31 Dec 1979
e) Forty percent of FAR to be paid upon satisfactory completion of earthwork.		

9. INVENTORY OF DOCUMENTS TO BE REVIEWED PER ABOVE DECISIONS			10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT	
<input type="checkbox"/> Project Paper	<input checked="" type="checkbox"/> Implementation Plan e.g., CPI Network	<input type="checkbox"/> Other (Specify)	A. <input checked="" type="checkbox"/> Continue Project Without Change	
<input type="checkbox"/> Financial Plan	<input type="checkbox"/> PIO/T		B. <input type="checkbox"/> Change Project Design and/or	
<input type="checkbox"/> Logical Framework	<input type="checkbox"/> PIO/C	<input type="checkbox"/> Other (Specify)	<input type="checkbox"/> Change Implementation Plan	
<input type="checkbox"/> Project Agreement	<input type="checkbox"/> PIO/R		C. <input type="checkbox"/> Discontinue Project	

11. PROJECT OFFICER AND HOST COUNTRY OR OTHER BANKING PARTICIPANTS AS APPROPRIATE (Name and Title)		12. MISSION/AID/W OFFICE APPROVAL	
Clearance: MGE:SPShah PROG:CPendor PROG:RCristy CONT:BWhipple		Signature: <i>Glenwood P. Roane</i> Typed Name: Glenwood P. Roane Date: <u>July 21, 1979</u>	

PROJECT EVALUATION SUMMARY (PES) - PART I

Report Symbol U-447

1. PROJECT TITLE ROADS GRAVELLING PROJECT	2. PROJECT NUMBER 615-0170	3. MISSION/AID/W OFFICE USAID/Kenya
	4. EVALUATION NUMBER (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY) 79-1	
<input checked="" type="checkbox"/> REGULAR EVALUATION <input type="checkbox"/> SPECIAL EVALUATION		

5. KEY PROJECT IMPLEMENTATION DATES			6. ESTIMATED PROJECT FUNDING		7. PERIOD COVERED BY EVALUATION	
A. First PRC-AG or Equivalent FY <u>77</u>	B. Final Obligation Expected FY <u>77</u>	C. Final Input Delivery FY <u>83</u>	A. Total	\$ <u>12,300,000</u>	From (month/yr.)	<u>July 1, 1978</u>
			B. U.S.	\$ <u>9,300,000</u>	To (month/yr.)	<u>30 June 1979</u>
					Date of Evaluation Review	<u>July 19, 1979</u>

B. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR

A. List decisions and/or unresolved issues, cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., airgram, SPAR, PIO, which will present detailed request.)	B. NAME OF OFFICER RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
<p>Two projects have been evaluated concurrently: Roads Graveling Project 615-0170 and Rural Roads Systems Project 615-0168. This summary sheet pertains to the Roads Graveling Project 615-0170 and to the GBC portion of Project 615-0168. A complementary summary sheet pertains to the Rural Access Roads portion of Project 615-0168. Items 13 thru 23 are presented jointly for both projects.</p>		
<p>a) The rate of construction progress will depend on the relative proportions of road sections requiring complete reconstruction to sections needing spot improvements. Revise Implementation Plan.</p>	J. Pastic	30 June 1980
<p>b) Sufficient manpower is available to start up the first unit. Recruitment is currently underway for staffing the second unit.</p>	J. Pastic	1 Oct 1979
<p>c) Construction start slipped from June 1979 to Sept. 1979, due to delay in equipment arrival. Although the equipment arrival problem has been resolved, some has arrived in an unsatisfactory condition. The suppliers have been notified; this is not expected to further delay construction start.</p>	J. Pastic	1 Oct 1979

9. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS			10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT	
<input type="checkbox"/> Project Paper	<input checked="" type="checkbox"/> Implementation Plan (e.g., CPI Network)	<input type="checkbox"/> Other (Specify)	A. <input checked="" type="checkbox"/> Continue Project Without Change	
<input type="checkbox"/> Financial Plan	<input type="checkbox"/> PIO/T		B. <input type="checkbox"/> Change Project Design and/or	
<input type="checkbox"/> Logical Framework	<input type="checkbox"/> PIO/C	<input type="checkbox"/> Other (Specify)	<input type="checkbox"/> Change Implementation Plan	
<input type="checkbox"/> Project Agreement	<input type="checkbox"/> PIO/P		C. <input type="checkbox"/> Discontinue Project	

11. PROJECT OFFICER AND HOST COUNTRY OR OTHER BANKING PARTICIPANTS AS APPROPRIATE (Names and Titles)		12. Mission/AID/W Office Director Approves	
Clearances: M&E: SP Shah <i>SP</i>		Signature <i>Glenwood P. Roane</i>	
PROG: CPendord <i>CP</i>		Typed Name Glenwood P. Roane	
PROG: RCrist <i>RC</i>		Date Aug 21, 1979	
CONT: BWhipple <i>BW</i>			

13. SUMMARY

This evaluation pertains to both the Roads Graveling Project (615-0170) and the Rural Roads Systems Project (615-0168). The format provides for reporting on two major components: Graveling, Bridging and Culverting (GBC); and Rural Access Roads (RAR). The former consists of the Roads Graveling Project (615-0170) and the GBC portion of the Rural Roads Systems Project (615-0168). The latter consists of the RAR portion of the Rural Roads Systems Project (615-0168). This format has been followed because each component is managed and executed by separate MOW branches.

The GBC component finances two construction units to bring 3,300 km of secondary and minor roads in Western and Nyanza Provinces to an all-weather standard. The RAR component finances eight labor-intensive construction units in Western and Nyanza Provinces to construct 942 km of farm-to-market rural access roads.

A. GBC

The Graveling, Bridging and Culverting construction units have not yet started work, with the start-up date slipping from June 1979 to September 1979, due to a delay in arrival of equipment. Although the equipment arrival problem has now been resolved, some equipment arrived in an unsatisfactory condition. Project activities have, until now, been primarily those of staff recruitment and training, equipment acquisition, candidate roads selection, and base camp selection. Based on initial qualitative observations, the prospects of achieving the project purpose and goal are very favorable.

Sufficient manpower is available at this time to start up the first GBC unit. Recruitment is currently underway for staffing the second unit, and the Ministry of Works (MOW) anticipates that sufficient manpower will also be recruited for this unit in time for an estimated starting date of October 1979.

The rate of construction progress will depend on the relative proportion of road sections requiring complete reconstruction to sections needing spot improvements.

B. RAR

Rural Access Roads units financed by USAID commenced construction activities in the first half of 1978. As of May 31, 1979, six construction units are operating. They have completed 116.7 km of earthwork, which represents sixty percent of the original target, based on

42 km per unit-year. However, only 7.4 km of these roads have been gravelled, which is considerably below the target. The MOW is re-assessing the gravelling program in order to improve on this performance.

It appears, based on experience with construction units operating throughout Kenya over the last four years, that the average construction rate should be revised to 36 km per unit-year. With this change, the program target of 942 km will still be met by 1982, the Project Assistance Completion Date (PACD) being March 1, 1984.

Problems of adequately trained and sufficient numbers of personnel have largely been obviated by program management decentralization, and training programs. However, officers-in-charge remain in short supply.

Based on initial qualitative observations, the prospects of achieving the purpose and goal are very favorable. The five-year Devres Socio-Economic Study to quantify the program achievements has begun, with initial data expected within the year.

14. EVALUATION METHODOLOGY

There are three elements of evaluation for the rural roads projects: (1) Annual RAR joint donors review; (2) socio-economic impact analysis; and (3) Mission annual evaluation.

The RAR program is reviewed annually at a joint donors' review. This year it was held during 12-21 June. The donors' review consisted of: (a) An initial formal presentation by the Ministry of Works; (b) field inspection of RAR camps and worksites; (c) donor discussions; (d) meeting with the MOW; and (e) composition of the draft donor review by donor representatives.

Besides presenting the progress report, the MOW presented nine discussion papers which provided the basic reference materials for subsequent discussions.

Donor representatives included Denmark, Switzerland, The Netherlands, Norway, United Kingdom, United States of America, World Bank, UNDP, and the International Labor Organization. The Ministry of Works was represented by several top-level people, including the Minister, Mr. N. Munoko, who gave the opening address. At the working session, the MOW was represented by: Mr. N.P. Radier, Chief Engineer (Roads); Mr. P. Wambura, Chief Executive Officer at MOW; Mr. A.A. Quinn, Chief Superintending Engineer for Special Projects; and Mr. J.A. Simpson, Superintending Engineer for RAR Program, among many others.

The second evaluation element is an analysis of the socio-economic impact of the roads on the target area and target population (including an environmental impact analysis) to determine: (1) If the forecast benefits are being achieved, and, if not, which socio-economic benefits and costs are occurring; (2) the distribution of these benefits among farmers, traders and consumers and whether the distribution could be improved; (3) the level of local participation in the projects; and (4) the degree of coordination of the AID projects with other Government of Kenya rural development programs. Devres, Inc. has been awarded the impact study contract and their personnel have begun their work in June 1979. The evaluation will be conducted over a five-year period.

To enable the GOK to provide analytical support for the socio-economic impact study, project funds have been used to obtain the services of Mr. Harvey Herr (PSC). Mr. Herr arrived in Kenya in February 1979, and is assigned to the Central Bureau of Statistics. He is supporting the socio-economic impact study by developing, designing and implementing a statistical data processing system which will be used by the Rural Roads Impact Study team.

The third evaluation element is the Mission Annual Evaluation. This evaluation is an outgrowth of the Mission's Quarterly Reviews in which program progress is measured and issues are monitored. The Annual Evaluation combines the Quarterly Reviews, the Annual Joint Donors' Review, and information generated by the impact study.

Sources of information used for the Quarterly Review have been joint MOW/USAID staff discussions, field inspections by the USAID Project Manager, Quarterly Progress Reports for both the RAR and GBC program and, for the RAR program, reports from a local consulting engineering firm (Liburd and Associates) on construction status. A copy of the last Mission Quarterly Review Discussion Paper is attached for reference.

This PES has been developed from internal review resources and has not been prepared by a contractor.

15. EXTERNAL FACTORS

The assumptions made in the development of the Roads Graveling and Rural Roads Systems Projects remain valid. During site visits and discussions with residents within the project areas, it is qualitatively clear that the rural access roads are making favorable changes in accessibility for social and economic activities.

The GOK, in its 1979-84 Development Plan, has re-emphasized its priority on the development of rural areas as a means of realizing more equitable

income redistribution and alleviating poverty. Both the RAR and GBC programs continue to appear to be necessary tools to achieve this development.

It is increasingly obvious, however, that other factors like agricultural extension services also have major impact on increased productivity and improved welfare. Improved access roads facilitate the availability of these other factors, but do not necessarily guarantee them. The subject project papers were developed with the explicit understanding that roads by themselves would not guarantee the delivery of services. The areas selected for road construction/improvement are areas where major rural development programs are underway. The criteria for specific road selection includes consideration of development programs/projects active within the road's zone of influence. This issue will be more fully addressed during the next annual evaluation.

16. INPUTS

A. GBC

1. T.A. Personnel

All AID-financed technicians are in place.

2. Commodities

Considerable delays have been experienced in the receipt of dump trucks, fuel and water tankers, and low-bed trailers. Originally scheduled for delivery to a U.S. port by 17 March 1979, International Harvester has over-run this date by several weeks. Thirty-six vehicles arrived in late June of this year. Thirty-two vehicles were shipped from New York on June 22, and the remaining six are scheduled for shipment by August 23. The MOW and the Mission have been disappointed with the quality of some of the vehicles, and with the quality of support from the local IH agent. The Mission has notified IH of our concern, and expects the situation to improve. The vehicle discrepancies should not have a serious impact on the project. Other supply items are being acquired satisfactorily.

3. Staff Recruitment

The MOW began staff recruitment during the period July 1, 1978 - June 30, 1979. After cooperating with all Provincial Engineers, the MOW Direct Labor Office, National Youth Service, Settlement Road Project at Kabozi, Thika-Kangondi Road Project, and the Office of the Chief Mechanical and Transport Engineer, a total of 115 skilled personnel have been recruited. This is only 34 percent of the estimated manpower needs. The shortage of trained personnel is a Government-wide problem, and its resolution is beyond the capability of the MOW alone. The MOW will recruit from the private sector during the next 6-8 weeks. The MOW feels that sufficient manpower will be available so as not to delay construction starts.

B. RAR

1. Supervisors

In the AID project area, the lack of skilled supervisory staff was felt to be a major constraint to overall progress of the program. The decentralization of the program will help to provide more effective supervision, and the MOW is continuing its efforts to increase the supply of officers-in-charge. The proposed new organization structure of the RARP will reduce the number of Engineers posted at headquarters from five to two. Four new posts will be set up in the Provincial Engineer's Offices in Kisumu (AID project area), Nakuru, Nyeri and Nairobi. Advertisements have already been placed for the recruitment of the necessary and prescribed administrative support staff. All other posts on engineering or senior technician levels are presently filled and no serious problems are envisaged in the near future.

2. Expatriate

Five donors are committed to providing three Engineers each to the program. Of these five, DANIDA and the Swiss are presently meeting that commitment while the Netherlands, NORAF and the U.K. are providing two. The remaining three field posts are filled by two volunteers, one from the Netherlands, one from the U.K., and a Kenyan Engineer. In addition, there is one Dutch volunteer, and one U.K. volunteer acting as Assistant Engineers. Thus, while all donors have not met their commitments, there are presently sufficient Engineers in the field.

It was recognized that frustrations and loss of motivation did arise among some expatriate Field Engineers when faced with many unexpected administrative matters caused by a lack of supporting staff. The MOW is now making serious efforts to overcome this problem by recruiting a sufficient number of suitably qualified senior administrative staff for each Engineer. This should alleviate, but not eliminate, hassles with bureaucratic procedures. For expatriate Engineers who have not worked in a similar system before, it is quite difficult to adopt an appropriate attitude required to work efficiently with the prescribed procedures. Nevertheless, the donors felt that prospective candidates for Field Engineer posts should comprehensively be briefed by the respective donor agencies.

3. Commodities

All equipment, tools, and materials are in place and available.

17. OUTPUTS

A. GBC

Since neither gravelling unit is as yet operational, no actual progress in terms of length of road regravelled has yet been achieved.

Because of delay in equipment deliveries, construction start has slipped about three months, and is now expected in September 1979.

The MOW has submitted the Candidate Roads List for Bungoma District to the District Development Committee (DDC). Discussions between the MOW/DDC are now underway to resolve final details. The Bungoma District Candidate Roads List and Annual Work Plan are expected from the MOW by August 15, 1979. Work is expected to start in Bungoma District by September 1979.

The rate of construction, as extrapolated from the Project Agreement, is: For 615-0170, 1300 km by 1983; for 615-0168, 2000 km by 1984. This equates to 370 km per unit-year for the former, and 440 km per unit-year for the latter. It is estimated that 25 percent of the total roads will require improvement for full length of the road, while the balance would require "spot improvements" to upgrade them to an all-weather standard.

The Canadian-assisted units have averaged 12 km of complete reconstruction per month. Since the MOW has improved on the equipment mix used by the Canadian units and has benefitted from lessons learned, the emphasis on partial reconstruction should result in a considerable increase in graveling rates. However, actual field performance during the coming year will determine the final rates.

B. RAR

<u>Unit</u>	<u>Achieved Thru 31 May 1979</u>	
Bungoma I	35.52 km	1.78 km
Bungoma II - not yet started	-0-	-0-
Busia	8.85 km	-0-
Kakamega I	9.01 km	-0-
Kakamega II - not yet started	-0-	-0-
Kisii I	33.56 km	5.57 km
Kisumu	29.72 km	-0-
Siaya	-0-	-0-
	<u>116.66 km</u>	<u>7.35 km</u>

As of May 31, 1979, earthwork on 116.66 km of roads has been completed which is approximately 60 percent of the 190 km which should have been

completed by May 31, 1979 under the original target, at the rate of 42 km per unit-year. USAID expressed its concern over the short-fall in an April 17, 1979 letter to the MOW, stating that this could affect the construction completion date and the cost of the 934 km of roads financed by AID. In an April 30, 1979 reply, the MOW acknowledged that start-up delays have prevented them from meeting the original targets. Now that operational experience has been gained, they feel that this situation will improve. USAID concurs.

The average rate of construction (excluding gravelling) for all units (including that financed by other donors) since project start has been 36 km per unit-year. Although this is below the 42 or 45 km per unit-year estimated by USAID and MOW respectively, this rate is considered to be realistic and reasonable, and will be taken as the revised output rate. The 942 km should be completed by 1982.

Gravelling operations have lagged behind earthwork operations. The MOW has studied this situation; they report the causes as poor on-site planning; improper quarry selections; and poor equipment utilization. The MOW has undertaken corrective action of these factors, but it will be several months before results can be observed. The donors, at the 1979 Annual Review, have requested the MOW to develop criteria under which gravelling would not be required for an all-weather standard road, i.e. in-situ material is satisfactory.

C. Maintenance

The Roads Maintenance Engineer (F.R. Harris, Inc. employee) submitted his "Annual Report - Highway Maintenance" on March 27, 1979. The document reports the failure of the previous years' maintenance program. A prerequisite to the establishment of a maintenance program was to bring these roads up to a maintainable standard. The project suffered from lack of equipment, spare parts and money. Only 21 km of the pilot roads were ever brought up to standard before the program failed completely by December 1, 1978.

The report identifies the following reasons for pilot project failure:

1. Practically all of the maintenance budget is being used on the primary system in an effort to keep it from deteriorating further.
2. Maintenance funds are being used for betterment and possibly other non-maintenance activities.
3. Selected roads were not up to maintainable standards. Ear-marking was proposed to assure that a reasonable pro-rata share of attention would be given to the maintenance of minor roads.

Based on the first year experience, the Roads Maintenance Engineer has developed a scope of work for a revised maintenance program. A specific funding commitment has been obtained from the MOW. With earmarked funds, a cost accounting system and a set of maintainable roads all of the obstacles to a successful initial program have been obviated.

By September 30, 1979, an Inception Report will be prepared which will contain specific test parameters, methodologies, data to be recorded, how data will be used, and purpose of each test. Four general aspects will be tested: Intensive machine maintenance; maintenance by casual laborers stationed at 2-3 km intervals; maintenance by casual laborer crews organized to work cyclically; and labor-intensive but with some use of equipment.

Furthermore, the Inception Report will specify the work plan for each test, key milestones and their target dates, and target dates for presentation of both general recommendations and detailed recommendations.

Subsequent reporting will consist of Quarterly Progress Reports formatted after the Inception Report; reports on accomplishment of milestones; and occasional spot reports as desired by the Roads Maintenance Engineer and the MOW.

Development and implementation of a viable maintenance activity for minor roads will be the cornerstone of a successful Rural Roads Systems Program. The Canadian aid program in Eastern Province has been a disappointment because newly regravelled roads deteriorated to unsatisfactory condition because they had received no maintenance for eighteen months. Virtually all participants in the program realize the importance of adequate maintenance. The World Bank, as a condition of its \$90 million loan, has stipulated a large increase in the maintenance effort. The Mission has been especially active in pursuing the need for adequate maintenance efforts. Implementation Letter No.16 was especially addressed at this matter. The MOW has been allocated approximately 33 percent more funds this year for the maintenance of roads compared to the last year allotment. It appears that with the increased allotment, the MOW should be able to undertake adequate maintenance for practically all roads.

18. PURPOSE

The approved project purpose for Project 615-0170 is: "To improve smallholder access to agricultural institutions, services and infrastructure, including inputs, credit, knowledge/extension to apply inputs, markets and/or storage facilities, roads and water." For Project

615-0168, the approved purpose is: "To provide isolated rural areas with improved accessibility to public and private factors of production and social services."

The Socio-economic Impact Study began in June 1979 by Devres, Inc., which will run for a five-year period, will investigate and measure the degree to which project purposes are met. Results are not available.

19. GOAL/SUBGOAL

See Paragraph 18 above.

20. BENEFICIARIES

A. GBC

Not pertinent at this time. Study data are still in the development stage. Initial socio-economic study findings are expected next year.

B. RAR

Road user beneficiary data not available. The farmers constructing rural access roads during the normal nine-month construction period are hired from the immediate area of influence of the roads. These people realize direct non-farm income. For the duration of the project, unemployment and underemployment are reduced. Women are frequently seen on these projects.

21. UNPLANNED EFFECTS

A. GBC

Not pertinent at this time.

B. RAR

None noticeable so far.

22. LESSONS LEARNED

Not pertinent at this time.

23. ATTACHMENTS

A. Draft Annual Donor Review of Rural Access Roads Program, 1979.

B. Mission Project Review Paper for Quarter Ending 30 June 1979.

MISSION REVIEW/15/15:
Project 615-0170/5125

Date: 6-30-79

PROJECT TITLE AND NUMBER: Rural Roads Systems (615-0168)
 INITIAL YEAR OF OBLIGATION: FY 77
 FINAL YEAR OF OBLIGATION: FY 80
 PACD: 2-29-84 TDD: 2-29-84 TDRDA: 2-29-84 (whichever apply)

I. FUNDING (\$000)

A. LOP - TOTAL: 14,748
 LOAN: 13,000
 GRANT: 1,748

B. GRANTS

	<u>PLANNED</u> ^{1/}			<u>ACTUAL</u>		
	<u>OBG.</u>	<u>Expend.</u>	<u>Pipe</u> ^{2/}	<u>OBG.</u>	<u>Expend.</u>	<u>Pipe</u> ^{2/}
THRU PRIOR FY: ^{1/}	900	56	844	900	56	844
Current FY:						
1st Qrt.	500	37	1,307	500	25	1,319
2nd Qrt.	-	88	1,219	-	53	1,266
3rd Qrt.	-	138	1,081	-	71	1,195
4th Qrt.	-	143	938	-	(143)*	(1,052)*
Current FY:	500	406	-	500	(292)*	-
THRU Current FY:	<u>1,400</u>	<u>462</u>	<u>938</u>	<u>1,400</u>	<u>(348)*</u>	<u>(1,052)*</u>

C. LOANS

	<u>Planned Expenditures</u>			<u>Actual Expenditures</u>		
	<u>OBG.</u>	<u>Expend.</u>	<u>Pipe.</u>	<u>OBG.</u>	<u>Expend.</u>	<u>Pipe.</u>
THRU PRIOR FY:	13,000	35	12,965	13,000		12,965
Current FY:						
1st Qrt.	-	700	12,265	-	{ 657	{ 12,308
2nd Qrt.	-	2,550	9,715	-		
3rd Qrt.	-	735	8,980	-	1,208	11,100
4th Qrt.	-	485	8,495	-	(485)*	(10,615)*
Current FY:	-	4,470	-	-	(2,350)*	-
THRU Current FY:	<u>13,000</u>	<u>4,505</u>	<u>8,495</u>	<u>13,000</u>	<u>(2,385)*</u>	<u>(10,615)*</u>

1/ Planned = actual for prior FY * Planned
 2/ Accumulations

B. PROJECT TITLE AND NUMBER:

Rural Access Roads 615-0168

INITIAL YEAR OF OBLIGATION:

FINAL YEAR OF OBLIGATION:

<u>Unit</u>	<u>Achieved Thru 31 May 1979</u>	
	<u>Earthwork Only</u>	<u>Gravelling Completed</u>
Bungoma I	35.52 Km	1.78 Km
Bungoma II - not yet started	- 0 -	- 0 -
Busia	8.85 Km	- 0 -
Kakamega I	9.01 Km	- 0 -
Kakamega II - not yet started	- 0 -	- 0 -
Kisii I	33.56 Km	5.57 Km
Kisumu	29.72 Km	- 0 -
Siaya	- 0 -	- 0 -
Total	116.66 Km	7.35 Km

Planned: 190 Km by May 1979 (Gravelling completed)

LOP Target: 934 Km

PROJECT REVIEW FORMAT

Date: 6-30-79

PROJECT TITLE AND NUMBER: Roads Graveling 615-0170

INITIAL YEAR OF OBLIGATION: FY 77

FINAL YEAR OF OBLIGATION: FY 77

FACD: 3-1-83 TDD: 3-1-83 TDRDA: 3-1-83 (whichever apply)

I. FUNDING (\$000)

A. LOP - TOTAL: 9,300
LOAN: 7,700
GRANT: 1,400

B. GRANTS

	<u>PLANNED</u> ^{1/}			<u>ACTUAL</u>		
	<u>OBC.</u>	<u>Expend.</u>	<u>Pipe</u> ^{2/}	<u>OBC.</u>	<u>Expend.</u>	<u>Pipe</u> ^{2/}
THRU PRIOR FY: ^{1/}	1,400	53	1,347	1,400	53	1,347
Current FY:						
1st Qrt.	-	35	1,312	-	24	1,323
2nd Qrt.	-	55	1,257	-	34	1,289
3rd Qrt.	-	120	1,137	-	34	1,229
4th Qrt.	-	125	1,012	-	(125)	(1,104)*
Current FY:	-	335	-	-	(243)*	-
THRU Current FY:	1,400	388	1,012	1,400	(290)	(1,104)*

C. LOANS

	<u>Planned Expenditures</u>			<u>Actual Expenditures</u>		
	<u>OBC.</u>	<u>Expend.</u>	<u>Pipe.</u>	<u>OBC.</u>	<u>Expend.</u>	<u>Pipe</u>
THRU PRIOR FY:	7,700	39	7,661	7,700	39	7,661
Current FY:						
1st Qrt.	-	700	6,961	-	656	7,005
2nd Qrt.	-	2,550	4,411	-		
3rd Qrt.	-	533	3,878	-	1,407	5,598
4th Qrt.	-	233	3,645	-	(233)	(5,365)*
Current FY:	-	4,016	-	-	(2,296)*	-
THRU Current FY:	7,700	4,055	3,645	7,700	(2,337)*	(5,365)*

^{1/} Planned - actual for prior FY ^{2/} Planned
^{2/} Cumulative

II. LOP STATUS

A. PROJECT TITLE AND NUMBER: Roads Gravelling 615-0170

INITIAL YEAR OF OBLIGATION:

FINAL YEAR OF OBLIGATION:

Output

Achieved as of June 30, 1979

1. RRSP 615-0168

GBC Roads Improved

Kisumu

Kisii

Siaya

Nyanza

Subtotal

- 0 -

LOP Target 2,000 Km

By June 1980: 320 Km

2. Roads Gravelling 615-0170

GBC Roads Improved

Bungoma

Kakamega

Busia

Subtotal

- 0 -

LOP Target 1,300 Km

By June 1980: 320 Km

Construction start is scheduled for September 1979 in Bungoma District; September/October for South Nyanza District.

Detailed work plans will be shown along with the candidate roads lists, to be submitted by the MOW during next reporting period.

RURAL ROADS SYSTEMS PROJECTS 615-0168/0170

III. Implementation

This report gives the status of both the Roads Graveling Project (615-0170) and the Rural Roads Systems Project (615-0168). The report is divided into two major reporting components: Graveling, Bridging and Culverting (GBC); and Rural Access Roads (RAR). The former consists of the Roads Graveling Project (615-0170) and the GBC portion of the Rural Roads Systems Project (615-0168). The latter consists of the RAR portion of the Rural Roads Systems Project (615-0168). This format has been followed because each component is managed and executed by separate MOW branches.

A. Graveling, Bridging, Culverting (GBC)

1. Status of Issues Addressed at Previous Meeting:

(a) Spare Parts: The Ministry of Works (MOW) has received from International Harvester a comprehensive list of two years' supply of spare parts. The lists have been reviewed, modified, and submitted to USAID/K for approval. Approval has been given and the ordering process is underway.

(b) Frederic R. Harris, Inc. Staffing

All F.R. Harris personnel are in-country.

Project Manager	Robert Weishaupt
Deputy Project Manager	Forrest Schultz
Roads Maintenance Engineer	Edmund Cummins
Mechanical Superintendents	David Chisnell Douglas Whinnery
Construction Superintendents	Thomas Hutchason John Grassel

(c) GBC Units/Work Plan: MOW has submitted the candidate roads list for Bungoma to the Bungoma District Development Committee (DDC). Discussions between MOW/DDC are now underway to resolve final details. The Bungoma District Candidate Roads List and Annual Work Plan are expected from MOW by August 15, 1979. Work is expected to start in Bungoma District by September 1979.

(d) Roads Maintenance: Mr. Cummins, Roads Maintenance Engineer, F.R. Harris, Inc., submitted "Annual Report - Highway Maintenance" on March 27, 1979. The document reports the failure of the previous year's maintenance program. (FYI. The following roads in Kisii were selected as the project area: D-207, 10.3 km; D-208, 18.1 km; C-16, 18.3 km; D-223, 4.7 km; T-1101, 9.5 km.) A

prerequisite to the establishment of a maintenance program was to bring these roads up to a maintainable standard. The project suffered from lack of equipment, spare parts and money. Only 21 kms of the pilot roads were ever brought up to standard before the program failed completely by 1 December 1978.

The report identifies the following reasons for pilot project failure:

- (1) Practically all of the maintenance budget is being used on the primary system in an effort to keep it from deteriorating further.
- (2) Maintenance funds are being used for betterment and possibly other non-maintenance activities.
- (3) Selected roads were not up to maintainable standards.

Mr. Cummins proposed an earmarking procedure to assure that a reasonable pro-rata-share of attention is given to the maintenance of minor roads.

Mr. Cummins, based on the first year experience, has developed a scope of work for a revised maintenance program. A specific funding commitment has been obtained from the MOW.

By 30 September 1979, Mr. Cummins will prepare an Inception Report which will contain specific test parameters, methodologies, data to be recorded, how data will be used, and purpose of each test. Four general aspects will be tested: Intensive machine maintenance; maintenance by casual laborers stationed at 2-3 km intervals; maintenance by casual laborer crews organized to work cyclically; and labor intensive but with some use of equipment.

Furthermore, the Inception Report should specify the work plan for each test, key milestones and their target dates, and target dates for presentation of both general recommendations and detailed recommendations.

Subsequent reporting should consist of Quarterly Progress Reports formatted after the Inception Report; reports on accomplishment of milestones; and occasional spot reports as desired by the Roads Maintenance Engineer and the MOW.

Project Manager's Comments:

Development and implementation of a viable maintenance activity for minor roads will be the cornerstone of a successful Rural Roads Systems Program. The Canadian aid program in Eastern Province has been a disappointment because newly re-gravelled roads

Cabinet has directed MOW to carry out with Cummins intensive maintenance

deteriorated to unsatisfactory condition because they had received no maintenance for eighteen months. Virtually all participants in the program realize the importance of adequate maintenance. The World Bank, as a condition of its \$90 million loan, has stipulated a large increase in the maintenance effort. This fiscal year's MOW budget for maintenance has been increased by one-third from last year's amount. It remains to be seen if the MOW will successfully channel a reasonable amount into the maintenance of minor roads.

Mr. Cummins has worked an arrangement to obtain the use of road maintenance equipment at the end of each fiscal quarter for use on roads in the new pilot area. The new pilot area is in Western Province near Kakamega, on the following roads: D-298 (10.7 km); E-295 and D-267 from Kakamega to C-39 (27.5 km); and D-260 (55 km). These roads are presently at maintainable standards. With earmarked funds, a cost accounting system, and a set of maintainable roads, all of the obstacles to a successful initial program have been obviated. The success of the pilot project depends very much on the aggressiveness, imagination and resourcefulness of the personnel involved. It is suggested that USAID formally convey its concern for a successful program and urge that top level interest be given to this effort.

Obvious

(e) Delays in Delivery of Trucks: Thirty of the sixty dump trucks have arrived in Mombasa. ~~Twenty-two more were scheduled for shipment 22 June. (Not yet confirmed.) Eight remain to be accounted for.~~ International Harvester, Inc. has been overdue in delivering these vehicles to dockside since 16 March 1979, and have accumulated very large liquidated damages.

New Issues:

(a) Bridging: The MOW is still developing its bridging strategy, so no work plan is yet available. There are eleven (11) bridges required for Bungoma District, and twenty-three (23) required in Homa Bay District. Not all of these are located on the candidate roads lists.

Project Manager's Comments: The MOW advises that some guidelines have been established. Spans greater than six (6) meters should be done by contract. However, the situation is not clear in the case of short (less than six meters) spans. Each GBC unit has a Construction Superintendent and Mechanical Superintendent, but no Bridge Technician. Furthermore, each is expected to complete approximately 400 kilometers per year, which when compared to the 2-3 month time required for bridge construction, will create logistical problems for the construction units. The emphasis for the construction units will therefore be on maximum utilization of culverts and drifts.

It is not clear, however, that the MOW has identified required bridging on the roads in the candidate lists. This, of course, is a prerequisite for developing a strategy for getting the bridging ultimately completed; therefore, this item should not be left unresolved. In this regard, the MOW was reminded that AID assistance provides for bridging activities. Changes, if any, required in the form of assistance can most likely be addressed through P.I.L.'s.

(b) Construction Rate/Degree of Improvement: (This item is related to III.A.I.C., "GBC Units/Work Plan", and to Item III B.I.C., "Additional Assistance".)

The rate of construction, as extrapolated from the project agreements, are: For 615-0170, 1300 km by 1983; for 615-0168, 2000 km by 1984. This equates to 370 km per unit-year for the former, and 440 km per unit-year for the latter. Some of this work would be on a complete reconstruction basis, while other work would be done as "spot improvements". It is not feasible to separate roads into two such distinguishable categories, but based on comparative experience of Canadian aided units, the MOW has programmed to complete 120 km of candidate roads per year.

Project Manager's Comments:

The Canadian assisted units accomplished 10-15 km of complete reconstruction per month, or 120-180 km per unit-year. The MOW has improved the equipment mix used by the pilot (Canadian) effort, and should benefit from lessons learned. However, field performance during the coming year will establish the actual rates.

(c) Recruitment: The MOW began staff recruitment during this period. After cooperating with all Provincial Engineers, the MOW Direct Labor Office, National Youth Service, Settlement Road Project at Kabozi, Thika-Kangondi Road Project, and the Office of the Chief Mechanical and Transport Engineer, a total of 115 skilled personnel have been recruited. This is only 34% of the estimated manpower needs.

Project Manager's Comments: The shortage of trained personnel is a Government-wide problem, and its resolution is beyond the capability of the MOW alone to address. The MOW intends to begin the project with reduced manning levels. The MOW will recruit from the private sector during the next 6-8 weeks. There appears to be sufficient personnel to begin operation in September in Bungoma District. However, adequate staffing for Homa Bay operation cannot be assured at this time. It is suggested that the MOW keep USAID advised on the status of this issue.

(d) Financial Reporting: The MOW has experienced chronic problems with AAPC in keeping track of expenditures. Laxity and inconsistency on the part of AAPC has resulted in the MOW not having accurate records of its loan fund position.

Project Manager's Comments: This unfortunate situation is not expected to continue, because practically all equipment purchases by AAPC on behalf of the MOW have been completed. Furthermore, a protest letter has been sent by the MOW to AAPC on 21 June 1979, which should prompt AAPC to bring the MOW up-to-date.

3. Status of Implementation:

(a) The issue of roads maintenance has been reviewed with MOW, which has resulted in renewed emphasis on an aggressive program.

(b) The MOW has awarded a contract for prefabricated houses, purchase of radios, and is in the process of purchasing locally procured small equipment items.

(c) The MOW has not yet submitted the Roads Selection Report for either Province to USAID for approval.

(d) Due to late shipment of project vehicles, construction has been rescheduled for September start in Bungoma.

4. Implementation Schedule for Next Reporting Period (July 1979 - November 1979):

(a) Recruit skilled personnel from outside the MOW:

(1) 91 drivers by September 30, 1979.

(2) 20 inspectors/foremen/overseers by September 30, 1979.

(b) Submit final Candidate Lists and Work Plan for Bungoma District to USAID for approval by August 15, 1979.

(c) Submit final Candidate Lists and Work Plan for South Nyanza District to USAID for approval by September 30, 1979.

(d) Stage all project vehicles and equipment at base camps by September 15, 1979.

(e) Station recruited personnel in their assigned districts by September 15, 1979.

(f) Start Bungoma construction by September 30, 1979.

(g) Start Homa Bay construction by November 15, 1979.

B. Rural Access Roads (RAR)

1. Status of Issues Addressed at Previous Review:

(a) Construction Progress: As of May 31, 1979, earthwork on 116.66 km of roads has been completed which is approximately 60% of the 190 km which should have been completed by May 31, 1979 under the original target (266 km by September 1979). We expressed our concern over the short-fall in an April 17, 1979 letter to the MOW, stating that this could affect the construction completion date and the cost of the 934 km of roads financed by AID. In an April 30, 1979 reply, the MOW acknowledged that start-up delays have prevented them from meeting the original targets. Now that operational experience has been gained, they feel that this situation will improve.

Project Manager's Comments: The average rate of construction (excluding gravelling) for all units (including that financed by other donors) since project start has been 36 km per unit-year, well below the 42-45 km per unit-year estimated by the MOW and USAID respectively. At these rates, the 942 km should be completed (except for gravelling) by May 1981, which would be on target. However, there is some evidence that the USAID-funded units (based on informal progress reports) are operating at a lower rate at present (20 km per unit-year). Therefore, this issue should be followed closely during the next reporting period.

reflect in PES
reduce rate
to 36 hereafter
→

Gravelling operations have lagged behind earthwork operations. The MOW has studied this situation; they report the causes as poor on-site planning; improper quarry selections; and poor equipment utilization. The MOW has undertaken corrective action of these factors, but it will be several months before results could be observed. The donors, at the 1979 Annual Review, have requested the MOW to develop criteria under which gravelling would not be required.

(b) Compaction: The Transport and Road Research Laboratory (TRRL) has published an interim report (Appendix A to Section 3 of Volume I of the Annual Review Discussion Papers) which supports the preliminary findings that, generally, compaction using special equipment is not required. Their conclusions are:

(1) Heavy compaction plant is not necessary in the construction of rural access roads.

(2) Compaction is necessary at all levels of construction, but it can be achieved by indirect methods in conjunction with an appropriate construction schedule.

(3) In some circumstances, additional compaction with light plant or hand rammers is appropriate. For example:

a. Good shape is often difficult to control and supervise when working with loose layers of material and it may be worth considering the use of raking and light rolling techniques to improve this operation.

b. At times of heavy rain, immediate compaction with light plant or hand rammers may be effective in reducing erosion problems and preventing saturation of shaped formations.

c. In deep fills, it may be inconvenient to have to rely on indirect compaction and additional compaction may be necessary.

In light of the relative success of this technique, it is felt that this issue is now under control, subject only to review at the next annual review.

(c) Approval of Phase II Program: Phase II roads have been identified by District Development Committees (DDC's), but the evaluation reports on these roads have not as yet been completed by the MOW, nor have they been submitted to USAID for approval. Each DDC is in the process of selecting 200 km of additional roads.

Project Manager's Comments: Under Phase I of the program, AID has approved construction of 424 km of roads as follows:

(1) Kisii District	60 km
(2) Kisumu District	38 km
(3) Siaya District	64 km
(4) Kakamega District	58 km
(5) Bungoma District	62 km
(6) Busia District	<u>142 km</u> entire DISTRICT
	424 km

The selection of 200 more km of roads per district would exceed the amount stated in the Project Agreement (1624 km vs 934 km).

These roads cannot all be built with the funds presently available under the project. Therefore, the Project Manager proposes that AID's approval of the Phase II roads should not exceed 155 kilometers (including roads already approved under the Phase I Program) for each district.

(d) Additional Assistance/Selection of Roads: Present MOW levels of effort, supported by various donors, provide for completion of 7600 km by 1982. This is approximately 50% of the total goal of 14,000 km. The GOK has not yet officially requested additional specific donor assistance, but has announced its intention to do so.

The MOW is working on ways to identify the additional roads. The GOK had planned for 600 km of rural access roads in each district, but soon rejected this rough planning figure. At the 1979 Donors Review, the MOW presented another analysis showing (a USAID) requirement for additional 3040 km in all of Kisii, Kisumu, Siaya, Bungoma, Busia and Kakamega Districts. The donors felt that the methodology used was insufficient, and have requested further study of this issue for discussion at a Fall 1979 donors meeting.

The MOW has indicated that they would like to reorient the efforts of the construction units in some districts to include the betterment of minor classified roads. This intention was endorsed by the donors, in light of the overall successful utilization of labor intensive technology. However, the donors will require a more detailed discussion and assessment of the set up of the program, and how the transformation would occur. As a first step, an indication of the extent the RARP will be involved with betterment of classified roads in each district will be required.

Project Manager's Comments: The methodology selected was based on relationships between population density (person per km²) and "road density" (the length of roads within a square km of land).

Each district was examined and the population and surface area data adjusted to take into account the exclusion of areas such as townships, urban centers, dense forests, National Parks and zones of exceedingly low population density. It was assumed that within the effective area major short-term development is most likely to take place.

The relationship between population density and road density which was used to estimate the additional length of road required in each district is as follows:

<u>Population Density</u> P/Km ²	<u>Road Density</u> Km/Km ²
0-50	0.25
50-100	0.4
100-150	0.5
150-250	0.6
250+	0.75

This relationship is completely arbitrary, but the MOW felt that it was reasonable to propose a minimum and a maximum desirable road density in rural areas. Identification of additional RAR should be based on specific development plans. For those districts and sub-districts in which few new roads are required, there is an opportunity to work on minor roads which actually are in the same unserviceable condition as the RAR tracks. The MOW has pointed out that the present road classification was not done precisely and is outdated. Some roads which were classified are the same in function and condition as RAR's.

The MOW has assumed USAID funding of eight construction units beyond the 1981 Project Agreement, through the first six months of 1982. At the present annual construction rate of 36 km per unit, completion of the entire 934 km covered by the existing Project Agreement will occur by May 1981 (ref paragraph III.B.1.a.) At the annual rate of 20 km per unit (the rate for May 1979), the 934 km will not be completed until October 1982. It is most probable that the original 934 km will be completed by the end of 1981. Whether or not sufficient funds are presently allocated for RAR Fixed Amount Reimbursement for these 934 km is not certain at this time (reference paragraph III.B.2.c). Assuming that sufficient funds for the initial 934 km are available (\$4.45 million is committed), it now appears that funds could be available from the CBC portion of the program. Of \$8.55 million available in the CBC portion of Project 615-0163, \$3.65 million of the \$5.89 million budgeted for equipment has been committed. The difference of \$2.24 million may be available for redistribution to RAR. At approximately \$5,000 per km, up to 450 km of additional rural access roads could be funded. Although the FAR figure could increase, and the entire \$2.24 million may not be available for redistribution, there still appears to be considerable flexibility to continue the program beyond 934 km while remaining within the established cost ceilings.

*money for
spare parts
besides that
already available*

1. New Issues:

(a) Change in Reimbursement Basis: There have been suggestions to change the reimbursement procedure. Presently, the Project Agreement provides for reimbursement to GOK based on the Fixed Amount Reimbursement (FAR) method. The proposed procedure (revised formula) would provide for forty percent (40%) reimbursement upon completion of earthwork, and the balance of sixty percent (60%) upon completion of gravelling.

Project Manager's Comments: This issue was raised by the Kisumu Rural Access Roads Engineer, and by the Kakamega and Bungoma RAR

Engineer, during the Project Manager's (PM) June 4-8, 1979 field inspection. The RAR Engineers are being urged by the MOW to complete gravelling operations in order for the GOK to be reimbursed. However, the Kisumu RAR Engineer feels that more time is needed to permit natural compaction to occur. He feels that a full year of weather cycles is preferable to the 3-6 month time recommended by the MOW headquarters. PM feels that the flexibility to decide on the time for final gravelling should be available to the RAR District Engineer. Amending the Project Agreement/PIL's to permit payment of 40% FAR amount upon satisfactory completion of earth formation, and the balance of 60% FAR upon satisfactory compaction, reshaping and gravelling, would permit funds to circulate to the GOK and simultaneously allow Field Engineers the flexibility to determine the timing of final gravelling. This procedure would also provide a formal two-step inspection by AID to insure satisfaction with the quality of work. USAID legal counsel advises that the FAR formula can be changed with a Project Implementation Letter. The PM recommends that the MOW ask the MOF to formally request USAID to change the FAR formula.

(b) Selection Procedure/Impact Study: The donors recommended that the selection procedures for rural access roads be modified. They feel that the use of the economic evaluation resulting in an internal rate of return for a package of roads should be discontinued as soon as possible. It is intended that the donors will meet again in September/October 1979 to discuss this issue in the light of the USAID consultant's (Devres Inc., Impact Study Consultant) report. They will then make recommendations to the MOW.

Project Manager's Comments: On the socio-economic side, the main burden of justification for a package of roads rests on the economic cost-benefit analysis, with benefits based entirely on agricultural gross margins and costs based on average costs of construction for the whole program. (The social data collected is used only for giving the construction priority of the roads selected.) It is acknowledged that the economic analysis used in the evaluation is generalized for the group of roads, and it has always been the intention to replace or adjust it in the light of the findings of the Impact Study. The delays in initiating the Impact Study have resulted in much greater reliance being placed on the present method of evaluation than was originally expected, and reliable results on the economic and social impact of the rural roads cannot now be expected for at least five years. However, it is hoped that before further funds are committed to the program the Impact Study will be able to suggest - on a more informed basis than is possible at present - simple tests for distinguishing between good and bad proposals for new roads.

Unfortunately, the poor quality of the agricultural data used in the present analysis and the weaknesses in the analysis itself (the latter being largely due to inconsistent treatment of the data) have caused severe doubts among the donors as to the usefulness of the economic evaluation as a decision-making tool and, in its place and in spite of the lack of feedback from the Impact Study, the donors would prefer to use more realistic and necessarily simple tests until such time as something better emerges from the Impact Study. The donors have recommended that, as soon as possible, the present cost-benefit analysis be abandoned in favor of more simple tests and that some of the time thus saved be used to make more accurate estimates of, for example, individual road costs and labor availability. Donors would like to take advantage of the results of the USAID consultancy, which are due in August 1979, to agree among themselves and with the MOW on a set of simpler tests which could be applied to all roads subsequently evaluated. Donors would like the evaluation reports to draw attention to projects in the District Development Plan that would affect the use of each road proposed.

The PM notes that the USAID project authorization letter does not require a cost-benefit analysis. Rather, the requirement is for an economic report "which would have, as one of its objectives, the demonstration that road selection procedures and criteria have been complied with."

The PM recommends that the required study concentrate on the factors of population density, zone of influence, and agricultural potential of the specific areas where a road is proposed. Where specific quantification is not feasible, attention should be given to definition/determination of threshold levels of selection criteria.

(c) FAR Unit Cost: The average "direct cost" per kilometer for all units to March 31, 1979 is KE 1810. Providing for overhead (base camp headquarters, training, and engineering supervision) and gravelling operation (KE 480 per km) yields a unit construction cost of KE 2570 per km.

The USAID FAR provides for 75% of the total construction costs (including overhead and gravelling) not to exceed \$4762 (KE 1786). Seventy-five percent of the total unit cost as calculated above is KE 1927.50.

Project Manager's Comments: Seventy-five percent of the total construction cost now exceeds the FAR amounts. (KE 1927.50 vs KE 1786) However, the total construction cost as developed above includes an estimate of final gravelling costs. At this time, the question of degree of gravelling required has been referred for re-study by the donors to the MOW. The PM therefore recommends that the FAR amount remain unchanged for the coming year.

Another factor which will affect total construction cost is the more rapid escalation of POL costs than planned for in the original Project Paper. Preliminary analysis indicates that 5% (+1%) increase in total construction cost (\$240⁺/km) may occur as a result of the recent 35% increase in OPEC prices. However, PM feels that some time will pass before more precise impacts of this factor can be quantitatively established and that the FAR amount remains as is until the next review.

3. Status of Implementation Actions Scheduled for this Reporting Period:

(a) AID/W has evaluated proposals from six firms to perform the five-year socio-economic evaluation of Projects 615-0168 and 615-0170. The selection committee has selected the firm of Devres, Inc. USAID and the GOK concurred in the selection, and the contract was signed on April 30, 1979.

(b) The consultant team consists of Peter Moock (Development Economist); David Brokensha (Ethnographer); and Bernard Riley (Social Scientist). Mr. Moock arrived on June 5, 1979; Messrs. Brokensha and Riley on June 9, 1979.

(c) CBS and the MOW have completed gathering of the baseline data for the first evaluation; however, it is not as yet encoded.

4. Implementation Actions Required Through the Next Review Period:

(a) Submit Kisumu Second Phase Evaluation Report for USAID approval by July 31, 1979.

(b) Submit Kisii Second Phase Evaluation Report for USAID approval by July 31, 1979.

(c) Submit Bungoma Report by July 31, 1979.

(d) Submit Kakamega Report by September 30, 1979.

(e) Submit Siaya Report by September 30, 1979.

RRAR Annual Review

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2

Review and Evaluation Report of the
Kenyan Rural Access Roads Programme

Preface

Since the concept and implementation of a joint donors review and evaluation meeting was deemed to be a success, the Ministry of Works requested that the donors should meet again in June 1979 for their second meeting. They again requested that the ILO, through Dr. G.A. Edmonds, should coordinate the production of the report.

The meeting was held between the 12th and 21st June and followed the same format as the previous year. That is, two days of review of the progress since the last meeting, a series of site visits which provided an opportunity to see the work and to discuss the programme with the field staff, and finally a detailed evaluation of the programme.

The meeting was opened by the Minister of Works, Mr. N. Munoko; A copy of his opening address is appended as Appendix 1.

The donors wish to express their appreciation for the efficient way in which the Ministry of Works organised the meeting. The background documentation was comprehensive and well presented, the site visits provided an excellent opportunity for donors to experience the programme at first hand and the Ministry of Works officials were extremely helpful in responding to requests for information.

The report represents the consensus view of all the donors. The summary and recommendations are presented at the beginning of the report. Part I is a review of the RARP, Part II is an evaluation. The background documentation is incorporated as appendices.

Summary and Recommendations

1. General

All the donors are satisfied that the Rural Access Roads Programme is developing effectively and efficiently. Since the last meeting there has been a rapid growth of the Programme and the donors are pleased to note that it has been possible to satisfactorily deal with this. They also note that the major problems of procurement and headquarters staffing, identified at the last meeting, have been overcome.

The specific recommendations that follow are the result of discussions held with the headquarters staff in Nairobi and with field engineers and other involved officials in the field. They represent the consensus view of all the donors.

Certain recommendations are marked with an asterisk. The donors wish to receive information on progress in relation to these particular recommendations in the quarterly progress reports.

2. Specific

Issues arising from the last Review and Evaluation Meeting

- (a) The donors were concerned that the MOW had found difficulty in producing a progress report on a regular 3 monthly basis. They now understand that MOW will be capable of producing this report regularly, not more than 2 months after the end of each quarter.
- (b) The donors requested that the progress report should include a section which detailed progress made in regard to the recommendations of the Review and Evaluation Meeting as well as an annex for each donor related to the units financed by the individual donors.
- (c)* The donors understand that the irregularity of disbursement requests is not caused by MOW, they request that efforts be made to regularise this procedure with the Treasury.

Constraints to Progress

- (a)* The donors noted that the supply of labour was a constraint to the growth of the programme in certain areas. They suggested that the potential labour supply should be clearly recognised as a criteria for the selection of roads.
- (b) It was clear that the shortage of skilled supervisory staff was a constraint on the programme. The donors therefore endorsed the MOW's policy of decentralizing the management of the programme and of intensifying the supervisory activities at the local level.

Reorganisation and Future Policy

- (a) The donors fully support the implementation of the new decentralised structure of the RARP as they believe it will improve the effective implementation of the Programme. They are concerned however that the Divisional Engineer's post should not be established in isolation but in conjunction with the necessary and prescribed administrative support staff.
- (b) In view of the donors previous support for the more wide-spread use of labour-based construction methods in Kenya, they welcome the MOW suggestion that the RARP will eventually be transformed into a programme of minor road betterment and maintenance based on the decentralised structure.
- (c) The donors would welcome a more detailed description and assessment by the MOW of the nature of the proposed betterment and maintenance programme and how it is to be implemented.
- (d) The donors noted that the MOW have suggested that the RARP could be used to improve minor classified roads in particular where they lead to rural access roads or where they are clearly a major bottleneck to rural development. The donors did not feel the need, at this stage, to reach a consensus on this issue and expect MOW to approach them individually.
- (e) The donors understand that the target output of the Programme is still 14,000kms. By 1982 7,600kms of rural access roads are expected to have been completed. This means that the Programme will need to be in operation past 1982 and that MOW will be requesting donor assistance for the period after 1982. The donors would welcome outline proposals for the period after 1982 at the next Review and Evaluation Meeting.

Selection Procedure

- (a) The donors recommend that the selection procedures for rural access roads be modified. They feel that the use of the economic evaluation resulting in an internal rate of return for a package of roads should be discontinued as soon as possible. It is intended that the donors will meet again in September/October to discuss this issue in the light of the USAID consultants' report. They will then make recommendations to the MOW. The World Bank representatives noted that the deletion of rates of return from the evaluation would mean a change in their credit agreement. They will be discussing this in the near future with their HQ.
- (b) The donors endorsed the MOW suggestion that more realistic construction cost estimates be developed for the purpose of road selection.

- (c) The donors supported the development of a project identification technique which would more equitably distribute the number of roads to be constructed in each district. It is intended that this issue will be discussed further at the September/October meeting referred to above.

The Impact Study

- (a) Since the study has not yet started the donors recommend that when it does so it should be particularly concerned in the initial stages with the derivation of effective selection criteria for the RARP. To this end the Development Economist should focus immediate attention on this issue. Assuming that he is in post in the near future it would be useful for him to discuss this aspect of his work with the donors at the meeting scheduled for September/October.

Staffing

- (a)* The donors understand that the problems encountered in obtaining the necessary administrative staff for the Programme may now have been solved. They would wish to be informed however, of whether there are continuing problems in this area. Moreover they wish to be informed whether a training course for executive officers is a feasible proposition.
- (b)* The donors noted that the promotion of staff in Job Group A to F will be authorised by the Permanent Secretary rather than the Public Service Commission. Thus it is hoped that the difficulties experienced in promoting suitable candidates to OIC will now be overcome. However, the donors wish to be informed of the situation in this respect.
- (c) Whilst there are understandable frustrations caused by the lack of administrative support, the donors were concerned that there seemed to be a lack of commitment and, in some cases, responsibility on the part of some expatriate engineers in the Programme. The donors undertook to advise their recruitment organisations of the importance of recruiting well motivated engineers for a Programme of this nature and of providing adequate briefing on all aspects of the Programme.
- (d) In regard to the above, the donors noted the MOW's intention to draw up a memorandum which would clearly specify the duties and responsibilities of RAR engineers. This will also enable donors to brief their engineers, with the intention of avoiding a division of loyalties which is detrimental to the Programme.
- (e) The donors also noted the MOW's suggestion of seconding Kenyan engineers working with the Programme either to similar programmes elsewhere or for short construction management courses. The ILO expressed its willingness to support such fellowships.

Road Maintenance

- (a) The donors urged the MOW to ensure a uniformity of standards regarding the maintenance of the rural access roads.
- (b) The donors supported the MOW's efforts to assess the viability of pedestrian rollers and drags and wished to be informed of the results of these trials.

Design Standards and Graveling

- (a) The donors endorsed the design standards developed for the Programme. They would however encourage MOW to make the field engineers aware that the standards and the construction methods to achieve them do permit flexibility and should be regarded as guidelines.
- (b)* The donors reiterated their recommendation that the roads should only be gravelled where it is necessary to do so to achieve an all weather standard (including safety considerations). It is recommended that criteria be drawn up to determine those cases where graveling is not required.

The donors understand that the next Review and Evaluation Meeting will take place in October 1980.

PART I

A Review of the Rural Access Roads Programme

1. Introduction

This review is based upon the background documents presented by the Ministry of Works and the additional material provided during the first day of the Review and Evaluation Meeting.

2. External Financial Aid and Technical Assistance

It has been decided to limit the total number of units of the RARP to 42. This implies that the programme will have to continue to at least 1985 if it is to achieve its target of 14,000 kms.

Finance is presently secured for the 42 units until June 1982. It is intended to negotiate further assistance for 1982-1985 at a later stage.

Whilst there are still difficulties of recruitment of expatriate engineers, the existing commitments are sufficient to meet the requirements. It is now clear that it is unlikely that a sufficient number of Kenyan engineers will be available to replace technical assistance personnel in the foreseeable future.

In all there are five Kenyan engineers working on the programme of whom three are graduate engineers undertaking part of their training with the RARP acting as assistant engineers. It is envisaged therefore that for the foreseeable future the number of expatriate engineers in the programme will remain at the present level.

3. Progress

With the rapid increase in the number of units since 31 December 1977 until March 1979 it is, perhaps, inevitable that the output has decreased. The trend, therefore, since the last meeting has been for output to fall and costs to remain stable. Thus, the average output in 1977/78 was 39 kms per unit per annum whilst in the nine months from July 1978 to March 1979 it fell to 34, moreover the average number of man-days per kilometre increased from 1600 in 1977/78 to close to 1700. As the number of units have increased the overhead costs per unit have reduced, thus offsetting the cost increase due to reduced productivity. Costs are presently about 20% higher than originally estimated.

MOW have estimated that by 1982, 7,600 kms of road will have been completed. This is based on the assumption that all 42 units will be in operation from the 1st July 1979 and that they will all be producing at a rate of 45 kms per annum. Both assumptions seem somewhat optimistic and an output closer to 7,000 kms seems more realistic.

The target output of the programme is still 14,000 kms and this implies, assuming an output of 45 kms/unit year, that the programme will continue until at least 1986.

Whilst progress is, in general, satisfactory, graveling still lags behind. The situation has in fact deteriorated since the last meeting in that only 17% of the roads constructed have been gravelled (as against 23% at the time of the last meeting). This is partly a reflection of the concentration on setting up new units. For example, in the first four units the ratio of gravelled roads is 34%.

The arrival during the last year of a mechanical engineer has greatly improved the capacity of the MOW to deal with the maintenance of equipment for the RARP and to keep a firm control on the utilisation of equipment.

MOW noted the wide variation in both man-days per kilometre and cost throughout the programme. Thus the Kwale II unit boasts an average of 961 man-days/kilometre and Kf 1,090 per km whilst the figures for Nyori I are 2251 and 2550 respectively. MOW have suggested that this wide variation requires attention and is one aspect upon which the management will focus in the coming year.

4. Road Maintenance¹

The MOW have now adopted a policy of using the labour-based maintenance system developed for the RARP for minor classified roads. This would allow the Ministry of Works to concentrate its equipment-intensive maintenance techniques and resources on the major trunk and primary roads.

The proposed re-organisation of the RARP is intended to provide a system for the implementation of this policy. Thus, the Divisional Engineer will eventually be required to set up a maintenance organisation independent of the field engineers, who would be solely responsible for RARP construction activities. This system would also reduce the difficulties of handing over the responsibility for maintenance of minor roads to the local authorities in the long term, thus reverting to the system that pertained prior to 1970.

¹See Appendix 3.

5. Training¹

Again the STD has been successful in meeting the demands laid upon it. The problem of producing sufficient OICs has been one of supply of suitable candidates and the whole question of career development.

It is envisaged that next year STD will start refresher courses for overseers.

6. Planning and Reporting

The simplified system named Alternative II in last year's Review and Evaluation Report has now been implemented throughout the programme. It is basically that prepared by the Technology Unit with necessary modifications resulting from discussions in the field.

7. Number of Roads per District

It was originally envisaged that the RARP would build approximately 600 kms in each of the (then) 23 districts in the Programme. It has now become clear that the indiscriminate building of a fixed kilometrage of roads in each district would result in saturation in certain districts and under-provision in others. An initial attempt has been made to allocate access roads to district on the basis of need.² It is recognised that this first attempt is rather crude and it is intended to improve on it in the coming year.

8. Selection of Roads

It is first worth noting the discrepancy between Table 1 of Appendix 12 and Table 5.1 of Appendix 13 which is due to the fact that Table 5.1 has been adjusted to reflect only those projects which are technically feasible.

The selection procedure involves a great deal of time and effort for the Planning Unit of the NOW. It is intended to take on another four engineers for the unit bringing its total strength to eight.

¹See Appendix 4.

²See Appendix 6.

PART II

Evaluation of the Rural Access Roads Programme

1. Issues arising from the Joint Donor and Evaluation Meeting held in March 1978

The issues discussed under this heading cover only these subjects which will not be dealt with in the following more specific sections of this evaluation.

This section discusses: (i) Reports to donors; (ii) Disbursement procedures; (iii) Tools - procurement and use.

Reports to Donors

During the last Review and Evaluation Meeting it was agreed that a detailed Progress Report of a specified format would be prepared by the MOW on a quarterly basis. This report was to describe the progress of the Programme as a whole and would contain an annex for each individual donor, describing the status of the units financed by the donor. The donors noted that, hitherto, these reports had not been prepared regularly and sent on a quarterly basis and that the annexes for individual donors had not been included. It was felt that a regular flow of information would not only improve the communications between MOW and the donors but would also enable the donors to play a more active role to rectify specific problems encountered by the RARP management. The MOW stated that the irregularity of the preparation of the reports had been due mainly to the fact that the staffing situation at RARP Headquarters had been difficult in the period under discussion. The backlog had now been cleared however and progress reports up to 31 March 1979 are now available. Progress reports will now be sent to the Donors not more than two months after the end of the reporting period to which the report refers. These reports will include an appendix, discussing the progress made in respect of certain recommendations and requests identified in the Summary and Recommendations. The progress reports will also contain an annex specially directed at the individual donors containing information on the Units financed by these donors.

Disbursement Procedures

The MOW stated that the RARP accounts are up to date and that the requests for disbursement are forwarded to Treasury regularly, on a monthly basis. However, most of the donors receive requests for disbursement irregularly. It is suggested that this matter be taken up with the Treasury in order to avoid undue delays and to streamline the disbursement procedures.

Tools Procurement and Use

Whilst not all type of tools presently purchased for the Programme meet the specifications laid down, enormous progress has been made in this area since the last Review and Evaluation Meeting. Sufficient quantities of all types of tools are available at the RARP HQ store in Nairobi. As regards the quality, it is now possible to purchase handtools and light equipment for the RARP according to specification and this principle is now being implemented. The MOW stated that further progress is being made in this regard and that no major problems are either experienced or expected.

2. Constraints to Progress

The donors stated that, in certain high agricultural potential areas, labour was either in short supply or was not forthcoming. This clearly hampers the progress of the Programme. The MOW have taken steps to overcome this problem by discussing it with the District Development Committee and enlisting their support to encourage the people to participate in the Programme. It was agreed that raising the wage rate in certain areas where labour was in short supply was not a solution to the problem. Moreover, it was accepted that the shortage of labour could well be an indication of the lack of popular interest in the construction of particular roads. It was recommended therefore that the degree of community interest in the construction of a project should be identified at an early stage in project selection and should be one of the criteria governing the selection of a road for construction. This would refer to both the supply of labour and the willingness of the people to make the land available for the road.

The lack of skilled supervisory staff was felt to be another major constraint to the overall progress of the Programme. The decentralisation of the Programme would help to provide more effective supervision, whilst the recent developments regarding officers-in-charge (see Section 6) should provide more incentives for the supervisory staff.

3. Reorganisation and Future Policy

The two points were taken together because in relation to the MOW's present policy they are directly interlinked. Thus the re-organisation of the Programme is intended not only to provide more effective supervision in the field but also the basis for the implementation of a betterment and maintenance programme. This programme will come into existence as the RARP comes to an end.

Decentralisation of the Programme

The proposed new organisation structure of the RARP is shown as Appendix B of Appendix 3. There are presently 5 engineers posts at the headquarters. This will be reduced to 2 and four new posts will be set up in the Provincial Engineers Offices in Kisumu, Nakuru, Wajir and Nairobi. Advertisements have already been placed for the recruitment of the necessary and prescribed administrative support staff.

It is the donors' view that the lack of supervision could prove to be a decisive factor in the overall success of the Programme. They therefore welcome this decentralisation of the Programme as they believe it will improve its efficiency and increase the level of supervision. Moreover they understand that the field supervisors in the new structure are not necessarily considered to be fully qualified engineers and could well be graduates of the polytechnic.

The donors felt, however, that one word of caution was necessary. Every effort should be made to synchronise the setting up of the posts in the new structure. Specifically the necessary administrative staff should be in post with the Divisional Engineer. If not, the D.E. will be completely involved in administrative duties.

Future Policy

In view of the donors previous expressed support for the continued and expanded use of efficient labour based construction methods, the donors naturally welcome the MOW decision to use labour-based maintenance methods both for rural access roads and for minor classified roads. It is the donors' understanding that finally the present RAR Programme would be transformed into a betterment and maintenance programme, again this is a decision which the donors support. Naturally the transformation would require detailed planning and discussions both within MOW and with the donors presently involved in the RARP.

In the light of the above decisions the donors would like to receive from the MOW a more detailed discussion and assessment of how the betterment and maintenance programme would be set up and how the transformation from the RARP would take place.

As a first step, they would like some indication of to what extent the RARP will be involved in the betterment of classified roads in those areas where they are a bottleneck to development.

The donors understand that the MOW still intends to construct 14,000 kms of access roads and that this implies that they will be requesting further financing for the Programme after 1982. The donors would welcome outline proposals for the period after 1982 at the next Review and Evaluation Meeting.

4. Selection and Evaluation Criteria

The selection and justification of roads to be constructed under the programme now falls into two distinct parts. First, the selection and evaluation of roads within a district, which has been the subject of earlier discussions between MOW and the donors; and second, the estimate for each district of the additional road length which merits construction.

Selection within the District

The selection of roads within a district requires the involvement of the District Development Committee. The donors understood that these committees met much less frequently than is suggested in Appendix 12. They were assured that the infrequency of District Development Committee Meetings was not a constraint on the selection and evaluation of roads. In NOW's view the most significant constraint was in the collection of the data which was the responsibility of the District Agricultural Officer. The forms returned by these officers were often incomplete or incorrectly filled in, with the result that the collection of data had to be repeated with the assistance of engineers.

The donors felt that the existing engineering criteria were generally being applied effectively. A major objective of these criteria is to keep construction costs within reasonable levels. The donors felt that in some cases the rigid application of these criteria might be eliminating roads whose overall cost was reasonable even though sections of them were relatively expensive. Thus, while it is clear that there is flexibility with regard to road length and gradients, the NOW confirmed that the criterion relating to bridges was strictly applied. Works ruled out by this criterion are regarded as the responsibility of the Provincial Engineer and are suitable for funding from the Rural Works Programme. The NOW is in the process of developing specialised bridge building units, which should give each Provincial Engineer the capacity to build two bridges per year per district, and which would be the appropriate units for construction of bridges eliminated from the Rural Access Roads Programme. The donors, although conscious of the need to avoid excessive bridge construction to the detriment of road building, urged that a more flexible approach to bridge construction be taken in cases where the total cost of the road concerned is within reasonable limits.

On the socio-economic side the main burden of justification for a package of roads rests on the economic cost-benefit analysis with benefits based entirely on agricultural gross margins and costs based on average costs of construction for the whole programme. The social data collected is used only for giving the construction priority of the roads selected. It is acknowledged that the economic analysis in the evaluation is of a hypothetical nature, and it has always been the intention to replace or adjust it in the light of the findings of the impact study. The delays in initiating the impact study have resulted in much greater reliance being placed on the present method of evaluation than was originally expected, and reliable results on the economic and social impact of the rural roads cannot now be expected for at least five years. However, as noted elsewhere in this report, it is hoped that before the majority of donors is asked to commit further funds to the programme the impact study will be able to suggest - on a more informed basis than is possible at present - simple tests for distinguishing between good and bad proposals for new roads.

Unfortunately the poor quality of the agricultural data used in the present analysis and the weaknesses in the analysis itself have caused severe doubts among the donors as to the usefulness of the economic evaluation as a decision-making tool, and, in its place and in spite of the lack of feedback from the impact study, the donors would prefer to use more realistic and necessarily simple tests until such time as something better emerges from the impact study. The possibility of improving the present method of evaluation has been considered. Its major advantage would be the avoidance of disrupting changes in MOW's selection and evaluation procedures, but donors felt that while the analysis of data might be improved without much difficulty, the estimation and collection of the basic agricultural data could not be improved without both District Agricultural Officers and engineers putting into this an amount of time which is not commensurate with the value of the data collected. The donors therefore recommend that, as soon as possible, the present cost-benefit analysis be abandoned in favour of more simple tests and that some of the time thus saved be used to make more accurate estimates of, for example, individual road costs and labour availability.

The donors feel it important that the MOW should not have to use more than one method of evaluation at a time. At present the IBRD is not able to relax its requirement of an economic cost benefit analysis without changes to its credit agreement which necessitate further consultations within the Bank. In consequence donors would like to take advantage of the results of the USAID consultancy, which are due in August 1979, to agree amongst themselves and with MOW a set of simpler tests, which could be applied to all roads subsequently evaluated. To this end, a meeting will be convened in Nairobi as soon after August 1979 as possible. This meeting will discuss and present simplified criteria. Until the formal implementation of the new evaluation criteria the MOW should continue to use the present methodology and to take particular care to ensure the accuracy of the data used. Donors would like the evaluation reports to draw attention to projects in the District Development Plans that would affect the use of each road proposed. It is hoped that the effectiveness of the simpler tests mentioned above could be tested as a first priority of the impact study.

Assessment of Rural Roads Requirements
for Each District

MOW's preliminary analysis of this subject was of considerable interest to donors, who recommend that before the next round of commitment of assistance to the programme the analysis is further developed and in particular related to the District Development Plans. The kind of further refinement required will also be considered at the meeting of donors in September/October. The present analysis - in conjunction with MOW's intention not to have more than 42 units - suggests that a significant redistribution of units among districts would be desirable. MOW does in fact expect to effect a certain amount of redistribution of units before the next phase of the

programme (i.e. before 1983) but the extent of this will depend on donors' attitudes to the use of units for betterment of minor classified roads in districts which are relatively well endowed with roads. Some donors, while appreciating MOW's concern for an apparently equitable distribution of units, question the necessity for ensuring that each district has at least one unit. The donors did not feel the need at this stage to reach a consensus on the question of using units for betterment of classified roads before 1983, and expect MOW to approach them individually on this matter as and when the question arises for a unit financed by the donor.

5. The Impact Study

The donors note that base line data have been collected for seven rural access roads in Western and Nyanza Provinces. The Central Bureau of Statistics is in the process of coding the data. Donors also note that financing for the Development Economist to head the Monitoring and Evaluation Unit of the MOW's Planning Division has been arranged with DANIDA, and that DANIDA is in the process of contacting a candidate presently working in Bangladesh. He has been interviewed and it is understood he will take up his duties later this year but probably not before October. The donors feel that this critical position should be filled as soon as possible.

The terms of reference for the study, drafted some five years ago, may be somewhat out of date. They were originally drafted with the objective of providing more effective selection criteria for the RARP. Clearly, as the bulk of the study will not be completed before 1985, the major output of the study will not be specifically related to the RARP.

The donors still feel that the impact study is a useful exercise, however they recommend that, in addition, detailed work is carried out at the earliest opportunity to strengthen the selection criteria. This is of particular importance in the light of the donors' recommendation that the economic analysis contained in the selection procedure should be abandoned in favour of more effective selection criteria at the local level.

It is recommended therefore that one of the first tasks of the Development Economist should be to develop, test and evaluate various selection criteria so that an effective system can be implemented. As far as the complementary rural development activities are concerned, it is realized that the development impact of the roads will be dependent on other development activities initiated in the area of influence of the road. The District Development Committees will play the most important role in this respect. It is hoped that the District Development Plans now under preparation will take the present and future rural access roads into consideration when development activities are proposed.

6. Staffing

The staffing situation at the levels of overseers and engineers can now be considered to be satisfactory. Problems are still being encountered in the administrative and levels. The RARP has been able to cope with the build up from the 8 units which were operational at the time of the last meeting to the present number of 33 units.

The Progress Report No. 3, up to March 1979, shows the detailed figures as regards staffing.

Headquarters Staff

The situation at headquarters has dramatically improved over this last year. All establishment posts are now filled. This has greatly facilitated the process of rapid expansion of the programme.

The programme coordinator responsible for the RARP, Mr. J.A. Simpson, will hand over to a Kenyan Engineer, Mr. G.H. Mwangi, with effect from 1st July 1979. Mr. Mwangi has now been with the programme for some months and will in the beginning be assisted by his predecessor who will remain in the RARP for some time and be available in an advisory capacity.

All other posts on engineering or senior technician level are presently filled and no serious problem is envisaged in the near future.

The reorganisation aiming at a decentralization of the management structure which will now be implemented, will evidently mostly affect the headquarters staff. This aspect is discussed in detail in Section 3, Reorganisation and Future Policy.

Field Engineers

Five donors are committed to providing three engineers each to the Programme. Of these five, DANIDA and HELVETAS are presently meeting that commitment whilst the Netherlands, NORAD and the U.K. are providing two. The remaining three field posts are filled by two volunteers, one from the Netherlands, one from the U.K., and a Kenyan Engineer. In addition there is one dutch volunteer and one U.K. volunteer acting as assistant engineers. Thus, whilst all donors have not met their commitments, there are presently sufficient engineers in the field.

Doubts have been expressed about the commitment of some of the expatriate engineers in the Programme. The donors felt that this was a serious problem. It was recognised that frustration did arise amongst field engineers when they had to deal with too much administrative matters as a result of a lack of supporting

staff. The donors feel that the present job description is not detailed enough, in that it gives no indication of the large amounts of administrative duties involved. This has led in some cases to frustrations and a possible loss of motivation on the engineers side. In this connection the donors appreciate the fact that the RARP is now making serious efforts to overcome this problem by recruiting a sufficient number of suitably qualified senior administrative staff for each engineer. It should be stressed, however, though that the problem with the bureaucratic procedures will not disappear. For expatriate engineers who have not worked in a similar system before, it is quite difficult to adapt to the attitude that is required to work efficiently with the prescribed procedures.

Nevertheless the donors felt that there was a strong case for ensuring that prospective candidates for field engineers' posts were comprehensively briefed by the respective donor agencies. To this end the donors noted that MOW intends to draw up a memorandum describing the duties and responsibilities of the field engineers. This could be used by donors for briefing purposes.

The donors agreed that as far as recruitment was concerned, they were recruiting engineers for the RARP. Whilst the question of divided loyalties should generally not arise, they recognised their role in ensuring that engineers recruited for the Programme had a commitment to it.

Kenyanisation

Limited progress has been made in this respect, but the donors appreciate the relevant efforts of the MOW. In particular, the fact that as of the 1st July a Kenyan, Mr. G. Mwangi, will take over as Programme Coordinator. This is recognised as a major step forward. The MOW will in the next years recruit a larger number of graduates from the University than before. The graduates will then undergo professional training in the Ministry, whereby they are given the choice to spend part of it in the RARP.

Further kenyanisation of engineering posts can be expected from the reorganisation of the RARP and the change from field engineers to field supervisors with the responsibility for two units only. It should then be possible to assign people with a lower qualification than B.Sc. to these posts, eg. engineers with the Higher Diploma from the Kenya Polytechnic.

The donors note that first contacts have been established with the University of Nairobi as regards the introduction of courses or lectures on labour-intensive methods. It is felt that it is important to try to prevent the undergraduate engineers from developing any bias against working with a labour-intensive programme at an early stage.

Supervisory Staff (Overseers and OIC)

A sufficient number of Overseers have been and will be trained. No problem seems to exist at this level.

There is a shortage at the OIC level resulting in an increased workload for the Field Engineers. For the 33 units, only 11 trained OIC are available. The main problem seems to have arisen from getting suitable candidates with the necessary qualifications for promotion purposes.

Recently, however, the Permanent Secretary MOW has been given authority to recruit personnel up to Job Group F without recourse to the Public Service Commission. Whilst it was originally intended that OIC's would be Job Group G, it is accepted that it will, at least, be possible to provide potential OIC's with career development prospects. Consequently the problem of the lack of OIC's should now be, at least partially, overcome. The donors wished to receive further information on progress in this area through the quarterly progress reports.

7. Road Maintenance

Donor representatives inspected the performance of the road maintenance programme during field inspection to the several districts. During the construction phase maintenance is generally conducted by members of the construction labour force. Upon completion of the gravelling phase, maintenance is accomplished through the engagement of part-time "contractors", who are paid the equivalent of twelve days salary upon satisfactory evaluation by the OIC that the required maintenance tasks are accomplished (see appendix 3).

The donors feel that the present maintenance scheme is functioning reasonably well. Where results are less than satisfactory, it is felt that improvements can be made through more effective supervision. Alternate transportation for supervisors was considered. Because of the need to insure proper security and witnessing of payments, and the relatively small difference in operating costs, alternative transportation such as motorcycles was not considered appropriate at this time. As far as the actual evaluation of the maintenance work is concerned, there appears to be considerable variation in the condition of surface camber, drainage systems maintenance, and grass cutting. It was generally felt that excessive attention is given to grass cutting and ditch cleaning, to the detriment of proper camber maintenance and rut control. MOW is considering the use of rollers and drag screens prior to final gravelling, which should increase the ability of contractors to maintain the surface. MOW also pointed out that the use of supplemental maintenance crews were being considered, for intensive cyclical maintenance. However, the donors note that this programme is now only in the conceptual stage. Until such supplemental activities are actually established, more attention to road-way camber control is required.

The donors felt that more effective quality supervision can be realised by specifying task priorities, such as designating camber maintenance a higher priority than ditch cleaning. MOW feels that

rigid prioritizing would be cumbersome, but has agreed to work towards a uniform standard of quality control during the training process and through inspection.

Donors were concerned with the legality of the maintenance contractor concept, and with the fairness of the concept to individual contractors. Discussion of these items with MOW indicated that the legality of the concept has been confirmed by the Ministry of Labour. Based on field observation and discussion with MOW, the donor consensus was that the concept is fair to individual contractors.

The donors were assured by the Ministry of Works that the only requirement on the maintenance contractor was that he achieved the standard of maintenance laid down in his contract. There was no question of compelling the contractor to be working on the road on specific days of the months.

The donors suggested that, to improve the efficiency of the maintenance operation, the policy of leaving piles of gravel along the completed road for maintenance purposes should be made standard throughout the programme.

The donors noted that there seemed to be a lack of uniformity regarding the timing of the start of maintenance operations. In general the contractor was not hired until the road, or sections of it, had been gravelled (or completed to final earth standard, if it has been decided that gravel is not necessary). Between the final earth formation being finished and gravel being placed, often a period of 6-9 months, the maintenance was carried out by the construction labour force.

In general, the donors felt that the maintenance system was working well but that the MOW should take care to have uniform standards of maintenance and organisation throughout the programme.

8. Design and Construction Standards

The donors considered the road design standards developed for the programme and endorsed at the last Review and Evaluation Meeting to be adequate and reasonable. They also recognised that the six different cross-sections relating to different types of terrain allowed flexibility and that, in addition, it was accepted that field engineers were encouraged to use their discretion and judgement in the design and construction methods used.

The donors endorsed the MOW's approach as they felt that a rigorous adherence to inflexible design standards and construction methods could, at times, be detrimental. Thus, where the existing track was in good condition it may in fact only be necessary to improve the drainage ditches; in certain cases the material in the

side ditches may be unsuitable for preparing the formation; if the existing road is well compacted and performs well even in the wet season then there is little point in destroying this strength merely to adhere to a specific construction technique. Moreover where it were possible to make spot improvements to an existing road this was clearly preferable to wholesale reconstruction. The extra supervision required, however, to achieve this must, of course, be set against the extra cost of complete reconstruction. In general, the donors supported the MCW's view that there should be certain standards of design and construction methods laid down accepting that within these standards engineers could use their engineering judgement.

Compaction by light or heavy rollers is not carried out, but nevertheless the result is generally satisfactory. However, there are cases with heavy erosion or severe damage of formation by traffic immediately after construction. In order to limit these cases it is understood that it is envisaged that rollers would in future be used where circumstances specifically warrant it.

All donors are agreed that it is unlikely that all roads will require regravelling. As the gravelling programme is considerably behind the construction programme, MCW have been reluctant to waver from their policy that all roads should be gravelled for fear that the gravelling will slip even further behind. An alternative policy, strongly recommended by the donors, is that a set of criteria should be used to decide which roads should be gravelled and which not. It was expected that the TRRL would produce such criteria however this is apparently not the case. The donors strongly recommend therefore that criteria based on those laid down in last year's Review and Evaluation Meeting, with an additional criterion related to road safety, be used at the earliest opportunity to decide in each district which roads should be gravelled.

Rural Access Roads ProgrammeReview and Evaluation Meeting 1979Opening Address

Mr. Chairman, distinguished guests, ladies and gentlemen.

On behalf of the Ministry of Works, the Roads Department and myself, I would like to welcome you all to this third Review and Evaluation Meeting of the Rural Access Roads Programme.

It is appropriate for me to say a few words about the scope and objectives of the Rural Access Roads Programme in relation to the overall national development strategy of the Government. The current five year development plan stresses the importance of rural development and in this context the need to improve the rural infrastructure and to create meaningful employment opportunities in the rural areas through the expansion of agricultural production.

Past efforts to improve the highway network have been focussed on the Trunk and Primary Roads. However, during the present plan period the emphasis has been shifted to the Secondary and Minor road network. The road gravelling, bridging and culverting programme is scheduled to upgrade some 5,000 kms of secondary and minor roads and the rural access roads programme will upgrade 14,000 kms of rural tracks so that transport of agricultural produce from farm to market may be carried out irrespective of weather conditions.

As you are aware, the rural roads programme is a major labour intensive public works programme. It is envisaged that when it is fully established it will provide daily employment for some 12,000 casual workers throughout 25 districts of Kenya. We are told that this is the largest programme of this type currently being implemented on this continent.

Among other things, the programme will stimulate agricultural production, bring more people into the market economy and provide easier access to social services and facilities for rural communities.

A special feature of the programme is the involvement of the rural communities at the grass-roots level in the identification, construction and maintenance of the roads. In line with the Government's policy of decentralising development planning, District Development Committees are required to identify and select construction projects in their respective districts in accordance with guidelines established by my Ministry.

The labour force for the construction and maintenance is recruited from the communities located in the immediate vicinity of the road. Thus we are able to avoid the problems of housing and

transporting workers and gain from the workers identification with the road because it is they themselves who will derive the benefits from its construction and continued maintenance.

I am pleased to note that significant progress has been made towards the achievement of the programme objectives. Since the last meeting a further 1000 km of road have been built making a total of 1400 kms since the inception of the programme. During the same period the number of operational construction units has increased from 8 to 32 and projects are on-going in all of the originally selected 23 districts.

A further 10 units will be established by the end of this calendar year and it is anticipated during the next 12 months a further 1800 km of road will be constructed.

It is not anticipated that the number of construction units will expand a great deal beyond the 42 for which finance has already been secured. Instead the programme management will concentrate on improving the productivity of the existing units and if possible surpass the productivity targets set in the Revised Loan Application.

Financial and technical assistance is being made available by not less than 11 bilateral and multilateral agencies. I understand that the majority of donors providing financial assistance including the World Bank have now agreed to continue their assistance through to June 1982. I hope that we shall have a favourable response from the donors who have yet to reach a decision on this issue.

With regard to technical assistance, you are all aware that for the implementation of the programme the government has had to rely on the goodwill of the various agencies to recruit and finance engineers to direct and control the programme. At the present time, there are a total of 19 technical assistance personnel out of a total of 22 engineers working on the programme. Every effort is being made to encourage experienced Kenyan engineers to participate in the programme but even with the best will in the world it is unlikely that a sufficient number of Kenyan engineers will be available to replace technical assistance personnel in the near future. It must be remembered that this is a developing country and in order to meet our development targets we need an increasing number of engineers.

Therefore I hope that the agencies presently providing technical assistance will be able to continue this support for some time to come. From the agenda, I see that you are going to be kept very busy with discussions and site visits. I hope that the planned visits will help you to relate the theory to the practice and that this meeting will result in concrete proposals for improving the effectiveness of the programme.

Finally, on behalf of the Government of Kenya I shall like to thank all the agencies who have agreed to assist the implementation of this exciting programme. We in the Ministry of Works attach a great deal of importance to the programme and we hope that the lessons we learn in the course of its implementation will benefit not only the rural communities of Kenya but also those in the rest of the developing world.

I take this opportunity to wish you every success in your deliberations.

Thank you.

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