FEEDER ROADS PROGRAMME

(FRP)

FINAL EVALUATION

DRAFT REPORT Version 2

Volume 2: Annexes

Submitted by:

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Maputo, 30 April 2000
VOLUME 2: ANNEXES

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ANNEX 1: PROGRAMME, ITINERARY AND ROADS VISITED

19 March 2000 (Sunday)
15:00 Nils Bruzelius (Asdi consultant) arrives in Maputo

20 March 2000 (Monday)
08:00 Meeting I with FRP Team
10:30 Meeting I with UNDP (Ms. Dahpne Casey and Ms. Mariam Pangah)
14:30 Meeting I with Asdi (Mr. C-G Svensson)

21 March 2000 (Tuesday)
11:00 Meeting I with DER at ANE (Eng. Atanasio)
15:00 Meeting II with FRP Team
16:00 Meeting with DFID (Ms. Compton and Mr. Wray)

22 March 2000 (Wednesday)
09:30 Meeting I with Road Fund at ANE HQ (Eng. Pereira)
11:00 Meeting at DER on Decentralization Study (Mr. Helling)

23 March 2000 (Thursday)
09:30 Meeting with NORAD (Mr. Eriksen)
14:30 Meeting with DEN (Mr. van Niekerk, Mr. Fernandez, Mr. Lear)
16:00 Meeting III with FRP Team

24 March 2000 (Friday)
09:00 Meeting with Mr. Rocha Lobo (GOM Consultant) and Ms Thompson (UNDP Consultant) and Ms. Pereira (UNDP Consultant)
11:00 Meeting II with UNDP (Mr. Van der Ree)
14:15 Meeting with Irish Aid (Mr. Empey)
15:00 Meeting II with Asdi (Mr. Werner)
16:30 Meeting III with FRP Team

25 March 2000 (Saturday)
08:00 Document review

26 March 2000 (Sunday)
08:00 Document review
27 March 2000 (Monday)
09:00 USAID (Mr. Santos)

28 March 2000 (Tuesday)
10:00 Interviews with TA-staff and counterparts by Mr. Bruzelius
17:00 Mr. Bruzelius departs for Namibia

29 March 2000 (Wednesday)
15.30 Mr. Bentall travels from UK

30 March 2000 (Thursday)
10.00 Mr. Bruzelius returns from Namibia
14:30 Mr. Bentall (UNDP consultant) arrives in Maputo. Mr. Lobo, Ms. Pereira and Ms. Thompson join the team
14:30 Meeting with Chairman of ANE Board (Mr. Fragoso)
16:00 First meeting with all members of Final Evaluation Team (Team)

31 March 2000 (Friday)
07:00 Team (minus Mr. Bruzelius and Ms. Thompson) + CTA + Mr. Serage depart for Nampula
08:00 Mr. Bruzelius meets Austral re. RTTP Study (Mr. Gottwals)
11:30 Mr. Bruzelius departs for Sweden
14.30 Team meets DEP and ECMEP Nampula

1 April 2000 (Saturday)
07:00 Site visits in Nampula Province (ECMEP, DET, and DEP)

2 April 2000 (Sunday)
06:30 Site visits in Nampula Province

3 April 2000 (Monday)
08:00 Team meets DPOPH Nampula
10:00 Team departs for Mocuba by road

4 April 2000 (Tuesday)
07:00 Site visits in Zambézia (with ECMEP Director, DET & TA staff)

5 April 2000 (Wednesday)
07:00 Site visits in Zambézia Province (FRP & DFID)
14:00 Team meets ECMEP
16:00 Team meets Scott Wilson team in Mocuba

6 April 2000 (Thursday)

08:00 Team departs for Quelimane; visiting DFID site en route
14:30 Team meets DEP in Quelimane.

7 April 2000 (Friday)

14:00 Team returns to Maputo by air.

8 April 2000 (Saturday)

08:00 Reporting

9 April 2000 (Sunday)

08:00 Reporting
15:00 Mr. Bruzelius returns from Sweden

10 April 2000 (Monday)

08:00 Meeting with DER/CMU staff and counterparts
14:00 Team meeting

11 April 2000 (Tuesday)

09:00 Meeting with Mr. Tomé (EU-financed consultant in ANE)
10:30 Meeting with Head of Investment Division and Accountant/Cooperante in ANE (Bruzelius)
10:30 Meeting with Contractors Association (EMPREMO) (Mr. Bentall)
14:00 Meeting with DER/CMU staff

12 April 2000 (Wednesday)

08.00 Meeting with Mr. Strange-Hansen, Danida (Mr. Bruzelius)
08.00 Meeting with DER/CMU staff (Mr. Bentall)
14:30 Meeting with World Bank res.rep., Mr. Coates
16:00 Meeting with Dr. Venica, Director, Economics Department, MOPH.

13 April 2000 (Thursday)

08.00 Reporting

14 April 2000 (Friday)

08.15 Meeting with Asdi (Mr. Bruzelius)
14.00 Team meeting
17.00 Ms. Thompson (UNDP consultants) complete their tasks.
15 April 2000 (Saturday)
08.00 Reporting

16 April 2000 (Sunday)
08.00 Reporting

19 April 2000 (Monday)
09.00 De-briefing at UNDP with UNDP, Asdi, MINEC and ANE.
14.00 Meeting with Noel Cook (EU-financed consultant; NGO Unit)
15.00 Meeting with Mr. Pereira, Road Fund, ANE

18 April 2000 (Tuesday)
08.30 De-briefing at ANE with DER and CMU
11:00 Ms. Pereira and Mr. Roach Lobo complete their tasks
15.00 Mr. Bentall departs from Maputo
18.00 De-briefing with Chairman of ANE.

19 April 2000 (Wednesday)
11.00 Mr. Bruzelius hands over draft final report to Asdi and UNDP.
15.00 Mr. Bruzelius departs from Maputo.
### Roads Visited

#### Nampula Province:

<table>
<thead>
<tr>
<th>Road</th>
<th>Location</th>
<th>Condition</th>
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<tr>
<td>ER 572</td>
<td>Meconlj - Corane</td>
<td>Rehabilitation</td>
</tr>
<tr>
<td>ER 510</td>
<td>Rapale - Mecubúri</td>
<td>Completed 1996 - under maintenance and spot improvement</td>
</tr>
<tr>
<td>EN241</td>
<td>Nacala Velha - Memba</td>
<td>Routine Maintenance</td>
</tr>
<tr>
<td>ER 567/ER514</td>
<td>Cruzens - Iticuli - N Velha</td>
<td>Routine Maintenance</td>
</tr>
<tr>
<td>EN 235</td>
<td>Napneme - Moussuril - Chocas Mar</td>
<td>Routine Maintenance</td>
</tr>
<tr>
<td>NC</td>
<td>Cruz EN 232 - Chuinga</td>
<td>Routine Maintenance</td>
</tr>
<tr>
<td>NC</td>
<td>Murrapule - Chuinja</td>
<td>Routine Maintenance</td>
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</table>

#### Zambézia Province

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<th>Condition</th>
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<tbody>
<tr>
<td>ER 480</td>
<td>Mulevala - Inturro</td>
<td>Routine Maintenance</td>
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<tr>
<td>EN 104</td>
<td>Vacha - Rio Ligonhe</td>
<td>Rehabilitation</td>
</tr>
<tr>
<td>ER 481</td>
<td>Mária - Mulevala - Morua</td>
<td>Full Gravelling</td>
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<tr>
<td>ER 481</td>
<td>Mulevala - Cruz EN 104, DFID</td>
<td>Routine Maintenance</td>
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<tr>
<td>ER 484</td>
<td>Inage - Rio Ligonhe</td>
<td>Routine Maintenance</td>
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<tr>
<td>ER 485</td>
<td>Cruz ER 471 - Nante, DFID</td>
<td>Routine Maintenance</td>
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</tbody>
</table>
ANNEX 2: LIST OF MAIN CONTACTS

GOVERNMENT OF MOZAMBIQUE

1.1 Ministério das Obras Publicas e Habitacao (MOPH)

Dr Venica
Director, Economic Directorate

1.2 Administração Nacional de Estradas (ANE)

Mr. Carlos Fragoso
Mr. Fransisco Pereira
Presidente
Vice-presidente

Mr. Atanasio J. Mugunhe
Mr. O. Machachene
Mr. Joao S. Montumbene
Mr. Jorge Muonima
Mr. Inácio Chiculo
Mr. Adelino Serage
Mr. Vasco Machava
Mr. Rui Sera
Mr. Michael Lear
Mr. Peter van Niekerk
Director, DER
Director, Investment Department
Fund of Roads
Co-ordinator FRP
Counterpart to Mechanical Advisor
Counterpart, RTA (S)
Counterpart, Manager, Administration
Studies and Project Department
Consultant

Fel

Nampula Province

Mr. X X
Mr. André Chongo
Mr. V. Spassov
Mr. Manuel Andrade
Mr. Tomas Justino Mario
Mr. Carlitos Daniel
Acting Director, DPOPH
Chief of DEP
Advisor, DEP
Director, ECMEP
Head of DET
Encarregado, ECMEP

1.4 Zambézia Province

Mr. Santos Alberto Manuel
Mr. Carlos Bráz
Mr. Joao Armando
Mr. Walter de Almeida
Mr. Mariano Leal (Cooperante)
Mr. Regério Castro (Cooperante)
Mr. X.X
Mr. James Agingu
Mr Suleman e Guanissa
Director, DPOPH
Chief of DEP
Director, ECMEP
Head of DET
Mechanical Foreman
Advisor, DET
SWK, DFID Project
SWK, DFID Project
Encarregados, ECMEP
2. **FRP CORE MANAGEMENT UNIT (CMU)**

   - M. James Markland  
     Chief Technical Advisor
   - Ms. Karin Andersson  
     Regional Technical Advisor (South)
   - Mr. Edward Greenhalf  
     Regional Technical Advisor (Central)
   - Mr. K.H. Myaing  
     Regional Technical Advisor (North)
   - Mr. Tin Htut  
     Mechanical Advisor
   - Mr. Dave Jennings  
     Training Advisor
   - Mr. Krishna Rauhunath  
     Manager, Administration
   - Mrs. Angelica Aguliera  
     Consultant for Gender Issues

3. **UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP)**

   - Ms. Daphne Casey,  
     Deptuty Res. Representative
   - Mrs. Mariam Pangah  
     Assistant Resident Representative
   - Mr. Peter van der Ree  
     Programme Officer
   - Ms. Kristin Wambold-Liebling  
     UNCDF, Programme Manager

4. **SWEDISH INTERNATIONAL DEVELOPMENT COOPERATION AGENCY (Asdi)**

   - Mr. Carl-Gustav Svensson  
     Resident Representative
   - Mr. Gösta Werner  
     Programme Officer; Maputo
   - Mr. Anders Kreitz  
     Programme Officer, Stockholm

5. **WORLD BANK**

   - Mr. James Coates  
     Resident Representative

6. **INTERNATIONAL LABOUR ORGANISATION (ILO)**

   - Mr. Tomas Stenstrom  
     Associate Expert, ASIST, Harare

7. **DEPARTMENT FOR INTERNATIONAL DEVELOPMENT (DFID)**

   - Ms. Julia Compton  
     First Secretary, Maputo
   - Mr. Alistair Wray  
     Senior Engineering Adviser, Harare

8. **NORWEGIAN AGENCY FOR DEVELOPMENT COOPERATION (NORAD)**

   - Mr. Jan Eriksen  
     Adviser
9. **IRISH AID**

Mr. Patrick Empey          First Secretary

10. **DANIDA**

Mr. Jørgen Strange-Hansen         Project Officer

11. **EU**

Mr. Joao R. Tomé          Technical Assistant
Mr. Noel Cook          Technical Assistant

12. **USAID**

Mr. Luis Santos          Project Officer

13. **Austral Consultoria e Projetos, Lda.**

Mr. Jeremy Gottwals          Socio-Economist

14. **EMPREMO (Mozambican Contractors Association)**

Victor Mujuaburre
José Mendes
Paulino Camela
ANNEX 3: LIST OF MAIN REFERENCES

1. Project Documents

SIDA/MOZ-DNEP

UNDP
"MOZ/96/013, Management Assistance to Labour Based Tertiary Roads Programme"

2. Evaluation Reports

UNDP/ILO

WFP

UNCDF

DNEP/UNDP/Asdi/WFP
"Feeder Roads Programme; Mid-Term Project Evaluation", Final Report, Maputo, June 1998

3. Progress Reports etc

DNEP
Roads and Coastal Shipping Projects; Mid Term Review Report, September 1996, Maputo.

FRP/ILO

FRP/ILO

FRP/ILO

FRP/ILO

FRP/ILO

DNEP
Annual Asdi Consultations, April 1997, Maputo.


DNEP Minutes of

DNEP/Asdi Agreed Minutes of
1. Annual Asdi Consultations, 1997

3. Other References

ANE/DER "ESTRADAS3; Regional Roads Component", February 2000, Maputo


DNEP "ROCS-3; Funding Agency's Summary Report", May 24, Maputo.


GOM   "The Road Administration System", Decree 14/99 of 27 April, Maputo, 1999

GOM   "The Fundamental Statute of the National Road Administration", Decree 15/99 of 27 April, Maputo 1999


<table>
<thead>
<tr>
<th>Author</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>O'Sullivan &amp; Graham</td>
<td>&quot;Consultancy Services for the Equipment Pool Formation Study Stage 1&quot;, September 1996, Reading, UK.</td>
</tr>
</tbody>
</table>
ANNEX 4: LOGICAL FRAMEWORK ANALYSIS

Overleaf is the Logical Framework Analysis of the UNDP Project Document (3 pages). This framework has been expanded here to include three items related to equipment which are included in the Logical Framework Analysis of the Asdi Project Document:

1. "Equipment availability after scrapping rehabilitation and replacement exercise during 1997 to be sustained to at least 75%"
2. "Equipment utilisation to be at least 50%"
3. "Goods procurement lead time from purchase request to delivery at warehouse not to exceed 3 months excluding international shipping."

These three items have been under Objective 2 and under Success Criteria and enter as items 2.4, 2.5. and 2.6 respectively
### ANNEX 5: BUDGETS AND EXPENDITURES

This Annex contains the following documentation:

| A5:1 | The Original Asdi Budget as presented in the Asdi Project Document |
| A5:2 | The Asdi Budget Revision No.2 which has now been accepted by Asdi, UNDP and GOM. This also shows actual expenditure during the period 1997-2000. |
| A5:3 | The Original UNDP Budget as presented in the UNDP Project Document |
| A5:4 | UNDP Budget revision H, which also shows actual expenditure during the period 1997-2000. |
| A5:5 | Final budget revision for the UNDP project, which has been accepted by UNDP and GOM. |
ANNEX 6: OUTPUTS 1997-2000

This annex contains tables showing following outputs for the period 1997-2000:

A6:1:1 FRP Brigades Operational December 1997 (1 p.)
A6:1:2 FRP Brigades Operational December 1998 (1 p.)
A6:1:3 FRP Brigades Operational December 1999 (1 p.) (to be added later)
A6:2:1 Rehabilitation Outputs Against Targets January - December 1997 (2 p.)
A6:2:2 Rehabilitation Outputs Against Targets January - December 1998 (2 p.)
A6:2:3 Rehabilitation Outputs Against Targets January - December 1999 (3 p.)
A6:3:1 Rehabilitation Outputs 1992-1999 (1 p.)
A6:5:1 Routine Maintenance Outputs January - December 1997 (1 p.)
A6:5:2 Routine Maintenance Outputs January - December 1998 (1 p.)
A6:5:3 Routine Maintenance Outputs Against Targets January - December 1999 (3 p.)
A6:6:1 Rehabilitation and Maintenance Plan January - December 1997 (3 p.) (to be added later)
A6:6:3 Rehabilitation and Maintenance Plan January - December 1999 (3 p.)
A6:6:4 Rehabilitation and Maintenance Plan January - December 2000 (3 p.) (to be added later)
ANNEX 7: TRAINING EVALUATION

7.1 Overview

Over the period of the Project there has been a continuous input of training based at the CFE in Chimoio made up of extensive sessions there and follow-up supervisory periods on sites in the Provinces. Assistance was also given in this area to other projects such as the DFID funded contractor training project in Zambézia.

It should be noted that under the terms of the Project document almost all this training effort has been concentrated in the ECMEPs/DETs from the Chef of the DET down to the site supervisors.

The training has been essentially practical, focussing on the technical and organisational needs of the activities of labour-based construction brigades under basically force account arrangements. There was little input to the management of the ECMEPs, which have been moving towards a private sector position over the course of the Project and thus requiring different components of business management training. It is reasonable to conclude that ECMEP Directors are not therefore necessarily all fully aware, or convinced, of the characteristics of labour-based construction and this has led to observed problems on these sites e.g. lack of essential hand tools and setting out aids and equipment.

The Project also had no part in the training of the supervisory side of the construction operations, that is the DEP staff, since this was part of another programme, and even now consultants in each province have training contracts for DEP staff. Contact with these operations revealed that their main target is the fiscais rather than DEP management but it is noted that the experience of these consultants in labour-based works is limited. Added to the fact that many of the fiscais have a lower basic education level than would be desirable, it is concluded that the level of supervision competence will not match the experience of the DET staff. In such a case contract supervision can never be fully effective since a "supervisor" should ideally have greater experience than the "supervised".

The final report of the first consultants providing TA to the DEP was frank in its assessment of the training programme indicating the problems mentioned above and the fact that several chefs of DEPs were technicians rather than engineers of experience. It needs to be remembered that some provinces in Mozambique are larger than some countries and managing a road network of such an area requires an engineer of the highest qualification and experience possible. In the current situation it is not possible for such DEP staff to give the relatively inexperienced fiscais the support which is required to ensure proper management of the ECMEPs/DETs.

It has been the case that the minimum stated education requirements to CFE courses have not been met (due to back of available candidates) and therefore some training is attempting to raise people beyond their potential which is neither beneficial for the individual nor the organisation.

7.2 Regional Training Advisers

To boost the follow-up of CFE training three Regional Training and Maintenance Advisors (RTMAs) have been posted to the provinces to continue the regular mentoring of trainees so
that their theoretical knowledge is turned into practical reality. These RTMAs have conducted additional site training sessions for groups from various provinces. One area of concern was the lack of use of setting out aids, ditch templates, camber boards etc which were not being used on sites despite being taught at the CFE. Chefs of DETs had been unable to convince their ECMEP Directors of the importance of such items for labour-based works.

7.3 Institutional Reforms

The situation has now changed with the institutional reforms in place whereby the CFE is being established as a self-funding centre no longer part of ANE (formerly DNEP) structure. However no increase in the staffing levels has been achieved and the capacity at CFE remains basically to do well what it has been doing with its established courses. The project TA at CFE has contributed considerably to the production of course content and materials which now cover the labour-based technology extensively. To succeed as a commercial organisation will require a different approach with a customer oriented service (e.g. few contractors would send supervisors on a 15 week course costing USD 8 per day) More involvement of the Contractors Association (EMPREMO) combined perhaps with a training levy would be one way forward in guiding the CFE into providing a service to fit the perceived needs of contractor (and consultants ) in the increasingly privatised environment.

It should also be noted that ANE is specifically not involved in contractor training any longer, and the responsibility for contractor development now rests with a section of the Ministry of Public Works.

The training section of ANE has been asked to prepare a training programme for the staff of the organisation and this is seen as a considerate task for which continued TA would be a valuable support but preferably not in the piecemeal approach which has led to the situation described above.

7.4 Achievements

In summary the Project training inputs have

- Achieved the target numbers within the narrow application allowed
- Achieved effectiveness as regards people knowing what they should do (but not necessarily having the means to do it). But there have been gaps in other areas
- Highlighted problems when systems/procedures used in training are not those used on the sites (e.g. bills of quality not reflecting each of the site construction activities.)

The training materials/course notes, etc., need to become part of the institutional assets of both CFE and the DER to avoid the common situation of many projects where carefully developed material is lost (or forgotten) after the project closes and TA staff depart.

7.5 Technology Transfer Programme

The technology transfer programme, which aims to assess the progress of the counterpart staff towards gaining knowledge and experience for their executive positions, was established to run for a short period (about 2 years). Quarterly reports were required in order to keep on initial close assessment of progress under various parameters on scale of 1-5. It was project
specific and was not set out in the form that longer term human resource development system would necessarily follow. These initial objectives were sound but over time the procedure has become more institutionalised with the scale moving to 1 - 10, but the reporting period remaining quarterly. Numerically this entails around 40 reports every quarter for which the few TA advisers are responsible. The original principle of the method was that counterparts themselves would be interactive in the process and equally responsible for identifying their own needs, but in practice it became more important for the TA staff in demonstrating their role in the technology transfer process. Also with the amount of information being gathered the analysis of the data at headquarters has become a huge task and it is not obvious that much use is made of it. As with many ideas the original intentions have been rather lost and the exercise may be seen more as a response to a World Bank requirement than a useful tool for the future of ANE. Once initial knowledge has been transferred to a person it takes a longer period for the necessary experience to be added and such assessments need not be at more than annual intervals.

What is also often misunderstood in the counterpart relationship is that staff are not expected to be able to do what the TA adviser does (since there may be years of experience gap between them). The objective is that the counterpart gains sufficient knowledge and experience to perform the tasks assigned to the line position within the organisation.

### 7.6 Training Adviser

The position and role of the training advisor within the new ANE structure is difficult to identify. He is part of the FRP technical team which is now established in the DER but since ANE has no further responsibility for contractor (ECMEP/DET) training and Chimoio CFE has been separated from ANE he has no specific position. ANE itself has a training section under the Directorate of Administration for the human resource development of its own staff. The advisor is located at present in this section (no office in DER being available) but it is certainly not clear as to his role for the remainder of the project and a future position cannot be readily identified at this stage. This would need to be part of the radical rethink of future support which is being suggested in other parts of the report.

The overall statistics for the numbers trained and courses conducted are given below.
## FEEDER ROADS PROGRAMME

**Staff Trained 1992 - 1999**

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<td>Tractor Mechanics</td>
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<td>Rehabilitation</td>
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<td>627</td>
<td>660</td>
<td>966</td>
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ANNEX 8: TECHNICAL EVALUATION

8.1 Mid-term Evaluation Report

In Annex IX.2 of the report of the Mid-term Evaluation, the team engineer tabulates his assessment of the road rehabilitation and maintenance works being carried out under the project. The current assessment is based on this tabulation and in general the remarks made at that time (2 years ago) can be confirmed by current observation. Overall the technical quality of the work is good - some is excellent - but as always there are areas for improvement. It remains a fact that labour-based works are very supervision intensive with attention to detail being always paramount. What is also clear is that works organisation (and therefore achieved quality) is dependent upon the individual site foreman rather than on DET management since the sites are widely spread, the geographical areas are very large, and the supervisory visits although regular cannot be frequent. The TA advisers themselves are responsible for three provinces each so time spent at each site is naturally limited. The situation has been eased by the arrival of the Regional Training Advisers who themselves travel extensively to give on-site and formalised training on the practical aspects of the technology. Also many of the Chef of DETs have attended the training courses in Kisii (Kenya) and so have a good knowledge of what is required.

8.2 Technical Assessment

Work Organisation: The basics are understood but the performance varies between sites. One new site was exceptionally well organised and already employing 150 labourers (including 50 women) as well as building a well laid out camp. The next site showed confusion with a gravelling operation confined to a length adjacent to a quarry, too many workers and machines in a confined space. If the evaluation team had not been there it would be interesting to know if the Chef of DET and/or the adviser would have managed to put things right. This highlights the need for experience to go with knowledge.

Setting out: On several sites the basic setting out aids were not evident (on others they were proudly displayed). The gravelling operation described had no setting out of any kind (all that was required were a few pegs and a measuring tape). It was stated that Chefs of DETs are unable to acquire these aids from the ECMEP Directors. It should also be noted that setting out was also totally absent on one ECMEP site where heavy equipment was being used. It is not something only applicable to labour-based construction.

Side Drains: Dimensions of side drains varied between the two Provinces visited, in Zambézia they are wider and deeper (with obvious benefits) than in Nampula. In principle the more material that is used to build up the road formation the better the water shedding characteristic of the road and the longer its life. Too many road formations are too low.

Spreading: The practice of piling up excavated material before spreading (often with a towed grader) remains. This is largely dictated by the compaction which is done by towed dead-weight (originally vibrating) rollers which require longer lengths of operation to be effective. Not only does the piled material lose valuable moisture before spreading but the grader cannot ensure the accuracy of the spread layer and dead-weight compaction is less reliable. The use
of the new pedestrian vibrating rollers together with manual spreading and proper setting out is strongly recommended.

Camber: There still persists the misunderstanding that the camber on gravel roads should be different dependent upon the technology used. The specification should not vary since the camber is created to allow water to be shed effectively. Gravel thickness and compaction standard also do not vary so the choice of technology does not affect the requirement. Five percent is the recommended minimum standard for gravel roads and to achieve this (by which ever technology) an initial 7% at construction stage is usually set. Setting out is required to attain this (again for both technologies).

Outlet Drains: It is not always clear that these drains lead downhill away from the road (more obviously not where a motor grader has been used) and particular attention is always needed in this area.

Scour Checks: The provision (and quality) of these is very variable with spacing (where they exist) also very random. The design needs considerable improvement as many were seen to be damaged (and not being repaired). They are also obviously omitted from ditches cut by machine (because machine maintenance would then be very difficult). This situation was highlighted in the previous report and is another example of where a good engineering decision should over-ride a preferred construction method. (This also applies to the shape of ditches - trapezoidal being superior in engineering terms).

Cross Drainage: Culverts and drifts appear to be mainly standardised but there was one example of an improvised culvert using one panel of an Armco pipe to form a very shallow arch supported on small abutments. Concern was expressed about potential maintenance problems. It was not clear how such innovations (always to be encouraged) are considered and approved. The DFID project in Zambézia has also improvised using Armco (which is with drawn and re-used). The previous report commented on the use of Armco.

Headwalls: Headwalls built in masonry are here (as elsewhere) being rendered with cement mortar. The reason for this has never been clear and it always seems to be an unnecessary additional expense.

Surfacing: Subgrade soils vary and they are often difficult to work with (sand and silty sands). The importance of gravelling to protect them (and to provide for traffic) is paramount if sustainable roads are to be provided. Good gravels are also not always readily available. Some alternatives and some experimentation are being considered and, as noted in the previous report, this needs proper trials and analysis and not ad hoc site improvisation. ANE has a materials specialist of international reputation and the DEP soil laboratories could be used in looking for practical solutions. It is noted that some stabilisation trials will take place in the south this year. Collaboration with a DFID regional programme (with TRL) would be helpful.

As noted earlier it is preferred that surface material is spread by hand with accurate setting out and the towed grader confined to the surface finish only.
8.3 Technical Manual

The previous report noted the absence of a published technical manual for the FRP although the basic information that would be included in such a document exists in a variety of forms. This is mostly in the course notes material used at CFE and most of the trainees from those courses would have information to hand for use in their day-to-day works. However, it has been shown on similar projects elsewhere that the production of a well designed and illustrated manual bearing the official government logo not only assists greatly in the standard of the technical output of labour-based works but also establishes the technology with an official blessing. It also provides donors, consultants and others with the agreed framework for any labour based interventions required under future programmes. The production of such a manual is not a part-time activity which can be added to someone's work schedule (this is why these manuals are often very slow in production). So many examples now exist from elsewhere that this exercise need not be as daunting as it may seen and the recommendation of the previous report is fully endorsed.

Consideration needs to be given to the form and content and to the target user groups. Site manuals for supervisors/inspectors, practical manuals for contracts managers, guidelines for establishing contractor development programmes, etc., are all relevant to particular user groups and it a mistake to try to produce one document as all things to all people.

Now that DER has been established as a Directorate within ANE any such document should be seen in the wider context. As noted above it is the standard of road required which is basic, the alternative technologies are only means to the same end. Therefore an overall technical manual (or one in two parts) may be the right approach in order that both technologies may stand as equally viable.

8.4 Contract Documents

Similar comments can be made about contract documents which are usually written initially with equipment-based technology in mind. Some revisions are currently being undertaken on existing documents but this is for a situation (apart from the DFID contractor project) where contracts are awarded on fixed rates without competitive bidding. This has allowed the situation, for example, where ECMEPs are using heavy machines on otherwise labour-based sites because there is nothing within their contracts to prevent them doing so. There is only an understanding that they are labour-based contracts. Other points have been noted by the Training Adviser concerning excavation to level, and the lack of scour checks could be mainly due to the fact they are not separately paid for.

The DFID project has produced some documentation through a process of evolution going from fully itemised bills of quantities to a few all inclusive items. DER needs to have a reaction and opinion to such developments since it leads to one small group of contractors understanding a particular form of contract which may not be applicable elsewhere. Since the responsibility for Regional Roads works now resides in the provinces it is critically important that DER provides the standards, the details and the documents which the provinces should use in the implementation of the works on these roads. There is likely to be a need for a major input in this area as DER establishes itself, and it will require engineers with experience together with any examples of best practice from elsewhere which is relevant.
8.5 Spot Improvements

Much attention is being increasingly given by donors, engineers and others to the inclusion of spot improvement interventions as an alternative to, or a first stage of, full scale road rehabilitation. Such programmes are already in place in many areas and one of the roads visited in Zambézia Province had been subject (under the DFID project) to spot improvement operations.

The principle is sound and it fits well into the concept of level of service maintenance works. The road in question worked well (apart from two isolated points) but, as usual in these situations, it was not always easy to see why some spots were improved and not others. Steep gradients and low areas are generally two obvious targets but in other cases some flatish lengths were gravelled and others not. Engineers admit that designing such works is not easy (two visits to the same road on different days may result in different conclusions). Contractors also find the works difficult to plan and organise, and if they are operating under fixed (rehabilitation) rates they are losing out due to the disjointed nature of the operations.

There is a need for serious consideration of spot improvement inputs including the development of some detailed guidelines for engineers in the initial technical assessments and technicians in the implementation and supervision of works.

8.6 Maintenance.

It was encouraging to observe the amount of routine maintenance which is being carried out on so many of the roads visited. The policy of putting recently rehabilitated roads under maintenance is clearly effective (which cannot be said for many countries where funds spent on "good" roads are seen as wasted and more urgently needed elsewhere). In places the length person system operates and in other places a group system is used. Noticeably almost all maintenance workers were provided with protective clothing including hard hats and goggles. However there were some obvious deficiencies for example in the tools being used (e.g. hoes for grass-cutting instead of slashers/knives), which results in more harm than good. There is the traditional pre-occupation with grass-cutting when surface repairs appear more of a priority. Ditch cleaning often results in material piled up at the ditch edge awaiting the next rain to be washed back in. It is the attention to details again which needs to be instilled into the supervisors. Lack of repair to scour checks (and the building of new ones) has already been noted. Also noted was the (very common) variable quality of machine (grader) maintenance which always relies on the skill and understanding of the individual operator. The deficiencies of most of these " heavy" maintenance works have been well rehearsed and will not be repeated, but still it is the perception of many that a motor grader can solve all maintenance problems.

8.7 Level of Service Contracts

This concept is gaining increasing popularity as a practical method of assessing, and paying for, effective routine maintenance. Previously either quantitative measurement of activities (extremely difficult and very time-consuming) or subjective monthly visual assessment by a supervisor have been the norms. Level of service aims to give an objective measurement, in the form of the average speed of a vehicle over the road, combined with some measurable parameters such as percentage of pothole area per kilometre. These contracts are in their early stages and will probably need to be refined but it is certainly an interesting development.
which is worth monitoring. What will be needed is an analysis of how they are operating and this is an area where the experience of the TA team might be valuable.

8.8 Conclusions

The technical expertise built up in the ECMEPs/DETs, the small contractors in maintenance (LRCI) and the larger contractors (DFID) is impressive but it is noted that the input of technical assistance to achieve such a situation has been huge. There would be concerns over sustainability in the following areas.

- Continuity of funding (operation of the Road Fund)
- Capacity of the DEPs (missed out on the training)
- Privatisation of ECMEPs/DETs (no experience in competitive bidding)
- The future roles and functions of the DEPs
- The future of labour-based brigades (DETs)
- The future of DFID contractors if they fail to acquire the equipment initially promised.
- The access of contractors to,
  - Work opportunity
  - Credit
  - Equipment

The important message is that the valuable resource, skill and experience that has been gained in this field of labour-based road construction needs to be first preserved and then further developed with contractors realising that the techniques and labour management skill have a much wider application than simply gravel roads.
ANNEX 9: EVALUATION OF MECHANICAL AND PROCUREMENT SUPPORT

9.1 Overview

The Mechanical Adviser has been with his current counterpart for 3 years and clearly they have a good working relationship. The counterpart is a degree mechanical engineer who first joined DNEP in 1993. Between them they are responsible for supporting the mechanical maintenance of the equipment of the DET labour-based brigades which is carried out in the provinces under the supervision of the TA Mechanical Foremen and their counterparts.

Evidence from the site visits and discussions held in the two provinces visited indicated that equipment is performing generally well and the maintenance was well managed. The TA foremen conducted both on-the-job daily training and some more formal group sessions for particular problems.

The second responsibility of the headquarters team is that of the procurement of equipment and other supplies (e.g. office furniture computers, etc.).

The procurement procedures were long established under DNEP and were influenced by donor requirements also. The construction equipment appropriate for labour-based works was procured on behalf of the ECMEPs for the DET brigades.

This has been a project specific arrangement since the ECMEPs are now separate from the ANE and will (presumably) become responsible for their own procurement. It is not clear what will be the future role of the mechanical engineer.

9.2 Support to DETs

Although the mechanical maintenance support to the DETs is well managed there have been problems at the workshops since it is the ECMEP responsibility to provide the DETs with the consumables support in terms of lubricants, spare parts, etc. The Project has provided some spares from time to time and it has also paid for the major tractor rehabilitation programme. However in the long-term the ECMEPs have to be responsible for taking over all the necessary support and the impression is that several of them do not reinvest their construction profits back into the equipment. It is the labour-based equipment which tends to suffer more in this respect, although one exception to the non-investment in equipment was seen in Nampula where a programme of equipment rehabilitation is being undertaken by the new ECMEP Director.

The other area where the ECMEPs may require further input is in the real costing of equipment for construction works as most equipment has to date been provided by donors (Asdi for the light equipment and Japan for heavy machines) and contract rates (which are fixed) do not reflect the true equipment costs. This has led to ECMEPs using some heavy machines for gravel loading on labour-based sites, (there is nothing in the contracts to prevent this).

The Mid-term Evaluation noted the equipment condition statistics produced by a consultancy study and there has been an ongoing tractor (MF) rehabilitation programme since that date. This has been carried out by the supply agents but it has also involved the advisers in a great deal of time-consuming administration and organisation. With TA Mechanical Foremen in
place in the Provinces the work could have been carried out in the DET workshop with the added training advantages, but the programme was already in hand before this situation had been achieved.

9.3 Procurement

A disproportionate amount of the Adviser's time is spent on procurement issues. In common with similar projects elsewhere the procurement tasks have been underestimated and this experience confirms what is already evident that procurement becomes a full time job in the initial stages of a project. In this instance,

- 194 units have been purchased under ICB at a cost of around $1.6 million
- 6 items have been purchased under International Shopping at a cost of around USD 300,000.00.

The problems and inevitable delays in procurement are well known but donors continue with the same procedures which will effectively prevent recipient bodies being able to specify equipment which is tried and tested and/or which assists in standardising the equipment fleets. Suppliers promises on delivery continue to be broken apparently without sanction and local agents after sales services continues to be very variable.

The main areas of procurement delays relate to:

- Government and donor procedures, particularly International Competitive Bidding. This is always a very lengthy process.
- Preparation and agreement of equipment specifications, yet all this type of equipment has been used before and specifications should by now be standard.
- Suppliers delivery promises. Large unsold stocks do not exist and suppliers will not start to manufacture before a Letter of Credit.
- Letter of Credit procedures are cumbersome and many have to be renewed more than once.
- Shipping; includes waiting for a vessel, pre-shipment inspection (e.g. SGS) and sometimes customs interventions.
- Clearance procedures at port of delivery. The Mid-term Evaluation report suggested the use of private clearing agents. Payment of any duties and/or taxes is always a further source of delay.
- Pre-delivery inspections. Local agents should be responsible but if the original orders have not been placed through them (thereby denying them their commission) they are often reluctant to carry out this task expeditiously since it is not obvious who will pay them for it.

Some equipment for the Project has only recently been delivered (e.g. 27 Bomag pedestrian rollers) and with only 8 months remaining they will still be relatively new at the end of the Project. The future of the donated equipment (Asdi and Japanese) may need further consideration if the ECMEPs become fully private companies.

The reason of purchasing the pedestrian rollers (and other equipment) at this late stage is not clear (they have been a priority item on almost all other labour-based construction projects). Similarly the practice of using one tractor/one trailer combination is unique to this Project and no explanation of this practice was given (expect that it has always been this way). This
highlights the concern about the equipment needs assessment and the procurement scheduling which results in much (almost) new equipment remaining at the end of the Project.

If ECMEPs/DETs are to practice commercially the economics of equipment usage is a key element in profitability. Similar comments would apply to the standard of hand tools which was noted on some sites to be very variable (ECMEP Directors being unwilling to invest in good quality). In some instances workers were expected to bring their own tools to site.

9.4 Training

Training for mechanics and equipment operators has taken place at Chimoio under the Supervision of a mechanical trainer who was not part of the project, so the mechanical Adviser and his counterpart have not been involved in this formal training. On taking delivery of equipment the local agents have provided the minimum of familiarisation (which hardly amount to training) and on occasions it has not been possible for operators to attend such sessions.

Effective training has largely been given by the TA Mechanical Foremen in the provincial workshops or a day-to-day basis with additional group sessions when appropriate.
ANNEX 10: SOCIO-ECONOMIC IMPACT EVALUATION

Annex 10:1: Achievement of Planned Outputs

Principle objectives in terms of the Logical Framework in the UNDP Project Document included:

- Injection of cash into rural areas by means of employment of the greatest numbers of casual workers commensurate with efficient labour based construction practice.

- Creation of a pool of relevant marketable skills in rural areas which will be available for subsequent employment in road maintenance and construction of agricultural or public works.

- Concentration of direct benefit upon the rural disadvantaged by means of direct employment

A summary of activities and success criteria, expected means of verification, the resources attributed to the activities, and actually verified situation is presented below:

### PROJECT SOCIAL AND GENDER ISSUES

<table>
<thead>
<tr>
<th>SUCCESS CRITERIA</th>
<th>MEANS OF VERIFICATION</th>
<th>RESOURCES 1997 – 1999</th>
<th>OUTPUTS ACHIEVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Increased commercial activity in defined area of influence of rehabilitated and maintained roads.</td>
<td></td>
<td></td>
<td>• Baseline not carried out. No impact information available.</td>
</tr>
<tr>
<td>4.1 Continuation of labour based construction in areas of project activity (road maintenance, agricultural works or constructor activity.</td>
<td></td>
<td></td>
<td>• Progress reports on worker numbers regularly sent to the Gender and Social Issues Advisor by the Gender Núcleos.</td>
</tr>
<tr>
<td>4.2 Numbers of labour only contractors in continued operation.</td>
<td></td>
<td></td>
<td>• Late wages reported in 1998, but improvements noted in 1999.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Formal courses have targeted 530 maintenance supervisors and 690 rehabilitation supervisors (1997/8) members of the ECMEPs. Female participants in formal training courses have risen during the project period from 1% in 1997 to 3% in 1998.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• No short-term workers trained to do anything other than basic labour tasks. No monitoring of skill levels of these workers.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Retention of workers in brigades for long periods is an indicator of the value put on their skills by the contractor.</td>
</tr>
</tbody>
</table>
5.1 Employment of specified percentages of defined disadvantaged groups e.g. women (25%), landless demobilised, displaced etc. without discrimination that further disadvantages.

**Budgeted:**
1 Gender Advisor x 24 months.

- Impact on rural poverty was not as widespread as it could have been with regular local recruitment & training at quarterly intervals.
- FRP only supported ECMEPs and no local contractors.
- Only basic and medium level candidates recruited for formal training.
- Progress reports by the Gender Advisor identified worker numbers, gender, contractual and operating conditions. Initial assessment of employment conditions not followed up by ANE / FRP.
- Advisor’s TOR broadened with admission of counterparts and eventual institutionalisation of section to PGA Unit by January 2000.
- Planned inputs of the Gender and Social Issues Advisor were extended beyond initial two years.
- Skills transfer to counterparts progressing well.
- Little support and feedback from ANE to gender & social issues unit, resulting in lack of clarity about role of unit in 1999.
- Issue of contractors contract conditions only taken up by ANE at end of 1999.
- Local labour conditions and hours dealt with through installation of provincial Gender Núcleos to monitor and intervene directly.
- Traditional & local authorities involved once a year by ECMEPs during annual recruitment drives. Other than this, only when necessary to augment numbers on the roads.

**Total budget (excluding TA) (USD):**
$2,082,825

**Expended 1997-1999 (excluding TA) (USD):**
$ 145,000
Annex 10:2: Additional Supporting Information

Employment of Casual Workers

One of the negative aspects of semi-permanent brigades is the need to create larger roadside work camps to house the mobile brigade members. The contractor in principle should have the responsibility to provide minimum conditions of housing, sanitation and medical services. The amplification of the scale of this responsibility due to having camps in which not only ECMEP permanent staff but also the semi-permanent brigade members living far from home was an issue initially identified in 1998 for improvement during the Project. Reports indicate that the Gender Núcleos have been tasked with responding to this, although concrete outputs are not reported. By the end of 1999 plans do however indicate that identified HIV/AIDS prevention promoters will be trained to respond to some of these identified needs.

The use of semi-permanent brigades means that skilled personnel are retained and from the point of view of the brigade leaders this is more effective than hiring workers once only. Actual results of this include:

- reduced liaison with local authorities,
- less interruptions in the work schedule for recruitment along the roads,
- brigade members do not have to be trained, thereby theoretically reducing the need for close supervision, and speeding up the process of rehabilitation / maintenance.
- However, if creating adequate living conditions in larger work camps that employ semi-permanent brigades is strictly adhered to, the added financial costs of this might in practice outweigh the ‘costs’ of employing people locally.

Poverty reduction

The level of income measured in the FRP in relation to averages obtained through the baseline monitoring of the USAID funded Rural Access Project (by Austral; see Annex 3) provides an interesting comparison. Samples were taken in Zambézia and Sofala from 10kms either side of four targeted roads. Preliminary findings of the 1999 update of a baseline survey carried out in 1997, indicate that rural household income has dropped 27% to 195 USD/year. Reported wage income as a percentage of this has risen overall from 2% in 1997 to 5% in 1999. This picture gives an indication of the relatively low scale of impact of the wages from road rehabilitation in terms of its broader impact in the population in general. The report notes that despite lower income levels in these areas, household’s purchase of more animals, tools and basic proxies for economic status such as radios, bicycles etc. had risen. Interpretations of such findings are not possible here, and this discussion is purely illustrative, but it does underline the negative impact of the lack of baseline information in the FRP.

Food was made available by the World Food Programme to add incentive to communities to offer themselves as candidates for road rehabilitation brigades. The food was provided through various mechanisms prior to 1997, including its purchase at a subsidised price in 1995/96. After 1997 through to the end of 1998 it was provided free, as a supplement to the minimum salary provided in cash. Cessation of this support in 1998 was felt to be a loss by brigade members, particularly where its provision had tided them over when salaries were late.

The initial assessment carried out by the FRP Gender Advisor in 1998 identified similar priorities for use of wages obtained from labour on the roads. Aside from paying other people
to carry out tasks at home, food, clothes and children’s educational needs were the principal areas identified by women on the brigades. Examples from other projects such as the DFID/ANE Project and World Vision in Zambézia support findings that women workers prioritise improvements in their homes, the purchase of children’s school materials, clothes and blankets with their salaries. Other items identified include food and assistance to other members of the home.

By retaining workers in brigades for over three months they are provided with the opportunities to better improve their lives, they become semi-skilled road workers, and they also provide new employment opportunities when they contract workers to assist in their homes.

Results of the Gender Component

Training in gender awareness has been part of the curriculum offered at CFE since 1997. Prior to the recruitment of the Gender and Social Advisor, Forum Mulher was contracted to prepare a module for the Supervisor’s course, and for inclusion in other courses as necessary. Gender sensitisation was formally launched at the DNEP’s Third Maintenance Seminar in 1997. Gender and social issues have become more prominent priorities of the donors since 1997. ANE has been slow to prioritise these questions, and pressure from the World Bank appears to have prompted the institutionalisation of the newly established (in January 2000) Poverty, Gender and Aids Prevention (PGA) Unit, in order to better address the approach endorsed by the proposed Estradas3 programme.

In 1997 the Annual Government/Donor Agency and Multipartite Review Meetings recommended the setting up of a Gender Forum comprising representatives of the various aid agencies, NGOs and government bodies. A Gender Support Group (Asdi, UNDP, WFP, NORAD, FRP) was set up as a first step with the task of providing an advisory panel to the FRP. This unit appears to have taken a very low-key operational role.

Gender Núcleos established in the provinces were involved in a monthly reporting system providing the number of women in the brigades, the number of dropouts and the reasons for these. Their tasks included establishment of percentages of women to be employed on brigades and reporting on progress; carrying out site visits to identify factors negatively affecting women’s recruitment and working to reduce these; encouraging training of female employees to provide them with opportunities for professional development; sensitising the ECMEPs, the DEPs and contractor staff about gender issues and the need to provide employment opportunities for women. Their performance varied by province, very much dependent on the personality and acceptance of their members locally, and the latter’s initiative in carrying out tasks over and above other duties. Few participated in the recruitment procedures, despite advice to do so, due mainly to lack of access to transport. Gaza and Zambézia showed the most assiduity in this task. The dynamic leadership of the DET leader in Inhambane resulted in constantly higher proportions of women participating in the brigades (in 1999 on average 24%).

Two social science university students were appointed by ANE in 1998 as counterparts to the Gender Advisor. Working half time they have been involved in informal and formal learning and performance evaluation processes through which they have gained familiarity with the work and expectations of the role of the PGA Unit. They are enthusiastic and willing to contribute whatever necessary to ensure that ANE and the sector operators in the provinces
take gender and social issues more seriously. They appear to have been well supervised and had there not been difficulties expressed by ANE concerning their accompanying the Gender Advisor to the provinces, their experiences of the whole country’s sector performance would be more balanced. Feedback from ANE’s training department regarding the counterparts’ expressed needs for training were not heeded during the Project term.

The principle responsibility of the counterparts has been to ensure the establishment and effective operation of the provincial Núcleos. They were involved in training them, monitoring and following-up their progress through provincial visits and verifying received reports. As the capacity of the new unit has expanded, difficulties have been encountered within ANE in supporting development of the gender and social issues component of the FRP. Activity delays or cancellation of activities have been due to non-availability of funds, and delays in approvals of documents and proposals.

With the assistance of the Núcleos, province specific quotas were established in 1998 for the recruitment of women. This stipulation could have benefited greatly from encouragement from ANE and the FRP to have openly discussed the initial assessment of recruitment made by the Gender Advisor in 1998. This could have been followed up with more qualitative reporting and studies that built on the first one’s findings. Indeed development of simple easy-to-collect indicators reported on by the Núcleos could have contributed to a more effective monitoring of the participation of women. For example, analysis by the PGA Unit of the records of the drop out rates and reasons given, already provided by the Núcleos, could have helped on-going strategy development with the Núcleos, and also identification of the degree of assiduity of reporting by the Núcleos. In the future the impact of the gender and social issues component could be enhanced by monitoring staffing levels of women employed in the longer term by contractors. Monitoring the numbers of women in supervisory or brigade leader positions, the numbers trained, and the numbers continuing working or readmitted on different stretches of road would assist in a better understanding of the dynamics of women’s role in the sector and in the FRP.

Scope for Future Support

Pressures from the World Bank to institutionalise the PGA Unit in the year 2000, clarify its role and scope of work, and demand a broader accountability outside of just the FRP, will undoubtedly effect the Unit’s priorities in the future.

It is difficult without data and time to draw meaningful conclusions on the social and economic impacts surrounding the FRP. In the future baseline and monitoring surveys should be carried out. If these are organised to include roads where no rehabilitation has been carried out they can be considered as 'before project' studies. Ideally the time elapsed after rehabilitation before follow-up monitoring surveys should be approximately two years, to provide people and organisations with time to respond to the improved roads. Data should be collected in collaboration with the commercial and agricultural sectors. In this scenario if the sample is carefully designed the baseline can also provide useful impact information as well. Surveys should be designed with the possibility that between-survey monitoring of certain aspects may be carried out during project implementation by the Gender Núcleos for example. To this end, data should be collected from contractors and guidelines for monitoring of key issues produced.

Useful information could include:
From Núcleos:
- Staffing levels of women employed in the longer term by contractors,
- The numbers of women in supervisory or brigade leader positions,
- The numbers of men and women trained and re-trained,
- Level of skills obtained through labour-based methods by the workers, by the contractors and by the DEP-DPOPH
- The numbers of men and women continuing working or readmitted on different stretches of road.
- The numbers of women trained in civil construction working for contractors / ECMEPs
- The numbers of women employed by contractors/ECMEPs as permanent staff, and their training histories with the FRP.

From field surveys key information could include:
- Changes in transport costs by method (taking account of load and distance).
- Changes in modes of transport and in the levels of traffic.
- Distance / travel times to farm inputs, markets / buyers, rural credit institutions
- Numbers of health and education facilities.
- Attendance at health facilities and schools.
- Proliferation and proximity to rural markets.
- Proliferation of micro and small enterprises.
- Changes in market prices and farmer gate prices of agricultural produce.
- Sale of agricultural inputs.
- Area of land under cultivation.
- Changes in household expenditure

Secondary data may be obtained from:
- The 1997 census figures at village level,
- the Ministry of Agriculture and Rural Development,
- the National System for Market Price Information,
- DINAGECA / Cenacarta for satellite imagery based interpretations of agricultural land-use and cover etc.,
- the 2001 National Agricultural Census results,
- USAID socio-economic impact monitoring reports of its Rural Access Project (95-005/656-003)
- DFID / ANE Feeder Roads Project’s socio-economic impact reports produced annually.

Main findings:

Recruitment involved:
- Notifying local authorities and traditional leaders
- Village meetings to inform the population in an area where road rehabilitation would take place
- Placing notices in public areas
- Information passed by actual brigade workers
- Radio
- The District Directorate of Labour

Candidate requirements:
- Physically good condition and health, and preferably young
- Residents in vicinity of road work rehabilitation sites
- Women heads of households and married women with authorisation from their husbands
- Identification cards or registration of location of residence

Length of contract:
- In principle for a period of three months.
- In reality longer periods of time due to lack of labour in some areas, preference by brigade leaders for workers already possessing skills to perform necessary tasks, and pressure from recruited workers to remain in brigades to secure their continued employment.

Situation of women in the brigades:
- 6% of workers were women (September 1997)
- Majority are heads of households
- Difficulties in hiring married women if their husbands are not already brigade members
- Existence of kinship relations between women on brigades
- Use of family members to maintain their family farms, and where none are available the payment of others as casual labour on these
- Most women were in their first employment situation
- Their salaries were used primarily for food, clothing and payment of school fees and other school materials
- Women view the work positively as they did the role of the improved road in the communities
- Most women were illiterate and very few were employed in positions with additional responsibilities such as supervisors, note-takers, warehouse managers, tractor drivers or other assistants
- The inconvenience of staying in labour camps was outweighed by their interest in continuing in salaried jobs
- Women had good working relations with male brigade members
- Brigade managers and supervisors had a good opinion of women as brigade workers noting they work well and were rarely absent
- In the central provinces women’s role in the brigades tended to be limited to meal preparation, water distribution, cleaning duties and clearing of brush
women’s responsibilities continued beyond the workplace to other tasks in their homes visited after work or on weekends

**Difficulties of brigade members:**
- delays in receiving salaries
- reduction in food quotas from WFP
- sexual relations in the camps resulting in pregnancies and termination of employment
- prevalence of STDs in camps as a result of frequent casual relationships
- serious shortages of medical assistance in camps
- lack of protective clothing and work instruments
- lack of transport to return to their homes during leave periods
- isolation of brigades and lack of visits to verify the quality of the work performed.

**Report recommendations:**
- Define a work programme for gender related activities and the formation of Gender Núcleos
- Determine the type of information to be monitored
- Reaffirm the recruitment procedures to include criteria to ensure the FRP target groups included
- Gender awareness raising to be carried out at management and operational levels
- Define scopes of work for Gender Núcleos to take these needs into consideration
- Identify sustainable mechanisms for operation of Gender Núcleos.
Annex 10:4: Summary Tables of Employment Levels and Derived Income

UNDP / Asdi - ANE Feeder Roads Programme

Employment generation

<table>
<thead>
<tr>
<th>Year</th>
<th>Men recruited</th>
<th>Women recruited</th>
<th>Total recruited</th>
<th>% women</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>5,521</td>
<td>675</td>
<td>6,196</td>
<td>10.9</td>
</tr>
<tr>
<td>1998</td>
<td>6,794</td>
<td>1,033</td>
<td>7,827</td>
<td>13</td>
</tr>
<tr>
<td>1999</td>
<td>7,420</td>
<td>1,514</td>
<td>8,934</td>
<td>17.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>19,735</td>
<td>3,222</td>
<td>22,957</td>
<td>13.6</td>
</tr>
</tbody>
</table>

Income generation

<table>
<thead>
<tr>
<th>Year</th>
<th>Total work days</th>
<th>Estim. Global income USD</th>
<th>Av. Income (USD) per family member</th>
<th>Av. Income (USD) per family</th>
<th>Av. days worked p/person</th>
<th>Average months worked/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>1,099,185</td>
<td>999,827</td>
<td>32.27</td>
<td>161.37</td>
<td>177.40</td>
<td>8.06</td>
</tr>
<tr>
<td>1998</td>
<td>1,416,724</td>
<td>1,090,745</td>
<td>27.87</td>
<td>139.36</td>
<td>181.00</td>
<td>8.23</td>
</tr>
<tr>
<td>1999</td>
<td>1,484,308</td>
<td>2,036,474</td>
<td>45.59</td>
<td>227.95</td>
<td>166.14</td>
<td>7.55</td>
</tr>
<tr>
<td>TOTAL</td>
<td>4,000,217</td>
<td>5,360,418</td>
<td>46.70</td>
<td>233.50</td>
<td>174.25</td>
<td>7.92</td>
</tr>
</tbody>
</table>

Notes:
Minimum wages for 1997, 1998 and 1999 used for income calculation

Training inputs

<table>
<thead>
<tr>
<th>Year</th>
<th>Maintenance supervisors trained</th>
<th>Rehabilitation supervisors trained</th>
<th># women trained</th>
<th>% women trained</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>222</td>
<td>360</td>
<td>4</td>
<td>1%</td>
</tr>
<tr>
<td>1998</td>
<td>308</td>
<td>330</td>
<td>19</td>
<td>3%</td>
</tr>
<tr>
<td>1999</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>530</td>
<td>690</td>
<td>11.5</td>
<td>2%</td>
</tr>
</tbody>
</table>


Introduction

In view of the short period spent in Nampula attention was focused on making a rapid follow-up assessment to the two socio-economic impact studies made by G. Åkesson in 1995 and 1996 on the Rapale – Mecubúri road. Interviews (of nine women and four men) were made in Nampula Province with employees of the health and education sectors, the Catholic Mission, patients in the maternity and health units, three brigade workers from this road, two traders based in Mecúburi, World Vision’s Programme Director and two members of the DET gender nucleus. The assessment continued in Zambézia Province with interviews carried out along the following roads: Mária – Mulevala, Maganja da Costa – Nate and Mugeba – Muakiwa. Fifty interviews were carried out with equal numbers of women as men: supervisors, first aid workers, rehabilitation and maintenance workers, men and women of roadside markets, traders, brigade leaders, DET technicians from Mocuba and the Gender Núcleo.

A total of 63 interviews were carried out, and questions concerned the benefits brought by the roads in terms of poverty alleviation, access to health and education facilities. In addition, the brigade workers were interviewed about their working conditions and procedures.

Socio-economic impact

1. During the visit to Nampula there was said to be much more movement of people within the districts than in previous years. Travelling within districts, between districts, to and from the provincial capital with articles for sale or purchased, on foot, bicycle or in a ‘chapa-100’ vehicle. New traffic also included the movement of heavy trucks with trailers carrying diverse contents, including cotton bales, cassava and maize.

2. All those interviewed in Nampula and Zambézia agreed that the FRP has contributed significantly to the collection of their products for commercialisation. The products included cassava, maize, rice, peanuts, coconuts and cotton.

3. Particularly on the roads where rehabilitation was complete, such as Rapale-Mecubúri (Nampula) and those of Maganja da Costa to Nate, and Mugeba to Muakiwa in Zambézia, access was said to be more rapid and provided safer access to the health units and local or provincial markets in the capital cities. On the Mária-Mulevala road which is being rehabilitated since the middle of 1998, there is no movement of vehicles as a result of the works being in process and the lack of bridges. The population in this area travels by foot and people carry their loads on their heads. Most of the loads are products for sale or purchased products for family consumption carried for up to five hours or a whole day covering distances of over 20km. Three primary schools were rehabilitated on this road and the pupils have to travel two to three hours every day to attend classes – leaving home at 0500 hrs or arriving after 2000 hrs. In this area those requiring medical assistance can only obtain this two to three hours away in Mocuba at the cost of 25,000.00 MT per passenger. Although there is a health unit at Mulevala, it has no medicines or qualified staff.

4. Trade of agricultural produce, which people say has increased in its variety since the Peace Accord in 1994 and progressively since 1996 is exchanged with fabricated goods such as clothes, domestic utensils, construction materials and basic food products from the cities of Nampula, Quelimane and Milange.
5. Most of the commercial network is still non-operational with the traders being unable to obtain capital to invest in rehabilitation, organising transport and re-stocking. In contrast the informal markets have become the main economic activity foci, generally led by men. However along the roads food products, firewood and charcoal tends to be sold by women.

6. From the men and women interviewed a profile was collected of use of salaries from working on the FRP:

<table>
<thead>
<tr>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st salary – improvement / increase in home, purchase of school materials for the children.</td>
<td>1st salary – bicycle, radio, basic school material for the children.</td>
</tr>
<tr>
<td>2nd salary – Food, domestic utensils, own and family clothes, bicycle.</td>
<td>2nd salary – clothes for self and family, food, purchase and sale of liquor and charcoal.</td>
</tr>
<tr>
<td>3rd salary – To assist other family members and home expenses.</td>
<td>3rd salary – assistance to family and home expenses,</td>
</tr>
<tr>
<td>4th salary – purchase of goods for their re-sale.</td>
<td>4th salary – small business, a vending stall on the road.</td>
</tr>
</tbody>
</table>

These people stressed that they depend on the temporary work on the roads since there is no other employment, particularly for the most vulnerable groups.

7. According to the Catholic Mission, the most influential congregation in Rapale, the existence of the road has contributed to spreading ideas so that the parents of malnourished children are taught about dietary improvements. It has also assisted health agents from the HIV / AIDS programme reach communities living along the roads. In the maternity unit in this area the number of births occurring at the centre have doubled from 30 in 1998, to 60 or 70 births a month now. Prioritised health problems requiring attention form health unit personnel were: 1st malaria; 2nd diarrhoea; 3rd tuberculosis; 4th STDs / AIDS; 5th measles; 6th anaemia (women and children).

**Women’s participation in the FRP (Nampula and Zambézia)**

8. In Nampula and Zambézia the DETs had operational Gender Núcleos that received support and direct assistance from the Gender Advisor in ANE. The members of this group carry out supervision of the initial community mobilisation to ensure the involvement of the local authorities and the recruitment of women into rehabilitation and maintenance brigades. They draw up monthly action plans, and write monthly progress reports.

9. There appear to be advances made in relation to initial reports and recommendations in the early studies of women’s participation made prior to 1997. These include:
- Meeting and passing the 25% proportion of women stipulated as recruitment levels
- Women’s drop-out rate from work brigades is practically nil as a result of:
  - Timely salary payments;
  - Stoppage of unjustified salary discounts;
  - Flexible working hours when work is task based, this allows men and women to carry out other agricultural and domestic work more easily;
  - Medical assistance is provided via nurses and first aid workers.
10. Generally women’s recruitment by supervisors and brigade leaders has not followed the recommendations in the ‘Norms for Women’s Recruitment’ established by DNEP in 1995. Women are not prioritised, nor given an opportunity to participate, local authorities are minimally involved with preferences for word of mouth through friends who work in the brigades or groups who have had previous contracts and would like to continue even though they are from the headquarters towns.

11. There was no evidence of insertion or training for women as works leaders, supervisors or overseers on the roads visited.

12. Most of the women working on the road are single or widows of various ages between 18 and 50 years. As most are heads of families they constitute part of the target group of the project in terms of vulnerability.

13. There was no mention of disrespect between men and women, lack of help or sexual harassment. On the contrary the men and women interviewed affirmed that there are so many women who need and want to work, they suggested that the quota should be raised to 50% (after a preliminary assessment), and they should be prioritised for recruitment for maintenance works.

14. There appears to be no system of social monitoring in operation.

15. There are neither any women engineers nor any women machine operators in the ECMEPs visited.

16. There are no exchanges of experiences with other NGOs / companies that also contribute to the FRP such as World Vision, ADRA, Scott Wilson with a view to improving their procedures and coherence. It was found that there is much inconsistency; sometimes roads are rehabilitated by one brigades and then maintained by another. Sometimes, therefore gender issues, as well as monitoring and the norms established by the central institution are observed, sometimes not.

**Recommendations**

- Policy formulation concerning selection of candidates for training for (semi-)professional qualifications/functions should include consideration of gender.
- Contacts and awareness raising in secondary schools and pre-university level institutions could be made so that male and female students may become interested in possible careers in the sector from early on.
- Exchange of experiences should be promoted within the FRP with other involved NGOs and companies such as World Vision, ADRA, and Scott Wilson.
- A system of monitoring should be set up to ensure that recruitment and working conditions follow acceptable norms by involving the local and traditional authorities.
- There should be collaboration with other gender and social programmes in the provinces. This will provide many institutional benefits and broaden the impact of the FRP activities, one of which would be to influence traders to offer work to women where appropriate.
ANNEX 11: INSTITUTIONAL ARRANGEMENTS AND REFORMS


It is to be noted that this annex describes the institutional arrangements as well as planned changes as of May 1998. The annex has thus not been edited to update it to reflect recent developments up to April 2000. These developments are reflected in the Main Report of the Final Evaluation.
INSTITUTIONAL ARRANGEMENTS AND REFORMS

1. Introduction

This Annex describes the current institutional arrangements in the road sector, the planned new arrangements in the sector, and the envisaged implementation arrangements. An analysis is also presented of some features of the present arrangements of relevance to the FRP as well as aspects of the planned reform process of significant importance as concerns any future support to the FRP, in general, and by UNDP and Asdi, in particular, within the context of their ongoing support under the projects MOZ/96/013 and Swedish Support of the Road Sector in Mozambique, respectively.

2. Background

At the time of Independence, responsibility for the management of the road network was vested in Junta Autonoma de Estradas de Mozambique (JAEM). JAEM was structured as an autonomous agency under the then colonial government. It established provincial services in all provinces, but generally relied on contracted companies to undertake construction and heavier maintenance works.

In 1977, the functions of JAEM were transferred to the National Roads Directorate (DNE). Subsequently, in 1979, the DNE was replaced by the Department of Roads in the Ministry of Construction and Water (MCA), resulting in the transfer of many of the road management functions to the provincial level. At that time the provincial road services were also restructured and incorporated into civil construction companies at the provincial level known as “Constructoras Integrais”.

These changes had a negative impact in that resources devoted to road maintenance diminished. As a consequence a further reorganisation of the sector took place in 1983 resulting in the creation of the National Department of Roads and Bridges (Departamento Nacional de Estradas e Pontes) in the MCA.

The following year, 1984, saw the establishment of the “Empresas de Construcao e Manutencao de Estradas e Pontes” (ECMEP), which were set up by using staff, equipment and installations which had previously belonged to the Provincial Road Services and subsequently to the Constructoras Integrais. One ECMEP was established in each one of the 10 provinces.

Subsequently, in 1987, the duties of managing the national road network were vested in the Direccao Nacional de Estradas e Pontes (DNEP), an organisation with somewhat greater autonomy than the previous Department. DNEP was given the responsibility to assist MCA in planning and ensuring the implementation of the construction of primary and secondary roads, and to promote the maintenance of the primary and secondary road network, in general, in co-ordination with the local authorities. Provincial Departments for Roads and Bridges (DEPs) were also created at that time.
A further reform took place in 1989 with the establishment of the Road Fund for the Maintenance of Roads and Bridges (Fundo Para a Manutencao de Estradas e Pontes). The Fund was established to finance maintenance of the national road network, based on, *inter alia*, dedicated road taxes.

In 1994, the Ministry of Public Works and Housing (MOPH) was established as the successor to MCA. The tasks of DNEP remained basically the same, but its area of responsibility was extended to cover the promotion and implementation of the construction and maintenance of all classified roads, i.e. also the tertiary road network.

With the coming into operation of the World Bank co-ordinated Roads and Coastal Shipping Project (ROCS) as from 1992, the country also saw the introduction of international competitive bidding for the provision of various services, including for design, supervision, and construction and rehabilitation works. This has later been followed by the active fostering of a small scale local construction industry to be involved in the maintenance of roads, subject to competitive tendering procedures, albeit on a much smaller scale than the ECMEPs. These more recent changes can be seen as part of a much larger restructuring programme of the road sector that is about to begin. Before describing these reforms, the actual situation will be outlined first.

### 3. Present Arrangements

#### 3.1 DNEP with an Emphasis on Organisational Arrangements for the FRP

In formal terms, the Ministry of Public Works and Housing (Ministerio das Obras Publicas e Habitacao; MOPH) is the road authority of the country. In effect, a considerable amount of the day-to-day responsibilities for the management of the road sector has been delegated to the DNEP, more formally then its National Director (ND). The role of the Minister vis-à-vis DNEP is primarily the appointment of the ND, the preliminary approval of annual budgets - final approval being obtained from the Ministry of Planning and Finance (MPF) - and the overall monitoring of DNEP. While DNEP cannot be described as an autonomous agency, its partial autonomy is underscored by the fact that it operates its own financial management and personnel systems, albeit subject to the regulations pertaining to the public sector.

DNEP performs planning, contracting, regulatory and supervisory functions. It is not involved in direct operations, which are performed by either private contractors and consultants, or the ECMEPs.

The organisational structure of DNEP is outlined in Figure AVII.1. A new feature of DNEP, not reflected in the Figure is that a new Deputy National Director was appointed in May 1998. Of relevance to the Feeder Roads Programme (FRP) is the unit referred to as Reparticao de Estradas Terciarias (RET). This section reports to the Department of Maintenance, which in turn reports to ‘Coordinator 2’. The use of these titles reflects the condition that the current organisational structure is in a sense transitional, in view of the fact that DNEP is expected to be transformed in the near future. This aspect is also reflected in the condition that the RET has never been formally established, unlike other offices in the DNEP. The RET has been set up provisionally in order to meet the specific requirements related to, primarily, the rehabilitation of the tertiary road network of the county, and to manage (co-ordinate) the substantial donor input into this task.
The DNEP organisational structure is characterised by a division according to functions, in brief (i) planning of major works; (ii) management of contracts for major works; (iii) co-ordination and monitoring of maintenance works; (iv) training and human resources development; (v) support to the ECMEPs, including for procurement of spares and equipment; (vi) finance; and (vii) administration. The RET is in effect structured differently as, with respect to tertiary roads in the country, it performs support functions in the fields of planning, management, co-ordination, monitoring, procurement as well as training. This support is benefiting the ECMEPs, the DEPs and DNEP, i.e., support is directed both to, on the one hand, planning, regulation, monitoring and supervision, and on the other hand, operations, including procurement. In addition, RET plays a significant role as concerns donor co-ordination and the provision of assistance to donors who wish to provide support to the rehabilitation of the tertiary road network of the country.

It is to be noted that the words ‘support’ and ‘co-ordination’ have been used to describe the RET; the RET has no executive functions. It should furthermore be noted that the RET is not organised so that a distinction is made with respect to the three main beneficiaries of its support activities: (i) DNEP/DEP; (ii) the ECMEPs; and (iii) donors.

The Chief Technical Adviser (CTA), who is the head of the Core Management Unit (CMU) and the three Regional Technical Assistance teams (RTA), i.e., the technical assistance under MOZ/96/013 (excluding the TA to the two UNCDF-financed projects) can be seen as reporting to and through the head of RET. The reporting route of the other members of the CMU/RTA is either directly to the CTA or through other members of the CMU/RTA to the CTA. However, as concerns their effective integration into the existing organisations in the road sector, the relationship is, in effect, given by the organisational affiliation of the person who has been allocated as the counterpart. Sometimes, this implies varying and perhaps also unclear ‘relationship’ structures. For example, the RTAs in Beira and Nampula can be seen as relating to the ECMEPs/DETs (see further below), while the RTA (South) is organisationally within DNEP/RET. A similar situation prevails with respect to the cooperantes under the Swedish support. While in theory the cooperantes assigned to, for example, the ECMEPs are part of the overall technical assistance effort they are not formally related to the CMU/RTA and their work cannot therefore be co-ordinated under the FRP.

The current organisational structure of RET as well as of the CMU/RTA raises questions from an overall management point of view, aspects which are neglected in the project documents for MOZ/96/013 and the Swedish Support to the Road Sector in Mocambique. The lack of attention to the organisational dimension can, however, be seen to at least in part explain another aspect that is frequently highlighted, e.g. at various donor meetings to review FRP, i.e. the counterparts. Although, most technical assistance staff now have counterparts, their appointments have not been without problems; in particular delays have been encountered. However, these problems must also be seen against the background that the CMU/RTA is related to RET, which is not an official part of DNEP. There are no ‘natural’ counterparts to the CMU/RTA in the established DNEP organisation.

Another dimension of the RET’s position in the DNEP is reflected in the condition that the work of the CMU/RTA appears not be adequately integrated into the work done by the rest of DNEP, and then in particular the work done by other technical assistance teams. There appears to be an inadequate level of communication, but this situation can also be a reflection
of the fact that the DNEP is run in a very centralised fashion with little delegation of responsibilities.

The current arrangements can be seen to reflect (i) historical circumstances; (ii) the fact that the road sector is undergoing fundamental organisational change; and (iii) the role of donors, and their need to ensure adequate transparency and effective utilisation of the resources which they make available. The ET is of the opinion that no changes should be done at present. But the ET would also like to emphasise the need to pay much greater attention to the organisational dimension when planning any future support to the FRP, and to then ensure that the organisational arrangements are such that they directly fit into and support the existing organisational structure of DNEP or its successor.

3.2 The DEPs

The DEPs in the provinces are formally a unit of the Provincial Directorate of Public Works and Housing (Direccao Provincial das Obras Publicas e Habitacao, DPOPH). The director of the DPOPH is a member of the provincial government, and ultimately reports to the Governor. The DEPs are, however, also part of the regional structure of DNEP, and the head of a DEP is appointed by the ND of DNEP.

Formally, therefore the head of a DEP has two masters. In effect, there appears to be the following division of functions. DNEP is responsible for the overall management and control of the rehabilitation, upgrading and periodic maintenance of primary and secondary roads, while the DEP is responsible for the management and control of the rehabilitation, upgrading and periodic maintenance of the tertiary roads, as well as the management and control of routine maintenance of primary and secondary roads. This implies, *inter alia*, that the DEPs enter into contracts for routine maintenance and rehabilitation works of the tertiary road networks, and supervise these works, and also have the power to approve and effect payments under these contracts. Payments are in principle to be effected by drawing on a DEP account, into which the Road Fund is to make payments in advance. In the case of private contractors engaged in routine maintenance, DNEP does a follow-up check (also of the contracts), and the DEP account is not reimbursed by the Road Fund until the invoice has been accepted by DNEP. However, in view of the condition that the Road Fund normally cannot meet payment obligations - and hence is not able to make advance payments to the DEP accounts - invoices under contracts administered by the DEPs are not paid out at the provincial level at present but sent on to DNEP for payment.

The further allocation of decision making powers between the provincial level and DNEP appears to be as follows: DNEP decides on policies for road maintenance rehabilitation and regulates contracting arrangements, including unit rates applicable in case of contracting with the ECMEPs. DNEP, together with the Road Fund, further set budget targets for various activities (routine maintenance, rehabilitation, bridge repairs, etc.), while the provincial government decides on priorities, and the DEP programmes the work given priorities, policies, regulations and budget limits. Proposed budgets have to be approved by DNEP, before the DEPs can execute them. In conclusion, the provincial governments can make priorities within certain limits and can therefore decide on which roads that should be rehabilitated by a brigade, and can to some extent also influence the allocation of resources to routine maintenance.

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The DEPs, hence play an important role in the management of the tertiary road network as well as the maintenance of all classified roads. Functions carried out involve (i) inspecting and monitoring road conditions, including undertaking traffic counts as part of the work required for maintenance planning; (ii) programming and planning above all routine maintenance works - rehabilitation works have largely in effect been programmed so far by the technical assistance provided under donor financed projects, but this work is formally a responsibility of the DEPs; (iii) contracting with ECMEPs and (small-scale) private contractors for execution of works; and (iv) the supervision of these works. The DEPs are also responsible for controlling vehicle loadings on roads.

The organisational structure of a DEP is shown in Figure AVII.2. As can be seen, a DEP is partly organised into districts; it is understood that there are normally 3 districts. These district organisations are headed by a district engineer and also manned by ‘fiscais’, i.e., inspectors who inspect road conditions and supervise the work of contractors, including the ECMEPs.

The DEPs currently receive technical assistance to train staff and to establish road inventories and to implement management systems, including arrangements for inspecting road conditions, monitoring road traffic, contracting and supervision. Under the technical assistance, small laboratories have also been set up to test materials.

The DEPs are emerging organisations, and most of them still have some way to go before they are fully able to handle the tasks allocated to them. The following weaknesses should be noted in particular:

- The inspectors tend to be inexperienced.
- The DEPs appear to have a low capacity for planning road rehabilitation works of the tertiary road network.
- There is no or little experience with and low capacity for handling negotiated or competitive tendering procedures.

It is noted that under current support - as well as under previous support programmes to the FRP - the roles of the DEPs are inadequately reflected, and little support is provided. This probably explains, at least in part, why the DEPs lack capacity for the planning of road rehabilitation works of tertiary roads. In view of the importance of the DEPs, it is the view of the ET that there is a need to redress this situation; see below.

3.3 The Road Fund

The scope of the Road Fund, which commenced activities in 1991, by financing maintenance activities, was extended to also cover road rehabilitation works as from 1994, including rehabilitation of primary, secondary and tertiary roads. The fund receives its revenues from primarily three sources:

- A MT 1100 surcharge on petrol and 80% of a surcharge on diesel (the value of which is MT 1825 at present.
- Transit charges imposed on foreign registered vehicles with a tare of 3,5 tonnes and above, and paid in foreign currency (Rand or US$); and
- Bridge tolls on all vehicles collected at Xai-Xai, Tete and Save. Tolls are also collected on the bridge to Ilha de Mocambique and on the ferry across Zambézia at Caia.
A further source of income for the Road Fund are contributions from Asdi towards local costs of the tertiary roads; WFP previously also contributed towards local costs.

The oil companies involved in fuel distribution in the country, collect the fuel surcharge revenues and transfer them to the MPF, which then transfers the money to the Road Fund. The transit charges are collected by an agent (Anfrena) at border posts, and are deposited directly into the Road Fund accounts, and similar arrangements have been established for the collection and transfer of the bridge tolls.

The accounts of the Road Fund are maintained on a cash flow basis. Measured in this way, total revenues in 1997 amounted to almost MT 300 billion (US$ 26 million). Of these revenues, more than 82% derived from fuel surcharges, and 15% from transit charges, so the other sources of revenue are small (although the value of the Asdi component in reality is underestimated by using cash-flow accounting principles).

On the expenditure side (all in all MT 313 billion), MT 98 Billion were spent on routine maintenance, i.e. 31%, MT 83 billion (27%) on rehabilitation of tertiary roads, and MT 108 billion (35%) on other road rehabilitation and maintenance works. During this year, MT 12 billion (4%) were also paid to the WFP (to be used for other GOM expenditures) as compensation for food for work to the district brigades.

The budget for 1998 indicates both for total expenses and receipts an amount of MT 348 billion. Of this, MT 88 billion would be spent on routine maintenance and MT 202 billion on rehabilitation and periodic maintenance.

Since its coming into operation, the Road Fund has been plagued by cash-flow problems. The main reason for this appears to be that MPF generally transfers revenues from the fuel surcharge late. On average there appears to be a 3 to 4 month delay, but unfortunately these delays are not regular either, making cash-flow projections difficult. Some months no moneys may be transferred while other months can see receipts reflecting several months. There is in addition some evidence that the MPF may not be transferring the full revenues received in terms of the fuel surcharges. Indications are thus that the revenues received on account of the surcharge on fuel during 1996 in effect only amounted to about 85% of the estimated value actually generated to the GOM through this revenue source. In 1997, the difference appears to have been smaller, about 10%. On the other hand it should also be stated that the MPF apparently has the power to fix the ceiling amount of expenditures from the Road Fund during a year, and that the actual transfers therefore may be seen to be in accordance with this decision. (It is also understood that the MPF may be applying the principle of capping the increase in the transfer of revenues derived from fuel surcharges each year at about 5%).

It is a general view that the cash flow problems associated with the Road Fund is a major reason - albeit not the only one - for payment delays of invoices from for example the ECMEPs, resulting also in delays in the payment of salaries to the labourers employed by the district brigades. However, this must also be seen against the background of the financial management systems employed by the Road Fund. The Road Fund appears so far not to have operated any proper cash-flow management system, it has no reserve funds, and is apparently not able to draw on short term loan facilities to meet peak demands. And it is operated on a pure cash-flow basis. However, it is understood that for 1998 an agreement has been reached
with the MPF for the programming of the transfer of revenues derived from the fuel surcharges, and the first indications are that this has led to an improvement.

The overall management of the Fund is the responsibility of the Administrative Council. The members of the Council represent six different ministries. The ND is *ex officio* member of the Council and at present also acts as its Chairman. The Chairman is appointed by the Minister of Public Works and Housing. While the Fund is organisationally separate from the DNEP, its secretariat is located in the DNEP premises. The Secretariat is managed by a Secretary supported by a staff of administrators and accountants. It is understood that the Road Fund Secretariat will move to independent offices in the near future.

The Road Fund is said to be a government owned legal entity, but appears to be a fully integral part of the government machinery. It does not have any formal objectives. The powers of the Road Fund seem to be limited. While the Administrative Council approves budgets for expenditures from the Road Fund, this power seems to be more of a formal nature than a real one as all the preparatory work is done by DNEP. The Road Fund control appears to be limited to ensure that moneys are spent for recognised items such as maintenance and rehabilitation of roads and bridges, and subject to an overall limit imposed by the MPF. The sources of revenue are given by law, the actual levels of surcharges, and other charges are fixed by the MPF in consultation with the Price Commission, and the actual transfers of revenues from fuel surcharges effectively controlled by the MPF. As budgeting is done by DNEP together with the DEPs/provincial governments, the current arrangement with the ND both managing DNEP and being the Chairman of the Road Fund Council, gives considerable leverage to DNEP for deciding on the overall allocation of funds to various activities. These arrangements are viewed as not appropriate, and it is understood that a new Chairman, independent of DNEP, will be appointed in the near future.

Finally it should be mentioned that it is understood that the Road Fund has no powers to impose any conditions for payments, in addition to that expenditures can only be made in terms of an approved budget. The payments from the Road Fund are made under the joint signatures of the Chairman and the Secretary.

3.4 The ECMEPs

ECMEPs are self-financing state-owned operational entities, but are not corporate bodies, and all their facilities and equipment are hence owned by the state. There is one ECMEP in each province, located in the provincial capital (with the exception of Zambézia where the ECMEP is located in Mocuba, and Inhambane where the head office is in Maxixe). ECMEPs are medium sized contracting organisations specialised in the maintenance of (non-urban) roads as well as the rehabilitation of tertiary roads using the district brigades.

The ECMEPs contract directly for work with the DEPs, and in terms of contracts based on bills of quantities and unit prices fixed by DNEP. The ECMEPs thus do not tender for work, and can in effect be commanded to undertake work in view the fact that their directors report to the Provincial Director of Public Works and Housing. Permission is required for an ECMEP to undertake work on behalf of another client than the DNEP/DEPs. The output during each month is measured and a statement prepared, and passed on to the DEP. The ECMEPs are expected to operate profitably, and any profits may be reinvested with the approval of the MPF. Capital is injected into ECMEPs by government through the provision
of plant, vehicles and equipment. The acquisition of new equipment is highly dependent on external funding.

The ECMEPs are organised into four departments: administration, technical, production and equipment. The director is appointed by the ND, and the director then appoints the staff of ECMEP. The ECMEPs are generally characterised by no or a low level of delegation. DNEP provides support to the ECMEPs with procurement and accounting services, which is done through a special unit, the Logistics Support Unit (NAE).

The personnel and remuneration policies are essentially those of the civil service. Although salaries are somewhat better than for staff employed by DNEP and the DEPs, conditions are considerably poorer than in the private sector. The ECMEPs therefore face problems in recruiting qualified staff. The number of employees per ECMEP, varies between 200 (Tete) and 800 (Zambézia).

The ECMEPs are estimated to have a capacity for maintaining about 7 500 km of roads per year (excluding the district brigades).

While ECMEPs are primarily maintenance organisations, they have come to play a very important role in the FRP, and this activity is now financially also the most important one for the ECMEPs, and probably also a more profitable activity than other activities. Since 1994, and in terms of a directive issued by the DNEP, all the feeder roads activities using labour-based techniques, including rehabilitation and maintenance, are supposed to be the responsibility of a separate unit in the ECMEPs, the District Road Divisions (Divisões de Estradas Terciarias; DETs). The head of the DET is to report directly to the Director of the ECMEP, and the DET is to operate with its own staff, machinery and financial management systems, including accounts, and should draw on the infrastructure of the ECMEPs (workshops, etc.) against payment of charges therefor; see Figure AVII.3. It is understood that these principles are not necessarily always adhered to, and that the DET sometimes is viewed as a component of the Production Department, and also that the separation/independence of the DET accounts are not always fully respected. It is also reported that DET accounts are being used to finance expenses incurred by other operations of the ECMEPs.

The DETs mobilise the district brigades to undertake rehabilitation works under the FRP, and are upon completion of the rehabilitation works responsible for the execution of maintenance. The DETs have organised routine maintenance based on the length-worker system. In December 1997 there were all in all 34 brigades involved in road rehabilitation and periodic maintenance. The intention is to increase the number of brigades to 38 during 1998. The annual capacity of the DETs for undertaking routine maintenance is estimated at some 1750 km. Some DETs have divided their organisation into two units, for rehabilitation and maintenance, both units run by its own Director de Obra. For further information concerning the operations of the brigades and the maintenance of the tertiary road system, see Sections 3.4 and 3.5 of the report.

### 3.5 Other Operators

The private contracting industry is limited in Mozambique. At present there is only one larger company capable and with experience of undertaking construction works in the road sector; this company, CETA, is currently being privatised (envisaged at present to be accomplished
through a management buy out as a bid for the purchase of the company was not acceptable to the GOM). There are additional local companies with a potential for becoming active in the sector, but most larger scale works at present have to be executed by foreign contractors.

The development of private contractors primarily for undertaking smaller routine maintenance and rehabilitation works is actively promoted at present. Under the ROCS project the local industry is being promoted under what is referred to as the Local Road Construction Industry (LRCI) initiative. One component thereof is giving preference to local contractors when tendering for work in competition with international contractors. Another component is the Contractor Development Teams project under which 49 contractors have been identified and are currently receiving assistance in developing competency in competitive tendering and commercial operations, and are also undertaking maintenance works. These companies, which have received trading licenses from the MOPH (one condition for a licence is that the company has adequate technical skills), are now being awarded contracts for work, without having to tender. They are estimated to have a combined annual capacity of at most 1 000 km of routine maintenance at present, but the capacity of small-scale local contractors is expected to expand considerably during the next few years.

In addition, donors are embarking on the fostering of private contractors as part of their support to the FRP. This has been done by IBIS and World Vision in Zambézia, with finance from USAID, and is now done as part of the DFID support to the feeder roads programme in Zambézia. Under the DFID project, 8 contractors have been selected and are receiving support in the form of direct contracting with payments made directly by DFID (albeit through an account with DEP, Zambézia); 6 of these contractors have obtained trading licenses. NORAD has advanced plans for initiating a similar project in Cabo Delgado in the near future.

There is a small, albeit growing, consulting industry in Mozambique capable of providing planning design and supervision services. Mention should also be made of that a National Contractors Association (EMPREMO) nowadays also exist in Mozambique and that there are plans to set up a similar association for consultants.

4. Proposals for Reforms

4.1 Introduction

In addition to the technical assistance to the FRP, DNEP has benefited from substantial technical assistance during the past 5 years in the fields of programming, planning, regulation, monitoring, supervision and financial management, and this technical assistance has also benefited the DEPs. Overall, the impression gained by the ET is that the organisation is in the process of implementing many of the required management tools and information systems of a modern road administration, including in order to be able to operate competitive tendering procedures for all kinds of work. The main problem is not a lack of tools and procedures, but inadequate capacity to use the tools and the procedures in a sustained and disciplined manner.

The immediate reason for this is the lack of experienced staff, although the situation in this regard is improving. However, the fundamental problem that DNEP is facing is that it works in an environment which does not allow it to function as a ‘managed’ organisation. In effect, operations can be seen as ‘crisis management’. This is not uncommon for road
administrations even in developed countries, but tends to be more visible in developing countries. Ultimately, the reason for the ‘crisis’ dimension can be seen as deriving from the condition that road administrations such as DNEP are accountable to the government, and hence driven. at the overall level, not so much by ‘measurable objectives’ as by political ambitions. In the case of DNEP this is compounded by a number of other factors, including:

- Shortage of funds, including irregular provision of moneys for paying contractors and staff.
- A shortage of experienced staff.
- Low salaries, and cumbersome civil service procedures, including financial, procurement and human resources management.
- The heavy role played by donors/IFIs, including the demand made by the donors in order to satisfy the often cumbersome accountability framework within which donors/IFIs are obliged to operate.
- The incomplete separation between operational activities of the ECMEPs, on the one hand, and the normal road authority functions, on the other.

The organisational reforms envisaged have been directed at overcoming these constraints on the performance of the DNEP/DEPs, the operations of the ECMEPs and also to enable the road sector to function more effectively when making use of inputs and support provided by donors. Below follows a description of the reforms, as understood by the ET, and an identification of issues of importance to the FRP.

3.2 The Proposed New Structure

In terms of the proposed reforms, the current DNEP/DEPs and financing arrangements would be replaced by the following structure (see further Figure AVII.4), all of which is seen as part of the National System for the Management of Public Roads (Sistema Nacional de Administracao das Estradas Publicas; SNAEP):

- A National Roads Board (Conselho Nacional de Estradas; CNE), an entirely new structure. The Board will have members representing government ministries, local authorities and different road user groups. The director generals of the Road Fund and the National Road Institute will be included as _ex officio_ members. The Minister of Public Works and Housing will appoint the Chairman of the Board, and the Board would be responsible to the Minister for implementing GOM policy concerning roads. The Board would both fulfil an advisory role to the Minister and, in a sense, the role of the Board of Directors of the National Road Institute and the Road Fund. The Board would thus regulate the activities of these two organisations as well as approve their budgets and annual reports. The Board will have two sub-committees, the Financial Sub-Committee, and the Planning Sub-Committee. There would be a Secretariat with 3-4 staff.

- Provincial Roads Commissions (Comissoes Provincias de Estradas; CPE); advisory commissions regarding the planning and financing for classified roads in each province; see below

- A National Road Institute (Instituto Nacional de Estradas; INE) to replace DNEP/DEPs; see below

- A slightly reformed Road Fund (Fundo Estradas; FE); see below.
To put this change into effect, it will be necessary to pass the following three pieces of legislation:

- An establishment decree; the purpose of this decree is to provide for (i) the establishment of the CNE, the INE and Provincial Roads Commissions; (ii) the termination of DNEP; (iii) the transfer of staff and assets from DNEP to the INE; and (iv) the establishment of the Road Fund as part of the SNAEP.

- A new Roads Act essentially setting out the road authority powers, including stating that classified roads are a responsibility of the State, as well as identifying who is responsible for exercising and prepare for the exercising of the road authority powers.

- Regulations of the National System of Management of Public Roads (SNAEP); these regulations set out the instruments, powers, functions, operations and duties of the various institutions of the SNAEP in the road sector, including with respect to the CNE, INE, CPE and the Road Fund.

An additional component of the reform process is the complete separation of the public functions in the road sector from pure operational functions. Two main reforms are envisaged:

- The conversion of the present ECMEPs into corporate bodies, for the time being to remain fully owned by the State.

- The establishment of three new plant pool companies. These companies, which would obtain their plant mainly from heavy surplus equipment at present under control of the ECMEPs, would be sold off to private interests, with the State retaining a minority share in these three companies.

An implication of these reforms is that it would entail the (eventual) termination of direct contracting to be replaced with competitive tendering for all maintenance and rehabilitation works.

3.3 The National Roads Institute

In terms of the new legislation the INE would be a legal body, and would be able to implement its own financial management, procurement and human resources policies, however, subject to policies formulated by the CNE. The CNE would also regulate technical standards. This would be the main change in comparison with the present DNEP; otherwise the organisation would perform the same functions as DNEP does today.

The INE would be managed by a Director General, to be appointed by the Minister of Public Works, and Housing, two Deputy Director Generals, a Management Board and a Technical Board. It would have 6 Departments, corresponding to the present structure (except Administration and Equipment). Appointment of staff would be the responsibility of the Director General.

The INE would be operating through branches in each province. These would perform functions similar to those performed by the DEPs today.
3.4 The Road Fund

The new Road Fund, would also be set up as a legal entity, and would be managed by a Director General to be appointed by the Minister of Public Works and Housing. The Director General would, however, report to the CNE. It would continue to finance routine and periodic maintenance and rehabilitation works as well as its own expenses out of the dedicated taxes, but would also finance the costs of running the CNE and the INE. The Road Fund would in addition administer government funds as well as funds obtained from donors to be spent on road works.

In terms of the new legislation, the Road Fund would be able to establish reserve funds to balance cash flows, and would also be able to borrow money subject to the approval of the CNE and regulations issued by the MPF. It is understood that the Road Fund would be able to directly collect all road taxes dedicated to the Road Fund, but that the level of these taxes would remain under the control of the MPF.

3.5 Decentralisation

It is understood that the proposed reforms would entail somewhat reduced powers at the provincial level in comparison with today. At present, the provincial government can exert influence over priorities. The Provincial Road Commissions proposed to be established in terms of the SNAEP are understood to perform a function similar to that performed by the provincial governments today, but the CPEs would only have advisory and monitoring functions. The CPEs would, *inter alia*, comprise as members a number of provincial directors, the INE local representative, and various private sector stakeholders. The local branch of INE would function as a secretariat.

On the other hand, it is understood that some further developments have also been considered. Proposals have thus been made for the establishment of ‘Conselho Provincial do Fundo Para Manutencao de Estradas e Pontes’ (CPFMEP). Incomplete information is available concerning this proposal, but it is understood that the local road fund are envisaged to be established in terms of present legislation and not within the ambit of the SNAEP. A possible interpretation of this development is that it is envisaged as a first reform step to fully delegate budgeting for road maintenance and rehabilitation to the provincial level by using the principle of block transfer of funds to Provincial Road Funds to be administered by the CPFMEPs. A possible further step, within the SNAEP, would then be to retain these local road fund boards, but also give more powers to the CPEs to allow them to decide on priorities. However, this interpretation is that of the ET and its relevance has as yet not been verified. It is understood that the proposals for establishing CPFMEPs are not being moved forward at present, indicating that they may be reassessed.

It is understood that the new institutional structure will only have powers in terms of the classified road network. It provides no powers with respect to unclassified roads as well as roads which are the responsibility of local authorities. It is also understood that legislation so far has identified 18 local authorities as responsible for the construction and maintenance of roads within their borders, and that eventually other urban and rural districts will be identified
as being responsible for, *inter alia*, roads and streets, as part of the local government reform process.

3.6 **The New ECMEPs**

The proposals for reforming the ECMEPs would lead to their transformation into public enterprises (so called Empresas Publicas), which would operate on commercial principles. Three ECMEP-EPs would be established, one in Maputo, one in Beira and one in Nampula. The three ECMEPs would retain provincial representations based on the principle of profit centres.

The new ECMEPs would initially be owned by the State, but 0.5% of the shares would be sold to CETA (in order to meet legal requirements pertaining to EPs). (It is understood that future privatisation of the ECMEPs will be considered, including a partial management buy-out.)

The analysis made in the report “Conversion of the ECMEPs into Legally Autonomous Entities” (1996) is based on the assumption that the new companies would focus on routine maintenance, and rehabilitation works using labour-based methods. The analysis is further based on the assumption that the new companies would only retain the kind of equipment that would be necessary for this kind of work, while all other, in particular heavy equipment, would be transferred to the Plant Pools (see below). It is however, understood that donors may object to the transfer of equipment that they have donated to the GOM, suggesting that the new ECMEPs may have to take on equipment that they may not require for the new envisaged business strategy or that it would be necessary to reconsider the business strategy proposed by the consultants.

The establishment of the new ECMEPs requires the passing of a decree by Cabinet. The decree has been drafted.

3.7 **The New Plant Pools (PERCs)**

The proposals for establishing the plant pools (PERCs; Private, Equipment Rental Companies) entail the transfer of surplus equipment from the ECMEPs to form the basis for three new companies, based in Maputo, Beira and Nampula. Operators of the equipment would also be transferred but no further staff and assets of the ECMEPs. The motives for setting up of these plant pools are (i) that the ECMEPs have excess equipment; (ii) emerging private operators cannot buy or hire-purchase equipment; and (iii) to reduce the probability of the equipment leaving the country assumed to be greater if the equipment was sold off through direct auctioning.

The new companies would initially be established as Empresas Publicas (ECMEP-EPs), which would then be partially sold to private investors - joint venture partners (JVPs) - through a tender process. It is envisaged that the JVPs would be able to own about 70% of the shares of the new companies. The main input of the government would be the plant pool and the initial formation of the three companies, while the JVPs are expected to inject their contributions in the form of new capital and/or assets. Additional tax and investment
incentives packages could also be made available through negotiations with the Investment Promotion Centre.

All the documentation for the sale of the PERCs has been prepared. It is based on a prequalification round, to be followed by submission of technical and financial proposals by prequalified bidders. Negotiations are assumed to result in a Joint Venture Agreement (JVA) being concluded, whereafter the actual legal conversion of the PERCs into public companies in terms of the companies act (conversion of the ECMEP-EP into ECMEP-SARLs) will take place, and this will be done by the JVPs in terms of the JVA. Once the new companies have been formally established and the JVP has contributed his promised investment, the JVA will cease and the companies will commence their operations.

It is envisaged that the shares retained by the State may later be sold to the staff of the PERCs and to other private investors, including the JVP.

It is understood that the equipment to be allocated to the PERCs, was originally identified in 1996, when it was on average 3.7 years old (about 50% depreciated) and had a value of US$ 6.9 million. This value should be considerably lower today, and will be even lower when the sale has been completed in view of that this process may take up to another two years.

4. Implementation Arrangements and Issues

4.1 Implementation Schedule

The implementation schedule for the proposed reforms as envisaged by DNEP in the beginning of 1998 is shown in Figure AVII.5. There has been a further slippage since then by about two to three months. Partly the reason appears to be that the MOPH has not desired to forward the new legislation to implement the SNAEP until a Road Policy has been formulated. Such a policy (Política de Estradas) has now been prepared by the DNEP and has been forwarded to the MOPH in March 1998. It is understood that the policy was to be considered by Cabinet on 31/03/98.

The documentation for the establishment of the new ECMEPs was submitted to MOPH on 27/03/98 for onward transmission to MPF for their final approval and appointment of interim chairmen of the interim board of directors. Appointment of these chairmen was made in early June, and actual commencement of the establishment of the new companies was planned to be initiated during the same month. The final documentation package for the establishments of the PERCs has been submitted to MOPH; it will also have to be approved by the Department of Patrimony. Before being considered by MPF, both these reforms have to be reviewed by UTRE as well, i.e. the special unit set up under the MPF to review the reform of state enterprises. Interim chairmen of the interim boards of the PERCs were also appointed in early June 1998.

In terms of the revised implementation schedule, the majority of actions will, however, still take place in the course of 1998. It is, however, to be noted that with the exception of the PERCs, the DNEP implementation schedule is not a complete schedule with regard to the full implementation of the envisaged reforms. The actions identified only relate to the initial approvals to be obtained in order to initiate the process of change.
The ET has not been able to obtain any information as to the further time plans for the actual establishment of the new institutions making up the SNAEP, as well as the ECMEPs.

4.2 Implementation Arrangements

As part of the Swedish financed Institutional Study, which prepared the background material and developed the approach to institutional change which are now embodied in the proposed reform of the GOM structure in the road sector, in particular the SNAEP and its various institutions, proposals were also made for a plan of action as well as organisational arrangements during implementation, including a steering committee, a task force and a project manager. It was also proposed that technical assistance be acquired by GOM to facilitate implementation.

The proposed transformation of, in particular DNEP, will be a demanding process, not least when seen against the background of the current pressures on DNEP. The information obtained by the ET suggests that neither DNEP nor the GOM is in the process of actively putting in place the arrangements that will be required in order to implement the proposed reforms in an orderly and credible manner.

As concerns the legalisation of the ECMEPs, TOR have been prepared for “Management Support During a Transitional Period for the Three Re-Structured Regional ECMEPs of Mozambique”. According to these TOR, the three new ECMEPs would be supported by three management advisors during one year as well as a technical advisor on short-term basis for in total 3 months. The management advisors are primarily expected to assist with business planning, organisational development, human resources development and policy formulation, and establishing management information systems. It is understood that the TOR do not call for the advisors to have experience in entrepreneurial development in the contracting industry.

It is understood that the recruitment of these advisors, to be provided by a consulting firm, will commence soon.

It is further understood that the ECMEPs will likely also obtain assistance through the LRCI initiative, more specifically the assistance provided under the Contractor Development Team efforts, in the near future. In addition this Team will provide assistance to local consultants. So far this programme has focused on emergent private operators.

As concerns the establishment of the PERCs, the main implementation arrangements are in place, including the provision of financial advisers to assist with the evaluation of bids and negotiating the JVA. It appears that responsibilities within GOM for the processing of the matter may still have to be sorted out. The implementation of this activity is facilitated by the condition that the JVPs will have to form the new companies and then also to build them up to become functioning operations.

5. Issues of Relevance to the FRP and Recommendations

5.1 Introduction

The reforms which have been outlined above have been subject to review for quite some time, but actual progress on crucial decision making has been slow. It is the ET’s view that this
slow progress may be explained that the reform process was never been adequately linked into the Government to begin with; all the efforts seem to have been channelled through DNEP, rather having come about on an instruction by Cabinet through the approval of a basic policy initiative.

Even at the time of the ET’s visit it was uncertain as to how the reform process would move forward. The ET’s impression is that the GOM has limited preparedness to handle the reforms at present, and the ET’s views are therefore that it cannot be assumed that reforms now will move ahead according to a tight schedule, e.g. as proposed in Figure AVII.5.

Nevertheless, it is believed that reforms will start to be effected in the near future. The basic groundwork has been laid out in the form of the preparation of the basic documentation. In addition, the World Bank will make reforms a condition for further support under the planned ROCS 3 project. More specifically the following conditions have been formulated, according to the World Bank Mission Aide Memoire, dated March 1998:

For pre-appraisal assumed to take place in February 1999, the following reform process should be completed:

(i). adoption of the Road Policy paper by GOM  
(ii) enactment of the new Road Act by Parliament  
(iii) the passing of the decree and regulations to establish the CNE and INE.  
(iv). the conversion of the ECMEPs and plant pools into Empresas Publicas

The following agreements are expected to be reached “prior to appraisal” scheduled for May/June 1999:

“(i). timely and direct transfer of road user charges into the Road Fund, and setting its managing Board up as an independent body;  
(ii) DNEP as an independent Road Authority fully functional, with proper career development and staff incentives;  
(iii) private plant pools up and running;  
(iv) ECMEPs operational as SARLs; and  
(v) definition of a strategy for rural roads, and reclassification of the network in line with decentralization of competencies for rural roads.”

While these demands may appear unrealistic - against the time frame indicated - it seems probable that reforms will start to move and during the time period of the current support from UNDP and Asdi to the FRP. The ET has also registered that other donors are now anxious for reforms to move ahead. For the FRP, the ET believes there are five main issues to be considered
5.2 Issue 1: Contracting

Work under the FRP has mainly been done through direct contracting with the district brigades through the ECMEPs. More recently, this has changed through the introduction of the DFID financed project in Zambézia, and the planned NORAD support to tertiary roads in Cabo Delgado, which like the DFID project will focus on developing private contractors. Private contracting is now also rapidly developing for routine maintenance, and already this year contracting in this field will be done through a competitive tender process (see Section 3.5 of report).

Once the ECMEPs are commercialised, a further step in this direction will be taken; contracts cannot any longer be commanded; they will have to be negotiated or tendered for subject to competition. Hence, maintenance and rehabilitation works done on the tertiary road network will gradually have to be done on commercial principles, and this will gradually grow in importance already during the 18 months remaining of the reviewed projects.

The implications of this for the FRP in general and the CMU/RTA, in particular, are the following: So far assistance supplied has mainly been in the ambit of direct (command) contracting; now more emphasis will have to be given to contracting under commercial conditions. This reorientation of the reviewed projects is also in accordance with the project documents.

Two further implications of this reorientation are the following: Firstly, the organisation that will be doing commercial contracting for feeder roads are the DEPs. The DEPs have no or little experience in negotiated and competitive tendering procedures. There is a need to consider if the RET and CMU/RTA should not therefore reorient their focus on, who receives assistance, and towards the DEPs. While the DEPs are currently receiving technical assistance under separate support, this assistance is scheduled to come to an end in August; however, it cannot be ruled out that there will be an extension. There is thus a need to co-ordinate any plans that the CMU/RTA may develop with respect to the DEPs with this other technical assistance team.

The other implication concerns technology. The FRP ideology is based on labour intensive work methods for tertiary roads. The ET is convinced that this technology is relevant and efficient. However, in a commercial setting what counts are not the methods but the end results, i.e. the quality - or performance - of the service delivered. In a commercial environment contracting is thus done on the principle of meeting certain performance requirements. For various reasons this approach to contracting cannot be applied easily in the road sector. However, it is becoming quite common in certain countries for routine maintenance activities to be contracted based on performance - or service - standards, and as described in Section 3.5 of the report, DNEP is now also in the first phase of introducing such contracts for routine maintenance.

Contracts based on service standards have several advantages. They are easier to monitor, they provide direct information about the quality of roads, and they give the entrepreneur/contractor much greater choice as to the choice of method of how to undertake the work. This is where the technology aspect comes in. In terms of traditional contracting, the client tends to determine the technology; in a service contract, it is up to the contractor to decide how things should be done, as long as service standards are met.
Routine maintenance on the tertiary road network is an issue, as discussed in Section 3.5. The costs appear to be high and the quality of the work done under the length-worker system is not always satisfactory. Contracting by way of service standards could prove to be instrumental to deal with these issues. This approach thus allows the road administration (the owner of the road) to focus on the appropriate level of standards of a road, and then to leave it to the contractors, through competitive tendering, to identify what is the appropriate - cost effective - work method for meeting the required standards. In other words, the ET is suggesting that the CTA/RTA should approach the issue of road maintenance of tertiary roads not only from a work method point of view, but start to give more attention to the question of what is the appropriate contracting method.

In conclusion the two recommendations of the ET on the issue of contracting in a commercial environment are:

**Recommendation 1:1**: The CMU/RTA should examine carefully what assistance it can and should provide in order to facilitate the introduction of commercial principles for contracting for rehabilitation and maintenance of tertiary roads. In particular, CMU/RTA should evaluate the need for developing contract documentation in this area, for training in negotiated and competitive tendering, and for the provision of targeted assistance to the DEPs, including the development of manuals. Any assistance towards the DEPs, must take into account other technical assistance that the DEPs are or may be receiving.

**Recommendation 1:2**: The CMU/RTA should carefully monitor the introduction of service standard-based contracts for routine maintenance, and evaluate the relevance of this type of contracting for the maintenance of tertiary roads. If the method is found appropriate, the CMU/RTA should map out other actions required in order to introduce this form of contracting and assist, where relevant and appropriate, with its introduction.

### 5.3 Issue 2: The Future of the DETs

As stated, the institutional reforms imply that competitive tendering will become the norm in the road sector in the future, and that this will also apply to the ECMEPs. On the other hand, the Draft Decree prepared by the consultant undertaking the Study into the Legalisation of the ECMEPs contains the following provision Article 13):

> “Through a joint ministerial ruling from the Ministries of Finance and Public Works and Housing, some of the activities mentioned in this Decree could be attributed exclusively to the new corporations.”

In Article 6 it is stated that the main activities will include

> “a) the routine maintenance of roads and bridges;
> b) the construction of roads with the use of intensive manual labour”.

Assuming that these provisions are still expected to be part of the pending legislation to be used for legalising the ECMEPs (this is to be confirmed) it would be possible to allow the ECMEPs to continue to operate in the future also in terms of direct contracts, e.g. in the area of using labour-based methods for road rehabilitation and road maintenance. It is the ET’s
understanding that it is being considered to offer the ECMEPs protection, but only for a limited period of time.

The current approach to the future of the district brigades is that they will form part of the commercialised ECMEPs. It will be up to the new companies to decide on the future course of development, including if they for example should hive off the DETs through some kind of privatisation process.

The view of the ET is that the future of the ECMEPs as commercial organisations must be viewed as uncertain. The new commercial entities will face considerable challenges. The new ECMEPs will also be organisations based on a combination of two methods of work in the road sector, the traditional method and the more labour-intensive method as applied by the DETs. It is noted that the afore-mentioned study on the Conversion of the ECMEPs into Legally Autonomous Entities does not actually undertake any business analysis of the future of the DETs; the study is based on the presumption that the DETs will become commercial as part of the legalised commercial ECMEPs, without analysing if this actually makes sense from a commercial/business point of view.

The DETs have often operated with considerable autonomy. These organisations have staff with considerable technical skills in labour-based construction methods, and many of them are considered capable and highly motivated. They, however, lack commercial skills and no administrative/business infrastructure. In addition, it is difficult to see - given the current situation and restrictions - how these organisations directly could be transformed into private entities. It seems inevitable that the first step of transformation, provided that the new ECMEPs are set up in the near future, is that the DETs initially remain part of the ECMEPs.

Given this, but also the uncertain future of the ECMEPs and their DETs, the ET would like to make the following recommendations:

**Recommendation 2:1:** The FRP should not contribute to establishing any further district brigades as part of the DETs. The proposal for increasing the number of DET brigades during 1998 by 3 (or 4) should therefore be reassessed for relevance and feasibility.

**Recommendation 2:2:** Any further brigades should be set up under projects, which aim at developing private contractors. The FRP should also consider if such new projects should not also be opened up to staff members of the DETs. While the ET is convinced that comprehensive approaches to the fostering of private contractors similar to the approach applied under the DFID project is required, it would also suggest that the CMU/RTA monitors different approaches to the fostering of commercial operators. In particular the following should be assessed: (i) The appropriate approach for the emerging contractors to acquire tools and equipment; the ET believes that approaches should be used, which as closely as possible actually mirrors conditions ruling under market conditions; and (ii) the need to ensure that emergent contractors are able to draw on the experience of entrepreneurs/contractors with a proven track record.

**Recommendation 2:3:** The CMU/RTA should evaluate if any further studies are warranted in order to assist with establishing a future development for the DETs, which would ensure that the capability and capacity of the DETs are being put to the best use of the country. Any such studies/evaluations could be financed under the Swedish Support (budget item 03). The study could e.g. review the appropriate future of the DETs, including whether they should remain
part of the ECMEPs or if they should hived off, and in that case, how. In particular, in the event it is found that privatisation of the district brigades is seen as an attractive option, the study could examine the appropriate privatisation method, including required arrangements for successful implementation.

5.4 Issue 3: The Preparation of Future Support

The projects under review will come to an end at the end of 1999, although the Swedish Support can provide for support during an additional two years. It is the ET’s view that further support will be required to the development of feeder support also after 1999. However, it is at this time not possible to identify the contents of such support, with the exception that it will have a clear focus on commercial operations.

The project documents for the ongoing Asdi and UNDP support was provided under the previous phase of support to the FRP. It is the ET’s opinion that it would not be appropriate to do this work in the same way in the future, given the fact that there will be institutional changes, but that the timing of these changes is uncertain. The preparation of any further support should be done through the provision of services from outside the CMU/RTA, which, however, would be prepared to contribute in a significant way.

The main reason for suggesting this approach is the need to take a fresh look at the contents and mechanisms of support. In particular, it will be important to consider the new institutional arrangements for the operations of the tertiary road network, including the future of such a unit as the RET and the roles of the DEPs.

Another reason, linked to the previous one, is the need to take a careful look at the mode of channelling support to DNEP. At present by-pass mechanisms are being used, implying that resources are made available without them entering into the accounts of DNEP and, in effect, the ECMEPs. As a consequence the prices now being charged by the ECMEPs do not reflect the full resource costs for work done; a further consequence is that there is no information system in place that can yield vital management information about the actual costs for undertaking rehabilitation and maintenance works on roads using labour-based methods. This situation will no doubt complicate the transition to commercial operations.

It is to be emphasised that the current situation is not due to donor intervention. The problem ultimately derives from how the ECMEPs have been structured, i.e. as extensions to DNEP, and having obtained their capital from the beginning in kind. This will now come to an end with the ECMEPs’ conversion into commercial entities.

But there is a further reason, dictated by the fact that the World Bank intends to include the FRP in the proposed ROCS 3 Project, and in addition has plans to play an active role.

The following is stated in the Aide Memoire issued after the recent World Bank mission (dated March 1998):

“IDA will prepare/secure funding to support the definition of a strategy for rural roads, including: (i) the allocation of responsibilities, and the identification of various agencies responsible for the rural roads; (ii) the definition of priorities and programming criteria with local inputs, and the assessment of the potential for
community involvement/participation in rural road maintenance; (iii) the definition of alternative and innovative funding mechanisms; (iv) a review of the FRP program; and (v) a review of the development of small local contractors in rural areas, including recommendations for the future."

The donors who traditionally have been funding the FRP, not least Asdi and the UNDP, will have to assess how their plans for any future involvement in the FRP can be combined in a constructive way with these plans and intentions of the World Bank. An active role by for example Asdi and/or UNDP implies that they cannot rely on the CMU/RTA only for advice; this would be too much a burden. The work will likely have to be done under a separate contract.

**Recommendation 3:1:** Further support to the FRP will be required. The definition of that support will have to be developed as an activity which is separate from the CMU/RTA, and will have to be co-ordinated with the work planned to be undertaken by the World Bank as part of its preparation of the ROCS 3 project, in particular then its work in the field of ‘rural roads’. The FRP and CMU/RTA are expected to provide inputs into the project definition work.

### 5.5 Issue 4: Support to the Implementation of SNAEP

The Swedish support was designed to include assistance to the implementation of the institutional reforms, including the setting up of INE, CNE and the reformed Road Fund. No plans have so far been developed for how to utilise these resources. The ET finds that this will still not be possible for some time to come, as progress on the reforms is still unclear and no concerted efforts have made to date to formulate a strategy for how to implement the reforms.

Assuming that the reforms will go ahead, the assistance envisaged under the Swedish Support will likely be needed badly. However, it is premature to define the nature of this support. It will likely comprise two components, one involving drawing up a strategy for how to move the reform package forward and the other for assisting with actual implementation.

It seems likely that the way forward will become more clear in September 1998, when the World Bank intends to organise a ‘policy and institutional reform seminar’ (presumably in Maputo). It seems likely that planning for the Swedish support for the implementation of SNAEP could be initiated at that time.

**Recommendation 4.1:** While the Swedish Support provides assistance to the implementation of institutional reforms, it is premature to define the scope and contents of that support. It is probable that the matter can start being moved forward in connection with the World Bank sponsored ‘Policy and Institutional Reform Seminar’, scheduled for September 1998.

### 5.6 Issue 5: Quality Control

Quality control is a major issue at present. DNEP is trying to strengthen its capacity in this field in a number of ways. Most important is the training of the ‘fiscais’, and to implement rigorous procedures for how to undertake inspection of works in the field as well as condition surveys of roads as part of the programming of maintenance activities. Considerable efforts
have already been made in this area, and additional training of ‘fiscais’ is being and will be undertaken. In addition under technical assistance to DNEP and the DEPs, a maintenance management system is being implemented to allow for better programming of maintenance, but also to enable better overall monitoring of the condition of the road network.

Under the FRP assistance is also being provided concerning quality control, mainly through training programmes and direct coaching in the field. But it is to be emphasised that the work mainly is related to the direct supervision of works to ensure quality and to ascertain the quantities of work being done.

There are two aspects to be considered here. The first aspect is the need to consider how the capacity for undertaking inspection of works done on the tertiary road network can be bolstered by making use of private consultants. As emphasised, there is a clear trend towards commercialising operations in the road sector, a development which will require even stronger supervision and control, and put the DEPs, and their fiscais’ under increasing pressures.

One approach to overcome this capacity problem is to rely on private consultants to do part of the work; indeed the private sector can to some extent also be used for doing the preparatory work required for road rehabilitation works to be let under commercial tendering.

Under the LRCI initiative steps are taken to foster the private sector, including the local consulting industry. There is need for the RET/CMU to consider if those efforts should be supplemented with regard to the local consulting sector in order to gradually increase its capacity to assist also with the inspection and planning activities of labour-based works.

**Recommendation 5.1:** The RET/CMU should examine the possible role played by the local consulting industry in the tertiary road sector, and take appropriate initiatives to gradually strengthen the capacity to plan and control works in the sector by relying on local consultants. There is a need to co-ordinate such initiatives with the LRCI.

The second aspect, which so far has been neglected in the development of the new institutional structures in the road sector, is how to ensure overall quality control in the future. In parallel with the external auditing which will be required of the finances of e.g. the INE in the future, it will also be necessary to establish a system for ensuring performance. It would appear appropriate for the Road Fund to assume a central role in this regard, i.e. the Fund should only disburse provided that works are of acceptable quality. This would likely require the Road Fund to establish its own - small - inspectorate to enforce the quality control system.

There is a need to already now give attention to the issue how a general monitoring system can be built up regarding the condition of the tertiary road system, i.e., an information system that can be used to obtain an overall impression of the condition of the tertiary road system. It goes without saying that such a system should be simple. It is possible that the approach now already being developed for the secondary and primary roads can be utilised. It is also possible that the new contracting system based on performance standards can be utilised.

This is not to be construed as a recommendation that the FRP should make a large effort in this area. It is only suggested that attention be paid to the issue, and that some process is initiated. In due course, it will likely become urgent to implement an overall quality monitoring system.
**Recommendation 5.2:** The CMU/RTA should examine how the (overall) monitoring of the maintenance of tertiary roads can be improved, taking into account efforts already made through other technical assistance and training efforts. The possible use of existing systems in DNEP for monitoring road conditions, including relying on information derived from maintenance contracts based on service standards should be examined.
Figure AVII.2
Figure AVII.3
ANNEX 12: TERMS OF REFERENCE

Overleaf are the terms of reference for the Final Evaluation.
## Final Evaluation

### Feeder Roads Programme (FRP)

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<tr>
<td><strong>Project Number:</strong></td>
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<td><strong>Project Title:</strong></td>
<td>1) Management Support to Labour based Tertiary Roads 2) Swedish Support to the Road Sector</td>
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<td>Feeder Roads Programme (FRP)</td>
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<td><strong>Sector:</strong></td>
<td>Transport</td>
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<tr>
<td><strong>Govt. Executing Agency:</strong></td>
<td>Ministry of Public Works and Housing (MOPH)</td>
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<td><strong>Agency:</strong></td>
<td>National Roads Administration (ANE)</td>
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<td><strong>Executing Agency:</strong></td>
<td>International Labour Organisation (ILO)</td>
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<td><strong>Total cost:</strong></td>
<td>1) $ 6,185,276 2) $12,700,000</td>
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<td><strong>Source of Funds:</strong></td>
<td>1) $ 2,890,000 - Asdi $ 3,873,202 - UNDP 2) $12,700,000 - Asdi</td>
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1 Introduction

1.1 General background

Mozambique is administratively divided in 10 provinces and the Capital of Maputo. There are 33 Municipalities (including the Capital of Maputo, the provincial capitals and the larger towns) and 128 districts. Mozambique has a land area of 799,380 km² with a coastline of 2,515km. 13 major rivers traverse the country and offer fertile flood plains. Mozambique shares borders with 6 countries, 5 of which it offers important rail, road and port facilities along "corridors".

The 1999 estimate of the National Institute for Statistics (INE) puts the total population at 16.8 million. Mozambique is characterised by high levels of mortality and fertility, high population growth and a young age structure.

After a civil war of almost 20 years, Mozambique democratically elected its first President and parliament in 1994. The second general elections were held in December 1999 and re-elected President Chissano and a Frelimo majority in the National Assembly.

The last five years have been characterised by rapid economic growth and increasing foreign investments. The GDP grew from US$2,251 million in 1994 to US$4,264 million in 1999, this means an increase of GDP per capita over the same period of US$145 to US$246 (source: INE, 1999 - with corrected population figures).

Agriculture is the most important sector of the economy, contributing approximately 30% of GDP and employing 80% of the work force. The family sector encompasses between 2.5 and 3 million families and predominates in both area and production volume. On average, these households cultivate 1.1 hectares, using a low level of technology based on family labour and hand tools, almost without the use of purchased inputs and completely dependent on often irregular rainfall.

Rural poverty is largely the result of the low level of development of agriculture, which is essentially subsistence. Continued economic isolation of the rural areas with poor infrastructure and a fragmented market economy is likely to cause substantial agricultural surpluses in many parts of the country that will remain unsold. Such isolation will also make these populations vulnerable to natural calamities such as droughts, floods, and plagues, as has become evident again in February 2000. Therefore, the tertiary roads play an important role in the economic development of the country.

1.2 Background of the Regional Roads Sector

The Mozambique classified national road network is estimated at approximately 26,960 km. Of this, about 5,500 km are asphalt-paved roads and the rest are gravelled or stabilised earth roads (source: ANE). The poor condition of roads is a major constraint to rural development and for the 80% of the population that lives in these rural areas.

The road sector plays a key part in the economic and social development of Mozambique. In recognition of the importance of land transportation for the economic and social development of the country, the Government, with assistance from the World Bank and other donors including UNDP and Asdi, has made wholesale changes in the management of the road sector. Under the framework of the Roads and Coastal Shipping (ROCS) Programme, substantial investments have been made throughout the sector. Major efforts have been made...
to repair key sections of the road system as well as to ensure that there is a maintenance
capacity to keep the roads in a good condition.

These changes to the sector are in line with the general trends in the overall economic
situation in the country. The first stage of the implementation of the reforms was the adoption
by the Government of a new National Road Policy in 1998. In April 1999 the Council of
Ministers approved the New Road Administration System and the establishment of the
National Road Administration (ANE) that falls under the responsibility of the Ministry of
Public Works and Housing (MOPH). Prior to the introduction of these reforms, the National
Directorate of Roads and Bridges (DNEP) managed the sector.

The Feeder Road Programme (FRP) is managed by the Government of Mozambique through
ANE by its Directorate of Regional Roads (DER). The programme is a component of the
ROCS project, and involves the rehabilitation and maintenance of classified rural roads
throughout Mozambique using labour based techniques, which have proved to be appropriate,
economical and successful in Mozambique. The programme, which began as a pilot project in
1981, now operates in 9 of the country’s 10 provinces. The FRP is involved primarily with a
small but growing portion of the 14.000-km of Tertiary Roads that represent almost 50% of
the total classified road network in the country.

UNDP in cost-sharing with Asdi is providing technical assistance through the International
Labour Organization (ILO) to ANE to develop the capacity to manage the Feeder Roads
Programme. The FRP has also provided management support to UNCDF for the recently
closed down CDF projects in Zambezia and Nampula. In the past, FRP has worked through
the Tertiary Roads Divisions (DETs), which are labour-based brigades within the parastatal
Provincial Road Construction Enterprises (ECMEPs). More recently support to the Provincial
Departments of Roads and Bridges (DEPs), which fall under the Provincial Directorates for
Public Works and Housing (DPOPHs), has been increased. The DEPs plan, supervise and
monitor road maintenance of all classified roads in a particular province. The DEPs are
responsible for the rehabilitation and maintenance of the feeder roads in their provinces.

Since 1992 a total of 3,507 km of road has been rehabilitated under the programme. With the
current 34 operational brigades, an average annual output by the FRP brigades of 700 km has
been achieved. The programme is devoting increasing attention to both routine and periodic
maintenance work.

1.3 Road Sector Policies
The new Road Policy, recently approved by the Council of Ministers, provides direction for
the management of the Road Sector. Decisions taken by the various executive bodies in the
sector must be in line with this policy. Particular aspects of the policy that relate to Regional
Roads, and thus of particular relevance, are listed below.

- The Government will initiate and sustain the decentralisation of rehabilitation
  and maintenance of Regional Roads to provincial level;
- Non-classified roads will remain the responsibility of District Authorities;
- The programme for rehabilitation of Regional Roads will be continued in the
  medium term;
- Routine maintenance will be carried out, concentrating primarily on roads in
good and fair condition;
- The programme for periodic maintenance will be extended to Regional Roads;
- Works on Regional Roads will be prioritised in accordance with level of use;
- The use of local contractors in the rehabilitation and maintenance of Regional Roads will be given priority;
- Labour-based techniques and nationally-available materials should be used to the maximum extent possible in the maintenance and rehabilitation of Regional Roads;
- The Government will take steps to guarantee regular and sufficient funding for Regional Roads.

2 Scope and Objectives of the Evaluation

The evaluation covers the following components of the Feeder Roads Programme; Management Support to Labour-based Tertiary Roads funded by UNDP/Asdi (MOZ/96/013), Swedish Support to the Roads Sector.

The purpose of the Final Evaluation is to assess overall achievements of the programme, specifically to ascertain relevance and potential effectiveness of the programmes and to assess the impact and effect generated from the programmes and what lessons can be drawn on operational, organisational and policy levels. The Final Evaluation aims to verify the technical and organisational aspects of the two programmes, the FRP and the Swedish Support to the Roads Sector. The capacity created by the programmes within the Directorate for Regional Roads of ANE and in the contracting sector should also be assessed.

The evaluation is further intended to draw lessons from the experiences of the programme and make recommendations for the future functioning of the Directorate of Regional Roads of ANE and the development of the tertiary roads sector as a whole in Mozambique. The recommendations should also address the issue of, in which way future donor funding can be most effective in its support to the sector.

The conclusions and recommendations will in particular be used by:
- Asdi to make decisions on the future support to the Tertiary Roads Sector;
- The Government of Mozambique (GOM) to inform decision making on the future functioning of the Directorate for Regional Roads; and
- Other interested donors to inform decision making on future programming in Mozambique.

3 Issues to be addressed

The mission team will thus have two objectives in mind for this evaluation. Firstly, the final evaluation of the Feeder Roads Programme, which describes and assesses the results and impact of the FRP. Secondly, a forward looking part, describing the future needs and makes recommendations for support to the sector.

3.1 Final Evaluation of FRP

In general the evaluation mission should describe and assess the performance of the programme with regards to its objectives in all respects including but not limited to the issues mentioned in 3.1.1 through 3.1.7.

3.1.1 Presentation of the programme as originally designed
• Background note on the situation of the sector at the start of this phase of the programme;
• Description of the programmes objectives, inputs, activities, expected outputs, implementation modalities, cost, financing and reporting, including any modifications to these elements during implementation.

3.1.2 Quality of project preparation and design

Assess if the programmes were properly designed and prepared and indicate if other necessary components should have been taken into account. Emphasis should be given to the following issues:

• Was the project concept sound;
• Were the beneficiaries clearly identified;
• Were the objectives and outputs realistic, quantifiable and well defined;
• Were workplans prepared, and were they followed.

3.1.3 Efficiency of project execution

Identify and assess factors that have facilitated the achievements of the various objectives of the programmes, as well as those that have impeded the fulfilment of those objectives. In particular assess the efficiency of the programme implementation and monitoring by comparing the actual implementation with the originally designed plans and explain differences. Particularly look at:

• Quality and timeliness of the inputs and activities of the various parties to the programmes, mentioning any deviations from the original plan and justification;
• Quality and timeliness of the responsiveness of the programme management to changes;
• Quality and timeliness of monitoring and backstopping by all parties to the programmes;
• Whether the programme coordination arrangements were carried out as envisaged.

3.1.4 Effectiveness of the Institutional and Technical aspects of the programme

Assess whether the technical approach, the institutional framework and the modalities of financing and execution were the best to achieve the programme objectives. In particular look at:

• The institutional setting of the programme;
• Comparison of the programmes achievements against the stated objectives and outputs;
• Extent to which the programme has been successful in its capacity building objective, i.e. transfer of capacity to national counterparts, development of training modules and transfer of technology. Also assess the capacity of the beneficiaries at the end of the programme;
• Analyse the sustainability of the roads and government’s capacity to ensure regular maintenance and make sure of the experience gained under the programme;
• Quality of the infrastructure constructed and the quality and adequacy of their maintenance operations, also after the programme comes to an end. Compare different maintenance systems introduced;
3.1.5 Impact of the Programme

Comment on programme results and assess how the programmes’ achievements have modified the pre project situation, contributing towards both community and national development and that the target population has benefited from the results, addressing in particular the following issues:

- Level of poverty reduction and employment generated under the programmes;
- Effectiveness of the rehabilitated roads in generating a socio-economic impact through facilitating access to social services, agricultural production inputs and urban markets in their area of influence;
- Impact on the activities and income level of women;
- Specific attention should be given to the results of the gender component and activities of the programmes;
- Impact on the environment.

Where possible provide quantitative evidence in support of conclusions.

3.1.6 For the nationally executed components

- Nature and extent of government contribution;
- Relevance of the policy of national execution;
- Factors that may have caused or are likely to cause any shortcomings.

3.1.7 Findings, lessons learnt and recommendations

The mission shall state the findings, lessons learnt and provide recommendations for the smooth phasing out of present support. The findings will also feed into the second part of the evaluation, which is forward looking and will recommend areas of future support.

Detail actions that should be taken in the winding up of project activities to ensure that data or experience is not lost with the departure of the present TA team.

3.2 Future support

The evaluation team is expected to carry out a situation analysis in which it adequately assesses the future needs of the roads sector. Recommendations on the direction of the future management of tertiary and non-classified roads should be made.

3.2.1 Situation analysis

The situation analysis should contain the following elements:

- ANE’s current strategies and plans for regional roads;
- Implementation and operation of the new system for management of regional roads;
- Operation of the current Feeder Roads Programme;
- Inform on best practice in other countries that may prove beneficial for Mozambique;
Present and planned support, listing support agencies and their activities;
Present coordination in the sector;
Changes in institutional responsibility for the development of national contracting
capacity;
Comment on the future operations of the training centre in Chimoio after separation from
the Roads Authority.

3.2.2 Scope of future support
The assessment of the future direction for the management of tertiary and unclassified roads
shall end up in a set of recommendations on possible future support to regional roads sector
and DER. These recommendations should enable donors to propose new projects and will
have to provide in particular:
- Recommendations for adjustments to current plans for management of tertiary and non
classified roads;
- Areas within the tertiary and non classified roads sector where support is still needed;
- Identification of appropriate types of support;
- Overview of the need and recommendations of modalities for coordination of support;
- Recommendations and define scope of future project documents for individual support
components.

4. Methodology of Evaluation Approach
The evaluation mission will do a final evaluation of the Feeder Roads Programme, and state
findings and recommendations in view of the phasing out of the support. The mission will
also look at the future management of the sector and propose specific areas where support
may still be needed.

The proposed evaluation will be of 3 weeks in Mozambique, and for the team leader one
additional week to finalise the report. Field trips should include visits to Nampula and
Zambezia (not necessarily by all the members of the team) and will take more or less four
days each. Another field trip should be made to a site closer to Maputo. The rest of the time is
for interviews/meetings in Maputo and report writing.

The details of the programme will be worked out with ANE, UNDP Country Office and Asdi
prior to the start of the mission. A provisional programme is given in annex. However, the
evaluation team will on arrival meet with the FRP to confirm the ToR and the proposed
detailed programme, and to agree on the reporting procedures.

5. Reporting
Before its departure from Mozambique the evaluation team will prepare a summary of its
preliminary findings, recommendations and proposals for the future, and will discuss them
with representatives from GOM and donors involved in this evaluation. The comments of the
parties concerned should be reflected in the final mission report.

A specific presentation should be given to a wider audience of other stakeholders interested in
the sector in Mozambique on the findings and recommendations of the evaluation mission
with respect to the sector.
The mission team leader will submit a draft of the report at the end of the mission. Combined comments on this draft report, from the donors involved in this evaluation and the government, will be forwarded by the government to the team leader within 15 days. A final evaluation report should be submitted to the donors, including comments on the draft report, within a period of 15 days in hard copy and on a diskette in MS Word/Excel.

The report should include a set of recommendations on possible future support to the regional roads sector and DER. The donors involved that are considering future support should be able to use the recommendations to propose new projects.

Provision will be made for the team leader to return to Mozambique to present the findings in a workshop defining future support to the roads sector.

6 Composition and Responsibilities of the Evaluation Team

The evaluation mission should integrate objective and independent consultants to represent the Government, UNDP and Asdi. The mission shall comprise members who have experience in road management systems, including financing, institutional reform, impact analysis, labour-based methods of road rehabilitation and maintenance. In more detail, the following team is proposed:

- a consultant with knowledge of the technical and engineering, and labour-based technologies aspects;
- a consultant with knowledge of the institutional set-up and reforms, impact analysis and technology transfer
- a local consultant with knowledge of the road sector in Mozambique and FRP operations
- a consultant specialising in gender and socio-economic issues in Mozambique

One of the above mentioned consultants will be nominated as team-leader. Possibly a consultant may have the required experience to cover more than one field, in which case the team could be more limited.

7 Implementation Arrangements

The Mission cost will be supported by the project budget of MOZ/96/013 and by Asdi through the Swedish Support to the Road Sector Programme.
## ANNEX 13: LIST OF ACRONYMS AND ABBREVIATIONS

<table>
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<tr>
<th>Acronym</th>
<th>Description</th>
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<tr>
<td>ADRA</td>
<td>Adventist Development and Relief Agency</td>
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<td>ANE</td>
<td>National Road Administration</td>
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<tr>
<td>Asdi</td>
<td>Swedish International Development Cooperation Agency</td>
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<tr>
<td>ASIST</td>
<td>Advisory Support Information Services &amp; Training (ILO Project)</td>
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<tr>
<td>CFE</td>
<td>Centro de Formacao de Estradas (in Chimoio)</td>
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<tr>
<td>CMU</td>
<td>Core Management Unit</td>
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<tr>
<td>CTA</td>
<td>Chief Technical Advisor</td>
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<tr>
<td>DETs</td>
<td>Divisoes de Estradas Terciarias (in ECMEPs; previously DEDs)</td>
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<td>DEN</td>
<td>National Roads Directorate (in ANE)</td>
</tr>
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<td>DEP</td>
<td>Provincial Department of Roads and Bridges</td>
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<td>DER</td>
<td>Regional Roads Directorate (in ANE)</td>
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<td>DDOPH</td>
<td>District Directorate of Public Works and Housing</td>
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<tr>
<td>DFID</td>
<td>Department of International Development (UK; previously ODA)</td>
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<td>DINAGECA</td>
<td>National Directorate of Geography and Cadastre</td>
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<tr>
<td>DNEP</td>
<td>National Directorate of Roads and Bridges (the predecessor of ANE)</td>
</tr>
<tr>
<td>DPOPH</td>
<td>Provincial Directorate of Public Works and Housing</td>
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<td>ECMEP</td>
<td>Provincial Enterprise for Construction and Maintenance of Roads and Bridges</td>
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<td>ESRP</td>
<td>Economic and Social Rehabilitation Programme</td>
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<td>European Union</td>
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<td>FE</td>
<td>Road Fund (in ANE)</td>
</tr>
<tr>
<td>FG</td>
<td>Full Gravelling</td>
</tr>
<tr>
<td>FRP</td>
<td>Feeder Roads Programme</td>
</tr>
<tr>
<td>GOM</td>
<td>Government of Mozambique</td>
</tr>
<tr>
<td>GSG</td>
<td>Gender Support Group</td>
</tr>
<tr>
<td>GTZ</td>
<td>Gesellschaft für Technische Zusammenarbeit</td>
</tr>
<tr>
<td>IDA</td>
<td>International Development Association</td>
</tr>
<tr>
<td>IFAD</td>
<td>International Fund for Agricultural Development</td>
</tr>
<tr>
<td>ILO</td>
<td>International Labour Organization</td>
</tr>
<tr>
<td>INAV</td>
<td>Instituto Nacional de Viacao - National Traffic Insitute</td>
</tr>
<tr>
<td>KfW</td>
<td>Kreditanstalt für Wiederaufbau</td>
</tr>
<tr>
<td>LCB</td>
<td>Local Competitive Bidding</td>
</tr>
<tr>
<td>MPF</td>
<td>Ministry of Planning and Finance</td>
</tr>
<tr>
<td>MOPH</td>
<td>Ministry of Public Works and Housing</td>
</tr>
<tr>
<td>MTC</td>
<td>Ministry of Transport and Communications</td>
</tr>
<tr>
<td>MINEC</td>
<td>Ministry of Economics and Cooperation</td>
</tr>
<tr>
<td>MT</td>
<td>Meticais (unit of currency)</td>
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<tr>
<td>NAE</td>
<td>Logistics Support Unit (in ANE)</td>
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<td>NGO</td>
<td>Non-governmental Organisation</td>
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<tr>
<td>PG</td>
<td>Partial Gravelling</td>
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<tr>
<td>PGA Unit</td>
<td>Poverty, Gender and Aids Prevention Unit</td>
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<tr>
<td>RET</td>
<td>Reparticao de Estradas Terciarias (predecessor to SET; in DNEP)</td>
</tr>
<tr>
<td>ROE</td>
<td>Rate of Exchange</td>
</tr>
<tr>
<td>ROCS</td>
<td>Roads and Coastal Shipping Project</td>
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<tr>
<td>RMTA</td>
<td>Regional Maintenance and Training Advisor</td>
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<td>RTA</td>
<td>Regional Technical Advisor</td>
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<tr>
<td>SEK</td>
<td>Swedish Crowns</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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<td>SET</td>
<td>Seccao Estradas Terciarias (in DER)</td>
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<tr>
<td>SI</td>
<td>Spot Improvement</td>
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<td>STD</td>
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<td>UNV</td>
<td>United Nations Volunteer</td>
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<td>USAID</td>
<td>United States Agency for International Development</td>
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<tr>
<td>USD</td>
<td>United States Dollar</td>
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<tr>
<td>WB</td>
<td>World Bank</td>
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<tr>
<td>WFP</td>
<td>World Food Programme</td>
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