

Regional Activity to Promote Integration through
Dialogue and Policy Implementation (RAPID)
REGIONAL MARKET INTEGRATION



**SUPPORT FOR
TRANSPORT AND TELECOMMUNICATION REFORM IN
SOUTHERN AFRICA:
PROTOCOL IMPLEMENTATION**

**TECHNICAL ASSESSMENT REPORT:
THE CONCESSIONING OF MOZAMBIQUE RAILWAYS:
RAPID SUPPORT OPTION**

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ABBREVIATIONS

RAPID	Regional Activity to Promote Integration through Dialogue and Policy Implementation
RCSA	(USAID) Regional Center for Southern Africa
SADC	Southern Africa Development Community
USAID	United States Agency for International Development
CFM	Portos e Caminhos de Ferro de Mozambique, E.P.
SDCN	Sociedade de Desenvolvimento do Corredor de Nacala
RDC	Rail Development Corporation

CONTENTS

Management Summary

- 1. Introduction**
 - 1.1 The RAPID Activity
 - 1.2 Approach
- 2. Mozambique Railways Review**
 - 2.1 Background
 - 2.2 World Bank Support
 - 2.3 Current Concessioning Status
- 3. Review of Corridors to be Concessioned**
 - 3.1 CFM North – Nacala Railway Corridor
 - 3.2 CFM North – Nacala Port
 - 3.3 CFM North – Infrastructure Assessment
 - 3.4 CFM North – Concession Structure
 - 3.5 CFM North – Conclusion & RAPID Assistance
- 4. Review of Corridors to be Concessioned**
 - 4.1 CFM Central – Beira Corridor
 - 4.2 CFM Central – Beira Port
 - 4.3 CFM Central – Infrastructure Assessment
 - 4.4 CFM Central – Concession Structure
 - 4.5 CFM Central – Conclusion & RAPID Assistance
- 5. Review of Corridors to be Concessioned**
 - 5.1 CFM South – Background
 - 5.2 CFM South – Ressano Garcia Railway Corridor
 - 5.3 CFM South – Goba Railway Corridor
 - 5.4 CFM South – Limpopo Railway Corridor
 - 5.5 CFM South – Port of Maputo
 - 5.6 CFM South – Conclusion & RAPID Assistance
- 6. Maputo Locomotive Shop**
- 7. CFM Railway Fleet**
 - 7.1 CFM Wagon Fleet
 - 7.2 CFM Locomotive Fleet
 - 7.3 Conclusion & RAPID Assistance
- 8. Retrenchment**
 - 8.1 Background
 - 8.2 Conclusion & RAPID Assistance
- 9. Other Issues**
 - 9.1 Business Agreements
 - 9.2 Legal & Regulatory Reform
- 10. RAPID: Summary of Technical Assistance**

Management Summary

The concessioning of the Mozambique railways has been separated into three corridor specific activities comprising the north, central, and the south.

To date, different approaches have been used varying between open tender and bid procedures (used in the south and central regions) and bi-lateral negotiation (used in the northern region). This report contains background information of each potential concession, of which one (the north) is approaching finality and two (Ressano Garcia and Beira) are subject to continuing negotiation. The report contains observations regarding infrastructure status and business trends (freight volumes) in each region.

Although independent consultants have been, and are currently assisting Mozambique railways on a variety of strategic and operational matters, the concessioning process appears to be managed internally and without external assistance. It does appear that reference has been made to the SATCC-TU publications “Guidelines for Concessioning Railways” and “Guidelines for the Concessioning of State Owned Enterprises”, albeit on a narrow scale.

As a result of its in-country assessment, which included interviews with principal stakeholders, the RAPID Technical Team on railways has identified a number of areas where short-term technical assistance can be offered in terms of the RAPID Activity. This includes legal/regulatory assistance, capacity building, and operational assistance at Ministerial as well as Stakeholder level. A summary of technical assistance which can be offered is included in Section 10 of the report.

Through its concessioning initiatives, Mozambique has shown its commitment to an element central to the SADC Protocol on Transport, Telecommunications, and Meteorology. It is anticipated that economic benefits will become apparent, particularly in the northern and southern regions, in the short to medium term as management of the concessions mature. Further benefits will accrue through legal and regulatory, as well as operational, capacity building within the principal stakeholders.

1. INTRODUCTION

1.1 THE RAPID ACTIVITY

RAPID (Regional Activity to Promote Integration Through Dialogue and Policy Implementation) is an initiative hosted by RCSA (the Regional Centre for Southern Africa of the USAID) as part of its development assistance programme to Member States within SADC (Southern African Development Community).

RAPID is designed to provide quick-response, short-term technical services to support policy analysis, policy dialogue, and the implementation of policy changes within SADC Member States. Within this context, RAPID offers assistance to SADC Member States to pursue regional market integration

Transport plays a critical role in the integration of regional markets. This role is clearly recognized in the SADC Protocol on Transport, Communications and Meteorology which calls on Member States to “establish transport, communications and meteorology systems which provide efficient, cost-effective and fully-integrated infrastructure and operations, which best meet the need of customers and promote economic and social development while being environmentally and economically sustainable.” (Article 2.3).

A major task order of RAPID (Task Order 2.1) provides technical support to SADC Member States as they re-position the infrastructure and operations of their transport portfolios, in terms of the Protocol as stated above.

National railways are a strategic part of each Member States’ transport portfolio. Viewed collectively, SADC’s railway system has the potential of an efficient, cost-effective, and seamless regional railway service, and one that can compete with road transport operators.

To achieve this, however, and in terms of the Transport Protocol, Member States are required to commit to an economic and institutional restructuring of their railways. This includes granting railway service providers autonomy, increasing private sector involvement in the national railway, enhancing the operational efficiency of the national railway, and promoting the establishment of integrated transport systems. To achieve this, the Protocol calls on the Governments of the Member States to expand and strengthen capacity to develop, implement and monitor supportive railway policy, legal and regulatory frameworks.

These are specific objectives within the Protocol, and they form the basis that has guided our investigation of assistance that can be offered to the railway sector in Mozambique, under the RAPID activity.

1.2 APPROACH

Our approach to this assignment has comprised extensive desktop study of reports, documents, and an in-country assessment during which interviews were held with public and private sector stakeholders. The in-country assessment was conducted by an interdisciplinary team comprising:

- Mr. Larry Phipps, a Railway Specialist;
- Mr. Rory Downey, an Institutional Development Specialist;

The in-country visit occurred between 20 and 23 November 2000. A list of persons interviewed is attached (Annex A: Mozambique In-Country Visit: Interviews).

This report, compiled from the material reviewed and from information gleaned during the interviews, presents the findings and recommendations of the consultant team and is focused on assistance the RAPID team can offer to support the concessioning of CFM (Portos e Caminhos de Ferro de Mozambique, E.P.). These findings and recommendations are based on the current status of Mozambique railways as presented to the consultants on the current status of the concessioning process.

2. MOZAMBIQUE RAILWAYS REVIEW

2.1. BACKGROUND

The concessioning structure applicable within Mozambique is summarised in the table below:

Mozambique Concessioning Structure

Parties to any Agreement	Three (3) parties must sign the contract, namely the Private Concessionaire, the Minister of Finance, and CFM
Extent	Railway corridors are included with geographically positioned Ports in the prospective concession agreements.
Form	There are five (5) vertically integrated rail corridor concessions as originally identified, namely 1. Nacala 2. Beira 3. Ressano Garcia 4. Limpopo 5. Goba The original Tender Document included the Maputo Locomotive shops and Marshalling yard with the Ressano Garcia concession, and the three ports were to be concessioned separately.
Duration	Varies with each individual concession negotiated.
Rates and fares	In each instance, the Concessionaire is free to determine and alter rates.
Passenger Service	In each instance operated by concessionaire as Public Service Obligation.
Income earned by the Government	Income to be earned by the Government from the concessioning of the railways will be generated from the following: a. Entry fee b. Bid price c. Recurring % of revenue d. Lease payments for wagons and locomotives.
Evaluation Criteria	The Government is using the following criteria to evaluate bids for the concessions: i. Proposed payments to Government. ii. Bidder commitment to maintain railway services. iii. Bidder's business plan. iv. Bidder experience and financial capacity.

These points are expanded upon in the main text under the discussions of the individual concessions.

2.2. WORLD BANK SUPPORT

The privatization of Mozambique's railway and port systems is to be supported by the World Bank in an especially designed sponsored project. The World Bank has allocated a US\$100 million credit to assist the Government of Mozambique improve the efficiency of its three major port-rail systems - the Maputo, the Beira and the Nacala Corridor systems respectively. These are three distinct, geographically positioned transport segments that have no physical linkages between them.

The World Bank project has been designed to support the Mozambican Government's objectives of transforming its railways and its ports into modern, competitively efficient, market-driven and financially viable entities

. The project includes:

- Concessioneering of the Ports and the Railways:
- Staff Rationalization:
- Staff Retrenchment, which includes:
 - redeployment support to help workers find alternative jobs
 - social mitigation measures such as counseling, establishment of libraries, community centers etc., and the creation of a specific “Redeployment Fund” to meaningfully employ some of the surplus staff in small projects
 - and the establishment of a pension fund for the remaining workers.
- Institutional Strengthening: The Ministry of Transport and Communications and CFM will build their capacity internally and develop the institutional framework necessary to deal with the new private sector environment.
- Regulatory Framework Strengthening: The Government is committed to setting up a regulatory framework for the transport sector that will address economic and technical regulation issues.

The World Bank project was approved in October 1999 but as yet has not distributed any significant amount of the loan. Whilst there has been some progress towards privatization of a portion of the railway, full concessioneering has not yet been concluded over any of the rail components. World Bank funds will be released as retrenchments occur.

2.3. CURRENT CONCESSIONING STATUS

Each of the three ports (Maputo, Beira, and Nacala) has a distinct railway associated to it. The combination of port and railway in each instance is considered as a corridor. A concession opportunity has been attached to each of these corridors, and is intended to improve the overall transport efficiency in each region respectively. Whilst this technical report focuses on the railway, the port concessions are closely tied to the railway and, in most instances, should be viewed as interrelated.

The current status of the potential concessions as communicated to the RAPID Technical Team is as follows:

- In the Northern region, the Nacala line has been awarded to a concessionaire, but contract negotiations will not be completed until March of 2001.
- In the Central region
 - The Beira line has not been offered for concessions, and its prospects for concessioneering have diminished with the deterioration in Zimbabwe.
- In the Southern region, the Ressano Garcia line had been auctioned. However, considerable differences over numerous aspects of the concession arose between CFM and the winning bidder, South Africa based Spoornet, with the result that no final agreement was concluded. The most recent development on this corridor has been the award of the concessioneering rights to Spanish based Renefe, who have apparently reached an agreement with Spoornet on a joint venture for the route. The concession for the Limpopo corridor has been awarded but the entire project has changed due to the flood damage to the line in February of 2000. There is now some doubt that the original concessionaire, Portugese based Consortium 2000, will continue with the project.
- Regarding each of the three principal ports, Maputo has been concessioneered to the Maputo Harbor Consortium, which includes the operator of the Liverpool Port Authority; Beira has been concessioneered to Cornelder de Mozambique; and Nacala has been attached to the railway concession currently being negotiated in the Northern region. A more detailed analysis of each of these principal opportunities follows.

CFM NORTH – NACALA RAILWAY CORRIDOR
Railway Volume 1995 to 1999

TOTAL TONNAGE TRANSPORTED	1995 (000's)	1996 (000's)	1997 (000's)	1998 (000's)	1999 (000's)
NATIONAL	73.8	101.1	111.5	116.9	64.5
INTERNATIONAL	141.3	136.1	138.8	152.9	167.2
TOTAL	215.1	237.2	250.3	269.8	231.7

Results for the full year 2000 appear encouraging based on the first six months of the year which has seen marked growth in tonnage, increasing from 89,100 to 147,000 (therefore predicting 294,000t for the full twelve months) with principal growth areas in agricultural products, both national and international. Ton kilometers also increased, from 43.9 million tkm to 59.9 million tkm.

3.2 CFM NORTH-NACALA PORT

Subject to current negotiations, it is envisioned that both the port of Nacala and the northern rail corridor will be concessioned to the same concessionaire. Having already obtained the concession to the Malawi railway, this consortium would then administer the whole route from Malawi, through Mozambique and to the port. The synergies of an efficient rail/port operation are seen to provide good growth opportunities to this corridor.

In 1999 the port handled marginally in excess of a total of 681,000t of freight, a significant increase over the previous years. Of the total, the major categories included cabotage (49,400t); international freight which accounted for 364,400t (37,900t only of export Mozambique traffic and 326,500t of import cargo); and transit freight which accounted for 255,700t (25,000t exported and 230,700t imported, most of which was to or from Malawi).

Regarding major categories of freight handled, fuels accounted for 135,400t, agricultural products 83,600t, fertilizers 49,400t, and minerals 20,600t. Numerous diverse categories of freight accounted for 121,900t. Containers amounted to a further 228,200 tons, being split 63,300t national and 111,700t international. Container traffic totaled 19,493 TEUs.

The table that follows depicts the trend of freight handled at Nacala over the last five years.

PORT OF NACALA
Freight Volumes
(000's Tons)

FREIGHT CATEGORY	1995	1996	1997	1998	1999
NATIONAL	49.1	85.1	105.4	119.8	112.5
INTERNATIONAL	165.6	273.2	213.5	258.1	329.3
TRANSIT	277.4	65	160.6	125.4	240.2
TOTAL	492.1	423.3	479.5	503.3	682.0
TOTAL TEUs	11,892	9,866	10,725	14,772	19,493

3.3 CFM NORTH - INFRASTRUCTURE ASSESSMENT

3.3.1 Infrastructure: Railway

The Nacala line extends from the port of Nacala to the frontier with Malawi at Entre Lagos, a distance of 610 kilometers. It includes two branchlines, one for 42 kilometers from Rio Monapo to Lumbo, and the other for 262 kilometers from Cuamba to Linchinga.

A portion of the mainline from Nacala to Cuamba (totaling 533km) has been rehabilitated recently to high standards. It is comprised entirely of concrete sleepers, a 40 kg rail, and a good surface and ballast section. Between Cuamba and Entre Lagos (a distance of 77km) the track is in poor condition, with 30-kg rail, and is operated with a 15km/hr speed restriction. Discussions pertaining to the standard to which this sector should be rehabilitated are currently being held. If donor funded it may well be built to the same high standard as the Nacala-Cuamba portion at an estimated cost of US\$37 million. If left to the responsibility of the concessionaire it will probably be upgraded, but to a lower standard, at a cost of approximately US\$10 million.

Of the remainder of this northern corridor, the branch line from Cuamba to Linchinga is in poor disrepair. Trips on this line take weeks to complete, normally at excessively slow speeds, and are accompanied frequently by derailments. A condition of the northern concession contract being negotiated is that this line is to be restored by the Government (CFM), and then operated by the concessionaire. Freight volume on the line is only 4,000t per annum, and service is and will continue to be infrequent.

3.3.2 Infrastructure: Port

The Port of Nacala currently has a handling capacity of 1 million tons of general cargo, and 600,000 tons of containerized cargo per annum. It has good natural draught and does not require dredging. Two wharves accommodate general cargo and one wharf accommodates container vessels. Eight cranes of varying capacity serve the general cargo, and the container facility has one crane each of 22t and 25t capacity respectively. The condition of the port equipment is not known.

Wharf area is 30,000 square meters and storage area is 82,400 square meters. Depth is 7 to 10 meters in the general cargo wharf, and 14 meters on the container wharf. Five general cargo vessels and 2 container vessels can be moored simultaneously.

3.4 CFM NORTH - CONCESSION STRUCTURE

The concession of the Northern Corridor was not subject to open bidding, but rather was negotiated over a period of three years between CFM and a predominantly foreign consortium, SDCN. A Memorandum of Understanding was signed in January 1999 and transfer to the concessionaire is expected in March 2001. The concession is for a period of 15 years, renewable for the same period.

Within the SDCN consortium, foreign shareholders own 67%, and include RDC (a USA Railroad Company); Edlow Resources; Tertir (a Portuguese company); and Rennies, a South African Company. National shareholders own 33% and include Gestra, Mozambique Gestores, S.T.P., C.C.D., Gedena, and Niassa Desenvolvimento.

The concession required an Entry Fee, a price for the assets purchased, and will be subject to an annual variable fee being a percent of gross revenue generated and set at 5%.

The infrastructure remains the property of CFM, but the concessionaire is responsible for capital improvements and maintenance. The concessionaire plans to invest \$69 million over the life of the concession of which US\$26 million will be invested in the port, and US\$43 million will be invested in the railway. Railway rolling stock is dry leased from CFM, with the concessionaire responsible for its maintenance.

CFM is responsible for the retrenchment of those employees not required by the concessionaire. While current law requires approximately 1.5 month's salary for each year of service, the allowance has been increased in this instance to 3 month's for each year of service, plus a transition allowance of six months salary. Two problems are encountered with this retrenchment process:

- i. The excessive time it takes from the initial notification that a position is redundant to the time when the actual redundancy takes place, almost eight weeks, because of the numerous reviews by Mozambique Government agencies and the World Bank:
- ii. The inflated retrenchment package is so attractive that it is dissuading skilled employees from remaining in the railway service. This is particularly serious in key positions, such as locomotive driver, where retention of experienced employees is critical for the future of the line.

From an operational perspective, the concessionaire forecasts revenues increasing from \$9 million to \$45 million on the railway side and from \$5 million to \$21 million on the port operations during the 15-year concession period. Positive cash flow is forecast only after approximately five years.

3.5 CONCLUSION & RAPID ASSISTANCE

The privatization process began in Mozambique several years ago. Consequently, the process and structure of the Nacala corridor concession does not resemble the Guidelines for Railway Concession, recommended by SATCC-TU.

The following major observations are made in this regard:

- i. Firstly, management of the railway has acted as the agent for designing and carrying out the restructuring and concessioning process. Whilst the Guidelines recommend that intermediate and independent agency manages the process of change that has political, economic and social implications, this was not done. However, the process utilized in the concessioning of the Nacala corridor *has* achieved the desired goal of encouraging private sector investment and management.
- ii. Secondly, little restructuring was done prior to concessioning that made the concession more attractive to bidders. This is customarily the preferred course of action, within limitation.
- iii. Thirdly, there was no open bidding for the concession, rather closed negotiation between the interested parties.
- iv. Fourthly, the significant enhancement of retrenchment benefits, as negotiated by CFM, has had a negative impact on the ability of the concessionaire to retain skilled employees.

As a further observation, when finalized in March 2001 this will be only the second railway concession in the region – the first having occurred in Malawi in 1999.

With regard to possible assistance in this particular process, the RAPID Technical Team (Railways) has identified the following:

- a. Negotiations regarding the concession appear to have progressed to the point where it is best left to the parties to finalize. Consequently no assistance should be offered unless a specific request is received from either of the parties. For reference purposes, however, the RAPID Technical Team will request that it be allowed to assess the concession contract once finalized and signed.
- b. Within its mandate of improving the efficiency of the railroad and thereby reducing the cost of doing business in the region, the RAPID Technical Team will consider extending an offer of assistance to the concessionaire with regard to operational issues.
- c. Within its mandate of capacity building and institutional development, the RAPID Technical Team will offer its assistance to the Mozambique Ministry of Transport and Telecommunications with regard to the following:
 - 1) Attending to the legal and regulatory issues pursuant to concessioning;
 - 2) Assisting with the development of a railways regulatory office and framework;
 - 3) Capacity building expertise of key (railway) industry issues within the Ministry.
- d. Offering assistance to the current national railway management (CFM) on related issues.

These offers of assistance will be extended once approval to do so has been received from the USAID/RCSA offices in Gaborone, and following appropriate briefing of the in-country USAID office.

4. CFM CENTRAL – BEIRA CORRIDOR

Traffic on the Beira Corridor has been steadily declining in recent years and in 1999 reached its lowest level since 1994, transporting only 650,000 tons of freight. From the previous year there were declines in almost all traffic categories. National traffic decreased from 146,500t to 94,600t, international decreased from 618,100t to 555,700t, and the volume of containers handled decreased from 198,700 to 183,900.

Agricultural products decreased from 160,800t to 77,200t, although increases in the volumes carried of granite and stone (from 83,700t to 110,700t) and fertilizer (from 66,100t to 100,700t) were the few bright spots.

The steady decline in freight carried on the Beira Corridor can be seen from the table which follows.

CFM CENTRAL – BEIRA CORRIDOR
Railway Volume 1995 to 1999
(000 t)

FREIGHT CATEGORY	1995	1996	1997	1998	1999
NATIONAL	109.3	71.7	118.8	146.5	94.6
INTERNATIONAL	953.6	1102.1	845.1	618.1	555.7
TOTAL	1062.9	1173.8	963.9	764.6	650.3

4.1 CFM CENTRAL – BEIRA PORT

Within the port, the container and general cargo terminals were concessioned to Cornelder de Mozambique in 1998, which currently handles all of the port's activities, container and general cargo, and the Cold Storage Terminal was concessioned in 1996. Maritime services have not yet been concessioned and are still provided by CFM.

As can be seen from the table below, the port has experienced a steady decline in the level of tonnage handled in recent years, reaching an all time low of 2.973million tons in 1999. Of this total, 1.278mt was transit moving to Zimbabwe. Freight to/from Malawi (103,000t) accounted for a further share, and a small portion (50,000t) moved through the port to Zambia.

Major commodities handled included fuel (1.230 million tons) and agricultural products (157,000 tons). The total freight handled in containers amounted to 383,000 tons. The majority of the fuel handled (1.051 million tons) moved through the port to Zimbabwe. None of the fuel movement is by railway, with the major portion being moved by pipeline.

PORT OF BEIRA
Volume of Freight
(000 t)

FREIGHT CATEGORY	1995	1996	1997	1998	1999
NATIONAL	70.1	72.4	75.2	64.7	43.4
INTERNATIONAL	628.5	661.1	1477.6	661.2	665.9
TRANSIT	3461.1	3857.3	3155.9	2489.8	2264.0
TOTAL	4159.7	4590.8	4708.7	3215.7	2973.3
TOTAL TEUs	25,577	32,380	37,522	36,090	32,737

The corridor currently operates four freight trains daily. Average train size is 437 net tons, with freight trains averaging a speed of only 11km/hr. At this profile, train size could be increased (and frequency even lengthened) to provide for a more efficient operation. In addition to the freight trains, four passenger trains are operated daily. Average trip length per passenger is 30 km, and passenger trains average 30 km/hr. The passenger trains only operate over a distance of 100 kilometers.

With its declining traffic levels, the Beira Corridor faces many of the same difficulties as the Limpopo Corridor. The principal source of tonnage is Zimbabwe, which accounts for 83% of the total tonnage on the route, but the current economic uncertainty prevailing in Zimbabwe augurs badly for the Beira Corridor. In addition, road competition is intense, there are a number of alternative and equally viable routes available and, to be competitive, the service would need to be improved over the entire route - both in Mozambique as well as in Zimbabwe.

4.2 CFM CENTRAL - INFRASTRUCTURE ASSESSMENT

4.2.1 Infrastructure: Railways

The Beira line extends from the port of Beira to the frontier with Zimbabwe at Machipanda, a distance of 317 km. The mainline is 40 kg rail, reportedly in fair condition. It includes three branchlines, which emanate from the mainline at Dondo. The principal branch is the Sena (578km) which terminates near Tete. A short branch (39km) extends from Mutarara and connects to Malawi at Vila Nova, whilst the third branchline (88km) runs between Inhamitanga and Marromeu.

All the branch lines on the Beira Corridor are in disrepair and have been out of service since 1984. All are 30-kg rail, and would require complete rehabilitation. As a conservative estimate, in excess of US\$300million would be required to rehabilitate the lines, assuming that the bridge over the Zambezi is in repairable condition.

Of the three, the Sena branchline has potential value because of mineral deposits in the Moatize region, reportedly 2.5 billion tons of high quality coking coal. Annual production, if the mines were developed, could reach between 2 and 9 million tons. CFM is considering a BOT contract to cover both the Machipanda and Sena lines. It is reported that Canadian donor funding may be available for rehabilitation of the Sena Line.

4.2.2 Infrastructure: Port

The port of Beira has an annual throughput capacity of 2 million tons of fuel, 2 million tons of general cargo, and 1 million container tons. It has a total of nine wharves - two for fuel, two for general cargo, one for coal, and four for containers. Total dock area is 42,000 square meters, and there is a further 255,000 square meters storage area, most of which is for containers. Five small cranes and one medium size crane of twenty-ton capacity serve general cargo. The container facility has two cranes, a 22t and a 25t respectively. The port reportedly requires dredging.

Two hundred twenty container vessels called at the port in 1999, but each vessel carried an average of only 1,700 tons. The large volume is fuel, with 55 vessels unloading an average of 22,000 tons each in 1999. If the Sena line were ever developed, a major expansion of the coal handling facility would be required.

The condition of the equipment at the port is not known.

4.3 CFM CENTRAL - CONCESSION STRUCTURE

The port has already been concessioned and consequently is viewed as a stand-alone entity. Furthermore, much of the port's traffic does not move by rail. Fewer rail/port synergies are apparent on this corridor in comparison to the northern or southern corridors.

Regarding investment opportunity, it is apparent that the strategy for concessioning the Beira corridor is (a) to await donors, investors or corporations with mining interests, then (b) to return the Sena line to service and (c) to then include the Beira corridor in the BOT concession for the entire central region. On its own the Beira corridor to Machipanda has limited (and possibly decreasing) commercial value. This reinforces the importance of an operational Sena line in the equation of an otherwise difficult concessioning prospect.

4.4 CONCLUSION & RAPID ASSISTANCE

Prospects for a successful concession of the Central Corridor are poor. Port tonnage is declining, and the portion of port tonnage that is carried by the railways is decreasing rapidly. Most of the traffic handled is international traffic to/from Zimbabwe, and with the internal difficulties in that country, no immediate increase in traffic is foreseen. The strategy of tying the concession to the development of mining on the Sena line will not lead to a concession in the short term. In conclusion, given the low volume and given the uncertainty of future traffic in the region, no bidders can be expected for the Beira line in the short to medium term.

Within the mandate of the RAPID activity, the areas of assistance that the RAPID Technical Team can offer would include the following:

- i. Advising CFM on operational issues (including scheduling and rehabilitation programmes with limited resources) to ensure maximization of efficiencies and returns on the Beira Machipanda line:

- ii. Capacity building within the relevant Government Departments and Ministries to ensure an adequacy of railway industry knowledge for better administration of the transport portfolio.

5. CFM SOUTH

5.1 BACKGROUND

Concessioning of the southern portion of CFM was divided into three separate corridors, the port of Maputo and its appurtenances, and the locomotive shop. In 1997 tender documents were issued for the concessioning of the CFM South into the following categories:

- Ressano Garcia corridor
- Goba corridor
- Limpopo corridor
- Locomotive shop
- Marshalling yard and common entrance to the port from Machava
- Port of Maputo.

The tender attracted seventy-three (73) bidders.

To date only one of the concessions has been completed, namely the Port of Maputo awarded to Maputo Harbor Consortium, which includes the operator of the Port of Liverpool. South Africa's national transport authority, Transnet, expressed strong interest in the port, but its bid failed to meet tender requirements. Transnet subsidiary, Spoornet, transports the majority of traffic destined to and from the port and retained an interest therefore in the Ressano Garcia corridor.

The concession of the Ressano Garcia line was to have been awarded to Transnet, but differences in operational interpretation arose and the respective governments entered bi-lateral negotiations regarding the concession. The impact of no concessionaire on the Ressano Garcia line also has tremendous impact on the port concessionaire because 1.5 million tons of the total 3.6 million tons of port cargo is export traffic from South Africa. The single main commodity is export coal (1.4 million tons) and if the continued use of the Ressano Garcia route for the coal shipments were placed in doubt, the port concessionaire would be in the undesirable position of losing as much as 42% of total volume. In the most recent development it has been announced that Spoornet and Renefe have reached agreement to operate the line as a joint venture.

As regards the remaining opportunities, concessions of the Goba and Limpopo lines, the Marshalling Yard and locomotive workshop, were all awarded to European based Consortium 2000. However, transfer to the concessionaire has been interrupted by the flood damages to the Limpopo line in February 2000, and there is now considerable doubt that this particular concession will be finalized in its original format or candidacy.

There follows a summary of each of the proposed concessions.

5.2 RESSANO GARCIA RAILWAY CORRIDOR

The Ressano Garcia corridor runs from the Port of Maputo to a connection with Spoornet at Ressano Garcia, a distance of 88 kilometers. The route has 54 km rail, 41 km of which is double track, and 10 km is signalized. It has a nominal capacity of 15 million gross tons per annum. In 1999 it carried 2 million net tons, an increase from 1.8 million net tons in 1998.

The greater portion of the traffic handled is coal moving from South Africa to the port for export. In 1999 the coal movement totaled 1,641,100 tons, or 82% of the total volume carried. In addition to coal, agricultural products (194,400t), cement (69,500t), and sundry other goods (121,200t) were carried on the line. Of the total volume carried, very little (50,000t in 1999) is national Mozambique traffic. In terms of ton kilometers produced, again coal accounts for 169 million t/km of the total of 176 million t/km.

Approximately twenty freight trains per day operate over the route. Considering the relatively low tonnage involved this is very high. On average, each freight train carries only 257 net tons. With such a large

proportion being coal movements, this average is very low and represents an opportunity to increase efficiencies. Average train size in an efficient Class I railway is approximately 3500 net tons. Train operating policy would be reviewed by the concessionaire and operations tailored for the needs of the service. Too many trains tax the line's carrying capacity, and results in needless meet and pass delays.

Regarding the passenger service, 861,000 passengers were carried on the line in 1999, but mainly on a commute type service with the average passenger trip length being 23 Km. Approximately six passenger trains per day are operated and each apparently covers the entire 88 km of the route. Passenger trains will continue to be operated by the concessionaire, but as a Public Service Obligation with the government subsidizing losses. Terms are to be negotiated accordingly in the concession contract.

The concession to operate the Ressano Garcia corridor was awarded to Transnet but as previously stated problems arose which delayed consummation of the concession. As this line presents the port of Maputo (Matola) with its largest volume, the awarding of this concession could have a profound effect on the port.

5.3 GOBA RAILWAY CORRIDOR

The Goba corridor provides Mozambique with its connection to Swaziland at Goba. From the junction with the Ressano Garcia line at Machava the line is 64 kilometers. It is laid with 45 kg rail and all 64 km of the route is signalized. It has a nominal capacity of 7million gross tons per annum.

In 1999 the Goba line carried 666,000 tons, a decrease from 1998's level of 705,000. Most of the tonnage is national, the bulk of which is limestone (441,900t in 1999). Swaziland traffic accounts for 222,900 tons, and is mainly sugar (212,000 in 1999) moving to Maputo for export.

Approximately four trains per day operate over the line, which, at present traffic levels, represents an average train size of only 500 net tons per train. Train volumes could be reduced significantly for a more efficient operation.

The Goba line also has commuter passenger trains, and in 1999 carried 478,000 passengers an average of 19 kilometers per passenger. Approximately four passenger trains are operated each day, averaging 315 passengers per train. Passenger service will continue to be provided by the concessionaire but as a Public Service Obligation with the government subsidizing losses. Terms are to be negotiated in the concession contract.

5.4 LIMPOPO RAILWAY CORRIDOR

The Limpopo corridor is southern Mozambique's connection to Zimbabwe. It is 520 km in length, laid with 45 kg rail and roughly follows the route of the Limpopo River. It has a nominal capacity of 3.8 million net tons per annum, but handled only 375 thousand tons in 1999. Most of the traffic is export traffic from Zimbabwe.

Traffic decreased markedly in 1999 to 375,400 tons, from the 1998 level of 539,400. Of this, national traffic accounts for only 17,200 tons whilst international traffic to/from Zimbabwe accounts for 358,200 tons. Exports from Zimbabwe amount to 313,700 tons, and imports 44,500 tons. The main product carried is chromium (179,800t) whilst agricultural products, mainly sugar, (100,300t) are also significant. Coal shipments that had previously been substantial decreased from 143,200t in 1998 to 26,500t in 1999.

Approximately three freight trains, per day operate on the Limpopo line, averaging almost 400 net tons per train. In addition there are four passenger trains each day that operate an average of 200 km per trip. One million passengers are transported on the line each year, at an average of 37 km per passenger per trip. Passenger service will continue to be provided by the concessionaire but as a Public Service Obligation with the government subsidizing losses. Terms are to be negotiated in the concession contract.

As a result of the flooding of the Limpopo River in February 2000, the railway suffered extensive damage from washouts along a 134-km stretch. The line was restored to service in November 2000 at a cost of approximately US\$7 million. Complete restoration and rehabilitation is estimated at US\$57 million.

Donor funding from USAID has been obtained to restore the line to pre-flood conditions, at an estimated cost of USD \$50 million. The subgrade will be restored where damaged and where necessary it will be protected with armoring such as rip-rap. The existing rail is salvageable and will be used, as will most of the concrete sleepers. The entire line will be resurfaced and when completed the line should be in excellent condition. Bids have been solicited from international construction firms with the project to be awarded in March, 2001. Construction will be complete in mid 2002.

The extensive damage caused by the floods was in large part due to the failure of the floodgates in the bridge/dam at Macarretane km 225 to function as intended. By design, the gates should open automatically when the surface level rises to a predetermined level. In the February 2000 floods, the gates failed to open. Thus the water did not follow the river channel but instead eroded both approaches of the rail/highway bridge at either end of the bridge. The gate mechanism is the responsibility of the irrigation authority and as such is not included in the railway restoration project. Inasmuch as a process failure, i.e. failsafe maintenance practices as related to the gate operation, led to the extensive damages, it is disconcerting to find that future responsibility for gate maintenance continues to reside with the agency that failed in February 2000. At the least, a well-detailed maintenance and testing procedure for the gates should be drafted and any failure to adequately test should be dealt with forcefully.

The concession for the Limpopo Corridor was awarded to Consortium 2000, a group of mainly Portuguese based investors and companies. However the events since the awarding of the concession have raised questions as to whether or not the concession will materialize. The situation in Zimbabwe has deteriorated markedly raising serious doubts about the long-term prospects of generating traffic along the corridor. With Zimbabwe accounting for over 95% of the traffic transported along the Limpopo Corridor in 1999, developments in that country have a direct effect on the viability of the line. At the time of writing, prospects appeared somewhat bleak in respect of both events in Zimbabwe, and finalisation of the concession agreement.

5.5 PORT OF MAPUTO

The Port of Maputo is Mozambique's largest port. The concession to operate the port has been awarded to the Maputo Harbor Consortium which includes the operators of the Liverpool port. The concessionaire handles all port operations, except pilotage.

The port has a nominal capacity of 8.5 million tons per annum. It has two liquid cargo wharves that have a capacity of 2 million tons of fuel and 150 thousand tons of molasses. General cargo is handled through 7 wharves. Separate facilities are available for grains, sugar, minerals, coal (2 facilities) and containers. Total wharf length is 4,478 meters, in a total area of 105 thousand square meters. Warehousing and storage area amounts to 392,000square meters. In 1999 some 499 vessels made calls in the port.

In 1999 over 3.6 million tons moved through the port. Only 21,000t of the total was national Mozambique cabotage traffic, and another 43,000t was national traffic moving in containers. The major portion of freight moved comprised 2million tons for export, and 700,000t of imports. Of the total exports, Mozambique's portion was just 100,000t. Container traffic totaled 311,000 tons, moving in 30,340 TEUs.

A summary of freight traffic trends at Maputo over the five year period 1995 through 1999 are contained in the table below.

PORT OF MAPUTO
Volume of Freight
(000 t)

FREIGHT CATEGORY	1995	1996	1997	1998	1999
NATIONAL	149.5	132.6	225.5	171.7	119.1
INTERNATIONAL	919.8	868.3	1071.6	1160.9	1419.1
TRANSIT	1555.9	2178.6	2120.2	2135.9	2130.5
TOTAL	2625.2	3179.5	3417.3	3468.5	3668.7
TOTAL TEUs	13,115	12,372	17,536	23,982	30,340

Of the freight volumes, coal (1.4million tons) is the major product. Agricultural products account for 700,000 tons, fuel 300,000 tons, and chromium 196,000 tons. By far the largest movement along the corridor was the export coal (1.35million tons) moving from South Africa via the Ressano Garcia. Sugar from Swaziland (217,000 tons) moving over the Goba Corridor accounted for the second largest volume, whilst the chromium (196,000 tons) moving over the Limpopo Corridor originated from Zimbabwe.

From the Port's perspective, the steady trend of international and transit traffic is encouraging. From a national perspective, the extremely low volume of nationally generated freight is alarming.

A master plan for private sector investment in the adjacent Matola Industrial Port is being developed. The plan includes increasing the draught to ten meters and providing separate areas for dry bulk, clean dry bulk, break bulk, and petroleum products. Improvements have already been made to accommodate the bauxite and coke imports for Mozal.

5.6 CONCLUSION & RAPID ASISTANCE

As can be seen, the Port of Maputo and each of the three lines, Ressano Garcia, Goba and Limpopo are interdependent. If issues relating to the concession of Ressano Garcia or Limpopo lines go unresolved the port concessionaire would suffer significant traffic losses. Therefore it is imperative that the railway concessions move forward to finality.

By unbundling the CFM southern network, one corridor (Ressano Garcia) was made more attractive to potential concessionaires whilst the remaining two (Goba and Limpopo) have become much less desirable. Whilst the latter two lines might have the potential to grow and foster economic development and international traffic volumes in the medium to longer term, their short term potential appear to be dependent upon maximizing efficiencies within a greater, more supportive network.

Accomplishing this appears to be within the mandate of the RAPID activity and, consequently, the RAPID Technical Team (Railways) proposes to offer its assistance in this regard.

With regard to the Ressano Garcia concession, the RAPID Technical Team will establish the current state of affairs prior to committing itself to assistance in any respect. If warranted and if within the scope of its mandate, the RAPID Technical Team will motivate any offer of assistance following an appraisal of the current status.

If the apparent lack of concrete progress towards completion of the Limpopo, Goba, Marshalling Yard, and the locomotive shop continues, the RAPID Technical Team will offer assistance in facilitating contract completion. If the concession is not awarded, the RAPID Technical Team will offer its assistance in redesigning the concession to make it attractive to prospective bidders in a new auction.

Under each separate circumstance, it is evident that there is considerable need (and consequently opportunity) for capacity building at the public sector level with regard to railway industry knowledge. The RAPID Technical Team will structure and offer its assistance to the Government in this regard.

6. MAPUTO LOCOMOTIVE SHOP

In each of the railway concessions, ownership of the locomotives and the wagons remains vested with CFM, but are dry leased to the concessionaires who assume maintenance responsibility for them. However, the concessioning of the locomotive shop in Maputo to Consortium 2000 remains to be resolved in terms of the full agreement pertaining to Consortium 2000.

7. CFM RAILWAY FLEET

7.1 WAGON FLEET

CFM has a complement of 5,012 wagons, distributed within the corridors. The south is credited with 2,153 wagons, central with 1,853 wagons, and the north with 954 wagons.

Open top hoppers/gondolas comprise 64% of the fleet, the balance being represented by flatcars and closed cars (boxcars) each of which accounts for a further 10%. A full 96% of the fleet is more than 15 years old, with only 72 open tops being less than 5 years and 150 ballast cars being less than 10 years. Only 46% of the fleet, 2326 wagons, are available for service. As a result, the fleet is regarded to be in disrepair. In each case, the prospective concessionaires will decide their requirements and will then lease from CFM. Verification is needed of the course of action if there are insufficient wagons for the concessionaires needs.

Of the wagons available for service, each made 75 loaded trips of an average of 120 km in 1999. Average load of 33.3 net tons results in net ton kilometers per available wagon of 300,000. The unit coal trains operating between Ressano Garcia and Matola impact heavily on these figures.

The northern corridor, without the unit trains, is probably more representative of the fleet's productivity. In 1999, some 463 available wagons made 33 trips of 222 km, representing a wagon turnaround time of approximately 11 days. In the central corridor, the 937 wagons available made 25 trips of an average of 235 km, representing a turnaround time of 14 days.

Since only 46% of the total fleet is serviceable it seems preferable, if the opportunity permits, to include the equipment in the concession price and allow each concessionaire to select the wagons required. The remaining wagons could then be disposed of for scrap value and CFM would have no further role in administering the lease, evaluating condition of return, etc. Regarding the current arrangement, it is doubtful that negotiated fees for dry lease will be significant, as the concessionaires will each concentrate on improving turnaround times, and improving fleet productivity. Consequently fewer wagons will be required.

7.2 LOCOMOTIVE FLEET

CFM's freight and passenger traction fleet totals 67 locomotives and an additional 14 locomotives are used in yard switching service. Overall, the age of the fleet does not appear to be too old - 28 of the line haul and 6 of the yard switchers are less than ten years old. The General Electric locomotives make up most of the fleet and 39 of the 42 are over 15 years old. The dependability of the fleet is questionable with only 49%, or 43 being available. Of the available line locomotives, 17 are assigned to the south, 14 to central, and 12 to the northern regions. Of the ten available yard switchers, 4 are assigned to the south, 4 to central, and 2 to the north.

The fleet produces 95,400 tkmb (gross ton kilometers) on average per locomotive day, with the south accounting for the largest proportion, 128,100 tkmb per day. This is probably due to the use of Spoornet locomotives on the unit coal trains. The central produces 86,800 tkmb and the north produces 57,800 tkmb. Fleet productivity should be much higher, since 250,000 tkmb is a reasonable utilization for line locomotives.

7.3 CONCLUSION & RAPID ASSISTANCE

By continued ownership of the wagons and locomotives, CFM has positioned itself for long term continued existence. It will be difficult to wind down CFM or to structure it as a contract overseer or Port authority. CFM continues to own a fleet of limited value, and which value will only diminish over the life of the proposed concessions. It has perpetuated a function, overseeing leases and monitoring the ongoing condition of a fleet for which it has no need, which it could have passed over to the concessionaire. Had the design of the restructuring and the concessioning been assigned to an independent autonomous agency, as recommended in the guidelines, the equipment might have been sold to the concessionaire, thereby eliminating the need for long term CFM involvement in railway fleet maintenance issues. The entire concession approach in Mozambique has been to continue a strong CFM presence through creating subsidiary companies while concessioning the freight operations of the railway and the port operations. It will prove to be difficult for CFM to provide leasing, maintenance and other services through these subsidiaries without continued government financing. Railway equipment leasing is very competitive,

equipment obsolescence is a factor, and margins depend upon stability in financial markets. Financial self sustainability will be difficult to achieve over the long term.

If concessions are re-advertised, the RAPID Technical Team can offer its assistance in restructuring these agreements accordingly.

8. RETRENCHMENT

Little progress has been made in terms of retrenchment of the railway workforce. While none of the concessions are yet completed, there is nothing to prevent workforce rationalization prior to concession.

The table that follows shows the level of employment in the national railway in recent years.

CFM RAILWAY EMPLOYMENT

REGION/YEAR	1994	1995	1999	JUNE 2000
CFM SOUTH	3602	3053	4448	4220
CFM CENTRAL	4678	4678	4264	4264
CFM NORTH	2147	2147	1533	1463
TOTAL	10,427	9,878	10,245	9,947

The table above reflects railway employees only. Total CFM workforce includes both port and railway workers. From a total of approximately 19,200 employees, both rail and port, the retrenchment program envisioned by the World Bank project would have total retrenchments of 6,000 by December 2000; 8,600 by December 2001; and 11,300 by December 2002, yielding a predicted employment level of 8,600. Actual June 2000 employment was 18,045. At present it does not appear as though the retrenchment goal will be met for the year 2000.

8.1 CONCLUSION & RAPID ASSISTANCE

Although there have been some retrenchments they have not kept pace with the schedule proposed in the World Bank Project. Whilst concessioning the railway in Mozambique has not proceeded as intended, workforce reduction does not necessarily have to follow the concession transfer. Many redundant positions can be identified and positions can be eliminated while the concessions are being finalized. Consequently, the work force can and should be downsized, even as concession negotiations are proceeding. In particular, with the decreasing tonnage on the central corridor, workforce reductions in that region should proceed as a matter of expediency.

The RAPID Technical Team has the experience and the expertise to offer its assistance rationalizing the size of the workforce required by the national railway at its current, and projected capacities.

9. OTHER ISSUES

9.1 BUSINESS AGREEMENTS

An important consideration for any future concessioning agreement is whether the existing business agreements automatically carry forward to the future concessionaire. These agreements refer (a) to private sector freight carriage agreements, and (b) to inter-working agreements between the regional railways, addressing such matters as procedures, interchange of equipment, compensation for accidents, through-working of trains, and revenue sharing arrangements.

The RAPID Technical Team advocates a comprehensive review (and amendment, if required) of these agreements. At the time of reviewing these agreements, the consultants can assess the contribution that these agreements make towards the facilitation of a “seamless” railway operation as ratified in the Protocol, and how the agreements contribute to the development of a regional model.

9.2 LEGAL & REGULATORY REFORM

A further area requiring attention encompasses the laws and regulations governing the railway industry. It is the RAPID Technical Team's opinion that a review of the requirements in this regard should be conducted without delay. Appropriate rectifying action can then be initiated immediately, where required.

10. RAPID: TECHNICAL ASSISTANCE

Based on this review of the progress made towards each of the concessions of Mozambique railways, the following represents the areas of assistance to be offered by the RAPID Technical Team:

a) Ministry of Works Transport, & Communications

- Independent appraisal/update of the railway concessioning process.
- Capacity building within the Ministry with regard to their concessioning and privatization efforts.
- Capacity building within the Ministry with regard to railway industry expertise.
- Direct assistance with regard to the Nacala concession.
- Facilitation of the Maputo corridor concession.
- Re-appraisal of the Beira/Machipanda/Sena line opportunities emphasizing the economic opportunities (taking note of any previous studies) and building a concession invitation based on these economic opportunities.
- Investigation of and assistance with the legal/regulatory changes required, including drafting and process facilitation.
- Assisting with the role of the regulator, i.e. definition of structure, duties and responsibilities, grievance handling procedures, independence, reporting, and sustainability.
- Operational assistance to the individual privatization agents appointed by the Ministry. Reconciliation to the Protocol guidelines.
- Assistance in the formation and the operational matters of the corridor groups.
- An invitation to the Ministry to submit and outline requests for assistance in specific areas.

(b) CFM

- Review/update of the operational capability of the railway in lieu of the forthcoming concessioning (including the logic CFM has used in designing their concession options)
- The formulation of purchase values realistic to both CFM and a prospective concessionaire, jointly and severally on each individual line.
- An independent review of the submissions from prospective concessionaires.
- An invitation to CFM to submit and outline requests for assistance in specific areas.

(c) Legal/Regulatory

- A full review of the legal and regulatory issues impacting on the railways.
- Inter-Ministerial assistance as required updating legal and regulatory issues to complement the restructuring within the industry as a result of the concession status.

Annex A

Persons Interviewed

1.	Dr. Fernando Cuota	Managing Director, Manica	21/11
2.	Mr Alberto Elias	Director Revitalization Project, Maputo, CFM	21/11
3.	Mr Antonio Pinto	Ministry of Transport and Communications	22/11
4.	Mr. Bernardo Saene	Ministry of Transport and Communications	22/11
5.	Ms. Teresa Jeremias	Ministry of Transport and Communications	22/11
6.	Mr. Eric Msolomba	Director, SATCC-TU	22/11
7.	Mr. Z. Mboya	Manager Training, SATCC-TU	22/11