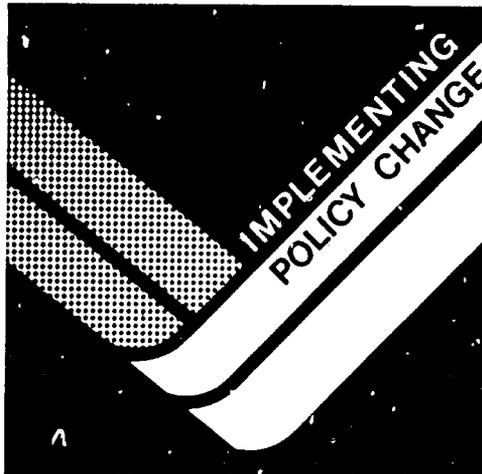


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MOZAMBIQUE NATIONAL RAILROAD RESTRUCTURING PROJECT: Analysis for Project Amendment

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Presented to:
USAID/Mozambique



Contractor Team:

Management Systems International

(lead contractor)

International Development Management Center

at University of Maryland

Aid Associates Inc.

Development Alternatives, Inc.

United States Agency for International Development
Bureau for Science & Technology
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FORWARD

This report is the result of a three-week TDY in Mozambique during June and July of 1992 by members of RD/EID's Implementing Policy Change Project. This report was presented to USAID/Mozambique and discussed extensively during an exit debriefing with Mission staff. The team's findings were also presented to leaders of Mozambique's national railroad (CFM).

The purpose of the TDY was to work closely with individuals within Mozambique in preparing analyses that would assist USAID in designing a possible amendment to its Regional Rail Systems Support Project (RRSS). In particular, the team was asked to examine issues relating to the deployment of excess CFM assets and staff. As a follow-on to this work, IPC is scheduled to conduct a workshop involving the Government of Mozambique (GRM) and CFM during which these issues might be more fully discussed, and if appropriate, the strategic management of the deployment process might be addressed.

The IPC team members responsible for this report are John Miller (Abt Associates), team leader and management specialist; Armando Lago (MSI), transportation economist; Charles Krakoff (Abt Associates), financial specialist; Samuel Taddessee (MSI), economist; Jill Murdoch (Abt Associates), labor specialist; Louis Helling (MSI), management and institutional specialist; Isabel Garcia (Thunder & Associates), labor law specialist; and Kenneth Cummins (Deloitte & Touche), labor specialist.

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1. PROJECT BACKGROUND AND RATIONALE

1.1. Project Setting

1.1.1 Economic and Social Conditions

The Mozambican railway and port system (CFM) has historically been a mainstay of Mozambique's economy, employing more than 40,000 people as recently as 1981, (14 percent of the estimated 300,000 people employed in the formal sector), and generating significant foreign exchange earnings. The CFM system is organized into four regional Directorates: South (CFM/S); Central (CFM/C); North (CFM/N); and Zambezia (CFM/Z). The CFM system was built largely to handle traffic to and from Mozambique's landlocked neighbors, chiefly Zimbabwe and Zambia (formerly Southern and Northern Rhodesia) and Malawi (formerly Nyasaland), as well as eastern sections of South Africa. The Southern region consists of three principal international lines: the Limpopo line linking the port of Maputo to Zimbabwe; the Goba line linking Maputo to Swaziland; and the Ressano Garcia line linking Maputo to the Eastern Transvaal region of South Africa. In addition, the CFM/S Directorate includes two short lines entirely within Mozambique, carrying purely domestic traffic: the line from Xai-Xai to Mauеле and Chicomo, and the line from the port of Inhambane to Inharrime.

The Ports of Maputo and Inhambane are also under the CFM/S Directorate. The CFM/C Directorate contains the main Beira Corridor line linking the Port of Beira to Zimbabwe. The Sena Line, linking Dondo on the Beira Corridor to the Malawian railway system, has been closed since 1975. CFM/C also includes two branch lines, of which only a small section, carrying domestic traffic only, remains in operation. The Port of Beira is also included in the CFM/C Directorate. The CFM/N Directorate contains the main line from the Port of Nacala to Lichinga, near the Malawian border, as well as two smaller lines. The Ports of Nacala and Pemba are under the CFM/N Directorate. CFM/Z contains the domestic short line from the Port of Quelimane to the town of Mocuba, as well as the Port of Quelimane itself.

In 1973, the last year in which operation of the railways was not inhibited by political or security problems, the three main corridors carried 20 million tons of freight, of which nearly 80 percent was international traffic from Mozambique's landlocked neighbors, chiefly Zimbabwe (then Rhodesia) and Malawi. In that year the CFM system carried over 90 percent of Zimbabwe's external freight traffic, 80 percent of Zambia's copper, and nearly 100 percent of Malawi's trade. In the same year, CFM's foreign exchange revenues of US\$110 million financed most of the structural deficit in Mozambique's balance of trade. Some 75 percent of this amount came from operations of the Maputo Corridor, which in 1973 carried 14 million tons of freight. Even as recently as 1979, at which time Mozambique observed trade sanctions against Rhodesia, CFM carried nearly nine million tons of freight, of which 6.8 million were international traffic, chiefly from South Africa (4.2 million tons) and Swaziland (1.9 million tons). By contrast, in 1991 the total CFM system carried less than 1.4 million tons of international freight, and the Maputo Corridor less than 900,000.¹ The CFM system as a whole in 1991 generated net losses of about US\$800 thousand on operating revenues of \$35 million. Most of these losses were accounted for

¹ CFM 1991 Annual Report, Maputo, 1992

by railway operations, which in 1991 showed operating losses of approximately US\$10 million. Taken alone, the Maputo Corridor's performance was even worse. While the operational, infrastructure and security assistance given to the Beira Corridor have enabled the Central region of CFM (CFM/C) to show an operating profit, each of the Southern region (CFM/S) lines, including the Xai-Xai and Inhambane short lines, continues to operate at a loss, as does CFM/S as a whole.

Political changes in the Southern African region, including the advent of majority rule in Zimbabwe, the likelihood of majority rule in South Africa, and the end of trade sanctions against South Africa, make it unlikely that the CFM system will ever recapture as much of the Southern African market as it once had. Increasingly, as political considerations lose their importance as determinants of transport routes in the region, transporters choose the lowest-cost option, which inevitably means that some traffic that for political reasons once went through Mozambique can be shipped more economically through South Africa. There is little question, however, that improvements on a number of dimensions could yield significant increases in the traffic carried by CFM and, possibly, an eventual return to profitability, particularly on those routes where one of the Mozambican corridors offers the shortest distance to a port. Current efforts by many of the major donors, including USAID, the World Bank, ODA and others, are aimed at improving the management and structure of CFM to the point where it can compete effectively with South African ports for a significant portion of the traffic to and from Zimbabwe, Malawi, Swaziland, Zambia, and South Africa itself.

In order to rebuild CFM and improve its capacity to compete for regional freight traffic, donors since the mid 1980s have invested more than \$400 million to upgrade both the principal rail corridors and the ports of Beira and Maputo as well as, to a lesser degree, the port of Nacala. Starting in the late 1980s, these donor-funded projects began to contribute to improvements in CFM performance. Rail traffic through Beira increased from a 20-year low of 296,000 tons in 1984 to 632,000 in 1989. Traffic through Maputo increased from 2.7 million tons in 1988 to 3.8 million in 1989. While the Beira Corridor has managed slight increases in traffic since 1989, on the CFM/S system these improvements were not sustained. CFM/S traffic, including domestic freight, dropped to 2.2 million tons in 1990, and again fell to 1.4 million tons in 1991.

Traffic on the CFM system is expected to increase significantly in 1992; however, this has little to do with any improvement in CFM's ability to compete. Instead, the worsening drought affecting all of Southern Africa has resulted in an increase in food shipments to Mozambique and other countries in the region, much of which is, and will continue to be, carried by CFM.

Since the mid-1980s, many changes have occurred in Mozambique which increase the likelihood that further assistance to CFM will be of significant benefit to the Mozambican economy as a whole. One of the key questions, of course, is the security situation, which has had repercussions throughout the economy and society. While it is impossible to predict when, and in what form, peace will come to Mozambique, some resolution of the conflict between the Government of Mozambique (GRM) and the Renamo rebels will be achieved, bringing with it more widespread efforts to rebuild the country, and a greater likelihood that such efforts will succeed. The GRM has, in addition, taken major steps towards the creation of a market economy. In 1987, with World Bank and IMF support, the GRM began implementing a comprehensive Economic

Rehabilitation Program (ERP). Exchange rate reform, improved allocation of foreign exchange, reduction of government subsidies to public enterprises and throughout the economy, have contributed to a reduction of Mozambique's fiscal deficit from over 13.5 percent of GDP in 1985/1986 to about 2.4 percent in 1991. The government has changed the status of government-owned enterprises from that of "state" enterprises, under the direct control of government, to that of "public", or parastatal, enterprises, which have greater autonomy in operational and management decisions. Going even further, government has begun to privatize state-owned companies in several industries (trucking, for example), through sale to citizens and non-citizens alike.

These measures have important implications for CFM. Successive devaluations of the metical (a depreciation of the real effective exchange rate of over 70 percent since 1987) have rendered CFM's tariff structure far more competitive internationally, as well as increasing the competitiveness of Mozambican exports. While this has little effect where imported equipment or raw materials are concerned, it means that the real wage of Mozambican workers has declined substantially in US dollar terms. The reform of the foreign exchange allocation system means that CFM and other enterprises are now allowed to retain 40 percent of foreign exchange earnings, improving both their motivation and their ability to compete internationally.

Further restructuring of CFM, therefore, takes place in the context of an economy in which the potential exists for dramatic increases, not only in the volume and profitability of other countries' freight exported or imported via Mozambique, but also in the volume and profitability of imports and exports generated by domestic supply and demand. While further economic restructuring carries with it this potential, it also increases market pressures to run the railway more efficiently.

1.1.2 Relationship to USAID Strategy

USAID began to assist CFM in 1986 with a program providing \$5.5 million for the overhaul of nine steam and two diesel locomotives and the partial conversion of the Beira workshop to diesel. The Mozambique Regional Rail Systems Support (RRSS) Project, started in 1988, focussed on problems of inadequately maintained locomotives and wagons, poorly equipped and inadequate maintenance workshops, and inadequate financial and operations management systems in CFM. Initial project funding provided \$34.5 million for locomotive maintenance, improvements in railway workshops, and technical assistance and training to CFM, particularly to improve CFM's financial management capacity. As well as providing CFM with the resources to rehabilitate at least eight locomotives, maintain the fleet of 60 diesel locomotives, complete the Beira workshop, and reconstruct the Maputo diesel workshop and shed, the RRSS Project also funded the provision of 25 technical advisors and trainers in the areas of financial management and locomotive repair. The original Project Paper was amended in 1990, when projected traffic increases indicated a need for additional locomotives, as well as a broader approach to CFM's continuing management problems. The amendment provided an additional \$21 million to purchase 10 new locomotives and to carry out an institutional assessment of CFM.

This Project Paper Amendment is consistent with the A.I.D. strategy already embodied in the RRSS Project, which is intended to contribute significantly to development not only in Mozambique, but in the Southern African region as a whole. A.I.D.'s Regional Development

Strategy for Southern Africa has as a strategic objective for the transport sector to "install capacity and efficiency in the transport systems that serve regional cooperation and provide access to regional and external markets." In addition, improved rail efficiency may, in the medium to long term, contribute to USAID/Mozambique's food security strategy by providing a reliable transport link between rural producers, urban consumers, and export outlets.

The overall rationale for this amendment, and its relationship to the existing RRSS Project, is made explicit in Maputo 00616, which states, "The overall donor program, particularly the combination of the [World] Bank's project to streamline and lease the operations and USAID's project amendment to redeploy assets, is a logical extension of the present project, and will contribute to the original project's purpose and objectives more effectively than presently planned activities....What is proposed...is a natural expansion of the present project to increase the overall performance of CFM, particularly CFM/S. Major reductions in staff and the conversion of uneconomic physical assets are critical to transform the railways and ports from permanent drains on the economy to profitable providers of efficient transport services to the national and regional economy."

1.2 Statement of the Problem

CFM suffers from most of the operational, management, and financial problems common to most African railways. For Mozambique, however, these problems are exacerbated, not only by the continuing civil war, but also by its close proximity to South Africa, whose railways and ports have more in common with those of other industrialized countries than with those in its Southern African neighbors. These problems include:

- **Loss and damage of cargo.** While the war has destroyed locomotives, wagons, and cargo, Mozambican ports are also a serious source of loss. For goods shipped from Swaziland via the Maputo Corridor, for example, the average cost of loss and damage is \$33.33 per ton (on high value shipments with values greater than \$2222 per ton), representing 45 percent of the total cost of shipment of \$74.75 per ton, as compared to loss/damage of \$11.11 per ton for goods shipped via Durban, out of a total shipping cost of \$40.59. This means that, even if CFM shipped goods from Swaziland free of charge, the cost to the exporter would still be greater than using the Durban route. The problem is especially serious in CFM/S. Shipments from Zimbabwe through the Beira Corridor are only slightly more costly than through Durban, with loss/damage costs only slightly higher. This indicates that, in the case of the Beira Corridor, modest improvements in operating efficiency could generate significant increases in traffic. It also indicates that, while improvements in efficiency are essential in CFM/S rail operations, port operations must also be drastically improved.²
- **Overall port handling problems.** Port demurrage charges in the Mozambican ports of Beira, Maputo and Nacala are \$7.56 per ton, as compared to \$1.68 per ton in South African ports. The SADCC Transport Investment Priority Assessment (STIPA) in 1991

² SADCC Transport Investment Priority Assessment (STIPA), USAID - Harare, De Leuw Cather International Ltd., August 1991.

concluded that restructuring Mozambican ports was the single most important transport infrastructure investment project in the entire SADCC region. STIPA's assessment of the benefits from port restructuring indicated that as many as 90 percent of the 14,000 port workers were unnecessary to efficient port operations. A combination of reduced operating costs from releasing unnecessary workers and increased revenues from improved efficiency and the resulting increases in traffic, could bring net benefits of \$7 million per year. At the same time, however, restructuring of the railways alone is not sufficient to bring about the desired increases in traffic.

- **Excessive labor costs resulting from overstaffing.** In 1991, on operating revenues of MT 15.35 billion, CFM rail operations had salary costs of MT 13.35 billion, or 87 percent of revenues. The performance of CFM/S was largely offset by that of CFM/C, which showed operating revenues of MT 10 billion, against labor costs of only MT 4.7 billion. In CFM/S, labor costs of MT 6.0 billion actually exceeded revenues of MT 4.2 billion. The performance of CFM/N and CFM/Zambezia was even worse. These figures, moreover, do not take into account the salaries costs incurred by the CFM Directorate General, a portion of which is allocable to the railways as overhead.
 - Widely divergent estimates of the magnitude of this problem have been made, some for the CFM system as a whole, and others that focus on rail or port operations alone or a single CFM region in isolation. The issue is further complicated by uncertainty as to future traffic increases.
 - Overstaffing in the ports, while certainly a problem, has not prevented CFM port operations from operating at a profit. Port staffing problems are less acute, largely because of the large numbers of temporary workers, who are maintained as part of an available labor pool, but are only hired and paid on a daily basis when there is work to be done.
 - Of a current CFM work force of about 35,000, of which 19,930 are permanent staff, approximately 13,100 are surplus to current CFM requirements.³
- **Weakness of CFM management.** In spite of the many capable people employed by CFM at all levels, there are many weaknesses undermining CFM's ability to operate the railways efficiently. These include:
 - Lack of capability to generate usable data and to formulate operational and financial action plans based on those data.
 - Lack of management accountability for operating results.

³ Precise staffing numbers have been difficult to obtain. Numerous inconsistencies have been found, both in totals and in departmental and age/skill breakdowns. This is due to several factors including a lack of availability of detailed management information; non-standard methods of data collection and presentation; and differing dates of origin. These numbers, and those subsequently presented in this paper, represent the best possible synthesis of and estimate from the numbers available from various CFM and non-CFM sources.

- The inclusion of assets and activities in CFM's portfolio that are not critical to efficient operation of a railway or ports, but which constitute a drain on management and financial resources. These include housing, clinics, railway clubs, schools, factories for the manufacture of concrete and wooden sleepers, quarries, and a host of repair and maintenance functions. In many other countries, some of these products and services are procured from other companies through a variety of subcontracting or purchase mechanisms.

These problems have had a devastating effect on overall performance of CFM, as evidenced by continued decline in freight tonnage and passenger transport as well as by continued increases in CFM's operating deficits. This decline is far more precipitous than earlier donor projections indicated, and requires more radical measures than the training, increases in locomotive and workshop capacity, and other assistance so far provided or envisaged by this, and other donor projects. The previous PP amendment acknowledged that this might be the case, stating, "At present RRSS and other donor projects do not have the scope necessary to correct the fundamental management deficiencies found everywhere: workshops, dispatching, materials management, upkeep of the buildings, and coordination of CFM's geographically separate and partially autonomous rail lines and ports."

While the 1990 PP amendment included a component to perform a systemic study and formulate a systemic approach to CFM's problems, Maputo 00616 concludes that, "this planned component has been overtaken by the events described...The development of a systemic study of CFM's management problems has become an unaffordable luxury in the face of severe traffic declines and the threat of new investments in infrastructure that could lead to the long-term diversion of traffic from Maputo to ports in South Africa (RSA). Furthermore, the study planned in 1990 would be little more than a distraction from the work of the investment advisory firm to be funded by the World Bank."

1.3 Other Donor Activities

The activities proposed by the current PP Amendment take place in the context of a major new donor initiative, coordinated by the World Bank and agreed to by the GRM in March 1992, which was formulated in consultation and cooperation with USAID, and to which A.I.D. expects to contribute substantially.

The centerpiece of the World Bank project is the engagement of an investment advisory firm to: 1) analyze the market for CFM/S services and formulate a business strategy for the CFM/S system, including identification of the operating, management, personnel, investment, and assets management strategies and actions required to achieve an appropriate cost structure and an acceptable financial rate of return on assets; 2) evaluate several possible options for restructuring and partial privatization of CFM/S which will enable the objectives of the reformulated business strategy to be achieved; and, 3) assist in the implementation of the strategies and restructuring options as agreed by the World Bank and the GRM.

The activities undertaken by the investment advisory firm are expected to encompass the following components:

- Evaluating financial prospects for the CFM/S system and identifying the related financial, operational, investment, and management strategies required to realize these prospects and, ultimately, return to profitability.
- Defining options available in restructuring CFM/S and attracting private capital and technical expertise required for successful implementation of the identified strategies.
- Assisting the GRM and CFM to attract and negotiate private sector participation and investment in selected areas of the CFM/S system and developing an implementation strategy for the management of those activities retained by CFM.
- Assisting the GRM and CFM in structuring and negotiating private sector investment proposals.
- For each of the options considered, assessing the implications on redundancy of personnel and assets, and recommending strategies for dealing with problems or opportunities that may arise from implementation of each option considered.

One of the key aspects of the proposed World Bank project is the question of redundant personnel in the restructuring, not only of CFM/S, but of the entire CFM system. This is made explicit in the terms of reference for the investment advisory service, which states, "Due to the key role of manpower resources in this exercise, the investigations and analyses...should cover all CFM and not only the CFM/S system." The terms of reference call for the investment advisors to: 1) determine the number of employees in the railway and port subsystems, classified by skills, function and length of service; 2) identify current industrial relations practices and pension regulations, determining whether they are mandated by law or are governed by evolved practices; 3) provide estimates of the manpower requirements by operational category and the degree of labor redundancy or skills shortage by occupational category; 4) formulate strategies for effecting reductions in manpower requirements; 5) develop new remuneration policies and service conditions necessary to ensure that CFM can compete effectively for personnel possessing the required skills; 6) assess existing training facilities and resources and identify strategies for strengthening training in critical skill areas, while ensuring cost recovery or funding for any training programs.

While the terms of reference have called for the investment advisors to evaluate several options for CFM/S restructuring, the World Bank, partly because of a perceived need to minimize the time spent on analysis and to move as rapidly as possible towards implementation of a restructuring plan, has decided, with the agreement of the GRM, to limit the number of options to two. These are: 1) a "master lease," under which CFM/S railway operations would be leased to a single company, which in turn might subcontract or sublet certain components of CFM/S operations to other private operators; and 2) a mix of public and private-sector management of CFM/S, with certain functions carried out under management contracts or other arrangements with private operators, and others retained by CFM. Whichever option is chosen, one possibility being to combine aspects of each of those under consideration, Government has agreed to the principle that technical assistance itself is not enough to solve CFM's problems and that, at least for CFM/S, some form of private operation is essential if it is to survive.

Questions do, however, remain as to exactly which parts of existing CFM/S operations would be covered by a master lease or otherwise turned over to private management. It will be an important responsibility of the investment advisory firm to determine the optimal structure that is consistent with both the need for more efficient and profitable management of CFM/S, and with other economic and social objectives of the GRM. One of the most critical issues that remain unresolved is the status of CFM/S employees and whether they should be 1) dismissed en masse, with a lessee then deciding whom to rehire; 2) transferred as part of a lease or other private management arrangement, the new management then deciding whom to retain and whom to let go; or 3) the subject of CFM's own determination of staffing requirements, with CFM determining who is retained and who is made redundant.

The current PP amendment, while not concerning itself directly with these questions, is intended to deal with the problems that will arise from large scale reductions in the CFM workforce and the need to dispose of redundant assets, both from CFM/S non-railway operations and from other CFM operations (e.g., the short lines) that will be restructured or closed.

Because the options for redeployment of redundant workers will to a large extent be contingent upon the restructuring of CFM and the degree to which certain CFM operations are privatized or otherwise divested, the activities covered by this PP amendment will have to take place in close collaboration with the investment advisory services to be provided under the World Bank project. These activities are, in fact, considered to be part of the overall World Bank project, for which USAID has accepted responsibility. Under the agreement between the World Bank and the GRM, "[A]ll labor-related issues, other than the refinement of the numbers of potentially redundant workers in CFM/S should be addressed under this component...Given the likely importance of manpower issues in any future strategy for the CFM/S system, the [World Bank] mission believes that negotiations should be subject to prior agreement between Government, CFM and USAID on terms of reference for this component."

The concern has been expressed in State 104102 that if the World Bank program for whatever reason fails to be implemented (for example, if a commercial lease of CFM/S is not achieved), the redundancy component to be undertaken by USAID might then be inappropriate or infeasible on its own. The planned reductions in personnel, however, are not restricted to CFM/S but are intended to cover the entire CFM rail system, as well as the overall and regional Directorates General. Similarly, the redundant assets will come not only from a restructured CFM/S but also from possible closing of the short lines, the restructuring and privatization of certain port operations under a British ODA-funded project, and restructuring and possible privatization of rail-related operations throughout the CFM system, including but not restricted to workshops and housing. Failure of the World Bank's leasing plan, while it might affect the numbers of people made redundant, and their location, would not eliminate the need for USAID to develop programs to redeploy redundant workers and to assist in their reintegration into the productive economy.

In addition to the World Bank program, ODA is undertaking a major \$34 million port restructuring program, focusing on rehabilitation and partial privatization of Maputo port operations. The success of this program is important to the success of the current project, since without significant improvements in port operations restructuring of the railways alone may not

be sufficient to bring the Maputo Corridor into a position where it is cost competitive with South African routes.

As indicated in Section 1.2, significant numbers of port workers will also be covered by the redeployment programs developed under this project.

2. PROJECT DESCRIPTION

2.1 Goal and Purpose

The goal of the original Regional Rail Systems Support (RRSS) Program was to support the development of a stronger economic foundation for growth in the Southern Africa region. This remains the goal of the amended project. The purpose of this project is to contribute to the ability of the Mozambique railway system (CFM) to reduce its operating deficits in order to regain a portion of the share of the regional rail transport market it has lost in recent years to other countries.

The original RRSS project was aimed at increasing the tractive capacity of CFM and developing a more commercially-oriented system of financial management for the railway. The 1990 Project Paper amendment, by providing new locomotives to CFM, was intended to increase CFM's freight hauling capacity from 5.8 million tons to approximately 7.0 million tons, which in turn was expected to result in reduction of at least \$3.6 million in operating deficits by 1995. The amended project, in addition, was intended to provide a basis for necessary and fundamental changes in CFM by financing an in-depth institutional study of requirements for transforming CFM into an effective and commercially viable railroad. Unfortunately, before either of these amendments was implemented, CFM experience further and rapid declines in traffic, creating the necessity to undertake more radical and rapid steps to restructure CFM.

Revitalization of CFM through some form of commercial lease or other private management arrangement will be difficult to achieve without creating programs to absorb the excess workers who will no longer be employed. In addition, the commercial reorientation of CFM will require that many existing CFM operations be divested, through privatization or outright closure. A more efficient and profitable CFM will, however, have little net benefit either to Mozambique or to the region as a whole if one effect of restructuring is to release some 13,000 workers into the labor force with few prospects of productive employment elsewhere. Disposal of redundant assets therefore also becomes a critical problem, both in the potential of those assets to generate new employment opportunities and in their ability, through sale, lease or other mechanisms, to generate revenues and reduce carrying costs for CFM and the GRM.

The proposed project amendment to develop redeployment schemes for redundant workers and assets will, therefore, contribute to the achievement of both the overall RRSS goal of supporting economic growth in Southern Africa and the purpose of increasing the efficiency and reducing the operating deficits of CFM.

2.2 Project Strategy

The strategy for achievement of the project goal and purpose has two principal components: 1) to assist the GRM, CFM and the private sector to identify and develop new, productive economic opportunities for workers made redundant by CFM restructuring; 2) to redeploy excess CFM assets so as to create the maximum possible number of productive employment opportunities and to increase the operating efficiency of CFM. These components are fully consistent with the goal of supporting development of a stronger economic foundation for growth in Southern Africa, and with the purpose of enabling the Mozambican railway to reduce its operating deficit and to regain a portion of its previous share of the regional rail transport market.

Component 1, by helping GRM, CFM and the private sector to identify and develop new opportunities for redundant railway workers, will contribute to development of a more vibrant private sector in Mozambique. It will also, by absorbing excess CFM railway workers in a productive way, make the idea of CFM restructuring more acceptable to workers, unions, management, provincial governments, and other groups potentially affected by the restructuring. Furthermore, by reducing the overall workforce, Component 1 will result in significant reductions in operating costs.

Component 2, by redeploying excess CFM assets, will contribute directly to the generation of new employment opportunities, since it is those assets that will form the basis of some new and productive private enterprises to be created. Divestiture of these excess assets will also contribute to the purpose of reducing CFM's operating deficits and rendering it more competitive in the regional transport market.

Although its success does not depend on other donors' activities, this project will collaborate closely with both the World Bank Investment Advisory team and with the eventual lessee of CFM/S rail operations, as well as with teams currently providing financial and operations management assistance to CFM. As the World Bank investment advisors identify and evaluate CFM restructuring options and refine the numbers of CFM employees to be made redundant, the USAID project team should have a major influence on choosing options that maximize productive employment opportunities for redundant workers. The USAID project will also work closely with the eventual CFM/S lessee to ensure that services and physical inputs are procured from enterprises employing or run by former CFM employees or employing former CFM physical assets, to the maximum extent consistent with the efficient and profitable operation of CFM/S. In the other CFM regions, the project will take a leading role in assisting the CFM regional directorates and Directorate General to calculate staffing requirements by location, skill category and skill level, and to identify those workers who should no longer be employed by CFM. In addition, because the problems of rail and port operations are so closely interrelated, and since the restructuring of rail and ports will both result in large-scale workforce reductions, close cooperation with the ODA ports restructuring program is also envisaged.

A five-year project life is anticipated. Because it will be impossible to absorb the expected 3,300 early retirees and 9,500 to 10,000 redundant workers into other productive activities immediately, a phased reduction of staff is anticipated over a three-to-four-year period, in which each cohort of workers to be released will be employed productively before their severance payments cease.

Although it does not fall within the scope of the project, it should be noted that a substantial training exercise must be undertaken within CFM during the life of this project. With the scale of redundancies proposed, far greater demands will be placed on the productivity and efficiency of the workers who remain. This will require increases in general skill levels, changes in work organization and working practices, and profound changes in attitudes of CFM employees at all levels. A comprehensive training program will be needed that can reach all members of CFM staff in order to ensure that the goals of restructuring are achieved.

2.3 End of Project Status

The end of project status (EOPS) will be measured at some point after the expiration of the estimated two years of severance payments expected to be made to redundant workers. While a five-year project life is envisaged, results are unlikely to be fully measurable within that time. It is only after the project period, when the benefits to CFM of reducing its salary expenditures take full effect, that significant economic returns may be generated. Apart from measurement of economic returns, however, the EOPS should include the following:

- The successful reorganization of CFM which may include, but not be limited to: the lease, sublease, sale, or other divestiture of railway operations other than core traffic operations (e.g., workshops), throughout the CFM system, to the extent that such divestiture can be demonstrated to increase the operating efficiency and profit potential of CFM, and to provide significant benefits in generating alternative employment for redundant CFM staff.
- Successful structuring and implementation of an early retirement program for approximately 3,300 workers reaching age 55 during the life of the project.
- Productive employment of at least 40 percent of the workers made redundant by the CFM restructuring program, excluding those aged 55 or over who opt for early retirement (at least 4,000 out of a projected 9,500 to 10,000 redundant workers).
- Successful identification of railway assets that are not essential to efficient rail operations, and their sale or conversion to other productive use.
- Successful closing of the short lines, or justification of their continued operation.
- Development of plans for alternative transport to serve the regions formerly served by the short lines in the event that these lines are closed.
- Development of plans, in coordination with the redeployment of workers and assets, of programs to mitigate the effects of rail line closures on the areas formerly served by the short lines, if closed.

2.4 Outputs/Project Activities

2.4.1 CFM/S Restructuring

While this project does not depend on the anticipated restructuring of CFM/S under a proposed World Bank project, the numbers and kinds of CFM employees made redundant will depend, to a degree, on the form taken by the CFM/S restructuring.

This master lease concept proposed by the World Bank for the restructuring of CFM/S provides scope for the leasing or subleasing of specialized operations such as workshops, factories, and quarries to private operators, whether Mozambican or foreign. Independently of the World Bank project, similar operations in other regions of CFM could similarly be divested, through leasing, management contracts, or outright sale and privatization. It is these operations, throughout the CFM system, that are likely to provide a large number of reemployment opportunities for redundant CFM workers. The means of disposing of them is therefore critical to the success of the project. While the master lease concept indicates that these specialized operations may be included in the master lease and then subleased as appropriate, other options should be considered by the amended RRSS project, which may provide for greater operating efficiency, greater participation by the Mozambican private sector, and the creation of greater numbers of employment opportunities.

One such option could be the retention of these specialized operations by CFM, subject to an agreement between the GRM and USAID that would commit CFM to their operational and/or financial privatization. A variety of mechanisms could be used to achieve this objective, including outright sale, leasing on terms similar to the lease of rail and port operations, or management contracts with performance incentives built in.

2.4.2 Short Lines

CFM currently operates three short lines: Inhambane-Inharrime, Quelimane-Mocuba (CFM-Zambezia), and Xai-Xai-Mauele-Chicomo. These lines, which are not connected to the main corridor lines in Mozambique, nor to the Southern African regional rail network, are at best peripheral to the main operations of CFM. While they may, in some ways, contribute to the economies of the areas they serve, as purely domestic lines they do not affect CFM's international competitiveness, except insofar as their continued operation may be a drain on CFM's overall management and financial resources. The Quelimane line in 1991 hauled only 8,500 tons, while the Inhambane line carried only 500 tons and the Xai-Xai line 300 tons, representing in aggregate only 0.4 percent of the total freight carried by the CFM rail system. These three lines are slightly more important in terms of passenger traffic. The Inhambane line in 1991 carried 38,000 passengers, the Quelimane line 17,500, and the Xai-Xai line 5900, amounting in total to slightly over three percent of the total passengers carried by CFM. These represent, however, significant declines from previous years. In 1989, for example, the Inhambane line carried 71,600 passengers and the Xai-Xai line 12,800. In 1990 the Quelimane line carried over 68,000 passengers. These drastic fluctuations in passenger traffic are most probably attributable to changes in the security situation in the regions served by these lines.

Each of these rail lines has generated losses in each of the past ten years that are high relative to the level of traffic they carry. Projections of future traffic indicate, moreover, that there is little chance that these lines will return to profitable operation. Consequently, it is hard to justify their continued operation on purely economic grounds. USAID has therefore proposed that these lines be shut down and the assets sold or otherwise redeployed. There is resistance to this idea at the level of CFM and at both the national and provincial government levels. Government and CFM have expressed the concern that the negative effects on the regional economies of closing these lines would far outweigh the positive benefits in cost savings and overall CFM efficiency.

It is also clear, at least for the Quelimane and Xai-Xai lines, that even at current levels of traffic they can at least break even given adequate staff reductions (see Annex D). To do this would permit CFM, once peace returns, to conduct a more thorough analysis of these lines' long-term prospects and to make the appropriate decisions as to their ultimate closure or continued operation.

Quelimane: CFM-Zambezia, as a whole, is close to breaking even. It is questionable, though, whether the port alone, without the railway to support it, could continue to operate profitably. The Quelimane line, moreover, is something of a special case. While the port of Quelimane is, in fact, a profitable operation, it is difficult to determine whether it will remain so if the railway line is closed. The railway, however, does continue to lose money, the amount depending on the extent to which the security situation has disrupted normal operations, even at a reduced level. Zambezia, as the most populous province of Mozambique and potentially its most productive agricultural area, could generate enough traffic for the Quelimane railway line to operate at a profit. The project will undertake a detailed study of the Quelimane line, based on the analysis in Annex D, to determine alternatives for closure or continued operation of the line, and the relative costs and benefits of each option. Pending the conclusions of this study, the CFM/Z railway workforce will be reduced significantly so as to reduce to a minimum its operating losses.

Xai-Xai: The Xai-Xai railway does not carry enough freight or passenger traffic to justify its continued operation on purely economic grounds. As a narrow-gauge steam locomotive line, however, it could have some tourist potential once the war ends and the tourist infrastructure is rebuilt. The current cost of operating the line is very low, amounting to some \$120,000 per year. With appropriate workforce reductions this could be reduced to about \$80,000. Since the existing road does not go as far as Chicomo or Mauele, closure of the railway without providing for alternative access would have dire consequences for the populations of those towns and the surrounding areas. Constructing even a basic dirt road to reach these towns, a distance of some 90 kilometers, would cost about \$10,000 per kilometer, or a total of \$900,000, which exceeds the present value of operating the line in perpetuity. The amended project will undertake a detailed study of the Xai-Xai line, which will include a more detailed analysis of the potential for its eventual profitable operation, as well as its potential for ultimate privatization as a tourist line, and will compare the associated costs with the cost of providing alternative means of transport (i.e., roads) to the areas the line now serves. This study will also analyze the economic and social effects of closing the line.

Inhambane: Of the three short lines, Inhambane is the least likely to become profitable under any circumstances, although its performance has further been impaired by frequent attacks on the line,

such that in the first six months of 1992 only 18 trains traveled on the line, carrying just over 1,100 tons of cargo and 107 passengers. The Inhambane line generated revenues of just MT 10.8 million, as against MT 112.5 million in expenses. In 1983 and 1984, rail revenues in Inhambane were MT 1.4 million and 4.5 million, respectively, and salary expenses alone were MT 30.8 million and 23.6 million. Its performance appears to have been no better in colonial times. Established in 1918, primarily to carry cotton produced at plantations along the line, traffic began to decline when the colonial administration outlawed forced labor on the plantations. Its decline became even more pronounced in the 1950s when the road linking Maputo to Inhambane was built, to the extent that in 1970 the colonial government closed the line entirely. It remained closed until 1980 when the provincial government requested that it be reopened. According to CFM sources, however, closure of the line had little, if any, adverse effect on the region. The port continues to make a profit, as it did when the rail line was not operating. The only conceivable justification for continuing to operate the line is the number of passengers it historically has carried (over 300 trains carrying 200 thousand passengers in 1984). This, however, is a level of demand that could be satisfied by fewer than 10 minibuses traveling the same route (See Annex F). While the project will conduct a more thorough analysis, based on the calculations in Annex F, the tentative conclusion is that the Inhambane line should be closed. Except for the first 10 kilometers of track out of Inhambane, which will continue to be useful for the National Railway School training courses, the rest of the track can be removed, or the local population allowed to tear it up for use as building material or for other purposes.

2.4.3 Alternative Plans for Retrenchment of Personnel

The retrenchment options chosen, and the number of workers eligible for assistance under one or more of these options, will depend to a large extent on the overall restructuring package funded and assisted by the World Bank. While it appears that the "master lease" concept, under which all "operationally useful" assets would be transferred to a single private sector lessee, which in turn would operate (with possible subleasing of some operations) the CFM/S system, is the option preferred by the World Bank, no effort has been made to define precisely what is meant by "operationally useful" assets. The question therefore remains to what degree operations such as maintenance of way, workshops, quarries, and other important but not strictly railway functions would be included in the master lease. The transfer or non-transfer of these operations under a lease arrangement will, naturally, affect the numbers of people for whom redeployment alternatives must be arranged.

CFM itself, without donor assistance, has only managed to reduce its workforce from over 37,000 in 1990 to around 35,000, largely by implementing a compulsory early retirement scheme, reducing the standard retirement age from 65 to 60. A future reduction to 55, at least on a voluntary basis, is contemplated, which could result in further reductions of approximately 3310 permanent employees. According to the calculations summarized in Section 1.2, some 3310 workers aged 55 or over, or who will reach age 55 by mid-1994, can be expected to be eligible for and to accept an early retirement package. CFM typically must pay 7 percent of a worker's annual salary into the Ministry of Finance pension fund. Any early retirement scheme, to be acceptable to the GRM, would require that CFM (or USAID) continue to make the pension fund contributions until the workers involved reach age 65.

The current 35,000 or so workers in the CFM system may, by attrition and retirement, be further reduced to fewer than 31,000. Of these, some 10,500 are employed at the ports on a temporary contract basis, and about 4,000 are permanent and temporary employees of the North and South maintenance brigades, responsible for track maintenance and operation of the concrete sleeper factory and the quarries. These temporary workers can be let go without any provision for severance pay or future redeployment, while the permanent employees of the brigades are externally funded. This leaves approximately 16,500 rail and port workers potentially affected by workforce reductions resulting from CFM restructuring. As discussed in Section 1.2, the best estimate of future traffic and staffing needs indicates that the project must find or develop reemployment opportunities for many of the approximately 10,000 workers, most of whom are unskilled or semi-skilled.

A number of possibilities are proposed to redeploy these remaining workers. They include:

- Privatization of non-railway operations: In railway systems in other countries, many operations such as maintenance of way, workshops, and other infrastructure support functions, are contracted by the railway to private operators. Often these arrangements permit operations formerly owned by the railway and providing services only to the railway to develop other markets for their services. CFM, for example, currently operates two concrete sleeper factories, staffed by the maintenance brigades and employing more than 100 people each. If privatized or leased and encouraged to develop other markets and new products, these could become commercially viable enterprises employing more people than they do currently. These factories could, for example, produce concrete pipe, precast concrete slabs, and other products for which a large potential demand exists in road building, waterworks, and commercial, industrial, and residential construction. Quarries, currently producing ballast, could begin to provide aggregate for concrete, ballast for road construction, again potentially increasing employment. Railway workshops, if privatized, could perform a variety of machinery maintenance for which non-railway demand could be found, as well as, with relatively modest investment, producing and marketing fabricated metal products.

These and other similar options will require detailed analysis, which short-term technical assistance will provide under the amended project. Consultants funded under the amended project will study these options in detail, analyzing potential railway and non-railway markets for the products and services to be offered by these enterprises; specifying the number of workers and the kinds of skills required; identifying potential private operators; structuring financial and managerial contract terms for privatization or lease; determining required levels and possible sources of new investment; determining training and technical assistance needs, and providing technical assistance and training as required.

The Maputo Port restructuring currently underway has already begun privatizing several port operations, including the coal and citrus terminals, through lease or management contract to private, commercial operators. In each case the proposed private operator has presented its estimated staffing requirement, and has been required under the terms of the agreement to employ at least 90 percent of this number from existing CFM employees.

This, or a similar formula, could be applied in the privatization of railway assets and operations.

- **Agricultural assistance:** While it is not feasible to contemplate moving urban-based CFM workers to rural areas, whether through compulsion or inducements, considerable potential exists to enable many current maintenance of way workers, who are based in rural areas and already do subsistence farming, to become more efficient and productive farmers capable of supporting themselves entirely through agricultural work. A combination of agricultural credit, provision of better farm implements, extension services, and assistance in marketing of produce could be provided by the amended project, providing alternative employment for as many as 1000 workers. The viability of such schemes may, however, be severely limited in many areas due to drought and war, and must be evaluated carefully.
- **Road building:** Several major road building projects are underway, or in planning stages, affecting most of the major transport routes in the country. These include projects funded by the United Nations Development Program (UNDP) and the World Bank. These projects have, however, been one of the main reemployment options for demobilized soldiers and for workers on the South African mines who have been repatriated due to employment cutbacks. As a result, the number of workers available for such projects exceeds the demand. While this may change, it is unlikely that road or other public works projects will provide reemployment for more than about 500 former CFM workers. These jobs are dependent on location, since they can employ only those ex-CFM workers who live close to the project site, and they are temporary, ending once the road is completed. However, as part of the proposed analysis of the economic, financial and social costs and benefits associated with closing the short lines or keeping them in operation, the project should undertake an analysis of the costs and benefits of building new roads or rehabilitating existing ones to provide alternate transport routes, together with the numbers of former CFM workers who might be employed on road construction or rehabilitation in these areas. Also, to the extent that any new road-building projects are initiated, particularly if funded by USAID, they could generate additional employment opportunities.
- **Other Private Sector Employment:** The project will also fund outplacement for ex-CFM employees to help them to find jobs with existing private sector firms. This component will also include assessing skills of individual workers and advising them on employment and training options.
- **Small-Scale Mining:** Each Ministry operates a "Fundo de Fomento", a fund for support of small-scale activities in the area or industry with which it is concerned. While many of these funds are not very effective, the fund operated by the Ministry of Mines has granted concessions and provided funds and equipment to over 100 small scale miners, mostly in Cabo Delgado and Manica Provinces. Significant potential exists for at least 100 ex-CFM employees, especially those who come from those provinces, to go into small-scale mining. The project will work with the Ministry of Mines Fund to assist those

workers choosing such an option, and will provide technical assistance and training to the Fund's professional staff, and financial support, as required.

- **Road Transport Services and Other Small Enterprise Development:** In the areas served by the short lines, the scope may exist for former CFM employees to provide road transport services to replace freight and passenger services formerly provided by CFM trains. Passenger train service has almost completely been eliminated on the Beira Corridor, and private and cooperative bus, truck and minivan operators now offer cheaper, faster, and more profitable passenger service. Given the restructuring and privatization of the trucking industry currently being undertaken with USAID assistance, the scope exists for private operators to buy or lease trucks and to provide private trucking services. The amended RRSS project could provide loan guarantees or other financial assistance to former CFM employees seeking to go into the private road transport business. The growth of private trucking could also provide opportunities for truck servicing and other support industries. The amended RRSS project, as part of its analysis of the short lines, will analyze potential employment and the requirements for financial and technical assistance associated with development of private trucking services in areas currently served by the short lines, as well as with the development of road transport of passengers to replace passenger rail service on the main lines.

In addition to road transport, such credit lines will be extended to any potentially viable enterprise proposed by retrenched CFM workers, subject to normal procedures in assessing and monitoring the progress of the proposed enterprise. As discussed in greater detail in Section 2.5.4, this credit will be applied through existing financial institutions. The project will, in addition, provide training and management support to the financial institutions selected, to improve their ability to monitor and assist these enterprises.

- **Training:** In addition to initiatives to facilitate direct re-entry into the productive labor force there will be up to 1,500 training scholarships available for redundant CFM employees aged below 50. Such scholarships will include training in vocational and trade skills as well as in general education in existing institutions.

While receiving training, employees will continue to be paid severance on a monthly basis until it is exhausted, and thereafter may receive a small allowance until the course is completed. Most of the funds provided for this training initiative will be in the form of institutional support to Mozambican training institutions, to help them to develop the curricula required, to recruit additional training staff as needed, and to purchase training materials.

2.4.4 Alternative Redeployment Plans for Capital Assets

The amended project is unlikely to involve extensive redeployment of assets independently of the personnel currently employed in use of those assets. The main assets likely to be divested by CFM are those, such as the workshops, which employ significant numbers of people in non-railway operations and which have significant potential for sale and operation as independent, private sector enterprises. Several such possibilities are described in Section 2.4.3, above. The

value of most of the physical assets available for divestiture is less in the market value of machinery, plant and equipment, spare parts, and land and buildings, than in their potential value as functioning operations employing skilled or semi-skilled workers, and in their ability to produce products and services for which a significant market may exist, domestically and abroad. If efforts are made to sell CFM's excess physical assets on a piecemeal basis, their value will be negligible. Much of the machinery in use in the workshops, for example, is at least 20 years old, and in many cases as much as 50 years old, and fully depreciated. The cost of transporting these machines to another location, and the cost of installation, would almost certainly far exceed the market value of the machines themselves. Their value instead lies almost entirely in their integration into a functioning productive unit. For CFM to realize any value from their sale would require that the entire productive unit, including buildings and staff, be transferred to a private owner who would then need to invest additional funds to convert the unit to commercial production. Workshop buildings, and the land they occupy, may be significantly more valuable. Directly adjacent to the port, the Maputo and Beira workshop land and buildings could be the nucleus of a new industrial zone, possibly an Export Processing Zone, in which case their value could be substantial. Since private land ownership remains illegal in Mozambique, and no real estate market exists, it is difficult to assess the value of CFM land and buildings. It is unlikely in the near term, even assuming that the law changes to permit private land ownership, that the land and buildings could be sold to private investors who would turn it to productive use immediately. Currently the only likely purchasers would be speculators, who would have no inclination to keep the workshops in operation and would thus release many hundreds of additional workers.

The likeliest scenario for disposal of these assets, and the one most likely to maintain productive employment for former CFM employees, is their lease or concession as part of an existing productive capacity. The project will provide for independent valuation of assets as part of the preparation of investment prospectuses. It is probable, however, that the value may be notional, and that they may be sold for a minimal amount to investors who commit themselves to providing the additional investment, as well as training, management and marketing assistance needed to keep the existing work force productively employed.

Other assets, such as housing owned by CFM, is equally problematic. Some 20 percent of permanent CFM employees live in houses owned and maintained by CFM. When they retire, workers receive from CFM sufficient building materials to build another house, the one they have occupied reverting to CFM. As part of its restructuring, CFM may no longer provide or maintain housing for its workers, nor would it need to provide building materials to workers who retire. The amended project will design a program to sell CFM houses to the workers currently occupying them. This is likely to involve concessional payment terms, if not an outright giveaway, and may not generate a significant return to CFM. Since housing is currently an important part of some workers' compensation, any scheme to privatize housing may also need to study and revise existing salary structures to compensate workers for the loss of this important benefit.

CFM also has valuable assets in its Railway Clubs, stadiums, dormitories, schools and clinics. Since, generally, these operations are important to the communities in which they are located, but are not critical to CFM's own operations, the solution is for them to be turned over to the

municipal government. since some of these facilities are in disrepair, the project should allocate funds for minor repair and rehabilitation before they are transferred to their new owners. This transfer will maintain institutions that are important to the life of the communities in which they are located, but will widen access to all members of the community.

CFM, furthermore, occupies a very valuable asset in its land holdings, especially in urban areas. At the Port of Maputo alone, CFM owns 400 to 500 hectares of unused land which, while it has no infrastructure such as roads, sewerage, electricity and water, is nonetheless potentially very valuable. Among other potential uses would be the creation of an Export Processing Zone (EPZ), which could generate significant revenues through development and lease of land or industrial buildings, as well as contributing to the creation of thousands of jobs for unskilled and semi-skilled workers. British ODA, currently funding restructuring of the Port of Maputo, has recommended development of an EPZ on CFM land. While the time required to develop specifications, provide the infrastructure and attract the required private investment is likely to be more than the life of this project, the project should nonetheless contribute to any further analyses of EPZ potential, and assist in implementation of any plans developed during the life of the project (See Annex F for a calculation of potential returns from development of an industrial park, based on current construction costs and commercial/industrial rentals).

Given the ambiguities and frequent changes in the laws affecting use or transfer of land, CFM will have to submit proposals for all property transfers to the Interministerial Committee for the Restructuring of State Enterprises (CIRE), which in turn must obtain the Prime Minister's approval. The project, as well as analyzing the potential for redeployment of assets, will, where appropriate, assist CFM in preparing the necessary documentation required to obtain GRM approval.

2.5 Inputs

2.5.1 Severance and Other Payments

The project will provide for payment of early retirement incentives; continued contributions to pension funds for early retirees until they reach the statutory retirement age; and severance pay for redundant employees equivalent to three months of salary for every two years of service. While several conduits for these payments could be used, the recommended option is for the Bank of Mozambique, which coordinates all state pension payments and which has a widespread network of offices throughout the country, to be the channel through which severance and other payments are effected.

2.5.2 Project Management

Institutional Identity: Management of the amended project will be centered in a project management unit (PMU), to be located in, though not forming a direct part of, the Ministry of Transport. While the possibility of situating the PMU in CFM was carefully considered, it is believed that the potential for institutional conflicts of interest is greater there than in a GRM ministry.

Policy and Oversight: The PMU will be overseen by a steering committee that will represent the different constituencies affected by CFM restructuring and retrenchment, and which will guide policy decisions and review progress of the project. At a minimum, the steering committee will consist of representatives of: CFM; the CFM labor union; the Ministries of Finance, Transport, Labor, Commerce, and Construction and Water; USAID; the Chamber of Commerce; the Gabinete de Promocao de Investimento Estrangeiro (GPIE); IDIL, and UTRE.

Personnel: The PMU will consist of a Mozambican Project Director, a Mozambican Finance/Administration Manager, four field officers, one located in each of the four CFM administrative regions, a secretary and a driver, all of whom will be paid out of project funds for the four-year project life. In addition, the project will provide two long-term advisors: 1) an enterprise development expert, who will work within the PMU throughout the four-year project life; and 2) an employment/training specialist, working with the CFM personnel department over the first two to three years of the project's life, who will assist CFM in the identification of workers to be dismissed and the identification of the best employment and training opportunities for those workers.

Physical requirements: While the GRM Ministry most closely associated with the PMU will be requested to provide office space and telephone lines, the project will provide funds for other needs, such as vehicles (one or two cars); a sufficient number of personal computers, printers and software; fax machine; photocopier; and office furniture. The project will also provide computer programming and management information system design as determined by the needs of the project.

2.5.3 Technical Assistance

Long-term Technical Assistance: The project will provide one long-term expatriate advisor, skilled in enterprise development, credit, and investment/export development, to advise the project management unit for the four-year duration of the technical assistance component of the project. This advisor, who will work closely with the Mozambican Project Director, will coordinate the provision of USAID funds under the project, as well as technical assistance and training. This advisor will provide major technical input to the preparation of terms of reference for the studies, short-term technical assistance, and training to be provided under this project.

The project will also provide one long-term employment and retrenchment specialist to work closely with the CFM personnel department over the four years of the project technical assistance component, to identify workers to be retained and those to be dismissed, and to identify the best employment and training opportunities for the redundant workers.

The project will provide a third expatriate advisor, an employment and training specialist, who will work in the PMU and will coordinate the training and outplacement components of the project.

Each long-term advisor, together with his or her Mozambican counterpart, will determine training needs for professional staff in local institutions and organizations to be funded by the project, and will coordinate the design and delivery of such training, as required.

Short-term Technical Assistance: The project will provide 40 person-months of short-term technical assistance for each of the 4 years of the technical assistance phase of the project, divided equally into two principal components:

- 1) enterprise development and investment feasibility studies, and the preparation of investment prospectuses.
- 2) direct short-term technical assistance and training to:
 - a) newly privatized enterprises, in the areas of marketing, production, personnel management and finance; and,
 - b) local institutions in the areas of project and credit evaluation, export and investment promotion, and training identification.

2.5.4 Training

The project will fund training for workers and managers in newly privatized enterprises, as well as professional staff in local institutions that will play an important role in supporting new enterprises. Two major training components are envisaged:

- 1) **A "matching fund" for training in productive enterprises:** This component is designed to provide workers with the training required to reorient them to productive commercial employment. Since it is expected that most such workers will continue to work in the same facilities in which they were employed by CFM, but under new, commercially-oriented ownership, it makes sense to provide them with on-the-job and other practical training in these new enterprises. It is also important that this not be a simple giveaway, but rather a means of reinforcing these enterprises' commitment to improving the skills of their workers. One way to ensure this is to provide training funds to match or supplement those funds allocated for training by the managers of these enterprises. The project will also provide assistance in determining training needs, designing appropriate training programs for implementation in these enterprises, and in identifying technicians or other experts most capable of providing the required training.
- 2) **Training support to local institutions:** A number of local institutions, including but not necessarily limited to GPIE, IDIL, the Banco Popular de Desenvolvimento, the Ministerial Development Funds, the Chamber of Commerce, and the Associação Industrial de Moçambique (AIMO), have an important role to play in providing credit and technical assistance, especially to small-scale enterprises. The project will fund training for professional staff in these, and other appropriate organizations, in the areas of project evaluation, enterprise start-up assistance, bookkeeping, marketing, and other small business services for which the need is identified. This training may be conducted at universities and training institutions in Mozambique, other African countries, or the United States, as appropriate.

- 3) **Direct vocational training:** The project will fund vocational training for ex-CFM employees who seek to develop skills that will help them eventually to find new jobs in the private sector. This training will take place in local training institutions and will be coordinated through the Direccao para a Formacao Profissional (DPFP), the national vocational training program.

2.5.5 Other Inputs

Small business credit: While many of the productive enterprises will be funded by private domestic or foreign investors for whom access to financing is not a significant constraint, smaller enterprises employing smaller numbers of people will require loans for which they are unlikely to be able to provide sufficient collateral. Depending on the numbers of such enterprises identified, their financing needs, and the ability of the Mozambican financial infrastructure to meet those needs, the project may establish a small business credit or credit guarantee scheme in cooperation with one or more domestic financial institutions, which will extend credit or credit guarantees to small, medium and micro-enterprises established as part of the CFM workforce retrenchment.

The project will, during its first year, evaluate the potential financing needs of small and medium enterprises, the ability of local institutions to absorb and implement a credit guarantee program, the cost to USAID of setting up such a program, and the likelihood that it will succeed. The project will pay special attention to existing credit programs, one for small and medium-scale enterprises (SMEs) funded by the World Bank and operated through the commercial banks, and one for micro-enterprises, also funded by the World Bank and operated through the Gabinete de Promocao do Emprego (GPE), as well as to existing programs operated by the BPD and the ministerial development funds.

In addition, for those workers joining spun-off privatized enterprises, their severance package may be paid in a lump sum to purchase shares on a preferential basis in the new companies, as permitted by Mozambican law. During the life of the project, project funds will underwrite those shares so that in the event that these enterprises fail the ex-CFM employees involved will recoup at least a portion of their original severance package. This guarantee will not apply to people starting their own businesses, who will be expected to bear the normal risks of entrepreneurship.

If such a program appears feasible, the project will establish credit limits, operating procedures, evaluation criteria, and management controls aimed at maximizing the program's chances of success. The project will also determine whether its credit scheme should be established independently or supplement existing donor-funded programs.

3. IMPLEMENTATION PLAN

3.1 Institutional Arrangements

Project activities are to be implemented by a US institutional contractor under the supervision of the Ministry of Transport and in close collaboration with its Directorate of Finance and

Investment. A semi-autonomous Project Management Unit, staffed by local hire personnel and assisted by long-term advisors and short term consultants, will be linked with the Ministry of Transport at both central and provincial levels, as well as with each of the CFM Directorates. This dual structure of project and ministerial personnel provides for both effective, responsive management of redeployment activities and ties to broader GRM sector and enterprise reform initiatives.

The project will provide technical assistance to CFM in support of downsizing and reorganization; it will also finance appropriate severance and pension-fund payments linked to the retrenchment of CFM staff. In addition, the Management Unit will administer, in close collaboration with the Ministry of Transportation, support for the reintegration of retrenched CFM personnel into alternative productive activities and the redeployment of ex-CFM capital assets for economically productive or publicly beneficial purposes. The Management Unit will arrange for external technical assistance and enter into local contracts for the implementation of these redeployment activities.

The contractor will hire local and expatriate personnel, establish a central office for the Management Unit within the Ministry of Transport in Maputo, and representation in the field for each of the lines undergoing downsizing and restructuring. Anticipated staffing for the Management Unit includes the following local hire personnel:

- a) 1 Project Director.
- b) 1 Deputy Director for Finance and Administration.
- c) 1 Deputy Director for Programs and Coordinator for CFM/S.
- d) 4 Field Coordinators (one each for CFM/C, CFM/N, CFM/Z and one for Xai-Xai and Inhambane).
- e) 3 Support staff (1 each: secretary, bookkeeper, and driver).

At both central and provincial levels, Management Unit personnel will be twinned with Ministry of Transport personnel (directors and delegates), posted respectively to Maputo, Beira, Nampula, Quelimane, and Inhambane.

The contractor will provide three long-term advisors to the CFM and the Management Unit: one Personnel Analyst/ Retrenchment Advisor one Enterprise Development/Redeployment Advisor, and one Employment Development and Training Advisor. In addition, the contractor will provide short term technical assistance as needed throughout project implementation in support of retrenchment, labor redeployment, establishment of spin-off enterprises (see below), etc.

The Management Unit will be governed by a Steering Committee which will establish policy, monitor implementation, and serve as a guiding and coordinating body at the level of central government. The Steering Committee will be comprised of representatives of key ministries, including Transport, Finance, Labor, Planning, and Industry as well representatives of CFM, the Railway Workers Union, and USAID. In addition, it will coordinate the participation of subsidiary organizations such as BPD (Peoples Development Bank), GPE (Bureau of Employment Promotion, Ministry of Labor), IDIL (National Institute for the Development of Local Industry, Ministry of Industry), DIFAP (Directorate of Vocational Training, Ministry of Labor), and the

various sectoral small initiative promotion funds (FFPI, FFPA, FFPC, etc). Private sector representatives will also be consulted by the Steering Committee as reemployment and privatization activities warrant.

A significant aspect of Management Unit and technical assistance activities will be the facilitation of a process of project implementation which responds to the various, often contradictory, priorities and concerns of government, management, labor, employees, new investors, etc. Participation of these stakeholders in ongoing planning and implementation of CFM reorganization, retrenchment, and redeployment will increase the likelihood that the flexibility built into the project will be employed in the interest of responsive implementation.

The Management Unit will oversee and administer financial flows in support of redeployment assistance. The payment of severance to retrenched workers will be monitored by project (MU) personnel. The MU will arrange for payment of pension fund requirements to the Ministry of Finance; it will also transfer funds to the Development Bank (BPD) for the creation of a guarantee fund as well as for the establishment of targeted rolling funds for small enterprise finance, agricultural credit, and privatization of redeployed CFM functional units as appropriate. The project and the Management Unit will avoid wherever possible the creation of new programs, but will rather use project resources through existing channels to meet the needs of its target group. Training of retrenched workers, technical assistance in preparation of business plans and loan applications for micro-enterprises, vetting and approval of loans, delivery of agricultural assistance, management training etc will be implemented by existing programs such as DIFAP, IDIL/FFPI and GPE. The Management Unit will contract with them for the provision of specific services to retrenched CFM workers; it will also provide grants and technical assistance to increase the capacity of these local training and technical assistance institutions to meet the needs of ex-CFM personnel.

The Management Unit will also oversee negotiations with private sector investors regarding the terms of their purchases and leases of ex-CFM facilities. Project personnel will closely monitor the activities of investors, joint venture partners, etc. to ensure that the equity stakes of ex-railway personnel are protected, that commitments regarding employment by new enterprises of ex-CFM staff are kept, and that project-funded subsidies and technical assistance are employed in the long-term interest of retrenched workers.

At the level of the provinces, Coordinating Commissions will be established on a similar basis to facilitate cross-sectoral collaboration in employment promotion and redeployment of capital assets. Local CC.'s will include provincial and district local government and grassroots organizations as well as the ministerial and sectoral representatives described above.

3.2 Implementation Workplan

The project will be implemented during a five year period. Phase I, the Project Start-Up, will focus on the establishment of the Management Unit, development of guiding policies and implementation strategies, and fielding of long-term advisors. Detailed studies and analyses begun during this phase will provide the bases for CFM downsizing and reorganization, assistance to retrenched workers, and project activities in areas affected by line closures which

will follow. Extensive consultation among stakeholders and policy-makers, as well as dialogue among coordinating institutions, will guide the decision-making which will be based on analytical studies.

Phase II will focus on personnel retrenchment and support for ex-CFM workers to productively re-enter the workforce. During Phase II, a broadly based "slimming-down" strategy will be pursued. Aggressive early retirement, incentive packages for voluntary departure, and selective discretionary retrenchment will be employed to eliminate the least skilled and least productive members of the CFM workforce.

The second phase's straightforward downsizing activity, based on detailed analyses of staffing requirements for each function and of the personnel currently employed by CFM, should result in the overall reduction of the workforce on the order of 5,000 to 7,000 people during 1993-5.

Phase III of project implementation will focus on shedding excess functions and facilities from CFM, in order to focus its structure and management on financially viable railway operations. Based on feasibility studies, plans will be developed and implemented for the spinning off; i.e. privatization to workers and/or other investors of auxiliary functions into the private sector. These spin-offs may produce some firms contracting wholly or mostly to provide services to CFM. They will also produce new enterprises which are engaged in production and service delivery for other markets; private and public, internal and export, as appropriate and feasible.

This third, shedding phase may also include the closure of CFM short lines, as deemed appropriate by CFM management, the Ministry of Transport, and the project steering committee. These short lines may be closed down; alternatively they may be privatized or spun-off in their own right, as joint ventures or autonomous enterprises operating in the private sector.

During Phase III, the Management Unit will provide technical assistance for such conversions and privatization, support for the redeployment of retrenched personnel, and for the conversion of unused capital assets for alternative public use. The privatization of auxiliary functions can be expected to further reduce the CFM workforce by between 500 and 1,500 people during 1994-5.

Phase IV, the final phase of project activities, will focus on closing-out. The Management Unit will be disbanded. As appropriate its functions may be merged with those of the MOT at both central and local levels. Final follow-up assistance will be administered for privatized enterprises, new businesses, and individuals who have left CFM under the project. Final impact evaluations will be conducted to assess the effectiveness of various project strategies in reintegrating workers and capital assets into productive activities.

4. TECHNICAL ANALYSES

4.1 Railroad Operations

4.1.1 Historical Trends in Performance

CFM, organized into three major regional directorates: CFM/N, CFM/C and CFM/S, has been experiencing continuous declines in its freight and passenger volumes. In 1973, prior to independence, CFM carried 20.7 million tons, which by 1991 had been reduced to one-third of its pre-independence traffic level. By 1991, the traffic had declined to 2.18 million tons.

The most dismal performance in the railroad sector was provided by CFM/S, whose traffic is in a descending spiral, from a 1981 level of 5.46 million tons to a low of 1.39 million tons in 1991. Unless prompt action is taken to reverse these trends, CFM/S may no longer be financially viable.

While the insurgency in Mozambique has greatly contributed to the rapid decrease in traffic, it does not explain entirely the decline. The CFM railroads exhibit poor operating performances and compete with formidable rivals, such as the railroads of the Republic of South Africa. The loss and damage and pilferage on freight shipments through the CFM railroads is three to five times larger than in shipments through South Africa. In addition, shipments through the CFM ports have to bear high port demurrage costs and inventory costs because of port stays of 18 days and up, which greatly increases the distribution costs of shipping via Mozambique.

4.1.2 Labor Redundancy and Excess Capacity

Only a small proportion of the operating capacity of the CFM railroads is currently in use. Locomotive utilization rates, except at CFM/C, are extremely low when contrasted to neighboring countries. But the major excess capacity factor affecting financial viability is the redundancy in the CFM labor force.

CFM exhibits the largest labor force in Sub-Saharan Africa in terms of railroad workers per track kilometer or workers per railroad traffic unit⁴. To analyze the degree of labor force redundancy at CFM, the railroad traffic activity for 1991 and projections for 1996 (or three years after peace prevails) and 2000 was used to estimate the labor force requirements of CFM under four manning standards, which in descending order of productivity are:

1. the best labor productivity-related staffing standards by occupational category in Sub-Saharan Africa.
2. a high standard of labor productivity, corresponding to the second best staffing standard for a variety of occupational categories.

⁴Traffic Units = Ton-Kilometers + Passenger Kilometers.

3. a medium labor productivity standard, corresponding to the median values of productivity by occupational category among the Sub-Sahara Africa railroads, and
4. the worst labor productivity standards in the Sub-Saharan Africa region, excepting the CFM railroads.

The best standard is probably achievable only under the master lease privatization option. The high productivity standard is achievable under the other privatization options that CFM is considering. But achieving the high productivity standard by 1996 is going to require considerable investments in equipment and technology and a massive retraining program to raise the labor productivity of the CFM employees. The target of achieving the high productivity standard by 1996, may be beyond reach for such short time span. In such case, the medium productivity standard could be achieved by 1996, with the high productivity standard achieved by 2000.

Application of the best labor productivity standard results in the requirement of 1,816 CFM workers in 1991, 2,373 in 1996 and 2,855 workers in 2000. Corresponding figures for the high productivity standard are: 3,467 CFM workers in 1991, 5,132 in 1996 and 6,640 workers in 2000. Annex C presents more detail on the application of the productivity standards to the CFM labor force.

4.1.3 Competition and Demand Projections

The analysis of the total distribution costs of shipping via CFM versus its rail competitors in each corridor, revealed that, in spite of their high loss and damage and pilferage costs, and their long delays (18 days) at port, two CFM are able to compete effectively for international freight traffic. CFM/N is the least cost railroad for serving Malawi, and CFM/C is the least cost railroad for serving Zimbabwe and Zambia. However, that is not the case of CFM/S which faces superior competition from the railroads of South Africa. While the rail tariffs of CFM/S are lower than its competitors, because of its shorter distances to port, the long delays at port and the loss and damage and pilferage at both railroad and ports overcome the CFM's distance advantage, so that CFM is the highest total distribution cost competitor for rail shipments from Swaziland and South Africa. However, if port delays at Maputo could be reduced to 7-11 days and loss and damage and pilferage are controlled through a systematic cargo security program at both ports and railroad, then CFM/S would emerge as the least cost rail competitor in its hinterland and recover the traffic lost in competition to South Africa.

The year 2000 traffic projections for the CFM railroads are estimated as: 792 thousand tons for CFM/N, 2,957 thousand tons for CFM/C and 4,904 thousand tons for CFM/S. The projections for the first two railroads are lower than the projections developed in other studies. The CFM/S traffic projection is within the range of projections developed by other studies. The projections developed in this study assume that a cargo security program will be started by the CFM/S railroad and by the port of Maputo. In addition, it is assumed that port delays at Maputo will be decreased from the current 18 days average to the competitive levels (7-11 days) mentioned earlier.

4.1.4 CFM's Financial Viability

The analysis of financial viability presented in Annex C show the precarious financial position of the CFM railroads. By 1996, CFM will need to shed 7,396 workers to avoid cash flow losses. But by year 2000, its financial position will change through cost containment and reductions in work force, so that its cash flow position will reverse to positive. CFM/S will need a larger proportional staff reduction of 4,086 workers to avoid a serious cash flow deficit by 1996; but also by 2000 it should be enjoying a positive cash flow, through a combination of manpower reductions and cost containment.

4.1.5 Other Rail Operation Considerations

In addition to the manpower reduction program, several other important operational improvements should be considered to improve the competitive position of CFM. The most important is the cargo security program which is urgent. The cargo security systems should include both rail and port facilities and operations. Attempts to run express and unit/block trains in CFM/S should be encouraged and track investments financed through donors. Rehabilitation of the freight car fleet is in order, bringing into the fleet more modern car design and technology to serve specialized cargo, such as sugar. Port investments will have to be coordinated with the introduction of new freight car technology to insure compatibility.

4.2 CFM Capital Assets

Reliability of Data: There has never been a reliable financial accounting of CFM physical assets, nor even a detailed listing of those assets. In 1991 ACL Audit, a French affiliate of Coopers & Lybrand International, submitted to CFM their report developing a balance sheet as of January 1, 1989, for the purpose of establishing a starting balance for the installation of a new accounting system with USAID assistance. ACL did not conduct any inventory of CFM physical assets, nor were their figures based on any such previous inventory. ACL's presentation stated clearly that their consolidated balances for each CFM Directorate were based solely on existing balances used by CFM, and were arrived at by adding and subtracting new capital acquisitions, debts and other payments that could reliably be identified. ACL further pointed out that although serious doubts persisted as to the reliability of their figures, they were the best that could be obtained under the circumstances.

The various port restructuring projects that have taken place with donor assistance have enabled CFM to develop a more or less reliable listing of port equipment. Similarly, the donor-funded rail projects have resulted in fairly accurate listings of tractive and rolling stock. Even in these cases, however, no reliable assessment of the value of these assets has ever been performed.

Methods of Assessing Value: As to other physical assets, such as land, buildings, workshop machinery, and housing, even the vaguest physical inventory is unavailable. Louis Berger, currently developing the CFM accounting system with USAID funding, has estimated that it would require at least 40 person-months to conduct a rough physical inventory of CFM assets. The valuation of these assets, assuming a value could be determined, would take even longer.

Further difficulties in determining values result from ambiguities in existing property law, the relatively underdeveloped state of any property market in Mozambique, and the likelihood that only a few potential buyers could be found for any property to be sold. If, for example, a chartered surveyor were to value CFM's workshop machinery, there is no guarantee that the machinery could be sold for that amount, nor that such a sale, if possible, would represent the best possible use of the machinery, given the need to employ the workers currently operating those machines.

The ACL report showed the total consolidated assets of CFM at \$135 million, of which buildings represent \$34 million, equipment \$16 million, land \$357 thousand, current investments \$18 million, and other fixed assets about \$1 million. These are purely notional values, based on depreciated book value of assets, many of which were acquired several decades ago. The only reliable way, in fact, to establish any real value once a physical inventory has been conducted, will be in negotiations with potential buyers and are likely to be based, at least in part, on the potential returns from their private commercial use.

Also, given that CFM's and the GRM's principal objective in disposing of these assets is to ensure productive employment of redundant CFM workers, negotiations for their sale are certain to include provisions for continued employment of a certain percentage of the workers currently employed, as well as undertakings by the purchaser to invest the amounts require to convert them to productive commercial use. It is therefore likely that many CFM assets, if sold subject to these provisions, will be sold for nominal amounts if not transferred virtually gratis.

Implications for Project Design: While it is beyond the scope of this project amendment to conduct a comprehensive physical inventory and valuation of CFM assets, a necessary part of developing alternative redeployment schemes for excess workers and assets will be to develop project prospectuses for potential private investors. These prospectuses will naturally include a listing of the assets to be transferred, determination of additional investment required, and a proposed price to the investor of acquiring the assets involved.

The project amendment includes 40 person-months per year over a four-year period to study investment possibilities and to prepare investment prospectuses. It is likely that some 25 percent of this effort will involve physical asset inventory and valuation, at an estimated cost of \$150 thousand per year.

Housing Privatization: In addition to its productive assets, CFM owns a large number of houses occupied by CFM employees. Any provision for privatization of CFM housing stock through transfer or sale to CFM workers will involve, at a minimum, identification of the houses currently belonging to CFM together with the workers now in occupation, and development of a pricing and financing scheme based on both market value and the ability of the houses' occupants to pay for them.

Some 60 percent of CFM's permanent employees at or above salary grade 7, live in CFM housing, meaning that CFM owns between 3,000 and 4,000 housing units. Housing is one of the major employment benefits offered by CFM. The average annual compensation of CFM workers in these grades is about \$1000, which includes direct salary of \$700, fringe benefits, and

overheads. Of this total amount, however, an estimated 20 percent, or \$200, is the imputed value of the housing provided. In addition, the market rental of comparable state-owned housing (excluding any key money paid) is about \$25 per year, indicating an average value per CFM house of about \$2200. CFM's housing stock is therefore worth somewhere between \$6.6 million and \$9 million. The portion of this amount that CFM can actually realize through sale of the houses to their occupants will depend on the programs developed for divestiture of housing. The project will analyze the various housing privatization options in detail, taking account of both CFM's interest in recouping this value as quickly as possible, and the social issues involved in trying to ensure that as many current and former CFM workers as possible are able to buy their homes.

Land: CFM occupies extensive land holdings not only along the rights of way but in core urban areas where the demand for land is high. While Mozambican law prohibits sale of land, there are many possible arrangements under which land could be developed and used by the private sector. As an example, CFM owns nearly 500 hectares of unused land in Maputo Port, for which a wide range of industrial uses could be found. Various options for development of this land exist, including the establishment by CFM of a separate land development company, and lease, concession or management contracting to a private operator who would provide basic infrastructure (roads, water, electricity, sewerage) and construct industrial buildings which could then be rented, or developed on a turnkey basis for CFM, generating a significant return to CFM. For example, the cost to develop a 10-ha. industrial park, containing 20 to 30 warehouse/factory buildings would cost about \$8 million, the exact amount depending on site servicing requirements and building size and design. Rental of these buildings could bring some \$150,000 in monthly revenues, generating an annual return of some 9.5 percent and contributing to industrial development in the country (See Annex F, Figure 1).

4.3 Investment Possibilities

4.3.1 Possibility of Private Operation of CFM Activities and Holdings

A. Forms of Privatization

Several different types of private operation of CFM activities are possible, distinguished largely by the degree to which they are essential to CFM's core railway operations. Each of the principal activities is discussed in turn.

Privatization of Essential Railway Operations: Apart from the core traffic operations, CFM performs many activities, including tractive and rolling stock maintenance and maintenance of way, that are essential to continued rail operations. To the extent that any such operations are turned over to commercially-oriented, private management, they will take with them workers that do not form part of the CFM labor surplus, as well as some that do.

For example, CFM currently employs 3,130 workshop engineers and technicians. This number includes entire workshop areas, such as carpentry, that CFM does not need, their main function being to maintain and build furniture for CFM houses and offices. Other

services, such as locomotive and rolling stock repair and maintenance, will be required by CFM, whether they are provided by CFM-owned operations or private contractors. The high standard labor requirements indicate that only 748 of this number are needed for CFM operations. If the workshops were to be privatized entirely, then this core number would continue to be employed under the private management, as well as an estimated 550 additional workers who would be required by expansion into non-CFM operations.

While it is unlikely that the entire workshop facilities would be privatized, certain components, while essential to CFM, also have significant commercial potential as well, and could be privatized, leased, or operated under a management contract by a private company possessing the ability to develop commercial production and markets. One example might be the wagon repair shop at Beira, which has some of the machinery and technical skills required to manufacture corrugated steel roofing, containers, and other fabricated metal products for domestic and export markets. Another such example might be the foundry, which currently produces castings for steam locomotives, but which could also manufacture valves, pump parts, plumbing fittings, manhole covers, and many other products. In each of these cases, these operations could end up employing more people than they do currently, as they develop the non-CFM side of their business.

Privatization could take several forms, including lease or concession⁵ of facilities by CFM to a private operator and joint ventures between CFM and a private operator. In each case, the terms of the agreement will ensure that existing CFM employees are employed in the reorganized operations. Financial incentives provided by the project will also ensure this, providing, on average, US\$700 in investment funds for each former CFM worker employed, consisting of the severance pay they are entitled to, but which will be used instead for the purchase of employee shares in the new enterprise. These funds, in addition to creating commitment to and ownership in the new ventures on the part of the employees, will also help ensure that the enterprises are adequately capitalized. The project will underwrite these share purchases during the life of the project so that if, through no fault of the workers, the enterprises fail, they will recoup at least a portion of their severance pay.

These newly-privatized enterprises will, in addition, receive training matching funds amounting to some \$500 per worker, which will be paid only up to the amount that the new employer pays for worker training. Such training could include classroom or vocational school training, as well as on-the-job, employer provided training or the cost of transport and lodging for employees to do training internships at a parent company in Mozambique or abroad.

Privatization of non-essential Operations: Facilities and operations such as carpentry shops have no place in CFM, particularly as privatization of CFM housing stock is contemplated. Privatized carpentry shops, while competing for CFM business, will

⁵ Portuguese and Mozambican law distinguishes between a lease and a concession, a concession retaining greater state control than a lease. To the extent possible, leaseholds of CFM assets as the basis for the productive enterprises is preferable, but a formula based on concessions can also prove feasible.

develop other markets, both domestic and export. If successful, employment in such facilities could increase substantially above current levels.

B. Privatization Costs, Benefits and Funding Sources

A general rule of thumb for the development of labor-intensive industries in developing countries is that investment of about \$2500 in fixed assets and working capital is required for each worker employed. While this figure varies somewhat by industry and level of automation, it is useful as a guide to the approximate costs involved. This figure assumes that the investor is leasing factory space rather than constructing his own factory building, in which case the cost is higher.

It is probable that most CFM facilities, if privatized, would require some renovation of basic infrastructure. Buildings, power and water supplies, lighting, and office space may all need improvements and repairs, the cost of which is difficult to calculate. At the same time, however, CFM facilities have a great deal of usable equipment, which may reduce the private operators' required investment in plant and equipment.

Employing the estimated 550 CFM employees likely to be qualified for employment in a newly-privatized company will therefore require new capital investment of about \$1.4 million. Of this amount, the project will contribute about \$660,000 in employees share purchase in lieu of severance, and in training matching funds. In addition, the small business credit assistance program will provide loans, not only to former CFM employees who start their own businesses, but to any small or medium scale enterprise employing former CFM workers, the amount based on the number of former CFM staff employed.

As a result of this assistance, private operators of CFM facilities will be required to contribute a minimum of 25 percent of the total investment required, an amount sufficient to ensure the commitment of the new operator without imposing too onerous a financial burden.

Lease terms for use of CFM facilities will be negotiated, and will depend on the size and quality of the facility to be leased, the financial resources of the operator, and the number of people to be employed. While CFM will seek to obtain commercial rents where feasible, in certain cases it may accept significantly lower rates.

Apart from the obvious benefit this program will generate in the form of jobs for former CFM employees, it will attract at least \$600,000, and quite possibly a significantly higher amount in new direct investment (See Annex F for an analysis of the costs, benefits and returns from the project).

4.3.2 Development of Industrial Parks

CFM is one of the largest land-owners in Mozambique, with nearly 500 hectares of unused space in the Port of Maputo alone. Some of the possible uses of this land, which include the development of industrial parks by CFM, by 1) contracting with a private land developer to

provide infrastructure and services for industrial plots or to build warehouses and factory shells for rent; 2) to lease the land to a private developer who would service, build and lease; or 3) to form a joint venture with a private developer to carry out similar activities. A portion of the project funds allocated to industrial feasibility studies will examine in detail the costs and potential returns of such projects, together with the potential employment for ex-CFM workers, both in construction and in the factories or other enterprises operated by the eventual occupants.

An additional possibility is the creation of one or more Export Processing Zones, ideally on land in or adjacent to one of the principal ports. While certain donors have carried out preliminary studies of the feasibility of EPZ's in Mozambique, no clear determination has been made. A close examination of Mozambican law regarding the possible creation of an EPZ and the status of companies operating there, as well as of the general potential of an EPZ, will be carried out as part of the industrial feasibility component of this project.

4.3.3 Implications of Divestiture on Master Lease Scenario

Divestiture of CFM holdings will affect the proposed master lease of CFM/S rail operations only insofar as questions may arise as to what is to be included in the master lease and what will fall outside the scope of that lease. Under one possible scenario, all "productive" CFM/S railway assets will be leased, with the lessee then possibly subleasing certain portions of the operations to other private companies. This need have no serious implications for the planned redeployment of assets or staff, except to the extent that sublessees be required to make the same undertakings with respect to employment, training, compensation and other issues as would be the case if CFM were to lease those facilities directly.

4.3.4 Market Potential of Divested Operations

It is difficult to determine the precise market potential of the operations divested. A great deal will depend on developments in the political and economic environment in Mozambique. consequently, the projections made for the performance of divested enterprises are modest, and assume only that they are able to break even. Modest development of export revenues is projected, and domestic sales are simply expected to grow sufficiently to replace lost CFM revenues (calculated on the basis of direct labor and allocated overhead).

The likely scenario, however, is that these enterprises will perform much better than projected. For even one or two of them to penetrate export markets could mean substantial revenues and the potential for employment of additional staff. Many of the operations likely to be oriented more towards domestic markets can produce an extremely wide range of basic products (building materials and furniture, for example) for which local demand is high. given that these enterprises will have modest capital requirements, and will receive substantial training, management and financial support, they should be able to produce products of a quality and at a price that will ensure their survival.

Mozambique has several advantages that could translate into significant export market penetration. These include: 1) membership of the Lomé Convention-ACP countries, granting it duty-free status or preferential tariffs, and quota-free access for its exports to the EEC; 2)

membership in the Preferential Trade Area (PTA) and SADCC, granting it preferential access to several Southern African countries; 3) a coastal location, giving it an advantage in competing with landlocked countries for which inland transport is a significant constraint; and 4) cheaper labor than most other African countries, rendering it competitive even with low-cost Asian countries such as Sri Lanka, Bangladesh, Burma and Vietnam.

Because of its privileged position with respect to the EEC, it is expected that most export development efforts will be targeted at European countries.

4.3.5 Capital Requirements of Divested Operations

As it is difficult to estimate the market potential of the operations without conducting a full market study, so it is hard to quantify the capital requirements. Based on a very rough rule of thumb that labor-intensive manufacturing or processing operations in developing countries are likely to require approximately \$2500 in capital investment in fixed assets and working capital per employee, then on the basis of an estimated 550 people to be employed in the divested operation the total capital requirement is about \$1.4 million. Of this, the new operators will be expected to contribute at least 25 percent, or \$350,000; the severance pay and training matching funds will contribute \$660,000, or 47 percent, and the remainder, \$390,000 or 28 percent, will come through the small business credit assistance fund in the form of loans. In addition, short-term technical assistance will be provided by the project to conduct feasibility and market studies, and to provide management, production, marketing and financial management advice to the new enterprises.

4.3.6 Implications for Project Design

As the foregoing analysis indicates, the divested CFM railway operations are expected to generate employment for some 550 people, most of them skilled or semi-skilled. To the extent possible, these enterprises will seek to develop export and domestic markets, and to generate employment opportunities for greater numbers than initially planned. Certain covenants in the assistance packages offered should require that, if labor requirements increase, a certain percentage of the new hires should be former CFM staff.

Development of these employment opportunities is likely to be among the most management-intensive of all project activities planned, given the needs for extensive technical assistance in the pre-project and project implementation phases, as well as the direct disbursement of project funds to private sector companies.

4.4 Social Soundness

4.4.1 Introduction

The activities proposed under the RRSS Project Amendment focussing on workforce retrenchment and redeployment of capital assets have significant social and political implications. By drastically cutting the number of workers employed by one of Mozambique's largest employers, project-supported sector reform activities will not only cause hardship for the families of

retrenched workers but may also exacerbate more general socio-economic tensions resulting from widespread, chronically low purchasing power and unemployment. By eliminating domestic rail lines in up to three Mozambican provinces, important--in some cases unique--transport links to rural areas will be lost. Loss of transport access and of traditionally important infrastructure can be expected, at least initially, to cause contraction of already fragile rural-regional economies.

In order to mitigate some of these social and economic hardships, a sizable proportion of project resources will be expended on activities to assist retrenched workers to reenter the workforce, to make productive use of redeployed CFM capital assets, and to support the development of alternative transport arrangements in areas where line closures are to take place.

4.4.2 Background

The policies which the project's activities reflect are a response to the changing conditions of transport in Southern Africa and to the changing role of the state in Mozambique's domestic economy. In order to understand the social and political consequences of dramatic changes in CFM staffing and organization, some background on the role of Mozambican railways in the wider society and economy is essential.

CFM has been one of the largest and most prominent employing organizations in Mozambique for almost one hundred years. It played a prominent role in the economic and social history of the country and in the southern Africa region; at present its importance as a symbol is at least as notable as its role as an employer. CFM, and its prominently placed civic facilities such as social clubs and stadiums, are considered a part of the **patrimonia nacional**; they are central to public life in most Mozambican cities. Thus railway reform in Mozambique has not only instrumental but political-cultural implications.

Changes in the role of CFM reflect broader changes in the economy of Mozambique and of the region. Since at least the 1960's, road transport has been competing with rail for internal traffic in many areas; regional development in the 70's reflected the expansion of Mozambique's road system and so dramatically increased integration of areas beyond the railway's influence into the national economy. The domestic transport role of CFM has decreased in many regions as the road network has expanded.

While the SADCC transport strategy of diversification away from dependence on South African ports made Mozambican rail links strategically important during the 1980's, regional developments are diminishing the reluctance of some shippers to use South African facilities. In addition, disruption of CFM traffic by RENAMO has dramatically reduced the reliability of all three international lines; a situation which has only recently been ameliorated on the Beira corridor but remains problematic on the Limpopo and Nacala lines. Finally, the construction of new port facilities in Richards Bay has significantly reduced South African reliance on Maputo and increased competition for regional traffic faced by the Limpopo line.

In addition to these changes in the demand for CFM's rail services, far-reaching policy change within Mozambique has drastically altered the institutional context in which transport is to be supplied. The severe fiscal constraint under which the GRM operates make the level of subsidies

which CFM has required in recent years unsustainable. CFM, because of its prominence and the scale of its losses, has become an obvious target for the market-oriented reforms which are a linchpin of Mozambique's economic liberalization program.

The reduction of public subsidies and the withdrawal of state protection within the transport sector make CFM an increasingly inviable enterprise. The necessity of retrenchment, of reorganization, and of management and ownership restructuring in CFM are all a direct result of the change in the broader political economy of Mozambique. Structural adjustment and the withdrawal of the state from domination of the economy are the forces which drive cutbacks in CFM. The retrenchment of CFM employees, the closure of inviable CFM lines and services, and the prospective privatization of CFM auxiliary functions are therefore the consequences of economic liberalization processes which transcend the specifics of railway reform.

Project activities which facilitate the redeployment of workers and capital assets "liberated" by these retrenchments, closures and privatizations are in fact efforts to ameliorate the adverse social effects of the organizational transitions precipitated by sectoral adjustment. A large proportion of project resources will be employed for precisely this purpose; while the project goal is to increase the viability of the railway, its activities in large part reflect the recognition that significant hardship for affected individuals and communities may be caused in pursuit of that efficiency goal.

Thus the primary social aim of project intervention is the reduction in hardship caused by restructuring and reform in CFM. This objective is to be pursued by assisting ex-CFM workers in finding alternative employment during the project period. While it is hoped that a significant number of the workers leaving CFM will ultimately find employment in activities where their contribution is more valuable, and so better rewarded, than their work for the railway; the first order social goal is to leave retrenched workers no worse off than they have been as underpaid workers in an afflicted and struggling public enterprise.

The following sections will explore the social context and consequences of large-scale worker retrenchment, CFM reorganization and the privatization of auxiliary services, and the closure of CFM's domestic short lines.

4.4.3 Retrenchment of CFM Workers

The release of over 5,000 state-enterprise employees into the private workforce is unprecedented in Mozambique. At the same time, retrenchment of CFM employees is just one part of a widening process of state-industrial sector reorganization, privatization, and contraction which will undoubtedly result in ongoing retrenchments.

The impending entry of ex-CFM workers into the job market will come at a time of increasing competition in an extremely weak labor demand setting. While modest output growth, especially in urban and export oriented enterprise, has taken place in 1989-92, most of this has been based on increased utilization of existing productive capacity, leading to relatively little growth in employment. The exception to this pattern seems to be in construction; while specific data are

not available this sector appears to be one of the few, alongside urban services and commerce, which are creating new jobs.

At the same time, ex-CFM workers will be facing competition from other newly unemployed groups. The return of thousands of Mozambican miners from South Africa has continued since the mid-1980's. Thousands of "guest workers" from the former German Democratic Republic have been repatriated over the last two years. Recent reports indicate that several thousand more Mozambicans may be repatriated from Cuba by the end of 1992.

Potentially dwarfing all these entries into the local labor market are the movements which will accompany the end of the war. Tens of thousands of military personnel are expected to be demobilized as the Mozambican peace process accelerates. Several million *deslocados* and refugees will be on the move, seeking a return to normal, productive life. No-one can predict how many of these *returnados* will come to urban areas looking for formal sector jobs.

Each of these groups has expectations of employment, many also are supported by donor-funded programs to assist their integration into productive private life. Retrenchment and redeployment of CFM workers, even with USAID project support, will take place in a challenging environment - a slow-growth, flooded, competitive low-wage labor market.

At the same time, the various roles which CFM employment plays in the lives of its employees must be considered. The loss of salary may in fact be one of the least significant impacts of retrenchment on CFM workers their households. In the first place, non-salary benefits to CFM employment are significant. Housing is provided to higher level employees; family size allowances, access to preferential and subsidized health care, transport and training allowances, and social facilities are available to all. What has been until now lifetime job security and access to a civil service pension are additional rewards associated with CFM employment. These tangible non-salary benefits may in many cases be more valuable to workers than their pay packet.

In addition, the intangible value of CFM employment appears quite important to railway workers. The long tradition of CFM's centrality in the development of Mozambique has historically made it a prestigious place to work. Although this prestige may have eroded during recent years as CFM has faced well-known operational and financial problems, nevertheless the sense of identification with CFM's nation-building mission is evident among long-term personnel. Many railway families go back several generations; loss of employment will constitute a loss of identity for many workers. Another intangible benefit of CFM employment may be the linking individuals and households to the complex systems of reciprocities, often organized along kinship and ethnic lines, which are known to be important coping mechanisms across Africa. These general benefits above and beyond remuneration which workers link to being employed, add value to the specific sentiments associated with working for CFM.

While it is impossible to compare these intangible benefits of CFM employment to the wages received by workers, and difficult to quantify tangible non-salary benefits alongside direct payments, the impacts of their loss on retrenched CFM workers must be considered when

discussing the social impacts of retrenchment. It may otherwise be difficult to explain the reluctance of workers to leave extremely low-paying railway jobs.

This having been said, it is also true the salaries being paid to CFM workers, especially the lower skilled and less educated who will comprise the majority of retrenched personnel, are extremely low. Based on recent research on the subsistence costs of life in Maputo, monthly expenditure of 20,000-30,000 Mt per capita places a household in the category "absolutely poor but not destitute."⁶ The same study shows an average household size of seven. Thus approximately MT 150,000-200,000 income per month is required to move the average household beyond poverty, i.e. to supply its basic needs for food, housing and medical care.

Grade III CFM workers, the bulk of whom are low skill way maintenance and operations staff, are currently paid MT 68,000 per month--which amounts to poverty wages for a household of only three persons. The households of these workers are clearly relying on other sources of income for an important part of their monthly expenditures. The role of the (usually male) family member who works for CFM may be important more in terms of the ancillary benefits derived from CFM employment (discussed above) than the salary he or she receives.

This fact has several implications. First, because CFM wages are only a part of household income, and perhaps not the largest part, retrenched workers may in fact be in a position to invest time in training and to undertake risky ventures which will provide no or little short term income for subsistence. If other household income and coping mechanisms remain intact after retrenchment, longer term income building options may be accessible and viable for retrenched workers.

Second, the extremely low purchasing power of most CFM salaries may make the severance and training or credit packages which the project will support attractive to a significant number of low-level workers. In large part the appeal of departure benefits depends not only on present trade-offs but on the expectation of workers that CFM salaries will improve and the important benefits such as pensions will be available in the future; to the extent that the overall viability of CFM remains in doubt, the retrenchment package may provide a powerful incentive for voluntary early departure by railway workers.

Finally, CFM worker households may already be engaged in small-scale private sector activities which could provide the basis for livelihood after retrenchment. As it is typically the woman household-head who is engaged in activities such as petty trade, food preparation etc. which supplement wage income⁷, the project will consider opening up some post-retrenchment assistance components to female members of retrenched worker households. In this way, project assistance might be seen as a way of strengthening the household's income security rather than simply finding employment for CFM workers.

⁶ B. Schubert (1992) Increasing the Food Security of Destitute Households in the Cities of Mozambique Report prepared for GAPVU by Team Consult Berlin.

⁷ P. Little and I.B. Lundin de Coloane (1992) Petty Trade and Household Survival Strategies ... in the Peri-Urban Area of Maputo, Mozambique, Report prepared for USAID/Mozambique.

All this having been said, the possibility that workers will actively resist any large-scale retrenchment program certainly exists. Port and railway workers have a long tradition of activism, stretching back to turn of the century strikes by stevedores against the portuguese. While union leadership is in close touch with CFM management, and seems to be in a position to participate in the formulation and implementation of retrenchment policies which are least detrimental to the interests of its members, it is unclear how influential leadership will be if faced with an angry rank-and-file committed to resisting retrenchment and reorganization. The possibility of sabotage and even violence in response to threatened retrenchment is real.

Although GRM and USAID efforts to develop adequate pension, severance, and redeployment assistance packages are good faith efforts to ease the impact of retrenchment on workers, the fragile political environment in which retrenchment will take place, coupled with the possibility of a politically controversial lease of CFM/S to a foreign (possibly South African or Portuguese) firm guided by World Bank assistance, may result in public contention or even conflict. The role of USAID as a supporter of retrenchment and reorganization could involve US assistance policy in these controversies.

In this respect, the importance of Mozambican "ownership" of the CFM reorganization and retrenchment program may be crucial. Governmental commitment, from the highest level, will likely be necessary in order to ensure that these difficult changes take place. Project implementation, especially sequencing and timing, will have to be sensitive to the changing political moment in Mozambique; otherwise the ability of project staff to proceed with the retrenchment program may be jeopardized and the revitalization of CFM threatened.

4.4.4 Short-Line Closures

The contemplated closures of the Zambezia, Inhambane and Xai-Xai lines would have significant impact on the economic and social conditions of the provinces in which they are located. Some of these impacts are discussed in more detail in Annex D, which is concerned entirely with issues related to short-line closures. Below, the general concerns relating to the social impact of short line closures are discussed.

Firstly, the loss of direct employment brought on by short-line closure will have analogous consequences on the households of ex-CFM workers to those discussed above in reference to widespread CFM retrenchments. However, employment options in these secondary urban centers will be less diverse and less numerous than those in Mozambique's major cities.

Second, these closures may in the short run cause a shrinking of regional consumption-based economies in affected provinces. CFM provides a notable proportion of formal sector (salary and wage) employment in each of the short-line areas; it can be expected that these wages have significant local multipliers tied to consumption of food and local services. Since lines have not, in recent years, been financially self-sufficient, CFM has been a vehicle for central-local resource transfers (via salaries and operating subsidies). The withdrawal of this income from the regional economy is likely to cause a measurable contraction in demand for local produce and services, further exacerbating un- and under-employment.

Another impact of short-line closures would be the possible loss of community facilities currently associated with CFM. In each town where CFM has sizable operations, it operates a Clube Ferroviaria which is an important center for social activities. In many towns and cities, the local stadium is also CFM facility. There are clinics and dormitories for schoolchildren from rural areas which, while officially for CFM workers and their families, offer benefits to other segments of the population as well.

The final and most significant potential impact of short-line closures is the loss of capacity within the transport sector itself. If the existing road transport system does not have the capacity to substitute for rail, in the short run but more importantly in the medium term when rural reconstruction and production growth are expected to increase traffic by at least an order of magnitude in most rural areas, then the loss of rail facilities could become a factor limiting post-war regional economic growth.

The importance of the railway in passenger transport is greatest in Xai-Xai; it appears that its loss would leave several rural areas without links to their provincial seat where essential health, education and other public services as well as markets are located. In situations where adequate roads are not available, loss of CFM service seems likely to cause significant hardship.

For these reasons, and for the broader political motive of defending a prominent element of local infrastructure, it can be expected that local government officials will resist the closure of short lines. Whether the general populace in Xai-Xai, Inhambane and Zambezia will mobilize to oppose closures is unknown.

Project activities which support the rehabilitation of railway buildings and other infrastructure before turning them over to appropriate local authorities for redeployment as public facilities may mitigate some of this resistance. But the long-standing centrality of the railways in rural Mozambican life will be difficult to replace in the minds of residents; they can be expected to perceive a significant loss to their community from short-line closures, notwithstanding any compensatory efforts.

4.4.5 CFM Reorganization and Privatization of Auxiliary Functions

The transfer of capital assets, especially physical infrastructure, out of CFM may have significant impacts, positive and/or negative, on the communities in which they are located. The consequences of CFM reorganization will vary depending on whether particular facilities are sold/leased to new enterprises, sold for private or personal use to present or past CFM workers, or transferred to local governments for public purposes.

The privatization of auxiliary services may be beneficial in several ways. In the first place, should the new firms created by former workers using former CFM facilities succeed in establishing themselves as viable commercial enterprises, they can be expected to create new jobs for ex-CFM and other workers which are likely to pay significantly better salaries than CFM, especially if they succeed in diversifying their market beyond railway goods and services. Some of these firms may process local raw materials, such as wood for carpentry shops, and so would also create demand and employment for producers and suppliers of these inputs.

On the other hand, the possibility that privatized enterprises employing retrenched CFM workers will fail must be considered. Leaving what has been until now and environment of lifetime job security for the additional risk, and potential benefit, of private sector employment is of uncertain value for workers in a fragile economy like that of Mozambique. It is likely that some ex-CFM workers will be made unemployed not by CFM itself but by the enterprise with which they left the railway. The project will offer the protection of some severance benefits for such redeployed personnel during the implementation period; but those who are gainfully employed in new privatized firms for a few years and then lose their jobs cannot be assisted indefinitely.

From the point of view of the wider economy, another possible consequence of divestiture is the creation of advantages that privatized firms may have in competing against other companies, new and existing, in the private sector. Competitors may criticize the project based on the claim that unfair subsidies are being received from USAID and CFM. While some start-up technical assistance may be provided by the project, spun-off enterprises will be forced to compete equally in local markets, including the capital and credit markets, in order to survive. Thus any competitive advantage gained from the project will be at most short-term. Given that benefits will be paid to workers, not firms, and targeted at promotion of employment, not of the enterprises per se, no fundamental conflict among project goals or impacts is anticipated.

ANNEXES

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ANNEX A

LOGICAL FRAMEWORK

MOZAMBIQUE NATIONAL PORTS AND RAILROAD RESTRUCTURING DESIGN LOGICAL FRAMEWORK USAID/MOZAMBIQUE

July 1992

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS/RESPONSIBILITY	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p><u>Activity Goal:</u></p> <p>To support the development of a stronger economic foundation for growth in Southern Africa</p>	<p><u>Measures of Goal Achievement:</u></p> <p>SADCC countries face lower total transport costs</p> <p>Less FX spent for transport</p> <p>Proportion of SADCC external trade using SADCC ports increases</p> <p>Savings in FX and LC from lower transport costs are available for other priority investments</p>	<p>National and regional statistics</p> <p>National accounts</p> <p>Investments not destroyed by hostile action</p> <p>FX and other cost savings stimulate economic growth</p>	<p><u>Affecting purpose-to-goal link:</u></p> <p>Continued regional cooperation</p> <p>Investments maintained by other SADCC countries</p> <p>Current trade volumes maintained or increased</p>

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS/RESPONSIBILITY	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p><u>Activity Purpose:</u></p> <p>To assist CFM in becoming cost competitive in the international cargo market.</p> <p>To assist CFM to recover a portion of its share of the regional rail transport market lost in recent years</p>	<p><u>Conditions that will indicate purpose has been achieved (EOPS):</u></p> <p>Reduced labor cost</p> <p>Early retirement of 3300 CFM employees over 55</p> <p>Productive employment of at least 4500 other redundant workers</p> <p>Reduction in economic cost of freight transport in the 3 short line areas</p>	<p>CFM reports</p> <p>Project evaluation</p> <p>TA reports</p> <p>National and regional statistics</p>	<p><u>Affecting output-to-purpose link:</u></p> <p>Security situation in Mozambique improves.</p> <p>CFM loss and pilferage reduced</p> <p>Wage rates remain stable</p> <p>Remaining CFM workers receive adequate training</p> <p>Other donor-funded restructurings of ports and rail are successful</p>

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NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS/RESPONSIBILITY	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p><u>Outputs:</u></p> <p>CFM personnel reductions of about 14,000 workers</p> <p>Redeployment package for redundant CFM workers that supports their reintegration into the productive economy</p> <p>Redeployment of CFM/S assets</p>	<p><u>Magnitude of Outputs necessary and sufficient to achieve purpose:</u></p> <p>Early retirement package applied to 3300 workers</p> <p>Severance payments to 9,500 to 10,000 permanent CFM employees</p> <p>Development of new employment and training for at least 4000 to 5000 redundant CFM workers:</p> <p>a. Absorption into spin-off business of 550 workers b. Agricultural assistance and credit to 1,000 workers c. Training and job placement for 1,400 workers d. Micro-enterprise credit and technical assistance for 350-400 workers e. Outplacement into road construction jobs, small-scale mining, and other private sector employment for at least 500 workers</p> <p>Detailed comparative analysis of short lines with alternative transport possibilities; recommendations and strategies for closure or continued operation.</p> <p>Spin-off of CFM operations into private enterprises employing at least 500-600 redundant CFM workers</p> <p>Development of feasibility studies for housing privatization and development of industrial estates on CFM property</p> <p>Divest non-operating CFM assets (clubs, schools, clinics, stadiums) by rehabilitating and transferring them to local or provincial governments or through other arrangements with private operators</p>	<p>CFM reports</p> <p>TA reports</p> <p>Project evaluation</p> <p>CFM records</p> <p>Records of local financial and training institutions</p> <p>TA reports and feasibility studies</p> <p>CFM reports</p>	<p><u>Affecting input-to-output link:</u></p> <p>CFM agrees to pursue retrenchment</p> <p>Workers eligible for early retirement accept incentive package</p> <p>Local institutions and the private sector have the ability to absorb training and financial support and accept project goal and purpose</p> <p>Domestic and foreign private sector capital investment can be mobilized for new and spin-off businesses</p>

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS/RESPONSIBILITY	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<u>Inputs:</u> <u>(Activities and Types of Resources):</u>	<u>Level of Effort/Expenditure for each activity</u> <u>(\$ thousand):</u>		<u>Conditions precedent to activity implementation:</u>
Severance and early retirement payments	10,780	Evaluation reports	
AID Project Coordinator (PSC)	1,250	TA reports	Agreement of Ministry of Transport to provide office space and institutional setting for Management Unit
160 person-months of short-term technical assistance	2,400	CFM records	
Project Management Unit (PMU):		Records of local financial and training institutions	Agreement of financial and training institutions to provide credit and training to ex-CFM employees
144 person-months of long-term technical assistance	3,000	Disbursement documents	
Local salaries	710		
Commodities	200		
Operating costs	200		
CFM Workers Redeployment Cost:			
Training/Institutional Support	2,290		
Credit	2,282		
Outplacement support	94		
Inflation and contingency	1,794		
Total	\$25,000		

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ANNEX B
PROJECT COSTS

ANNEX B

MOZAMBIQUE REGIONAL RAIL SYSTEMS SUPPORT (RRSS) PROJECT
BUDGET PROJECTIONS

(THOUSAND US\$)

PROJECT COSTS	1993	1994	1995	1996	1997	TOTAL
Severance pay	1,628	3,076	3,076	1,859	411	10,050
Early retirement pension fund contribution	365	365	0	0	0	730
Total Payments to Workers	1,993	3,441	3,076	1,859	411	10,780
Project feasibility studies						
5 per yr., 4 p.m./study	0	300	300	300	300	1,200
Other S.T. TA, 20 p.m. per year	0	300	300	300	300	1,200
Management Unit						
Expatriate Staff						
technical advisor (PMU)		250	250	250	250	1,000
employment advisor (CFM)		250	250	250	250	1,000
employment advisor (PMU)		250	250	250	250	1,000
local salaries						
project director		50	50	50	50	200
finance/admin officer		10	10	10	10	40
4 regional officers		40	40	40	40	160
driver		2	2	2	2	8
secretary		2	2	2	2	8
procurement						
cars (2)		50				50
computers		50				50
furniture		50				50
misc.		50				50
operating costs		50	50	50	50	200
Total Management Unit Costs	0	1,104	904	904	904	3,816
Agricultural Assistance/Credit	0	400	400	240	0	1,040
Spin-off Business						
a. Training		100	100	75		275
b. Credit		200	200	150		550
Training Support to Local Institutions/Organizations	0	400	300	300	235	1,235
Outplacement Support		30	20	20	14	84
Micro Enterprise						
a. Credit		300	300	200	167	967
b. Institutional Support		250	200	130		580
Inflation and Contingency	199	683	610	448	233	2,173
TOTAL PROJECT COST	2,192	7,508	6,710	4,926	2,564	23,900

ANNEX C

RAILROAD OPERATIONS

1. The CFM Railroad and Trends in its Performance.

This section presents a brief description of the CFM Railroads, followed by a short analysis of historical trends in performance.

1.1 An Overview of the CFM Railroads.

CFM is the parastatal organization managing the railroads and ports of Mozambique. It is organized into several divisions (called Directorates) along geographical corridors, namely: CFM/N, CFM/C, CFM/S and the smaller CFM/Zambezia. All these Directorates include both railroad and port operations, however this overview discusses only the railroad operations, whose track, (unless otherwise specified) is single track of 1.067 meters.

1.1.1 CFM/N

The Northern transportation corridor links the port of Nacala to a hinterland covering Malawi and portions of Northern Mozambique, particularly Niassa Province. A main line of 615 kilometers of single track connects the port of Nacala to Entrelagos (on the Malawi border). A small branch line of 42 kilometers connects the Rio Monapo station to Lumbo. A branch line of 262 kilometers goes from Cuamba to Lichinga serving prime agricultural land in Niassa Province. Several major gradients and curves along the main and branch lines limit operations to 40-freight car trains on the main line with either one or double locomotive headings, and to 28-car trains on the branch lines.

1.1.2 CFM/C

The Central transportation corridor links the port of Beira to Zimbabwe and a central Mozambique hinterland. A main rail line of 317 kilometers of single track connects Beira to Machipanda (on the border with Zimbabwe), with trains operated under the protection of the armed forces of Zimbabwe and Mozambique. Grades on the Machipanda line limit operations to trains carrying at maximum 28 freight cars. A second main line of 335 kilometers links the Dondo rail station to Sena/Villa Nova de Fronteira at the border.

In addition, there are two branch lines in this corridor. One branch line goes from D. Ana to Moatize in Tete Province (Mozambique), a distance of 254 kilometers. A second branch line, very much affected by the insurgency links Inhamitanga to Marromeu, a distance of 88 kilometers.

1.1.3 CFM/S

The Southern transportation corridor consists of three main lines each serving a different international cargo market. The Limpopo line goes 522 kilometers through Mozambique to Chicualacual, carrying exports from Zimbabwe to the port of Maputo, and food aid imports to Zimbabwe on the backhaul. This line is under the protection of the Zimbabwe and Mozambique armed forces, and is increasing in traffic.

A second main line, referred to as the Goba line, links the port of Maputo to Swaziland, a distance of 63.5 kilometers. Normal speeds of 30 kilometers per hour are achieved on this rail line.

The R. Garcia main line has a length of 88 kilometers linking the port of Maputo to a South Africa hinterland at R. Garcia. Speeds of 40 kilometers per hour are achieved on this line.

1.1.4 The CFM Short Lines

CFM operates three short rail lines, consisting of CFM-Zambezia, the Xai-Xai line, and the Inhambane line. The Zambezia line connects the port of Quelimane to Mocuba with 145 kilometers of single track. The Inhambane line links the port of Inhambane to Inharrine, a distance of 90 kilometers of single track. The Xai-Xai line has two spurs: a 0.762 meter single track runs from Xai-Xai to Chicomo, a distance of 90 kilometers; a second spur links Manjacaze to Mauale, a distance of 50 kilometers with another single track of 0.762 meters. The CFM is considering the possibility of abandoning these short lines.

1.2 Historical Trends in Performance

In 1973 previous to independence, CFM carried 20.67 millions tons and the trends since have been downwards. By 1981 the traffic was almost 1/3 of the pre-independence level and stood at 7.767 million tons. The traffic since 1981 is presented in Table C.1.1 (tables may be found following the complete annex text), which shows a continued rapid decline up to 1988, with a slight increase in 1989, only to descend steeply in 1990 and more so in 1991.

The traffic on CFM/N bottomed out in 1986 at 32.3 thousand tons and has remained stable at levels of around 90 thousand tons in the last four years. The traffic on the CFM/C declined continuously since pre-independence levels to its lowest level of 296 thousand tons in 1984, but has been growing since and stood at close to 700 thousand tons in 1991. As will be shown later, the CFM/C railroad enjoys a competitive edge in its competition with its rivals.

The most dismal performance in the railroad sector is provided by CFM/S, whose traffic is in a descending spiral with no end in sight. Traffic levels for this railroad are dangerously close to affecting its economic viability. Unless prompt action is taken to reverse these trends its international traffic will disappear.

These downward trends in performance are the consequence of several factors. Certainly the insurgency and war conditions facing Mozambique have affected CFM's traffic decline, but the

adverse effects of the insurgency do not provide the whole story for the traffic decline. Increasingly, the CFM railroads and ports exhibit a poor quality of service when contrasted with its competitors. CFM's loss and damage rates and pilferage are the highest in the region when contrasted with their competitors. Days at ports at Maputo, Beira and Nacala are at least four times that of South African and Namibian ports. All these factors combine to negate the natural advantages of shorter distances to ports enjoyed by Mozambican railroads and result in placing some railroad corridors, like the Southern corridor, in jeopardy.

2. Railroad Productivity and Excess Resources

The analysis of the issue of labor redundancy is discussed within the larger context of resource productivity, both equipment and labor.

2.1 Productivity of Locomotives and Freight Cars

Table C.2.1 presents trends in locomotive productivity since 1981 for the three CFM railroads. Only the CFM/C railroad is showing adequate locomotive productivity rates, in terms of net ton-kilometers per locomotive in the fleet. In fact this railroad's productivity has climbed back to levels comparable to those of the late seventies and early eighties, aided by its traffic increase. The other two CFM railroads show low rates of locomotive productivity and appear to have excess capacity with respect to their current traffic levels. The freight car fleet stands at 8,606 cars, but a high percentage of them appear to be in disrepair. As a consequence neither the South Africa railroads, nor the Swaziland railroads allow the CFM freight cars to transit on their lines. The end result of this practice is that the poor quality of the freight cars results in increased transfer costs and times in transit for shipments via the CFM railroads.

2.2 Productivity of and Redundancy of the Railroad Labor Force

The CFM labor force is presented in Table C.2.2, which displays trends in the use of labor resources since 1979. At the start of the decade of the eighties the CFM labor force, including railroad and port operations, was 40,499 workers. Some labor force reductions took place from 1984 to 1988, when it reached its lowest level of 26,376 workers. However it has inexplicably increased since then, in spite of the traffic declines CFM has experienced. As of March 1992, the CFM labor force stood at 34,355 workers.

Table C.2.2 also presents the trends in CFM/S labor force, showing employment increases up to 1983 and declines since then. The lowest labor force levels were experienced in 1985, when CFM/S employed 13,708 workers. By the end of 1989 the labor force had increased to 14,501 employees in spite the railroad experiencing significant traffic declines.

In terms of both workers per track kilometer and workers per ton-kilometer, the CFM railroads exhibit the worst manning standards for railroad operations in Sub-Saharan Africa. To assess the degree of labor force redundancy in the CFM railroads an analysis was conducted applying the labor productivity standards of a sample of ten Sub-Saharan Africa countries (excluding South Africa) to the CFM railroad activity units. Four Sub-Saharan Africa manning standards are presented in Table C.2.3, namely:

1. the best labor productivity standard, which refers to the railroad showing the lowest manning standard for each respective staffing category (whether mechanics, managers, maintenance of way labor, etc.),
2. a high labor productivity standard, which refers to the second lowest manning rate for each staffing category,
3. a medium labor productivity standard, which corresponds to the median staffing requirements per traffic unit, and
4. the worst manning standard, which is presented solely for comparison purposes to characterize the degree of labor redundancy in CFM.

In addition, at the request of USAID, a developed country standard corresponding to the U.S. Class I railroad average is also presented. The U.S. standard is not applicable, since it responds to capital labor ratios (factor proportions), and capital costs/labor costs ratios very different from the conditions of Mozambique.

The traffic projections used as inputs in the estimation of the manning requirements of CFM are presented in Table C.2.4. The source for these traffic estimates are explained in Section C.5. Application of the manning standards to the traffic projections result in the estimates of labor requirements presented in Tables C.2.5 to C.2.8. At current traffic levels, 5,124 workers would have to be displaced even under the worst manning standards in Sub-Saharan Africa. While the medium manning standard can be easily achieved by CFM, this standard is not high enough to put the CFM railroads in a sound financial position. The only possible choices are the best standard, which would probably be achieved only under the master lease privatization option, and the high (or second best) standard, which is within the realm of achievement possibilities in the privatization scenarios other than the master lease.

But even the high standard may not be achieved without significant capital investments and new technology to raise the productivity of the CFM workforce to the productivity level implicit in the standard. It will be difficult to reach the high standard by 1996 even with the major investment in training required; in which case the median standard could be adopted as an interim standard for 1996, with the high standard applicable to year 2000. Under the high standard 5,132 workers would be needed by 1996 and 6,640 workers by year 2000. Tables C.2.6 to C.2.8 present estimates of labor redundancy for the three CFM railroads. At CFM/S only 2,879 workers will be needed by 1996 under the high manning standard, with 3,714 workers needed by year 2,000. More detail on the projection of labor requirements by skill and railroad operation functions is presented in Section analyzing the options for redeploying the excess labor.

3. Railroad and Ports Operating Capacities

The operating capacities of the CFM railroad lines are presented in Table C.3.1. As shown there the line capacities are many multiples of the current traffic carried in 1991; however of particular interest for competition purposes are the maximum train length (in terms of the number of freight cars) that can transit on each line. In the CFM/C lines, trains of length not longer than 28 freight cars can be accommodated, while in CFM/N 40-car trains can be transported. In the intensively competitive CFM/S markets, 50-car trains can use the Goba line to Swaziland, and 35-car trains can use the Limpopo line. The train length that can use the CFM/S lines is lower than the 80-100 car unit trains (or block trains) that are typical for the movement of coal, grain, ores and other bulk commodities in developed countries. This capacity limit worsens the competitive position of the CFM/S in competing against South African railroads for transporting bulk commodities.

Because of the importance that ports play in the railroad competition faced by the CFM railroads, a brief description of their capacities and qualities is in order. The maximum ship sizes handled by the Mozambique ports are: 30,000/50,000 tons at Maputo, 50,000/60,000 tons at Matola, 20,000 tons at Beira, and 30,000 tons at Nacala. The port of Durban, the chief competitor to the CFM/S ports, can handle ships of 60,000 tons. Quay length for bulk sugar are, at 180 meters, identical at Maputo and Durban. But for handling bulk ores and coal shipments, the quay length of 1,400 meters at Durban is eight times greater than the 180 meters quay length at Maputo. In addition, the days in port at all the Mozambique ports are 18 days, which compares unfavorably with the four days at port in Durban. Loss and damage and pilferage at Maputo is three times as large as the rate at Durban.⁸ Exhibit C.3.1 presents a description of the specialized port facilities at Maputo and at the South African ports of Durban and Richards Bay.

3.1 Exhibit C

The port of Richards bay specializes in bulk commodities and can accommodate ship sizes of 60,000 to 80,000 tons. The port of Durban can handle ship sizes up to 60,000 tons, while the port of Maputo can handle only 20,000 tons. A description of the operations and facilities specific to the shipping of selected commodities is presented next.

Asbestos. Neither the ports of Maputo or Durban have special handling facilities. This cargo is either moved by pallets or in containers. The pallet rates are used in the tariff comparisons presented in Table C.4.3.

Citrus. Maputo has two pre-cooling sheds with a combined 550,000 case capacity, five cranes and 380 meters of quay side. Durban has nine pre-cooling chambers with a combined capacity of 900,000 cases.

Molasses. Maputo has three storage tanks, while Durban has a 48,000 tons capacity and shipping rates of 500 tons per hour.

⁸See: De Leuw, Cather International Limited. SADCC Transportation Investment Priority Assessment (STIPA). Vol II. Prepared for USAID-Harare. August 1991, page D-3.



Coal. The capacity at the port of Maputo is 1.5 million tons per year, with four storage stock piles. Ship loading rates of 800 tons per hour are achieved, with daily averages of 7,500 coal tons.

Most of the facilities at Richards Bay are owned by the coal shippers and for that reason the actual port rates may be considerably lower than the tariff rates. Richards Bay has a storage capacity of four stockpiles of 250,000-270,000 tons each, and ship loading rates of 3,500-6,500 tons per hour.

Sugar. Shipping of sugar is done by charter vessel, usually in shipments up to 25,000 tons. Maputo has a dedicated facility with three horizontal warehouses with reclaimed systems. Storage capacity is 120,000 tons with loading rates of up to 500 tons per hour. Durban also has a dedicated facility with a storage capacity of up to 520,000 tons and loading rates of 800 tons per hour.

There are also differences in the freight car technology used at both ports. At Maputo, open freight cars with tarpaulins are used, while shipments through South Africa use bottom dumping freight cars designed specifically for the Durban terminal.

Steel. Maputo has two quays of 165 and 175 meters respectively, four cranes of 20 ton capacity each, and a 150,000 stockpile facility. Shipments of steel through South Africa use the port of Durban.

4. Competition and Transport Flows

The CFM railroads operate within very competitive international transportation markets. The CFM/N railroad competes with the CFM/C railroad and with the Tanzanian railroad for shipments from Malawi. The CFM/C railroad competes with the CFM/N railroad for shipments from Malawi, with Tanzanian railroads for shipments from Zambia, and with South African railroads and CFM/S for shipments from Zimbabwe. The CFM/S railroad competes with CFM/C and the South African railroads for shipments from Zimbabwe, and with the South African railroads for shipments from Swaziland and South Africa.

In 1988, CFM/C carried two percent of all the imports from Malawi (but no exports) due to the insurgency in Mozambique, while carrying 13 percent of the imports and six percent of the exports from Zimbabwe. CFM/S carried 53 percent of the exports from Swaziland (but none of the imports), and nine percent of the imports and 12 percent of the exports from Zimbabwe.¹ In 1991, a deterioration in the service provided by CFM/S, characterized by large costs of loss and damage and pilferage and long periods of stay at the port of Maputo, contributed to CFM/S losing 180,00 tons of Swaziland sugar diverted to Durban (South Africa), 90,000 tons of ferroalloys from Zimbabwe shifted to Port of Elizabeth (South Africa), and 100,000 tons of Zimbabwe steel shifted to Durban (South Africa).

¹See: De Leuw, Cather International Limited. SADCC Transportation Investment Priority Assessment (STIPA) August 1991, page D-3.

The De Leuw, Cather International Limited report quoted earlier researched the least cost routes and degree of competition in each transportation corridor by focusing on the total distribution costs of shipments via alternative transport modes. The total distribution costs examined included: transportation tariffs, inventory costs while in transit, transfer costs, loss and damage costs and port demurrage costs. While their simulation of total distribution costs focused on high commodity values (i.e. \$1,000-\$2,222 values per ton) and did not use actual rail tariffs, but instead used broad rail cost averages per ton-kilometer for each competing railroad, some significant conclusions emerged. Even for high value commodities, high rates of loss and damage, and long periods of stay of 18 days at CFM ports, the CFM/N railroad appeared to be the least cost mode for transporting commodities from Malawi, while CFM/C emerged as the least cost mode for shipments from Zimbabwe and Zambia. However, the total distribution costs of shipments via the CFM/S railroad were the largest of all the competitors for products to/from Swaziland and Zimbabwe. This led the De Leuw, Cather researchers to project very low traffic for CFM/S for years 1995 and 2000. Their CFM/S traffic projections of 1.39-2.146 million tons for 1996 and 2000 are lower than the projections presented in Section C.5.²

Because of the reservations noted above regarding the use of high value commodities and the absence of rail tariff data in the total distribution cost comparisons, it was decided to simulate different competing scenarios of CFM/S versus the South Africa railroads. Table C.4.1 presents rail tariff information on shipments of several key commodities via the ports of Maputo and Durban, showing a rail transportation cost differential favorable to CFM/S which ranged from \$11 to \$19 per ton depending on the commodity shipment in question.

Table C.4.2 presents the distribution costs for commodity shipments whose value are \$1,000 per ton (towards the top values of the commodities shipped through Maputo) assuming several port delay scenarios at the port of Maputo. At the current level of delays at the port of Maputo (18 days), the distribution cost differential of \$21.63 per ton favorable to Durban is larger than the rail tariff cost advantage enjoyed by Maputo (\$11-\$19 per ton). Thus, there is no surprise that traffic has been diverted to Durban. However, if port delays at Maputo are reduced to 15 days (with their concomitant proportional reduction in loss and damage), then CFM/S becomes the least cost mode for the shipments of asbestos and iron/steel, since in these cases the transportation cost differential (\$17-\$19) in favor of Maputo is larger than the \$16.94 distribution cost differential favorable to Durban. By the time the delays at Maputo are reduced to 11 days, the transportation cost differential favorable to CFM/S overwhelms the distribution cost advantages of Durban, and CFM/S shipments via Maputo emerge convincingly as the least cost mode.

4.1 CFM/S Competition in Specific Commodities

This section analyzes the competition faced by CFM/S in its principal freight markets. The total distribution costs of rail shipments via Maputo and the South African ports are presented in Table C.4.3, which is based on data collected by Austral Consultoria E Projectos in July 1992.

²De Leuw, Cather International Limited. Op. cit. page 77.

Asbestos. In spite of the significant advantage in total distribution costs enjoyed by CFM/S in this market, Durban has been capturing an increasing share of the tonnage moved. This has occurred because with ships for the Far East serving Maputo every 21 days, there are more shipping opportunities through Durban, which has weekly service. Thus, the tendency to ship via Durban.

Citrus. While considerable amounts of citrus are handled by Maputo, the total distribution costs of shipping through Durban are already 20 percent smaller. Shipments to the Far East via charters use Durban because of Japanese food quality regulations that are not met at the port of Maputo.

Molasses. CFM/s enjoys a significant advantage in total distribution costs in this market, and has been able to hold off the South African competition.

Coal. While CFM/s is still the least cost competitor in the competition with Richards Bay, it is so by a small margin. The South African railroad and port are offering 20 percent discounts in this market, thereby eliminating the Maputo advantage. Coal is shipped in larger shipments at Richards Bay, turning the balance against CFM/S. Higher costs at Maputo relate to times in port, and fewer shipping opportunities. This is a CFM/S market under competitive pressure

Sugar. Longer times in port and huge loss and damage and pilferage costs have eliminated the distance advantage enjoyed by CFM/S. It is now cheaper to ship sugar through Durban and the freight traffic figures reflect this.

Steel. While Maputo enjoys a cost advantage in steel shipments, South African steel uses Durban primarily because ocean shipping costs are cheaper there. The only steel shipments currently using Maputo originate in Zimbabwe.

Considering that shipments through Maputo are characterized by bulk commodities with lower values per ton than \$1,000 (sugar, for example, is less than \$250 per ton in the London futures market), there is still hope that CFM/S can recuperate some of the traffic diverted to the South African ports if port delays at Maputo are reduced to 11 days, that is, almost cut in half from current levels, and if loss and damage and pilferage can be controlled through a systematic program of cargo security at both the CFM/S railroad and ports. The traffic projections for CFM/S presented in the next section assume that port delays at Maputo and loss and damage will be reduced to the competitive levels presented in Table C.4.2; consequently these projections are larger than those developed in the De Leuw, Cather report.

5. Railroad Demand Projections

Projections of the net tonnage and net ton-kilometers were developed for the three transportation corridors following several assumptions regarding the prevalence of peace in the area, as well as much needed improvements in cargo security at both rails and ports, and improvements in waiting times for loading and unloading at Mozambique's ports.

The projections assume peace conditions in the transportation corridors with no armed assaults on the railroads or their property. The first projection year corresponds to three years after peace

prevails. The first projection year has been assumed to correspond to 1996, that is three years after peace is assumed to occur at the end of 1992. A second projection year is 2000, which was selected to permit comparisons with projections of traffic flows conducted by other researchers.

The assumptions regarding time in transit and loss and damage rates are as follows. Railroad transit days from Swaziland to the port of Maputo are assumed to be reduced to two days, lower from the 1990 level of three days, by assuming non-stop express trains, which considerably reduce the loss and damage experience on this rail corridor. Similarly the time in transit from Zimbabwe to the port of Beira is assumed to be reduced from the 16 days experience of 1988-89, while time in transit from Malawi to the ports of Nacala and Beira are assumed to be reduced from the 15-16 days experienced in 1988-89. Port days at the Mozambican ports are assumed to be reduced from the current level of 18 days at port to 7-11 days, that is, improved yet still above the South African port experience. In addition, improvements in cargo security at CFM rail and ports are assumed to be made, so that the loss and damage rate on the transportation corridors of Mozambique are reduced from the current rates of 1.2-1.5 percent to 0.6 percent. The improvement in cargo security will require both the running of non-stop international cargo trains, as well as investments in security systems at railroad yards, stations and port terminals.

5.1 Domestic Cargo Projections

Domestic cargo tonnage was projected on a product by product basis for CFM/S for 1996 (or three years after peace). The following products were projected at their peak levels of the early eighties:

Limestone:	42,000 tons
Cement:	36,000 tons
Fuel:	58,000 tons
Stone:	56,000 tons
Food Supplies:	199,000 tons
Other unspecified:	562,000 tons

The resulting 1996 traffic is close to the 1982 traffic level. A slight growth is projected for year 2000.

The domestic cargo traffic of CFM/C is projected at levels comparable to 1983 for both projection years. Similarly, the traffic on CFM/N is projected close to the 1982-83 traffic levels for years 1996 and 2000. The projections are presented in Table C.5.1.

5.2 International Cargo Projections

International cargo projections were developed on a corridor basis as follows:

5.2.1 Northern Corridor

The 1996 projection for CFM/N assumes that the peak traffic of 1981-82 in tea, tobacco and minerals from Malawi will be recovered three years after peace arrives in the corridor. The year

2000 projection comes from De Leuw, Cather International Limited³ The international projections on this corridor are below those in the recent TRANSMARK study (January 1992) of this corridor. The resulting international cargo projection for the Northern corridor is presented in Table C.5.1.

5.2.2 Central Corridor

Shipments from Zambia were projected as 84,000 tons for years 1996 and 2000, comparable to 1987 levels. The tonnages from Malawi were projected at 1981 levels for 1996. Zimbabwe shipments were projected to grow at 9.5 percent annual rates to year 1996. This is the rate of growth experienced by the tonnage from Zimbabwe in the high growth period 1982-1988. The year 2000 projections for the Central corridor were taken from the DeLeuw, Cather study referred to earlier.⁴

5.2.3 Southern Corridor

Flows from Zimbabwe, Swaziland and South Africa using the CFM/S railroad were projected on a product by product basis for 1996. This projection is presented in Table C.5.2 and shows the tonnage transported from each country projected at their peak traffic during the eighties, with the exceptions of mineral shipments from South Africa and sugar shipments from Swaziland. In the case of the Swaziland sugar, traffic which has already been lost by CFM/S, it was assumed that improvements in port sugar handling technology by the port of Maputo, use of specialized rail freight cars for transporting sugar and reduction in loss and damage rates in this corridor would enable CFM/S to recuperate all the sugar traffic lost by year 2000. All the other non-sugar traffic on this corridor is assumed to grow at the moderate rate of six percent from year 1996 to 2000. The resulting projections, presented in Table C.5.2, are smaller than the projections presented in the De Leuw, Cather study cited earlier, study which assumed still high rates of loss and damage, times in transit and long periods of stay at the port of Maputo and for CFM/S. It should be obvious that the recovery of lost traffic on CFM/S will require investments in logistics, cargo security systems and port technology necessary to compete effectively with shipments via the South African ports of Durban and Richards Bay. Table C.5.3 compares projections from the main corridor studies conducted recently.

5.3 Passenger Traffic Projections

Passenger traffic on the three corridors were projected at their peak levels during the eighties, after adjustments for the degree of competition from road traffic. In the Central corridor, where CFM/C competes with a good paved road, it was assumed that only 25 percent of the previous peak traffic would be retained. The other two corridors experience less road traffic competition, since they compete with poor quality roads. As a consequence, it was assumed that only 50 percent of the peak passenger traffic would be retained in the competition with busses and pick-

³De Leuw, Cather International Limited. SADCC Transportation Investment Priority Assessment. (STIPA). Vol. I, page 77. Prepared for USAID-Harare. August 1977.

⁴De Leuw, Cather International Limited. Op. Cit. page 77.

up trucks in the Northern and Southern Corridors. The passenger traffic projections are presented in Table C.5.1.

6. Railroad Operational Improvements Needed

Previous sections have focused on the competitive markets in which CFM operates, particularly the intensive competition from the South African railroads faced by CFM/S. This section briefly discusses the operational improvement needed to make CFM an effective competitor. The discussion starts by focusing on the interdependence of rail and port operating strategies. As discussed in Section C.4, the high levels of delay (18 days) at the CFM ports are very adversely affecting the competitiveness of CFM/S in its struggle to compete with the South African railroads. The first order of business should be to concentrate on reducing the delays at the port of Maputo and its high rate of loss and damage and pilferage. The following paragraphs pertain to railroad improvements.

6.1 Railroad Cargo Security

The CFM railroads, particularly CFM/S, are not immune to the problem of cargo security. This problem includes the assaults on CFM trains and loss of locomotives on the CFM/S line, as well as the pilferage that occurs to shipments at stations and railroad yards. Since most of the assaults on CFM/S trains occurs in a 10-kilometer section, solution of this problem is possible; indeed the CFM/C railroad has already managed to overcome this problem. The problem of pilferage could be minimized by running non-stop trains to/from Maputo to the borders, that is by minimizing the opportunities for pilferage by railroad employees and the local populations. In addition, a comprehensive program of cargo security should be implemented. This program would include a shipper information system to trace the location of rail shipments at all times.

In addition, cargo security at rail stations and yards need to be improved in a systematic fashion through security measures, such as: employment screening, employee identification tags, proper fencing and guarded entry gates, controlled and exclusion areas, outside and protective lighting, locks, padlocks and high security seals for the freight cars, alarms and patrol guards. These same techniques should be used for port cargo security.

6.2 Use of Unit/Block Trains for Bulk Commodities

Competition for coal cargo, and other bulk commodities (such as grain) in the Southern corridor will require improvements in train length, since the South African competitors can be expected to increasingly use unit trains (80-100 freight cars) for their train movements. The problem with matching the South African railroads is that the CFM lines have their capacity limited to 28-50 car trains. A start should be made to commence operating 40-50 car trains in the Southern corridor, with the view of eventually improving the line to accommodate 80-car trains and compete more effectively on coal markets.

6.3 Improvements in the Freight Car Fleet

The current freight car fleet has two problems. First, it is in such a state of disrepair that the CFM cars are not allowed to transit in the rail lines of the surrounding countries, which creates the need for extra transfers and increases rail transit times and the total distribution costs of shipments in highly competitive cargo markets, such as Swaziland, Zimbabwe and South Africa.

A second problem is the need for more specialized cars. For example, the freight cars used for transporting bulk sugar in South Africa are unavailable in the CFM fleet. There is an urgent need to modernize and update the freight car fleet used to serve the international traffic.

6.4 Reducing Rail Transit Times and Improving Locomotive Productivity

It currently takes three days of transit for shipments from Swaziland to reach the port of Maputo, thereby negating the advantage of shorter distances to the CFM ports. An effort should be made to reduce transit times through a combination of policy options like : running unit trains, running non-stop trains to the borders, improving the vehicle fleet so that the CFM freight cars can transit on other railroads in the region, and negotiating agreements with the neighboring countries to expedite cargo handling at the borders (like paying for customs at the port on the exports from the neighboring countries). Locomotive productivity is at an all time low in the Northern and Southern corridors, which need to be raised to the productivity levels of CFM/C.

7. Prospects for CFM Financial Viability

This section presents an analysis of the current financial position of CFM's railroad operations and its future prospects. A separate analysis is provided for CFM/S rail operations.

7.1 CFM Current Financial Status

The profit and loss statements of CFM are presented in Table C.7.1. These figures show that CFM had a positive cash flow in 1987 and 1988, but that the cash flow turned negative in 1989 and has been growing in negative terms since then. The negative cash flow of CFM in 1991 rose to MT 1,510.6 million. A closer look at Table C.7.1 reveals that the revenues from the railroad operations of CFM did not cover their direct salary expenses from 1988 to 1990, and then only showed a positive balance of revenues over salary expenses in 1991 as a consequence of a major increase in the rail tariffs. In contrast, the revenues from CFM port operations have always shown a healthy surplus over the direct salary expenses at the ports. The conclusion is that port operations have been consistently contributing positive cash flows to CFM, while the railroad operations have been a consistent drain on the finances of CFM.

In view of the fact that the railroad accounting system does not permit a thorough allocation of costs between railroad and port operations⁵, an attempt was made to allocate rail and port costs

⁵The CFM profit and loss statement does not include depreciation expenses, which are unavailable due to the fact that the railroad and port assets have not been valued. In addition, interviews with CFM accounting and finance officials, and their consultants, indicate that the current accounting system is unable to provide costs of commodity

on the basis of information external to CFM. To that effect a World Bank 1990 study⁶ was used to separate the railroad portion of the unallocated other general expenses of Table C.7.1 from the rail portion for the Central and Southern corridors in year 1988. The World Bank study allocated 73 percent of unallocated other general expenses to rail in the Southern corridor, and 83.8 percent in the Central corridor (no estimate was provided for the Northern corridor). Adding the costs of the two corridors resulted in the assignment of 77.6 percent of the CFM unallocated other general expenses to the rail operations. This rail cost proportion, albeit large, was used to assess the net cash flow from CFM railroad operations in 1988. A set of allocation rules, presented in Table C.7.2, was designed for assigning the unallocated general expenses for 1991. The resulting cost allocations are presented in Table C.7.3. These figures show the CFM railroads experiencing cash flow losses of MT 8,246 million in 1988 and MT 37,342 million in 1991.

7.2 CFM Future Financial Prospects

CFM revenues and expenses are projected for years 1996 (three years after the breakout of peace) and 2000. The projections, presented in Table C.7.3, use constant 1991 price levels, and assume that the 1991 expense levels for direct salary and other general expenses allocated to the railroad will remain constant in real terms (after adjustment for inflation), that is, that direct salaries and other general expenses will grow at the rate of inflation. Assuming that the revenue per net ton kilometer transported remains constant in 1991 prices, the railroad revenues are projected in accordance with the traffic projections presented in Section C.5. On the basis of the traffic projections presented earlier, CFM will still experience a negative cash flow in 1996, as shown in Table C.7.3, even if they hold the line on wages and general expenses. Breaking even (on a cash flow basis) under these conditions will require reducing the CFM railroad staff by as much as 7,396 workers. However, by the year 2000 CFM railroad operations will show a profit, profit to be increased to MT 22,684 million (1991) if the 1996 labor force reduction of 7,396 workers goes in effect.

7.3 CFM/S Current Financial Position

The rail and port operations of CFM/S showed a negative cash flow in 1991, after running positive cash balances during the earlier period presented in Table C.7.4. The railroad operations of CFM/S have not generated enough revenues to cover the direct salary expenses of the rail workers since 1989, a situation which worsened in 1991 in spite of the tariff increases.

Allocating the other general expenses in accordance with the proportions used in the World Bank study referred to earlier for 1988 and the allocation rules presented in Table C.7.2 for 1991, results in a negative cash flow of MT 15,507 million for the rail operations in 1991, a large increase when contrasted to the 1988 losses presented in Table C.7.5.

shipments or even to allow an allocation of rail/port costs.

⁶World Bank. Southern Africa Department. Infrastructure Operations Division. SADCC Transport Corridors: Study of Financial Strategy. Vol 2. Annex C-1. November 1990, pages 5 and 6.

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7.4 CFM/S Future Financial Prospects

The revenues and costs of CFM/S were projected to 1996 and 2000 using the same identical methodology used in the analysis presented in Section 7.2. These projections use the CFM/S traffic projections presented in Section C.5. Table C.7.5 presents the financial projections of CFM/S, which exhibit a large cash flow deficit of MT 6,129 million (1991) in 1996. However this deficit is significantly reduced by year 2000, when the cash flow becomes positive. CFM/S will continue to show a cash flow deficit by 1996 and will require a major labor force reduction of 4,086 workers in order to avoid cash flow deficits then. By year 2000, the CFM/S will be operating with a slight positive cash flow. If the major labor force reduction of 1996 goes into effect, the positive cash flow by year 2000 will increase to the level of MT 6,429 million (1991).

TABLE C.1
CFM HISTORICAL TRAFFIC TRENDS
1981 - 1991

YEARS	NET TONS TRANSPORTED (MILLIONS)				TON - KMS (MILLIONS)			
	CFM/S	CFM/C	CFM/N	CFM	CFM/S	CFM/C	CFM/N	CFM
1981	5.46	1.82	0.43	7.77	794.8	573.9	207.8	1583.0
1982	4.88	1.30	0.42	6.74	648.3	408.4	197.8	1260.9
1983	3.46	0.48	0.39	4.37	457.5	130.5	175.8	767.0
1984	3.17	0.30	0.21	3.70	375.2	69.7	90.4	537.9
1985	2.52	0.31	0.05	2.99	188.4	88.3	10.5	289.6
1986	2.54	0.37	0.03	2.94	194.4	98.7	7.7	301.2
1987	2.33	0.48	0.39	3.20	159.5	135.4	57.0	352.3
1988	2.12	0.49	0.10	2.71	145.3	142.7	16.9	305.9
1989	3.04	0.63	0.07	3.74	213.2	175.1	14.2	402.5
1990	2.12	0.85	0.09	3.06	150.2	225.6	45.6	421.4
1991	1.39	0.70	0.09	2.18	102.5	170.5	77.4	350.4

SOURCE: CFM. INFORMACAO ESTADISTICA. SELECTED YEARS.

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TABLE C.2.1
CFM LOCOMOTIVE PRODUCTIVITY 1981 - 1991

YEARS	NO. OF MAIN LINE LOCOMOTIVES				TON - KILOMETERS PER LOCOMOTIVE (MILLIONS)			
	CFM/S	CFM/C	CFM/N	CFM	TON-KM/LOCO CFM/S	TON-KM/LOCO CFM/C	TON-KM/LOCO CFM/N	TON-KM/LOCO CFM
1981	64	26	11	101	12.4	22.0	18.9	15.7
1982	62	26	11	99	10.5	15.7	18.0	12.7
1983	62	26	11	99	7.4	5.0	16.0	7.7
1984	62	26	11	99	6.1	2.7	8.2	5.4
1985	62	26	11	99	3.0	3.4	1.0	2.9
1986	56	8	13	77	3.5	12.3	0.6	3.9
1987	46	8	13	67	3.5	16.9	4.4	5.3
1988	46	8	13	67	3.2	17.8	1.3	4.6
1989	42	7	11	60	5.1	25.0	1.3	6.7
1990	38	11	11	60	4.0	20.5	4.1	7.0
1991	37	11	11	59	2.8	15.5	7.0	6.0

SOURCE: CFM. INFORMACAO ESTADISTICA. SELECTED YEARS.

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TABLE C.2.2 CFM PERSONNEL - SELECTED YEARS 1979 - 1992

CFM	1979	1980	1981	1982	1983	1984	1985	JUNE 1986	1987	1988	1989	1990	1991	MARCH 1992
DIRECT RAIL			19,913	19,933		18,368	17,251	17,196	14,427	14,057		15,738		
DIRECT PORT			18,178	18,183		13,920	11,733	9,923	10,858	10,166		18,926		
UNALLOCATED			2,408	2,141		2,051	1,734	1,719	1,553	2,153		2,481		
TOTAL:	N.A.	N.A.	40,499	40,257	N.A.	34,339	30,718	28,738	26,838	26,376	N.A.	37,145	N.A.	34,355
CFM/S														
DIRECT RAIL			7,264	7,271		6,138	5,492	6,238	5,639	5,517		5,226		
DIRECT PORT			8,876	8,876		9,124	7,616	6,003	7,563	6,971		8,420		
UNALLOCATED			681	682		799	600	575	534	1,167		855		
TOTAL:	13,294	13,567	16,821	16,829	17,045	16,061	13,708	12,816	13,736	13,655	N.A.	14,501	N.A.	N.A.

SOURCE: CFM. INFORMACAO ESTADISTICA. SELECTED YEARS.

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**TABLE C.2.3
LABOR PRODUCTIVITY STANDARDS**

LABOR REQUIREMENTS FOR:	DEFINITION OF STANDARD	BEST SUB-SAHARAN AFRICAN RAILROAD	HIGH STANDARD	MEDIUM STANDARD	LOW STANDARD	US CLASS 1 RAILROAD AVERAGE*
I - MAINTENANCE OF WAY AND STRUCTURES	EMPLOYEES PER TRACK - KM	0.54	0.85	1.12	1.39	0.23
II - LOCOMOTIVE REPAIRS	LOCOMOTIVES - KM PER MECHANIC	17,451	3,774	2,008	1,836	47,120
III - FREIGHT AND PASSENGER CAR REPAIRS	CAR - KMS PER MECHANIC	320,392	63,504	32,535	12,685	871,107
IV - TRAFFIC OPERATIONS	MILLIONS OF TRAFFIC UNITS PER EMPLOYEE	2.69	1.37	1.046	0.822	16.42
V - MANAGEMENT AND OVERHEAD FUNCTIONS	AS PERCENT OF ALL OTHER PERSONNEL	9.0%	9.0%	15.0%	29.0%	23.0%

SOURCE: ESTIMATED FROM THE RECORDS OF TEN RAILROAD COMPANIES IN SUB-SAHARAN AFRICA (EXCLUDES SOUTH AFRICA)

NOTE: * INCLUDED FOR COMPARISON PURPOSES AT THE REQUEST OF THE USAID - MOZAMBIQUE MISSION.

**TABLE C.2.4
DATA INPUTS FOR THE ESTIMATION OF LABOR REQUIREMENTS**

	1991	1996	2000
TRAFFIC UNITS (MILLIONS)			
CFM/N	82.1	177.2	254.0
CFM/C	177.5	648.1	1068.4
CFM/S	149.4	472.4	672.8
CFM	412.1 *	1297.7	1995.2
TRACK KILOMETERS			
CFM/N	919	919	919
CFM/C	884	884	884
CFM/S	705	705	705
CFM	2508	2508	2508
FREIGHT PASSENGER CAR KILOMETERS (THOUSANDS)			
CFM/N	888.5	1,918	2,749
CFM/C	5,224.5	19,076	31,447
CFM/S	6,435.6	20,349	28,982
CFM	12,845.2 *	41,343	63,178
LOCOMOTIVE KILOMETERS (THOUSANDS) **			
CFM/N	268.28	479	686
CFM/C	648.28	1,935	3,189
CFM/S	1,101.69	1,277	1,818
CFM	2,059.83 *	3,691	5,693

NOTES:

- * INCLUDES OPERATIONS ON ZAMBEZIA LINE.
- ** ASSUMES 370 TRAFFIC UNITS PER LOCOMOTIVE - KILOMETER FOR CFM/S AND CFM/N FOR 1996 AND 2000. THE EQUIVALENT FIGURE FOR CFM/C IS ASSUMED TO BE 335 FOR THE SAME YEARS.

SOURCE: SEE TEXT

Table C.2.5 Labor Requirement of CFM*

Class of Labor	Current Level**	1991		1992		1993	
		Required	Surplus	Required	Surplus	Required	Surplus
Maintenance of Ways & Structures	4,248						
Best Sub-Sahara Africa Railroad		1,354	2,894	1,354	2,894	1,354	2,894
High Standard		2,132	2,116	2,132	2,116	2,132	2,116
Medium Standard		2,809	1,439	2,809	1,439	2,809	1,439
Low Standard		3,486	762	3,486	762	3,486	762
US Class I Railroad Average		577	3,671	577	3,671	577	3,671
Workshop Engineers & Technicians	3,273						
Best Sub-Sahara Africa Railroad		158	3,115	341	2,932	523	2,750
High Standard		748	2,525	1,629	1,644	2,503	770
Medium Standard		1,421	1,852	3,109	164	4,777	(1,504)
Low Standard		2,135	1,138	5,270	(1,997)	8,081	(4,808)
US Class I Railroad Average		58	3,215	126	3,147	193	3,080
Traffic Operations	4,007						
Best Sub-Sahara Africa Railroad		153	3,854	482	3,525	742	3,265
High Standard		301	3,706	947	3,060	1,456	2,551
Medium Standard		394	3,613	1,242	2,765	1,909	2,098
Low Standard		501	3,506	1,579	2,428	2,427	1,580
US Class I Railroad Average		25	3,982	79	3,928	122	3,885
Management & Support Services	2,247						
Best Sub-Sahara Africa Railroad		150	2,097	196	2,051	236	2,011
High Standard		286	1,961	424	1,823	548	1,699
Medium Standard		694	1,553	1,074	1,173	1,424	823
Low Standard		1,775	472	2,997	(750)	4,058	(1,811)
US Class I Railroad Average		152	2,095	180	2,067	205	2,042
All Railroad Employees	13,775						
Best Sub-Sahara Africa Railroad		1,816	11,959	2,373	11,402	2,855	10,920
High Standard		3,467	10,308	5,132	8,643	6,640	7,135
Medium Standard		5,318	8,457	8,234	5,541	10,920	2,855
Low Standard		7,897	5,878	13,331	444	18,053	(4,278)
US Class I Railroad Average		812	12,963	961	12,814	1,097	12,678

* Estimated by applying the labor standards presented in Table C.2.3 to the summary traffic projections presented in Table C.5.1.

permanent employees excluding foreigners and brigadas

in Resources Director 7/17/92

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Table C.2.6 Labor Requirement of CFM/N

Class of Labor	Current Level	1991		1996		2000	
		Required	Surplus	Required	Surplus	Required	Surplus
Maintenance of Ways & Structures	962						
Best Sub-Sahara Africa Railroad		496	466	496	466	496	466
High Standard		781	181	781	181	781	181
Medium Standard		1,029	(67)	1,029	(67)	1,029	(67)
Low Standard		1,277	(315)	1,277	(315)	1,277	(315)
US Class I Railroad Average		211	751	211	751	211	751
Workshop Engineers & Technicians	571						
Best Sub-Sahara Africa Railroad		18	553	33	538	48	523
High Standard		85	486	157	414	225	346
Medium Standard		161	410	297	274	426	145
Low Standard		216	355	412	159	590	(19)
US Class I Railroad Average		7	564	12	559	18	553
Traffic Operations	731						
Best Sub-Sahara Africa Railroad		31	700	66	665	94	637
High Standard		60	671	129	602	185	546
Medium Standard		79	652	170	561	243	488
Low Standard		100	631	216	515	309	422
US Class I Railroad Average		5	726	11	720	15	716
Management & Support Services	474						
Best Sub-Sahara Africa Railroad		49	425	54	420	57	417
High Standard		83	391	96	378	107	367
Medium Standard		190	284	224	250	255	219
Low Standard		462	12	552	(78)	631	(157)
US Class I Railroad Average		51	423	54	420	56	418
All Railroad Employees	2,738						
Best Sub-Sahara Africa Railroad		594	2,144	649	2,089	696	2,042
High Standard		1,010	1,728	1,164	1,574	1,299	1,439
Medium Standard		1,459	1,279	1,721	1,017	1,953	785
Low Standard		2,056	682	2,458	280	2,808	(70)
US Class I Railroad Average		274	2,464	288	2,450	301	2,437

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Table C.2.7 Labor Requirement of CFM/C

Class of Labor	Current Level	1991		1996		2000	
		Required	Surplus	Required	Surplus	Required	Surplus
Maintenance of Ways & Structures	1,908						
Best Sub-Sahara Africa Railroad		477	1,431	477	1,431	477	1,431
High Standard		751	1,157	751	1,157	751	1,157
Medium Standard		990	918	990	918	990	918
Low Standard		1,229	679	1,229	679	1,229	679
US Class I Railroad Average		203	1,705	203	1,705	203	1,705
Workshop Engineers & Technicians	1,485						
Best Sub-Sahara Africa Railroad		53	1,432	170	1,315	281	1,204
High Standard		254	1,231	813	672	1,340	145
Medium Standard		483	1,002	1,550	(65)	2,555	(1,070)
Low Standard		765	720	2,558	(1,073)	4,216	(2,731)
US Class I Railroad Average		20	1,465	63	1,422	104	1,381
Traffic Operations	1,459						
Best Sub-Sahara Africa Railroad		66	1,393	241	1,218	397	1,062
High Standard		130	1,329	473	986	780	679
Medium Standard		170	1,289	620	839	1,022	437
Low Standard		216	1,243	788	671	1,300	159
US Class I Railroad Average		11	1,448	39	1,420	65	1,394
Management & Support Services	512						
Best Sub-Sahara Africa Railroad		54	458	80	432	104	408
High Standard		102	410	183	329	258	254
Medium Standard		247	265	474	38	685	(173)
Low Standard		641	(129)	1,327	(815)	1,956	(1,444)
US Class I Railroad Average		54	458	70	442	86	426
All Railroad Employees	5,364						
Best Sub-Sahara Africa Railroad		651	4,713	969	4,395	1,259	4,105
High Standard		1,237	4,127	2,221	3,143	3,130	2,234
Medium Standard		1,890	3,474	3,634	1,730	5,252	112
Low Standard		2,850	2,514	5,902	(538)	8,700	(3,336)
US Class I Railroad Average		288	5,076	376	4,988	458	4,906

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Table C.2.8 Labor Requirement of CFM/S

Class of Labor	Current Level	1991		1996		2000	
		Required	Surplus	Required	Surplus	Required	Surplus
Maintenance of Ways & Structures	1,027						
Best Sub-Sahara Africa Railroad		381	646	381	646	381	646
High Standard		599	428	599	428	599	428
Medium Standard		790	237	790	237	790	237
Low Standard		980	47	980	47	980	47
US Class I Railroad Average		162	865	162	865	162	865
Workshop Engineers & Technicians	1,207						
Best Sub-Sahara Africa Railroad		83	1,124	137	1,070	195	1,012
High Standard		393	814	659	548	938	269
Medium Standard		746	461	1,261	(54)	1,796	(589)
Low Standard		1,107	100	2,300	(1,093)	3,275	(2,068)
US Class I Railroad Average		31	1,176	50	1,157	72	1,135
Traffic Operations	1,650						
Best Sub-Sahara Africa Railroad		56	1,594	176	1,474	250	1,400
High Standard		109	1,541	345	1,305	491	1,159
Medium Standard		143	1,507	452	1,198	644	1,006
Low Standard		182	1,468	575	1,075	818	832
US Class I Railroad Average		9	1,641	29	1,621	41	1,609
Management & Support Services	683						
Best Sub-Sahara Africa Railroad		47	636	62	621	74	609
High Standard		99	584	144	539	183	500
Medium Standard		252	431	375	308	484	199
Low Standard		658	25	1,118	(435)	1,471	(788)
US Class I Railroad Average		46	637	58	627	63	620
All Railroad Employees	4,567						
Best Sub-Sahara Africa Railroad		566	4,001	755	3,812	900	3,667
High Standard		1,201	3,366	1,747	2,820	2,211	2,356
Medium Standard		1,931	2,636	2,879	1,688	3,714	853
Low Standard		2,927	1,640	4,972	(405)	6,545	(1,978)
US Class I Railroad Average		248	4,319	297	4,270	338	4,229

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**TABLE C.3.1.
CFM RAILROAD LINE CAPACITY**

LINE AND SECTION	MAXIMUM AXLE LOADS (TONS)	MAXIMUM TRAIN SPEEDS (KM/HR.)	MAXIMUM TRAIN LENGTH (NO. OF FREIGHT CARS)	CAPACITY (MILLIONS OF TONS)
CFM/N (NACALA - NAYUCI)	16 - 20	80 - 100	40	9
CFM/C (SENA LINE)	16	60	28	6
CFM/C (BEIRA - MACHIPANDA)	18 - 20	60 - 80	35	9
CFM/S (LIMPOPO LINE)	20	60 - 80	35	6
CFM/S (GOBA LINE)	18 - 20	50 - 70	50	6

SOURCE: WORLD BANK. SOUTHERN AFRICA DEPARTMENT.
INFRASTRUCTURE OPERATIONS DIVISION. SADCC TRANSPORT
CORRIDORS: STUDY OF FINANCIAL STRATEGY. NOVEMBER 1990
ANNEX. A-2, PAGE 1.

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**TABLE C.4.1.
FREIGHT RATE DIFFERENTIALS BETWEEN CFM-SOUTH
AND SOUTH AFRICAN RAILROADS ON SELECTED
COMMODITY SHIPMENTS - 1990**

COMMODITY	FROM	TO	KMS	RAIL RATE PER TON-KM (US\$)	RAIL RATE PER TON (US\$)	RATE DIFFERENTIAL
ASBESTOS, BREAK BULK	ZVISTTAVANE ZVISTTAVANE	MAPUTO DURBAN	1071	\$0.039	\$42	\$17
			1683	\$0.035	\$59	
FERRO CHROME, BREAK BULK	KWEKWE KWEKWE	MAPUTO DURBAN	1233	\$0.027	\$34	\$15
			1831	\$0.027	\$49	
IRON/STEEL CRUDE, BREAK BULK	REDCLIFF REDCLIFF	MAPUTO DURBAN	1234	\$0.036	\$44	\$19
			1832	\$0.034	\$63	
RAW SUGAR FOR EXPORT, BREAK BULK	CHIREDDRI CHIREDDRI	MAPUTO DURBAN	981	\$0.032	\$31	\$13
			1603	\$0.027	\$44	
WHEAT IMPORTS	MAPUTO DURBAN	LUSAKA	2178	\$0.029	\$62	\$11
		LUSAKA	2776	\$0.026	\$73	

SOURCE: World Bank, Southern Africa Department, Infrastructure Operations, Division,
SADCC Transport Corridors: A Study of Financial Strategy, Vol. 11. November 1990.
Annex., A-4, Page 3.

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TABLE C.4.2.
DISTRIBUTION COSTS PER TON (EXCLUDING RAIL TARIFFS) FOR SELECTED SHIPMENTS FROM SWAZILAND.
(IN U.S. 1990 DOLLARS)

VALUE PER TON	VIA PORT OF	DAYS IN PORT	RAIL TRANSIT DAYS	NO. OF TRANSFERS	DISTRIBUTION COSTS a)					
					INVENTORY COSTS b)	TRANSFER COSTS	LOSS AND DAMAGE COSTS c)	PORT DEMURAGE COSTS c)	TOTAL	DIFFERENTIAL
\$1,000	DURBAN	4	3	1	\$2.88	\$2.22	\$5.00	\$1.68	\$11.78	-
	MAPUTO	18	3	1	8.63	2.22	15.00	7.56	33.41	\$21.63
	MAPUTO	15	3	1	7.40	2.22	12.80	6.30	28.72	16.94
	MAPUTO	11	3	1	5.75	2.22	9.40	4.62	21.99	10.21
	MAPUTO	7	3	1	4.11	2.22	6.00	2.92	15.25	3.47

NOTES:

a) FOR ESTIMATING THE TOTAL DISTRIBUTION COSTS, THE RAIL TARIFF COST DIFFERENTIAL NEEDS TO BE ADDED (SEE TABLE C.4.1).
 b) ESTIMATED USING 15 % AS THE RATE OF INTEREST.

c) ESTIMATED FROM DE LEUW, CATHER INTERNATIONAL LIMITED. SADCC TRANSPORTATION INVESTMENT PEIORITY ASSESSMENT (STIPA).
 AUGUST 1991, PAGE C-5, AS PROPORTIONAL TO DAYS IN PORT.
 TO DAYS IN PORT.

SOURCE: SEE TEXT

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TABLE C.4.3
TOTAL DISTRIBUTION COST PER TON OF SELECTED SHIPMENTS. JULY 1992.
(U.S. 1992 DOLLARS)

COMMODITY SHIPMENTS	PORT	RAIL TARIFF	PORT TARIFF AND AD VALOREU	INTEREST* IN TRANSIT	LOSS AND DAMAGE	TRANSFER COSTS	TOTAL DISTRIBUTION COSTS
ASBESTOS (BARBERTON, S.A.)	MAPUTO	21.44	\$6.50	\$4.32	\$0	\$2.22	\$34.48
	DURBAN	43.51	8.74	1.03	0	0	\$53.28
CITRUS (NELSPRUIT, S.A.)	MAPUTO	30.60	24.15	11.10	54.00	2.22	\$122.07
	DURBAN	61.57	20.44	6.66	18.00	0	\$106.67
MOLASSES (MALWULA, SWAZ.)	MAPUTO	16.14	1.60	8.84	0	2.22	\$28.80
	DURBAN	64.19	2.57	4.52	0	2.22	\$73.50
COAL (MPAKA, SWAZ.)	MAPUTO	7.55	3.73	4.47	0	2.22	17.97
	RICHARDS BAY	11.89	4.19	4.37	0	2.22	22.67
COAL (MIDDLEBURG, S.A.)	MAPUTO	17.70	3.73	4.57	0	2.22	28.22
	RICHARDS BAY	24.95	4.19	4.41	0	0	33.55
SUGAR (PHOZOMOYO, SWAZ.)	MAPUTO	17.20	4.00	4.42	12.5	2.22	40.34
	DURBAN	18.74	4.00	2.98	1.25	2.22	28.19
STEEL (MIDDLEBURG, S.A.)	MAPUTO	40.57	8.40	27.43	0	2.22	78.62
	DURBAN	84.69	10.58	26.82	0	0	122.09

* ESTIMATED AT 15 PERCENT INTEREST RATE.

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**TABLE C.5.1
TRAFFIC PROJECTIONS SUMMARY**

	1991	1996	2000
TONS TRANSPORTED (THOUSANDS)			
CFM/N	89.0	360.1	712.0
NATIONAL	50.8	116.0	196.0
INTERNATIONAL	38.2	244.1	516.0
CFM/C	699.0	1,775.5	2,957.0
NATIONAL	226.0	315.5	435.0
INTERNATIONAL	473.0	1,460.0	2,522.0
MALAWI	17.9	458.0	N.A
ZAMBIA	8.7	84.0	N.A
ZIMBABWE	446.4	918.0	N.A
CFM/S	1,385.1	3,311.0	4,904.0
NATIONAL	520.3	933.0	1,153.0
INTERNATIONAL	864.8	2,378.0	3,751.0
ZIMBABWE	110.0	627.0	792.0
SOUTH AFRICA	599.6	1,272.0	1,606.0
SWAZILANDIA	155.2	479.0	1,353.0
CFM	2,181.6	5,446.6	8,573.0
NATIONAL	805.6 *	1,364.5	1,784.0
INTERNATIONAL	1,376.0	4,082.1	6,789.0

* INCLUDES THE ZAMBESIA LINE AS WELL

SOURCE: SEE TEXT

**TABLE C.5.1 - CONTINUATION
TRAFFIC PROTECTIONS SUMMARY**

	1991	1996	2000
TONS KILOMETERS TRANSPORTED (MILLIONS)			
CFM/N	77.4	77.2	146.0
NATIONAL	33.6	40.6	68.6
INTERNATIONAL	43.8	36.6	77.4
CFM/C	170.5	615.1	1031.4
NATIONAL	24.9	89.5	123.5
INTERNATIONAL	145.6	525.6	907.9
CFM/S	102.5	336.4	487.8
NATIONAL	16.9	65.3	80.7
INTERNATIONAL	85.6	271.1	407.1
CFM	351.2	1028.7	1665.2
NATIONAL	76.2	195.4	272.8
INTERNATIONAL	275.0	833.3	1392.4
PASSENGER KILOMETERS TRANSPORTED (MILLIONS)			
CFM	60.9	269.0	330.0
CFM/N	4.7	100.0	108.0
CFM/C	7.0	33.0	37.0
CFM/S	46.9	136.0	185.0
CFM/Z	2.3	N.A	N.A

SOURCE: SEE TEXT

**TABLE C.5.2
INTERNATIONAL TRAFFIC PROJECTIONS
CFM/S
(THOUSANDS OF TONS)**

	1996	2000
FROM ZIMBABWE		
FERROALLOYS	70	
STEEL	177	
ASBESTOS	68	
MAIZE	75	
SUGAR	199	
ALL OTHERS	38	
	627	792 *
FROM SOUTH AFRICA		
COAL	779	
STEEL	64	
CITRICS	130	
ASBESTOS	75	
MINERAL PRODUCTS	50	
ALL OTHERS	174	
	1272	1606 *
FROM SWAZILAND		
SUGAR **	95	380
COAL	130	
MOLASSES	126	709 *
MAIZE	18	
ALL OTHERS	110	264
	479	1353

* PROJECTED AT 6 % ANNUAL GROWTH FROM 1996 TO 2000

** ASSUMES 25 % OF SUGAR TRAFFIC RECUPERATED BY 1996 AND 100 % RECUPERATED BY 2000.

SOURCE: SEE TEXT

**TABLE C.5.3.
COMPARISONS OF TRAFFIC PROJECTIONS OF SEVERAL STUDIES
(THOUSANDS OF TONS AND MILLIONS OF TON KMS)**

STUDY	THIS STUDY	DE LEUW, CATHER INTERNATIONAL	TRANSMARK	HAMBURG PORT CONSULTING GROUP
YEAR	JULY, 1992	AUGUST, 1991	JANUARY, 1992	1981
CFM/N 1995/96				
TONS	360.1	484	N.A.	658-940
TON-KMS	77.2	N.A.	277-287	332-475
2000				
TONS	712.0	516	N.A.	808-1,154
TON-KMS	146.0	N.A.	N.A.	396-565
CFM/C 1996/96				
TONS	1,775	2,522-3,416	N.A.	N.A.
TON-KMS	615.1	N.A.	N.A.	N.A.
2000				
TONS	2,957	2,522-3,416	N.A.	N.A.
TON-KMS	1,031.4	N.A.	N.A.	N.A.
CFM/S 1996/96				
TONS	3,311	982-1,294	N.A.	4,517-6453
TON-KMS	336.4	N.A.	N.A.	495-708
2000				
TONS	4,904	1,392-2,146	N.A.	5,373-7,676
TON-KMS	487.8	N.A.	N.A.	566-810

SOURCES:

DE LEUW, CATHER INTERNATIONAL LIMITED. SADCC TRANSPORTATION INVESTMENT PRIORITY ASSESSMENT (STIPA) AUGUST 1991. PREPARED FOR USAID - HARARE, AUGUST 1991. PAGE 61.

HPC (HAMBURG PORT CONSULTING GMBH). CFM TECHNICAL ASSISTANCE AND TRAINING NEE FINAL REPORT. HAMBURG/MAPUTO 1991, PAGES 1.11 - 1.14.

TRANSMARK. STUDY OF THE CFM/N CORRIDOR. JANUARY 1992, PAGE 6.14.

TABLE C.7.1
PROFIT AND LOSS STATEMENT
CFM
(MILLIONS OF METICAIS)

	1991	1990	1989	1988	1987
RAILROAD SECTOR					
REVENUES	15,358.3	6001.9	5990.4	4,366.3	2,548.2
LESS: DIRECT SALARY EXPENSES	13,350.1	10,165.7	8,888.3	4,771.1	2,244.7
	2,008.2	(4,163.8)	(2,897.9)	(404.8)	303.5
PORT SECTOR					
REVENUES	42,962.5	29,137.6	24,491.7	14,251.5	6,863.9
LESS: DIRECT SALARY EXPENSES	9,465.7	6,465.5	5,898.7	3,195.0	1,635.2
	33,496.8	22,672.1	18,593.0	11,056.5	5,228.7
OTHER REVENUES					
	13,634.4	10,158.7	3,119.4	1,342.1	963.6
LESS: UNALLOCATED GENERAL EXPENSES	50,650.0	28,814.3	18,857.4	10,084.9	4,841.0
NET INCOME (EXCLUDING DEPRECIATION)	(1,510.6)	(147.3)	(42.9)	1,908.9	1,654.8

SOURCE: CFM. INFORMACAO ESTADISTICA. SELECTED YEARS.

**TABLE C.7.2
ALLOCATION RULES
FOR ASSIGNMENT OF COSTS
TO CFM RAILROAD
AND PORT OPERATIONS IN 1991**

EXPENSE ACCOUNT	ALLOCATION RULE	PERCENT ASSIGNED TO	
		RAILROAD	PORT
DIRECT RAILROAD SALARIES	DIRECTLY ASSIGNABLE	100%	0%
DIRECT PORT SALARIES	DIRECTLY ASSIGNABLE	0%	100%
DIRECT SALARIES - PROTECTION FORCE	PROPORTIONAL TO DIRECT RAILROAD SALARIES OF THE PORT PROTECTION FORCE **	50%	50%
PENSIONS	PROPORTIONAL TO DIRECT RAILROAD & PORT SALARIES (VARIES BY RAILROAD)	58.5%	41.5%
REVENUE DISCOUNTS	ASSIGNED TO RAILROADS	100%	0%
FUEL PURCHASES	ASSIGNED PROPORTIONAL TO FUEL USE *** AT RAILROADS AND PORTS (VARIES BY RAILROAD)	70.6%	29.4%
AUTO FINANCIAMENTO	ASSIGNED TO RAILROADS	100%	0%
TRAINING OF BRIGADAS DE MEJORAMENTO	ASSIGNED TO RAILROADS	100%	0%
EXPENSES OF CLUB FERROVIARIOS	ASSIGNED TO RAILROADS	100%	0%
EXPENSES OF PROTECTION FORCE	PROPORTIONAL TO RAILROAD/PORT PROTECTION FORCE DIRECT SALARIES **	50%	50%
OTHER EXPENSES:			
SALES TAX ON PURCHASES GENERAL SUPPLIES ELECTRICITY AND WATER EMPLOYEE TRAVEL EXPENSES TELEPHONE AND TELEX OTHER PURCHASES, NON SPECIFIED) ASSIGNED IN PROPORTION TO ALL OTHER ASSIGNABLE COSTS (VARIES BY RAILROAD) (0.77 METICAIS PER ASSIGNED COSTS TO RAIL AND PORTS). *		

NOTES:

- * THE EQUIVALENT FIGURE FOR CFM - SOUTH IS 1.15 METICAIS PER ASSIGNED COST TO RAILROADS AND PORTS.
- ** ASSUMED TO BE EQUAL IN THIS EXERCISE.
- *** THE FUEL USE PROPORTIONS FOR CFM - SOUTH ARE 70.6 % FOR THE RAILROAD AND 29.4 % FOR THE PORT.

**TABLE C.7.3
PROFIT AND LOSS STATEMENT
CFM (RAILROAD OPERATIONS ONLY)
SELECTED YEARS 1988 AND 1991
AND 1996 AND 2000 PROJECTIONS
(MILLIONS OF METICAIS)**

	1988 (AT CURRENT PRICES)	1991 (AT CURRENT PRICES)	1996 (AT CONSTANT 1991 PRICES)	2000 (AT CONSTANT 1991 PRICES)
REVENUES	4,366.3	15,358.3	44,986 c]	72,821 c]
DIRECT SALARY	4,771.1	13,350.0	13,350	13,350
FUEL	906.3 d]	4,269.4 d]	7,650 b]	12,800 b]
OTHER GENERAL EXPENSES	6,935.0 a]	35,080.6 e]	35,080.6	35,080.6
NET INCOME (EXCLUDING DEPRECIATION)	(8,246.1)	(37,341.7)	(11,094.6)	11,590.4
REQUIRED LABOR FORCE REDUCTION TO BREAKEVEN (1.5 MILLION MT PER PERSON - YEAR IN 1991)			7,396	0

- NOTES: a. ESTIMATED ON THE BASIS OF THE STUDY: WORLD BANK. SOUTHERN AFRICA DEPARTMENT. SADCC TRANSPORT CORRIDORS: A STUDY OF FINANCIAL STRATEGY. VOL II. ANNC C-1, PAGES 5 AND 6.
- b. FUEL USE WAS PROJECTED PROPORTIONAL TO THE GROWTH IN LOCOMOTIVE - KILOMETERS.
- c. REVENUES WERE PROJECTED ASSUMING CONSTANT 1991 REVENUES FOR NET TON - KILOMETER TRANSPORTED.
- d. ALLOCATED TO THE RAILROAD PROPORTIONAL TO ITS DIESEL AND GASOLINE USE.
- e. ALLOCATED ACCORDING TO THE ALLOCATION RULES PRESENTED IN TABLE C.8.2.

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TABLE C.7.4
PROFIT AND LOSS STATEMENT
CFM/S
(MILLIONS OF METICAIS)

	1991	1990	1989	1988	1987
RAILROAD SECTOR					
REVENUES	4,152.7	3,440.5	4,392.7	3,451.5	1,891.6
LESS: DIRECT SALARY EXPENSES	5,968.3	4,922.4	4,512.5	2,519.3	1,065.0
	(1,815.6)	(1,481.9)	(119.8)	932.2	826.6
PORT SECTOR					
REVENUES	21,557.6	14,858.7	12,017.5	6,844.0	3,631.1
LESS: DIRECT SALARY EXPENSES	4,849.6	3,129.8	2,828.7	1,687.1	904.9
	16,708.0	11,728.9	9,188.8	5,156.9	2,726.2
OTHER REVENUES	1,364.4	2,378.6	2,148.4	427.6	373.8
LESS: UNALLOCATED GENERAL EXPENSES	21,242.3	10,179.0	9,771.3	5,322.3	2,490.4
NET INCOME (EXCLUDING DEPRECIATION)	(4,985.5)	2,446.6	1,446.1	1,194.4	1,436.2

SOURCE: CFM. INFORMACAO ESTADISTICA. SELECTED YEARS.

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**TABLE C.7.5 PROFIT AND LOSS STATEMENT CFM/S (RAILROAD OPERATIONS ONLY)
SELECTED YEARS 1988 AND 1991 AND 1996 AND 2000 PROJECTIONS.
(MILLIONS OF METICAIS)**

	1988 (AT CURRENT PRICES)	1991 (AT CURRENT PRICES)	1996 (AT CONSTANT 1991 PRICES)	2000 (AT CONSTANT 1991 PRICES)
REVENUES	3,451.5	4,152.7	13,629.0 c]	19,763.0 c]
DIRECT SALARY	2,519.3	5,968.3	5,968.3	5,968.3
FUEL	605.6 d]	622.2 d]	721.2 b]	1,026.7 b]
OTHER GENERAL EXPENSES	3,349.1 a]	13,068.8 e]	13,068.8	13,068.8
NET INCOME (EXCLUDING DEPRECIATION)	(3,022.5)	(15,506.6)	(6,129.3)	300.8
REQUIRED LABOR FORCE REDUCTION TO BREAKEVEN (@ 1.5 MILLION MT PER PERSON - YEAR IN 1991)			4,086	0

- NOTES: a. ESTIMATED ON THE BASIS OF THE STUDY: WORLD BANK. SOUTHERN AFRICA DEPARTMENT. SADCC TRANSPORT CORRIDORS: A STUDY OF FINANCIAL STRATEGY. VOL. II, ANNEX C - 1, PAGE 6.
- b. FUEL USE WAS PROJECTED PROPORTIONAL TO THE GROWTH IN LOCOMOTIVE - KILOMETERS.
- c. REVENUES WERE PROJECTED ASSUMING CONSTANT 1991 REVENUES PER NET TON - KILOMETERS TRANSPORTED.
- d. ALLOCATED TO THE RAILROAD PROPORTIONAL TO ITS DIESEL AND GASOLINE USE.
- e. ALLOCATED ACCORDING TO THE ALLOCATION RULES PRESENTED IN TABLE C.8.2.

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ANNEX D

ANALYSIS OF CFM SHORT LINE RAILWAY

CFM is considering the closure of three short lines because of low traffic volumes and revenues. These lines are: Zambezia, Xai-Xai, and Inhambane, whose respective distances and current traffic levels are presented in Table D.1. A summary of the situations of these lines and of the analysis conducted concerning their viability follows.

1. Short Line Traffic

Traffic on the short lines is extremely low, a fraction of what it used to be. All three lines are affected by both the insurgency and road traffic competition. The Xai-Xai line has road competition all the way to Manjacaze, but no road service is available to the ends of the line at Chicomo and Mauele because of either a poor road (Chicomo) or a non-existent road (Mauele). Both of the other lines: Zambezia and Inhambane suffer adversely from road competition. The Inhambane line carried 30,000 passengers in 1981, traffic which has evaporated on account of road competition and the insurgency.

Only the Zambezia line still carries noticeable traffic: stone and building products, petroleum products, corn, wood and cashew, amounting at present to 1200 tons annually. No rail-dependent firms exist in Xai-Xai or Inhambane.

1.1 An Overview of CFM/Zambezia

The Zambezia Line runs 148 kms from the Quelimane port to Mocuba in central Zambezia Province, the jumping off point for roads which lead to what were once some of Mozambique's most productive agricultural regions. CFM/Z is organizationally unique; the railway's only completely domestic line which has directorate status and is granted more managerial autonomy than the short lines of either Xai-Xai or Inhambane.

Currently plagued by security and equipment problems as well as by the war's nearly total disruption in the tea, sisal, cashew, cotton and maize producing lands to the north and east, the railway currently operates two mixed trains per week. Principle products shipped down the line at present are timber (logs) for export, stone and gravel to Quelimane for construction, and small amounts of cashew and sisal. Important products moved up to Mocuba are food (both donated relief commodities and commercially imported ones), petroleum products, and general consumer goods.

The position of CFM/Z in the regional transport economy is conditioned by its relationship with the trucking industry. In the first place, because the railhead is 100-200 kms from the tea areas (earlier the source of most traffic and one of Mozambique's most important exports until 1982), middle distance haulers feed the rail line. During the early independence era, CFM ran regional trucking operations which transferred goods to rail; since the separation of C.A. Camionagem as an autonomous state enterprise in 1984, links have been less strong. Increasing privatization of

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the trucking industry in Zambezia has further weakened the truck to rail transfer at Mocuba for all but heavy goods.

Because the CFM/Z line runs essentially parallel to Zambezia's main highway, many haulers avoid delays and transfer costs by trucking directly to port. However, limitations of highway bridge weight capacity limit the loads which can be carried by truck, and CFM rates are at least 20 percent lower for heavy bulk commodities than parastatal trucking rates, and up to half the cost of private hauling. In any case, competition between rail and road between Quelimane and Mocuba is an important feature in any assessment of the railway's future role.

CFM/Z operations are significantly overstaffed for present traffic levels. An average of two trains a week make the 12-14 hour journey to Mocuba which once took four. Large numbers of support personnel are underutilized; CFM/Z maintains only five stations along its line, having closed three during the 1980s. The only important inland loading points for freight are at the Mocuba railhead and from six sidings which link industrial sites--cotton and sisal processing plants, a ceramic brick and tile factory, a quarry etc.--to the line.

Maintenance of way staff (approximately one per kilometer of line) clear brush and replace sleepers as they fail, however budgets do not permit routine replacement of wooden sleepers (cited at 15,000 per year during colonial times and now less than 200); thus the condition of the line has deteriorated significantly. Workshop personnel maintain and rehabilitate steam locomotives as well as routinely rebuild freight and passenger cars. Many of these maintenance operations can be seen as employment of labor in compensation for the extreme undercapitalization of CFM/Z; the only significant new investment in CFM/Z since 1975 has been second hand equipment passed down from Beira as operations there have shifted to diesel.

The prospects for CFM/Z remain uncertain. The port of Quelimane has been slated for renovation beginning in 1993, increasing its berthing, transfer, storage and container capacities. Agricultural production in Zambezia is expected to rise rapidly and significantly--by at least 10 times within five years after peace. The World Bank is currently appraising an investment program for smallholder production in Zambezia. In addition, the flow of construction materials and other heavy capital goods to Alto Zambezia from the port of Quelimane is expected to be large enough to tax transport infrastructure significantly during their reconstruction effort. It is extremely likely that the flow of goods in and out of Zambezia will grow rapidly in coming years.

However, the possibility of substituting truck for train transport calls into question the railway's future role. Clearly CFM/Z has lost its position in the passenger market; it is too slow and too inflexible to be attractive to any but the poorest passengers. Should investment in reinforcing or rebuilding bridges and the roadbed from Quelimane to Mocuba be made, heavier loads may be able to move by road, further eroding the competitive advantage of the railway for freight traffic.

It is clear that with reductions in staff on par with those proposed system-wide and with realistic expectations for the growth of traffic in coming years, CFM/Z operations could reach a break-even point earlier than some of the larger international CFM lines. But the extreme

undercapitalization of CFM/Z makes this short-term financial break-even misleading. Unless CFM/Z is recapitalized significantly; mainly through investment in line rehabilitation but also in locomotives, rolling stock, and other equipment over the middle term; its operations will be neither competitive nor sustainable.

A thorough feasibility study of the prospects for CFM/Z is required in order to assess its potential long-term technical and economic viability. Only on the basis of accurate traffic projections, recapitalization requirements, detailed staffing and operating cost projections, etc can the decision of whether or not to close the line, privatize it, or rehabilitate it within CFM be taken with confidence.

While the closure of the Zambezia line would be a significant blow to the local economy, especially in Quelimane, it would not eliminate transport access to rural Zambezia. Road transport would easily substitute for lost rail facilities in transport of passengers and light goods. Heavy goods and local produce for export may remain the problem.

The question of whether rail-port links from Mocuba are more efficient than road-port links, requires further study. An assessment of the investment and operating costs of the entire regional transport system in Zambezia is needed in order to place any decision regarding CFM/Z in context. It may be that over the middle run the Zambezia line is an economically viable and important link from Mozambique's most productive highlands to the national and export markets.

2. Financial Results From Operations

As shown in Table D.2, all the short lines exhibit negative cash flows for the first semester of 1992. Xai-Xai's and Inhambane's negative cash flows range between MT 100 to 112 million as of June 30, 1992. The Zambezia's negative cash flow is five times larger, but approximately equal on a per ton basis. These cash flow deficits are a negligible proportion of CFM's operating deficits. The labor force reduction requirements to break even on cash flow are: 67 workers at Xai-Xai, 342 workers at Zambezia and 74 workers at Inhambane. The cost per ton of freight transported exceeds the value per ton of the commodities transported in all the three short lines.

3. Road Competition

Both the Zambezia and the Inhambane lines compete with parallel truck and passenger service along the principle south-to-north national highway. The road, however, is in some state of disrepair north of Quelimane, where the depth of the base and sub-base and bridge supports are not sufficient to support heavy trucks.

The issue of road competition on the Xai-Xai hinterland is more complex. A good dirt road exists from Xai-Xai to Manjacauze over which trucking and passenger service is available from Camionagem and private entrepreneurs. Manjacauze and Chicomo are linked by an unimproved dirt road which is in significant disrepair, but no trucking and passenger service is provided. Only a trail is available to Muele.

Comparisons of rail costs with trucking costs presented in Table D.3, reveals that trucking costs at official rates (assuming 50 percent empty return and heavy security) are much smaller than rail, and that cost overall cost savings would be realized by the short line closings. That is, based on present traffic and personnel costs, the lines should be closed solely on economic criteria. However, social considerations play an important role in abandonment decisions, as is discussed below.

4. Social Considerations

4.1 Loss of Transport to Rural Areas

Social issues pertaining to the closure of the short rail lines concern the loss of mobility to the residents of Chicomo and Mauele on the Xai-xai line, and the need to convert the rail lines' property and assets to productive use, while safeguarding and protecting the social use of some of the property.

Thirty weekly passengers ride the Xai-Xai line in each direction. If this line is closed, these travelers would lose their mobility and access to markets and health care available through the rail service. However, the passenger and freight traffic generated by Chicomo and Mauele is too small to justify a major road investment. At construction costs of \$5,000-\$20,000 per kilometer of dirt road, it would be cost-effective to maintain a skeleton rail service in lieu of building even 150-kilometers of low quality road to these places.

Another problem with investing in road improvement to substitute for a closed Xai-Xai line concerns the numerous rivers that would require bridges; since existing rail bridges are the most narrow in the CFM system, they would require widening to carry vehicles. A related issue concerns whether the road Xai-Xai to Manjacauze has sufficient traffic to upgrade it to an all-weather gravel road. Traffic volumes of 50 vehicles per day (or 25 trucks/buses/ vans) would be required for the improvement to be viable, from a benefit-cost analysis viewpoint.

Thus the expense of replacing Xai-Xai rail service, important for social reasons even if not profitable, may be greater than that of absorbing its losses for several more years until post-war development of production justifies road construction.

In addition to the loss of socially important transport facilities, closure of the short lines will effect the communities, especially in the port towns, where their operation are located.

4.2 Loss to Communities of CFM Owned Social Infrastructure

CFM's real estate property along the short lines is extensive. At Xai-Xai, CFM owns the stations, the manager's house, four warehouses (two already rented to the private sector and one used gratis by a provincial furniture factory), two large yard shops used to manufacture kitchen furniture), 48 houses, the best sports stadium in the town, and the Clube Ferroviaria, which is the center os social activities in Xai-Xai. In Quelimane, Inhambane and Mocuba CFM is similarly endowed with extensive properties, many used by the general community and for public purposes.

The social uses of the Clube Ferroviaria's facilities, the sports stadium, and the building housing the health clinic should be protected for the general public by transferring responsibility for administering them to the provincial government, under the condition that the social services rendered will be maintained and opened to the general public. Current residents of CFM housing and CFM employees should also have first option of renting or using CFM facilities.

5. Recommendations Regarding Short line Closures

While there are strong economic arguments for the closure of CFM's three short lines, consideration of factors unique to each line makes the recommendations for each case different. The following recommendations on each line can be advanced:

5.1 The Inhambane Line

This line, which had been closed from 1970 to 1980, should be abandoned. The first ten kilometers of track should be kept open, since they are needed for the National Railway school. Convert CFM's social-oriented property in Inhambane to public use.

5.2 The Zambezia (Quelimane) Line

It is premature to close this line because it has some economic potential. A full scale feasibility study should be undertaken to analyze the economic viability of rehabilitation and/or privatization of the line. Attempts should be made to find a private buyer (preferably a local buyer) for this railroad.

In the meanwhile, large scale rehabilitation activities should be postponed. A manpower reduction of at least 342 workers should be implemented to bring expenses in line with revenues. Public use facilities (stadiums and clubs) associated with this line should be transferred to the provincial government.

If adequate traffic increases fail to materialize in peace time conditions, the line should be closed.

5.3 The Xai-Xai Line

On purely economic grounds, the Xai-Xai line should be closed. But the first 50 kilometers of track and steam locomotives should be kept (mothballed) pending a time when the tourist traffic to the Xai-Xai beaches materializes. Operation of this stretch of the Xai-Xai line as a tourist facility may ultimately be profitable, preferably under the auspices of a private owner or lessor.

However, there are strong social reasons to suggest that the strict economic decision of closure is not appropriate for this line. The cost of running the railroad is considerably smaller than the cost of building poor quality dirt roads to Chicomo and Mauele. Thus the line should be left open if the government's policy is not to adversely affect the mobility of these residents.

In any event, CFM should further reduce the staff of this line by at least 67 workers to bring expenses more in line with receipts. No investments in improving the track should be

undertaken. Skilled labor and personnel in the yards should be encouraged and assisted to go into private manufacturing. Key railroad property with social/public uses should be administered by the provincial government and opened to the public.

**TABLE D.1
SELECTED TRAFFIC DATA ON THE SHORT LINE RAILROADS
AS OF JUNE 30, 1992.**

TRACK KILOMETERS	XAI-XAI LINE	ZAMBEZIA LINE	INHAMBANE LINE
	XAI-XAI - CHICOMO: 150 KMS MANJACAUZE - MUELE: 90 KMS	QUELMANE-MACUBA: 150KMS	INHAMBANE - INHAFIRIME: 90 KMS
PASSENGER TRAFFIC			
PASSENGER TICKETS SOLD	1,543	5,918	107
PASSENGER - KMS (000)	129	378.5	9.6 a]
FREIGHT TRAFFIC			
TONS	183	595.2	110
TON-KMS (000)	13.4	326.5	9 a]
NO. OF TRAINS			
(EXCLUDES SERVICE TRAINS) MIXED TRAINS	62	28	18
TRAIN-KILOMETERS	4,310	6,200	1620 a]
PRINCIPAL FREIGHT CARRIED:	WOOD AND LUMBER RAIL SLEEPERS	STONE, & CEMENT PETROLEUM PRODUCTS CORN WOOD CASHEW	WOOD CASHEW COTTON COPRA SAND AND STONE
RAIL-ORIENTED FIRMS IN ALONG THE RAIL LINE	NONE	ENABEL (LOG EXPORTS) J. DOMINGO MARQUES (LOG EXPORTS) CFTA (CEMENT & STONE)	NONE
SPECIAL COMMENT			LINE CLOSED FROM 1970 TO 1980.

a] ESTIMATED.

a/

TABLE D.2
SELECTED FINANCIAL INFORMATION ON THE SHORT LINE RAILROADS
AS OF JUNE, 30 1992.
(IN 1992 METICAIS)

	XAI-XAI LINE	ZAMBEZIA LINE	INHAMBANE LINE
REVENUES (000):	6,412	107,265	10,843
PASSENGER REVENUES	2,103	N.A.	N.A.
FREIGHT REVENUES	2,164	N.A.	N.A.
OTHER REVENUES	2,145	N.A.	N.A.
EXPENSES (000)	106,191	620,933	112,520
SALARIES AND WAGES	76,148	211,816	N.A.
GENERAL EXPENSES	18,732	402,139	N.A.
EXPENSES ON PROTECTION FORCES	11,311	6,978	N.A.
NET CASH FLOW INCOME	(99,779)	(513,668)	(111,677)
PERSONNEL	196	793	294
RAILROAD WORKER	162	793	294
PROTECTION FORCES	34	N.A.	N.A.
REQUIRED LABOR FORCE REDUCTION TO BREAKEVEN (@ 1.5 MILLION MT PER PERSON - YEAR)	67	342	74
RAIL COSTS PER TON TRANSPORTED (000)	584	1,437	1,023

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**TABLE D.3
TRUCK/RAIL COST COMPARISONS ON THE SHORT LINE RAILROADS
AS OF JUNE 30, 1992 (THOUSAND METICAIS).**

	XAI-XAI LINE	ZAMBEZIA LINE	INHAMBANE LINE
TRUCK SERVICE AVAILABILITY	GOOD DIRT ROAD TO MANJACAUZE UNIMPROVED DIRT ROAD MAJACAUZE-CHICOMO. NO ROAD TO MAULELE.	PARALELL TO THE NATIONAL HIGHWAY (IN SOME STATE OF DISREPAIR)	PARALELL TO THE NATIONAL HIGHWAY
FIPMS PROVIDING COMPETING PASSENGER/FREIGHT SERVICE	CAMIOGEN OLIVEIRA TRANSPORT (PASSENGER SERVICE TO MANJACAUZE)	CAMIOGEN PRIVATE FIRMS INDEPENDENT TRUCKERS	CAMIOGEN
TRUCK/RAIL COST COMPARISON			
TON-KMS	13.4	326.5	9.0
RAIL COSTS	106,191	620,933	112,520
TRUCK COSTS	5,025	122,437	3,375
SAVINGS FROM LINE CLOSING	101,166	498,496	109,145

NOTE:

- a. ESTIMATED AT 375 METICAIS PER TON-KM FOR CAMIOGEN SERVICE (INCLUDING 225 METICAIS PER TON-KM AT OFFICIAL TARIFF RATES, 50 PERCENT EMPTY RETURN AND AN 11 PERCENT SURCHARGE FOR SECURITY PROTECTION SERVICE.)

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ANNEX E

ANALYSIS OF OPTIONS FOR REDEPLOYING LABOR

1. Staff Profile

Accurate staffing figures have proved very difficult to obtain. Manpower planning statistics are not systematically kept in CFM. Monthly staff returns are made to the Human Resources Department in the General Directorate but different collection and presentation systems are used by each Executive Directorate and little effort is made centrally to collate the information and turn it into current management information. The final figures used to assess levels of excess staff in the various areas and departments are deemed to be as accurate as possible. (See Table E.1.) Some discrepancies in totals will be found in tables showing the age and education of the work force as data came from different sources.

As shown in Table E.1, the Mozambique National Railroad Company (CFM) currently employs total of about 19,900 permanent workers, 13,775 in the railroads and 6,155 in the ports. Of the total number of permanent workers approximately 60 percent are unskilled with less than four years of education. And 24 percent are above the age of 50 years.

The staffing figures shown exclude 952 permanent employees and 2,799 temporary workers in the Brigadas de Melhoramento (rehabilitation brigades) who work solely on donor funded track improvements and do not come into the frame of normal CFM activity. They also exclude 11,352 temporary workers in the ports to whom CFM has no legal responsibilities and who do not come into the scope of this study.

Almost all staff over the age of 60 have now left CFM due to the policy of early retirement that has been in force for two years. This has been an effective policy in shedding staff who are in the unskilled categories where the majority of excess is to be found. Where data is available (from CFM/N) almost 70 per cent of those retired early were in Group III, the basic unskilled manual labor category. Many workers, however, in this category, while not having the ability to be promoted are highly skilled in their trades after years of experience and in some cases could be a loss to their departments.

The work force is in general very poorly educated. This is largely a historical legacy from colonial times when Africans received no education, so reducing staff in the upper age ranges should gradually lead to a better educational balance in the work force. Unfortunately young people are often still not receiving much education and in CFM/C (where the information is available) 140, or 11 percent, of employees under the age of 30 are illiterate. Only 9 percent of the entire work force in CFM/C has an education above primary level (6th grade).

There is currently a policy not to take any recruits who have less than 9th grade education. CFM provides literacy classes and encourages employees to improve their academic qualifications through evening classes. The National Railway School at Inhambane provides academic education from grade 6 up to grade 9 as well as vocational training.

While CFM is overstaffed in the unskilled areas of work it has a serious shortage of good quality staff in technical and managerial positions.

The restructuring and the streamlining of Mozambique National Railroad Company, will displace approximately 10,300 permanent workers in the railroad department and approximately 3,450 permanent workers in the ports. The number of redundant workers is estimated as the difference between CFM's current labor force and calculated labor requirement. The labor requirement analysis takes into account traffic estimates for 1991 for the four lines -- CFM/South, CFM/Central, CFM/North and CFM/Zambezia; and selected railroad performance standards for the second best African railroad company (high standard) see Table E.2 - Work Force Attrition.

USAID through this project wants to assist the Government of Mozambique (GRM) to absorb as many as possible of these redundant workers into the productive economy. The redundant work force will be taken off CFM's payroll through attrition, and several redeployment programs.

2. Attrition

Realistically it will be mid-1994 by the time that the project financial manpower study on CFM is completed and approved for implementation. During this period of approximately two years there will be natural attrition of the existing work force through a combination of resignations, disciplinary dismissals, medical disabilities, death and retirement.

It is estimated that normal attrition excluding retirements will reduce the work force by approximately 4 percent or 660 employees over the two years, while normal and accelerated retirements at age 60 will account for a further reduction of 3,300 employees, providing a total reduction by of 3,970 workers. See Table E.2 Work Force Attrition.

To facilitate accelerated attrition it is proposed to introduce a special severance scheme for those employees who will reach 55 years of age or more by the end of 1994. On a phased basis 3,300 such employees will be provided with a special severance payment of up to three months pay per two years of service until they reach the age of 65 or have completed 35 years total service, whichever comes first, when they will become entitled to a full retirement pension.

This severance payment will be paid out on a monthly basis and adjusted to reflect future increases in CFM salaries. For those employees who will exhaust their special severance payments before attaining the age of 65, or 35 years of service they may opt to take an early slightly reduced pension at that time or to wait and take a full pension when they qualify.

In all cases when the pensions become due they will be based on what the employees salary would have been had he or she remained in service until normal pension would have become payable. If an ex-employee secures any form of employment while receiving severance pay this will not effect his entitlement to continue to receive this payment.

This arrangement will require funding of both the severance payment which is estimated to average \$25 per employee per month, plus some small additional funding of the pension scheme which is estimated to average three month's pay per employee.



Under this arrangement and with this addition of natural attrition, it will be possible to reduce the labor force by 3,970 employees by mid 1994.

3. Redeployment of Surplus Labor

Having established a scheme for the early retirees there will still be a requirement to shed about 9,800 employees from the remaining permanent labor force of approximately 16,000. Due to the high proportion (55 to 60 percent) of employees to be retrenched, it will not be possible to target a particular age group of employees for retrenchment but rather be a case of selecting only the best to remain regardless of age or length of service. If this policy is adopted the retention of employees with developed skills and high performance will be pursued in order to provide the railway and the port system with the best available labor force to improve its performance.

The severance scheme will be based on the existing scheme for employees recruited from 1989 or later, that is, three months pay for each two years of service subject to three months notice. For the average employee with approximately 15 years service this will equate to 22 months pay. This has been used as a basis for costing "all other severance pay" in Table E.4.

If as anticipated, the younger employees aged under 40 years are some what over represented amongst the employees to be retrenched due to having acquired fewer skills than the 40 to 55 age group, many of whom were trained pre-independence period, then there will be a number of other positive effects.

First, it is expected that reemployment assistance for these younger individuals will have more long term benefit on their families and their communities thus training, credit, and technical assistance are a better investment. Second, it will provide for further continued gradual reductions of personnel in the coming decade. This attrition will be beneficial not only in moving toward ultimately optimal staffing levels, but will also provide greater opportunities for hiring new and more highly educated and skilled personnel as replacement for retirees, should new hiring be justified by traffic increases.

While macro-targets for force reduction may be applied to each line, specific retrenchments will vary by department based on detailed analysis of personnel needs by functional area. Thus it is expected that retrenchment task forces and middle-managers will, based on targets established analytically, select the most valuable workers to remain with CFM irrespective of age or years of service. Those not selected will enter the retrenchment program. In this way, coherent but across the board downsizing of the CFM work force can be achieved without jeopardizing the middle term capacity of remaining personnel to operate the railway.

In view of the large number of employees to be retrenched it is proposed that retrenchment is phased over a three year period commencing in 1994 with the reduction of between 3,000 and 4,000 employees each year. This will be necessary in order to allow for the progressive absorption of retencees into the redeployment program.

3.1 Spin-off Business Assistance

Using existing CFM facilities, equipment and tools several specialty businesses could be established and spun off. These business units could retain most of the workshop skilled workers as well as absorb additional skilled redundant workers from other departments of CFM.

CFM currently operates two concrete sleeper factories, staffed by the maintenance brigades and employing more than 100 people each. These factories could be used to produce concrete pipes, precast concrete slabs, and other products for which a potential demand exists in road building, waterworks, commercial, industrial, and residential construction. Quarries, currently producing ballast, could begin to provide aggregate for concrete and ballast for road construction for which there is a large potential demand.

CFM workshops in Beira and other locations, currently produce a variety of products including office and household furniture including chairs, tables, bed frames, cabinets, and bookshelves for which there exists a high potential demand outside of CFM. In Beira, a small buildings material production workshop is producing concrete blocks, doors and windows for the construction of new staff houses. Given the supply of high-quality tropical hardwood from Manica Province, these carpentry workshops could begin to produce furniture, doors and windows, parquet flooring, and veneers for domestic and export markets.

CFM's iron and brass foundry, forges, machine shops and chroming workshops could produce plumbing fittings and fixtures, industrial valves, pump components, agricultural implements and a variety of other metal products for industrial use at competitive market prices for which there is a large potential local and regional market. Indeed, in the past, the workshop in Beira has produced spare parts such as axles for heavy trucks for outside contractors.

The Beira carriage repair workshop, with machinery and technical assistance having been provided by DANIDA, currently produces train wagon bodies. Given that metal sheets are available from South Africa and Zimbabwe at competitive international prices, this group could produce containers of various sizes for domestic use and the regional and international market.

In addition, the restructuring of CFM and the sub-contracting of certain railroad functions to private operators will provide additional options for the productive redeployment of workers. For example, functions such as locomotive and wagon maintenance and repair and track maintenance and repair can be contracted out to private entities. Some of the redundant work force can be organized, trained and managed by these private contractors.

It is estimated that approximately 550 workers can be absorbed into the spin-off ventures that result from the restructuring of CFM. Detailed studies are, however, required to establish the number and kinds of business units and the optimal numbers of personnel they can absorb, based on analysis of market potentials for different lines of products and services.

The key to success in these spin-off businesses depends upon the acquisition of entrepreneurial skills. Even if the cadre of workers are sufficiently skilled, and vast domestic, regional and international market opportunities exist, it will require experienced private operators to make

these spin-off businesses a commercial success. The project provides sufficient funds for technical assistance and matching funds for skills training for spin-off businesses. Under the training matching funds scheme, the private operator will contribute approximately 50 percent of the training cost for each employee while the project funds the balance. The enterprises will also qualify for credit assistance commensurate to the number of ex-CFM employees it absorbs.

In cases where spin-off businesses are established by private operators, it is recommended that workers are given ownership shares in these ventures to the value of the severance pay which would have otherwise have been paid to them. These shares, which would be worth approximately US \$ 600 per worker, would need to be guaranteed by the project for three years. On expiration of the three year period, the worker will be given the option to either receive the original value of the dollar equivalent of the severance pay in local currency, or the current value of the shares whichever is the greater, or to leave the shares in the business without any future underwriting of the value by the project. If the business fails or an ex-CFM employee is dismissed for any other reason within the first three years the original value of the severance payment will also be guaranteed by the project. It is hoped that this proposal will enhance ex-CFM workers productivity and give them the same degree of security as other retrenched workers.

3.2 Agricultural Assistance

While it is not feasible to contemplate resettling urban-based CFM workers to rural areas, considerable potential exists to enable many CFM maintenance of ways workers, who are currently based in rural areas to become self supporting productive farmers. Although Mozambique is endowed with extensive fertile agricultural land, it is one of the most food deficient countries in the world. An estimated 30 to 40 percent of the total national supply of basic foods comes from food aid. Therefore, this unmet demand for food crops creates a huge opportunity for productive farming provided the security situation allows.

A large majority of CFM's rural unskilled labor force are already either part time farmers or are people with strong ties with smallholder farmers. Some of these workers could be assisted to settle as full time farmers. Assistance in the form of farm inputs, improved farm technology, extension services and agricultural marketing can be provided to enhance their productivity and their farm income. To the extent that CFM has use of potential farm lands along the railroad lines and at other locations, it should be converted, where appropriate, into productive farm land to resettle redundant workers.

It is estimated that approximately 1,000 workers will take advantage of such agricultural assistance in the form of inputs, extension services and some credit facilities.

3.3 Micro-enterprises Assistance

Some of the displaced workers, particularly from the workshops, may choose to operate as micro-entrepreneurs. These workers will be provided with technical assistance in the form of business management training, vocational training and given access to credit. These workers can

potentially be engaged in the production of wood burning stoves, farm implements and tools and other household items for rural as well as urban households.

Along the short lines, where it is anticipated that these lines will be closed down, there is opportunity for independent truckers and passenger transport operators. Displaced workers with some business management training and credit for working capital and purchase of equipment can be organized to operate independent trucking and transport businesses. The termination of passenger train services and the closure of the freight hauling train traffic does create demand for alternative transport and freight services. For example, along the Beira Corridor the passenger train service has been eliminated. Private and cooperative bus, truck and minivan operators now offer cheaper, and faster services.

Given the restructuring and privatization of the trucking industry currently being undertaken with USAID assistance, the scope for private operators to buy or lease trucks and to provide private trucking services exists. This project fund could provide loan guarantees or other forms of financial assistance to former CFM employees seeking to enter into this industry.

While the project is providing direct assistance to micro-enterprises, it also will provide additional technical assistance and training to those financial institutions and other organizations that deal with micro-enterprises to enhance their ability to monitor and assist these enterprises (for example, FFPI, GPE, DIFAP, etc.).

3.4 Road and Bridge Construction

Some displaced workers can be organized into independent entities to contract for road works with the Ministry of Construction and Waters and the Ministry of Public Works. Several major road building projects are underway, or in planning stages, affecting most of the major transport routes in the country. These include projects funded by UNDP and the World Bank. These projects have, however, been one of the main reemployment options for demobilized soldiers and for workers repatriated from the South African mines due to employment cutbacks. As a result the number of workers available for such projects exceeds the demand and the project for the most part employ residents of the locations on which the road is being constructed and is of a short term nature.

However, there still is some potential to employ ex-CFM workers particularly along those short lines that are expected to be closed. It is estimated that about 500 workers will probably be absorbed into this type of activity. The project could possibly engage a qualified organization to place ex-CFM workers in road building brigades as the opportunity arises.

3.5 Training Assistance

As can be inferred from the educational profile of workers in Table E.1, a large proportion of the displaced workers are either illiterate or have a low level of education and skill. Many of these workers can be given short-term training to enable them to acquire basic skills and others can upgrade their educational levels to improve their potential to find productive employment in the private sector or go into business for themselves.

It is estimated that about 15 percent or 1,450 of the displaced workers will take advantage of the training assistance offered to them. The severance payments they receive can be used to maintain them while in training. Additional training funds are provided by the project for rehabilitating training facilities and to enhance the capacity and capability of Mozambican training institutions. Funds are provided for technical assistance to develop appropriate curriculum and for the hiring of appropriately trained trainers. To this end, links with DDIFAP should be developed.

3.6 Out-Placement of Displaced Workers

Workers that have not been absorbed into either the spin-off businesses, opted to go to business on their own, or into farming will be assisted to locate jobs in the formal private sector, including the road and bridge construction referred to above. If local private institutions or employment agencies are unavailable to act as an agent, the project could hire qualified individuals on a temporary basis to work with the private sector to identify and place ex-CFM workers. It is estimated that about 820 workers could be assisted through out-placement services.

Once an employee has completed his probation in a permanent job with another employer and produces satisfactory evidence to this effect he may elect to receive a lump sum payment for the balance of any severance pay still outstanding.

4. Costs Associated with the Redeployment Plan

The breakdown of the estimated cost of implementing the CFM redeployment plan is as follows.

Program Component	Number of Qualifying Workers	Total Cost In US\$ millions	Cost per Worker (US\$)
Severance Pay			
Early retirement	3,310	4.839	1,462
Retrenchment	9,790	5.942	607
Sub-Total		10.781	
Spin-Off Businesses Support:			
a. Training Matching Fund	550	0.275	
b. Credit Assistance		0.550	500
Sub-Total		0.825	1,000
Training	1,435	1.435	1,000
Agricultural and credit Assistance	1,020	0.765	750
Micro-enterprise Assistance			
a. Credit Assistance	387	0.967	2,500
b. Institution Building		0.580	1,500
Sub-Total		1.547	
Out-Placement Services (Road Construction and Others)	943	0.094	100
Grand Total		15.448	

5. Programmatic Implications to CFM and Other Institutions

Redeploying displaced workers will require close collaboration with Government Ministries, Provincial Governments and the Private sector.

5.1 CFM

These proposals will be implemented simultaneously with the re-organization of the railways, the need for which has been accepted by CFM management and the Ministry of Transport. Such a re-organization should be in preparation at the same time as the retrenchment program and the form of that re-organization should be an important criterion to be considered in the process of restructuring of the work force.

CFM will also need to implement a major program of training and upgrading of the employees it retrains in order to fill the skilled vacancies that exist and in order to achieve the increases in productivity that the restructuring assumes. A program aimed at attitudinal change will also be necessary.

5.2 Legislation

New legislation will be required on the basis of CFM being an exceptional case, to facilitate the implementation of severance and adjustment of pensions for staff under 65 years of age and without 35 years service.

If workshops or other facilities are to be used by the private sector as a means of retaining employment opportunities for certain groups of staff the Government will have to permit this use of State property.

5.3 Financial/Funding Institutions

Payment of severance pay will need to be tightly controlled and an effective administration system will have to be established. There should be a clear distinction between the payment of severance pay and the payment of salary. In order to make it clear that the workers have been separated from CFM it would be preferable if an outside institution undertook responsibility for the payment, for example the Bank of Mozambique, or some other institution that has a nationwide network of outlets.

The establishment of the loan fund for small business investment can best be achieved by linking with existing organizations. Each Ministry has a revolving fund (Fundo de Fomento) set up to encourage small enterprises in its area of responsibility (e.g. in mining, agriculture, fisheries). Linkages with any of these funds could be considered although at present only that in the Ministry of Minerals is operational. In the future it is likely that the Fundo de Fomento para Pequeno Industria (Fund for the Promotion of Small Industry - FFPI) which is linked to IDIL - Instituto para Desenvolvimento de Industria Local (Institute for the Development of Local Industry) within the Ministry of Industry and Energy will be the most suitable.

IDIL has representatives in all provinces but at present it is not especially effective. However, Swedish donors are about to invest in capacity building and training for FFPI and IDIL. FFPI is able to accept money from any source and will set up separate sections for money that is earmarked for particular purposes. The project will fund a technician to administer the CFM accounts of the fund. The Project Management Unit field workers will need to establish close links with the IDIL/FFPI workers at provincial level. Substantial project funds will be available for institutional capacity building and to train professional staff in those institutions selected for lending of project funds and for providing assistance to firms established in the context of the project.

Loan criteria will be determined by the Fund but the loans will be administered by the BPD - Banco Popular de Desenvolvimento (People's Development Bank). It may be considered necessary to set up a guarantee fund to cover any possible losses.

5.4 Training Institutions

The retraining activities will put considerable pressure on the vocational training institutions in Mozambique. In Maputo itself capacity exists in terms of physical space within the three colleges run by DIFAP (Direccao de Formacao Profissional - Vocational Training Directorate) but finance would be required for more professional trainers. The same would be true of the various industrial institutions with which DIFAP has links around the country. Part of the reason for proposing to phase the retrenchment of younger workers over the three years is to avoid placing an unduly heavy burden on the existing training facilities.

With some injection of funds CFM's training institutions may also have some spare capacity, although this could be very limited if their internal training program gets started. It would also not be advisable to continue the connection between the worker and CFM if a suitable alternative exists.

5.5 Trade Union

The Trade Union, SINPOCAP, is opposed to the reduction of staff as originally proposed (15,000 displaced) on social grounds and on the basis of fears of sabotage. They accept that there is currently excess capacity within the railways and ports but they would prefer to see temporary layoffs in anticipation of an increase in traffic in the near future. If any severance pay has to be paid the Union expressed a strong preference that it should be paid on a monthly basis rather than in a lump sum.

The Trade Unions in Mozambique are going through the process of establishing themselves as independent entities after years of being tied to Government. It is possible that they may wish to use an issue like this to demonstrate power, but sensitive handling and adequate compensation all the way through should reduce that possibility.

Table E.1 Profile of CFM's Permanent Staff

Total CFM Staff

	Maintenance Way & Structure	Traffic Operations	Workshop Engineering	Management & Support	TOTAL RAILWAY	TOTAL PORT	TOTAL STAFF
CFM/S	1,027	1,650	1,207	683	4,567	2,915	7,482
CFM/C	1,908	1,459	1,485	512	5,364	2,125	7,489
CFM/N	962	731	571	474	2,738	947	3,685
CFM/Z	223	167	138	195	723	168	891
Gen. Directo				383	383		383
Total	4,120	4,007	3,401	2,247	13,775	6,155	19,930

Education Profile*

	Maintenance Way & Structure	Traffic Operations	Workshop Engineering	Management & Support	TOTAL RAILWAY	TOTAL PORT	TOTAL STAFF
Ill.	1,001	576	372	247	2,196	981	3,177
1-3 years	1,901	760	1,029	585	4,275	1,910	6,185
4-6 years	1,050	1,354	1,499	819	4,722	2,110	6,832
7-8 years	73	1,189	175	215	1,652	738	2,390
9-10 years	82	112	274	295	763	341	1,104
11th year	11	7	4	43	65	29	94
College	2	5	37	29	73	33	106
University	0	4	11	14	29	13	42
Total	4,120	4,007	3,401	2,247	13,775	6,155	19,930

Age Profile*

	Maintenance Way & Structure	Traffic Operations	Workshop Engineering	Management & Support	TOTAL RAILWAY	TOTAL PORT	TOTAL STAFF
18-25	196	199	421	200	1,016	454	1,470
26-30	274	405	453	386	1,518	678	2,196
31-35	694	574	440	366	2,074	927	3,001
36-40	762	549	422	313	2,046	914	2,960
41-45	653	704	521	301	2,179	974	3,153
46-50	490	574	375	239	1,678	750	2,428
51-55	543	508	417	251	1,719	768	2,487
56-60	507	491	351	183	1,532	685	2,217
>60	1	3	1	8	13	6	19
Total	4,120	4,007	3,401	2,247	13,775	6,156	19,931

* Age and Education Profile Compile from Reports received from regional CFM's Offices

Table E.2 Work Force Attrition

Class of Labor	Current Level*	1991		Projected Attrition 1992 - Mid 1994			Attrition Adjusted Surplus
		Required	Surplus	Retirement Program	Other Attrition	Total Attrition	
Maintenance of Ways & Structures	4,248						
Best Sub-Sahara Africa Railroad		1,354	2,894	777	139	916	1,977
High Standard		2,132	2,116	777	139	916	1,200
Medium Standard		2,809	1,439	777	139	916	523
Low Standard		3,486	762	617	145	762	0
US Class I Railroad Average		577	3,671	777	139	916	2,755
Workshop Engineers & Technicians	3,273						
Best Sub-Sahara Africa Railroad		158	3,115	540	109	649	2,466
High Standard		748	2,525	540	109	649	1,876
Medium Standard		1,421	1,852	540	109	649	1,203
Low Standard		2,135	1,138	540	109	649	489
US Class I Railroad Average		58	3,215	540	109	649	2,565
Traffic Operations	4,007						
Best Sub-Sahara Africa Railroad		153	3,854	669	134	803	3,051
High Standard		301	3,706	669	134	803	2,904
Medium Standard		394	3,613	669	134	803	2,810
Low Standard		501	3,506	669	134	803	2,703
US Class I Railroad Average		25	3,982	669	134	803	3,179
Management & Support Services	2,247						
Best Sub-Sahara Africa Railroad		150	2,097	301	78	379	1,718
High Standard		286	1,961	301	78	379	1,582
Medium Standard		694	1,553	301	78	379	1,174
Low Standard		1,775	472	301	78	379	93
US Class I Railroad Average		152	2,095	301	78	379	1,716
All Railroad Employees	13,775						
Best Sub-Sahara Africa Railroad		1,816	11,959	2,288	459	2,747	9,212
High Standard		3,467	10,308	2,288	459	2,747	7,561
Medium Standard		5,318	8,457	2,288	459	2,747	5,710
Low Standard		7,897	5,878	2,127	466	2,593	3,284
US Class I Railroad Average		812	12,963	2,288	459	2,747	10,216
PORTS							
Full-Time Staff	6,155	2,698	3,457	1,022	205	1,227	2,230
GRAND TOTAL (Railways & Ports)	19,930						
High Standard		6,165	13,765	3,309	665	3,974	9,791

* Current Levels - All permanent employees excluding foreigners and brigadas de melhoramento
Source: CFM Human Resources Director 07/17/92

Table E.3 Deployment of Surplus Labor

Class of Labor	Attrition Adjusted Surplus	Skilled	Unskilled	Spin-off Business Absorption	Training	Agricultural & Credit Assistance	Micro Enterprise Credit Assistance	Out Placement		Balance of Surplus
								Road Construction	Other Formal Employment	
Maintenance of Ways & Structures High Standard	1,200	240	960	50	120	360	24	300	0	346
Workshop Engineers & Technicians High Standard	1,876	750	1,125	500	375	0	94	200	94	613
Traffic Operations High Standard	2,904	871	2,032	0	290	581	145	0	0	1,887
Management & Support Services High Standard	1,582	949	633	0	316	79	79	0	237	870
All Railroad Employees High Standard	7,561	2,810	4,751	550	1,102	1,020	342	500	331	3,716
PORTS Full-Time Staff	2,230	334	1,895	0	334	0	45	0	111	1,739
CFM - Total	9,791	3,144	6,646	550	1,436	1,020	387	500	442	5,455

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**Table E.4 Cost of Retrenchment
('000 OF US DOLLARS)**

Class of Labor	Severance Pay			Spin-off Business Absorption*	Training	Agricultural & Credit Assistance	Micro Enterprise Credit Assistance**	Out Placement		Balance of Surplus	Severance & Program Cost
	Retirement	All Other	Total					Road Construction	Other Formal Employment		
Maintenance of Ways & Structures High Standard	1,137	728	1,865	75	120	270	96	30	0	591	2,456
Workshop Engineers & Technicians High Standard	790	1,138	1,928	750	375	0	375	20	9	1,530	3,457
Traffic Operations High Standard	978	1,762	2,741	0	290	436	581	0	0	1,307	4,047
Management & Support Services High Standard	440	960	1,400	0	316	59	316	0	24	716	2,116
All Railroad Employees High Standard	3,345	4,589	7,933	825	1,102	765	1,368	50	33	4,143	12,076
PORTS Full-Time Staff	1,494	1,353	2,847	0	334	0	178	0	11	524	3,371
CFM - Total	4,839	5,942	10,781	825	1,436	765	1,546	50	44	4,667	15,447

* Includes training matching fund and credit assistance

** Includes credit assistance and institutional building

ANNEX F

ECONOMIC AND FINANCIAL ANALYSIS

Assumptions

Figure 1, Project Cost-Benefit Analysis:

The analysis of project costs, benefits, and rates of return is based on the budgeted expenditures over the project life, and on certain known or estimated benefits from the activities undertaken by the project. These include:

- Salary cost reductions. Based on the workforce reductions anticipated under this project, CFM will reduce its salary costs by \$19.3 million over the project life. Although the calculations do not include them, these reductions will show continued benefits after the project life, amounting to some \$5.4 million per year in salary costs that are less than what they would have been without workforce reductions. If the analysis of salary savings alone is further extended to ten years after project inception, the project shows an economic rate of more than 45 percent.
- Sale or lease of assets. It has not been possible to conduct a proper physical inventory of CFM assets, nor to arrive at an accurate valuation of those assets that have been identified. However, based on known rental values for industrial buildings in Beira and Maputo averaging \$5 per square meters per month, lease of just two of CFM's workshop buildings would generate annual revenues in excess of the \$100 thousand used in the benefit projections.
- New private sector investment. Without knowing exactly what industries may be established, nor in what locations, nor the number of workers they will employ, it is difficult to estimate the amount of new private sector investment likely to be mobilized as a result of the spin-off of CFM operations into the private sector. However, it is expected that 550 redundant CFM workers will be employed by these spun-off industries. A very conservative estimate of the required capital investment per worker is \$2500, which is based on figures for garment manufacturing (one of the least capital-intensive manufacturing industries) in other sub-Saharan African countries. Of this amount, if at least 25 percent can be expected to be the private sector operators' equity contributions, then at least \$350,000 in new private sector investment can be expected. In addition, these workers' severance will be paid as a lump sum for the purchase of equity shares in the new enterprises, hence constituting new investment in productive capacity amounting to about \$310,000, for a total over years 2 to 5 of the project of nearly \$700,000.
- Domestic value added. This analysis assumes that workers will add value equivalent to at least twice the salaries they receive (typically, in labor-intensive manufacturing in developing countries, salaries constitute some 20 to 30 percent of sales). As workers are better trained and new markets developed, this amount can be expected to increase dramatically in the second year of production, and to rise by at least 50 percent annually

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thereafter. If peace arrives and the Mozambican economy revives, growth could be much higher.

- Without a thorough analysis of export markets, it is difficult to gauge what export potential these spin-off businesses may have. However, this analysis assumes that a moderately-sized enterprise is able to attract a foreign partner and to begin exporting fairly soon after its establishment, generating \$100,000 in export sales in Year 2 of the project, doubling to \$200,000 in Year 3, and increasing by 50 percent annually thereafter over the project life. Any viable export-oriented company is, in fact, likely to generate export sales that are much higher than these figures.

Based on these assumptions, which are, admittedly, rough estimates of the true potential of activities related to the project, the project over five years shows an economic rate of return (ERR) of 8.5 percent. This calculation, based on incomplete information, leaves out many factors that could increase this figure substantially. For example, multiplier effects of the increased investment on other companies providing domestic inputs and on the welfare of workers in those companies, have been ignored. Increases in workers' purchasing power stemming from share ownership and profit participation, and corresponding effects on local economies, have not been calculated. One of the greatest potential effects, that of successful companies expanding their employment base and offering new jobs not only to former CFM employees but to the general population, has not been included. The calculations, moreover, make no estimate of the economic benefits, apart from reduced salary costs, on CFM operations and on CFM's ability to attract more business. Traffic increases that, directly or indirectly, are attributable to workforce reductions and an improved cost structure, will raise calculations of ERR immensely.

The purpose of this analysis has merely been to demonstrate that, even using an incomplete accounting of the positive effects of the project, it will still generate a positive economic return to Mozambique, and will therefore constitute an appropriate use of USAID funds.

Figure 2 - Replacing the Inhambane Line with Road Transport:

The analysis of the Inhambane line is based on historically high 1984 figures, when the line carried 200,000 passengers and 105,000 ton-kilometers of freight traffic. These are far in excess of more recent figures. This level of demand could be met by a fleet of 10 minibuses, each one making two Inhambane-Inharrime round trips per day, and a 10-ton truck making one round trip daily. While the capital cost of acquiring this equipment is high (nearly \$500,000), it is far less than the cost of necessary track repairs. Assessment of the condition of track indicates that at least 50 percent of the sleepers must be replaced. At \$35 per sleeper and 1400 sleepers per kilometer, an investment of nearly \$2.2 million would be required, excluding any replacement of rails that might be required.

Even with drastic reductions in work force, there appears to be no way the Inhambane line can be operated even at a break-even level. Given the quality of the road that serves the area, and the relatively low cost of providing a road transport alternative, this preliminary analysis indicates that closure of the Inhambane line may be the best solution. A final determination must await a more detailed analysis, which as well as determining more precisely the capital requirements

to keep the line open and the cost of road transport alternatives, must also examine in greater detail the employment options that may be available to people in the Inhambane-Inharrime region.

Figure 3 - Development of Industrial Parks:

This analysis is based on the availability of large tracts of land occupied by CFM, which could be put to productive and profitable use with the construction of factory buildings and warehouses for rental to private sector companies. Based on figures from Mozambique and neighboring countries, a 10-ha. industrial estate, comprising 20 to 30 buildings and basic infrastructure (water, sewerage, roads and electrical reticulation) could be built for around \$8 million. Based on average industrial rentals in Maputo of about \$5 per square meters, such a project would show a 9.5 percent internal rate of return, which is relatively high for property development projects. Obviously, the exact potential of such a project would depend on an assessment of the potential demand, as well as a more precise calculation of construction costs. Here it serves mainly to illustrate the potential value of some of CFM's holdings.

ANNEX G

LEGAL IMPLICATIONS OF CFM RESTRUCTURING

In its original Portuguese, this Annex G presents the findings of a review of the laws pertaining to the rights of CFM employees and the obligations of CFM management and the Government of Mozambique. The project components described in the main text reflect this analysis.

Annex G also provides a review and comments on the laws that apply to contemplated changes to CFM from a state enterprise to a private management structure through a contracted leased arrangement.

The interested reader is urged to read the original Portuguese in its entirety. A brief summary of some of the most salient points follows.

1. There are two distinct regulations governing CFM labor. The first applies to employees of the CFM prior to its conversion to a state enterprise in January 1989; this group has "public" rights. The second set of regulations covers those CFM employees who were hired by CFM after that date; this group has "private" rights.
2. Workers who were hired before January 1989 benefit from both regulations. They have public rights for purposes of seniority, bonus, retirement, pensions, and termination. They have private rights for purposes of wages, incentives, and collective bargaining.
3. Retirement is compulsory for men reaching 65 years of age and women reaching 60 years of age. The appeal of voluntary retirement can be enhanced by establishing a minimum number of years of service (e.g., 15 years), a lower age (e.g., 55 for men and 50 for women), a retirement bonus (e.g., 20 percent) or an indemnity valued at a number of months worth of remuneration.
4. CFM could consider creating a labor category of underutilized workers. Those who would not opt for a retirement plan would receive a salary reduced to about 60 or 70 percent of full pay after several months; they would retain all other benefits. Depending on actual CFM staffing needs, these employees would be retained, again at full salary, or be eligible for voluntary, or compulsory, retirement. Although these and other measures are not spelled out in current regulations, CFM is not precluded from implementing them.
5. The process of restructuring a state enterprise engaged in a nationally vital activity, such as CFM, is a gradual one; the state enterprise must first be transformed into a public enterprise. Unlike CFM, State enterprises not operating in strategic sectors can be privatized without legal changes.
6. If CFM becomes a public enterprise, it can partly or fully divest itself through private negotiation or public tender. Indeed, CFM will be able to privatize properties no longer used for the public good (e.g., rail lines, buildings, workshops, etc.), but not until the Government declares the properties no longer necessary for the public good.

7. **CFM must be converted from a state enterprise to a public enterprise before it can assume more characteristically private sector functions. A private company may then receive the concession to operate the railway -- manage it, at the company's own risk and account - but not own it; the Government will retain ownership.**

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A N E X O J

J I - ANALISE JURIDICA DA REDUÇÃO DA FORÇA DE TRABALHO DOS CFM: ENQUADRAMENTO DO TEMA

1. Um dos problemas centrais do processo de reestruturação dos CFM é o de uma grave perturbação na dialéctica entre rentabilização e renovação do tecido empresarial e racionalização e adequação dos recursos humanos existentes.
2. No momento actual e tendo por base o cenário de guerra em Moçambique, toda a análise técnico-económica do presente PPA conclui, claramente, pela existência de um grave desfazamento entre os postos de trabalho necessários à rentabilização e a revitalização dos CFM e os trabalhadores existentes.
3. Não é por acaso que, de entre as diversas propostas que têm vindo a ser delineadas e sugeridas às autoridades moçambicanas sobre a reestruturação dos CFM ("MEMORANDUM AND RECOMMENDATIONS OF THE PRESIDENT OF THE INTERNATIONAL DEVELOPMENT ASSOCIATION", Maio de 1992; e "IPC RECONNAISSANCE VISIT TO REVIEW MOZAMBIQUE RRSS" (Blacken & White Report) Maio de 1992), existe um denominador comum reconhecido pelas estruturas de direcção da empresa: a redução da força de trabalho excedentária como medida de melhor racionalização, pleno aproveitamento dos recursos humanos existentes e de viabilidade do projecto de reestruturação da empresa.

4. Nesta fase do presente projecto, não cabe a análise histórica dos Caminhos de Ferro de Moçambique, enquanto principal empregador e fonte de financiamento e acumulação antes da Independência, na sua função primeira de prestação de serviços aos países vizinhos.
5. É importante, porém, recordar que, antes da Independência de Moçambique, os Caminhos de Ferro integravam um serviço público da administração colonial portuguesa, onde os trabalhadores com funções de confiança ou supervisão eram exclusivamente funcionários de origem portuguesa (Ex: capatazes, inspectores de via, chefes de zona, inspectores portuários, chefes de movimento e tracção, chefes de estação, factores de 1ª, supervisores, maquinistas de locomotivas, operadores de guindastes, etc.).
6. Após a Independência, todo este pessoal, por várias razões e, também, porque eram funcionários públicos, regressaram a Portugal para serem reintegrados, tal como veio a acontecer nos anos de 1975 e 1976, nos quadros da referida Administração Pública.
7. Os trabalhadores moçambicanos foram, então, chamados a desempenhar funções cujo acesso lhes tinha sido vedado, até aí. A inexperiência, aliada à ignorância e falta de qualificação e formação adequadas pesou para contabilizar os actuais problemas que se acentuaram na componente força de trabalho, já de si grande parte excedentária, face à débil situação económica da empresa CFM.
8. Nos últimos três anos, diversos esforços têm sido desenvolvidos na reestruturação do sector ferro-
por-

tuário no sentido de o dotar da dinâmica empresarial indispensável à sua actividade económica, que se iniciaram com a criação, em 01.01.89, da Empresa Nacional de Portos e Caminhos de Ferro de Moçambique (CFM) - Empresa Estatal e, agora, apontam para nova reforma institucional como seja a da subsequente transformação numa "empresa pública", dotada de maior autonomia e flexibilidade de gestão e primeiro passo no processo de calendarização das actividades que virão a ser objecto de privatização.

9. Mas, para além destas acções incidindo no tecido empresarial, outras medidas incidindo sobre a reorganização do sistema laboral têm, igualmente, vindo a ser adoptadas, das quais se salientam, pela sua importância no presente projecto, as seguintes:
- Reforma de todos os trabalhadores com 60 ou mais anos de idade, o que significa uma redução global de cerca de 4 000 a 5 000 trabalhadores
 - Reforma de trabalhadores que, por razões de saúde ou outras, se revelam inaptos a prestar serviços rentáveis à empresa, independentemente da idade
 - Adopção e institucionalização de um novo sistema salarial, mais competitivo e visando a estabilização dos quadros médios e técnicos, e respectivos incentivos, que culminou com a nova tabela salarial recentemente em vigor, conforme ordem de serviço de 09.06.92.
10. Só que as medidas tomadas são ainda insuficientes para a resolução da mão de obra que ainda se re-

vela excedentária no processo de reestruturação do sector, em especial no que respeita à área dos caminhos de ferro.

11. Soluções alternativas para a medida de redução maciça da força de trabalho e o regresso forçado à inactividade foram delineadas no citado relatório B & W e desenvolvidas, aprofundadas e caracterizadas no presente PPA, como forma de minimizar os custos sociais resultantes de tal redução.
12. No momento actual, importa salientar, à luz do quadro jusconstitucional e legal vigente, a legitimidade e validade de tal medida e suas implicações legais.

Assim:

J II - AS RELAÇÕES DE TRABALHO NA
EMPRESA ESTATAL CFM;
SEU REGIME JURIDICO

1. O regime juslaboral das empresas estatais é o do contrato individual de trabalho, regulado pela Lei nº 8/85, de 14.12.85.
2. Acontece, porém, que no caso particular da empresa estatal CFM, porque se assistiu à transformação de um serviço público integrado no Ministério dos Transportes (a ex-Direcção Nacional dos Portos e Caminhos de Ferro) numa entidade empresarial para

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a qual foi mandado transitar todo o património mobiliário e imobiliário, incluindo direitos e obrigações que estavam afectos aquela ex-Direcção Nacional, bem como o respectivo pessoal com expressa salvaguarda dos direitos adquiridos, verificou-se o seguinte:

Os trabalhadores que, até à data da criação da empresa, ou seja, 01.01.89, estavam ao serviço da ex-Direcção Nacional de Portos e Caminhos de Ferro e, por este facto, sujeitos ao "Estatuto Geral dos Funcionários do Estado", ao transitar para a nova empresa, ainda que despedidos da qualidade de funcionários públicos, permaneceram sujeitos a aquele "Estatuto" no que respeita aos direitos adquiridos (antiguidade, progressão na carreira, aposentação, pensões, vencimento, entre outros).

Diferente, porém, é a situação dos trabalhadores admitidos após 01.01.89, os quais estão sujeitos, exclusivamente, à lei do contrato individual de trabalho.

3. Podemos, então, concluir que na empresa CFM existem dois regimes distintos para regular as relações laborais:

Um, de direito público, regulado pelo Decreto nº 14/87, de 20.05.87, "Estatuto Geral dos Funcionários do Estado", aplicável somente aos trabalhadores que estavam vinculados à ex-Direcção Nacional dos Portos e Caminhos de Ferro até 01.01.89, e que, nesta data, transitaram para a nova empresa.

Outro, de direito privado, regulado pela Lei nº 8/

/85, de 14.12.85, aplicável:

- a todos os trabalhadores que foram admitidos na Empresa após 01.01.89
- aos trabalhadores que transitaram para a nova empresa na parte que não colida com os direitos adquiridos à luz do "Estatuto dos Funcionários do Estado".

4. Existem, pois, não só dois estatutos laborais distintos na empresa CFM, como uma dualidade de regimes aplicáveis às relações juslaborais dos trabalhadores que transitaram para a nova empresa, os quais mantêm um núcleo de "direitos adquiridos" provenientes do anterior estatuto de direito público, mas beneficiam também das normas de direito privado que não prejudicam aqueles direitos.

Assim:

- a) estão sujeitos, porque mais favorável, ao sistema de salários e respectivos incentivos, específico da empresa e não mais à estrutura salarial aplicável aos trabalhadores do Aparelho de Estado, necessariamente menos favorável (cfr Decreto nº 40/90, de 29.12.90)
- b) beneficiam do direito de associação sindical, (Lei nº 23/91, de 31.12.91); do direito à contratação colectiva (Decreto nº 33/90, de 24/12/90); e do direito à greve (Lei nº 6/91, de 09.01.91, e Despacho de 10.01.90), direitos esses não aplicáveis aos funcionários do Estado.

5. Diferentemente, porém, é o direito aplicável para

efeitos de reforma e respectivas pensões ou em caso de cessação da sua relação de trabalho, cujas vantagens do regime mais favorável de direito público constituem, para estes trabalhadores, o núcleo dos "direitos adquiridos" intangível ao regime menos favorável da lei do contrato individual de trabalho.

6. Estão, ainda, sujeitos à Lei Geral do Trabalho, um número importante de trabalhadores que prestam a sua actividade nos Portos (cerca de 9 750), os chamados "Trabalhadores de Cartão" e os que prestam a sua actividade nas brigadas de manutenção (cerca de 1 900) e que constituem o grupo dos chamados "trabalhadores eventuais".
7. Na verdade, estes trabalhadores prestam a sua actividade para satisfação de necessidades pontuais e temporárias, às vezes com carácter excepcional, sendo pagos ao dia, à semana, sujeitos a tarifas próprias, calculadas à hora, ao dia, à semana, sem qualquer garantia da continuidade do posto de trabalho, por contraposição aos restantes que são trabalhadores efectivos.
8. Uma primeira conclusão parece interessante retirar e que é esta:

Os trabalhadores que transitaram da ex-Direcção Nacional dos Portos e Caminhos de Ferro para a nova empresa, passaram a beneficiar de uma dualidade de regimes: um, de direito público, para efeitos de antiguidade, bónus, aposentação, pensões e cessação da sua relação juslaboral; outro, de direito privado, para efeitos de regime salarial, incentivos,

contratação colectiva, etc., que lhes permite acumular as vantagens próprias de cada um, colocando a empresa CFM numa situação excepcional no mercado de trabalho e emprego.

J III - ALGUNS ASPECTOS DO REGIME DE
SEGURANÇA SOCIAL DOS
TRABALHADORES DOS CFM

1. Tal como temos vindo a referir, a maior parte dos trabalhadores dos CFM estão sujeitos ao "Estatuto Geral dos Funcionários do Estado", para efeitos de pensões.
2. Falamos da pensão de aposentação a propósito das medidas para a redução da força de trabalho, incluindo nesta a pensão por invalidez ou doença.
3. Convém ainda e porque se trata, também, de encargos suportados, directamente, pelo Orçamento Geral do Estado, identificar outras situações geradoras de pensões, tais como:

- Pensão por Sobrevivência (Artº 258)
- Subsídio por Morte (Artº 263)
- Pensão de Sangue (Artº 269)

A Pensão de Sobrevivência é devida aos herdeiros, por morte do funcionário com direito a aposentação, ou já aposentado, calculada do mesmo modo que a pensão de aposentação e o seu montante é igual a 50% desta.

O Subsídio por Morte é abonado à pessoa de família a cargo do funcionário falecido e equivalente a seis meses das remunerações inerentes ao respectivo cargo ou função.

A Pensão de Sangue é devida em caso de falecimento do funcionário por ferimento, acidente em serviço ou resultante de doença contraída por actividades profissionais em contacto com matérias tóxicas.

Esta pensão é calculada como a pensão de aposentação, sendo o seu montante de 70%, acrescido de 6% por cada filho menor.

4. Estas pensões foram actualizadas, recentemente, em 35%, conforme a já referida ordem de serviço de 09.06.92.

J IV - MECANISMOS LEGAIS DA REDUÇÃO DA FORÇA DE TRABALHO NA EMPRESA CFM

A - TRABALHADORES VINCULADOS AOS CFM ATE 01.01.89

1. Tomando por base os dados fornecidos pela Direcção de Planificação dos CFM, que aponta para um número global de 32 500 trabalhadores, dos quais 9 750 são trabalhadores de cartão (eventuais) e 1 900 são de brigadas de manutenção (igualmente eventuais), os restantes, cerca de 21 000, são trabalhadores efectivos.

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2. Por sua vez, de entre estes, cerca de 65% a 70% trabalham nos caminhos de ferro, ou seja, 12 500 a 13 000. Considerando, por outro lado, que as admissões de pessoal registadas após 01.09.89 não foram além de 5%, mais de 95% dos trabalhadores affectos aos Caminhos de Ferro são oriundos da ex-Direcção Nacional de Portos e Caminhos de Ferro e, portanto, sujeitos ao regime de direito público para efeitos de aposentação, pensão e cessação da sua relação de trabalho.
3. Assim, o mecanismo legal de que a empresa CFM se pode socorrer para a redução, por sua iniciativa, da força de trabalho, em relação a estes trabalhadores, é o da aposentação obrigatória.
4. Na verdade, é possível por iniciativa dos CFM, como consequência de medidas de reorganização do serviço, proceder à aposentação obrigatória do trabalhador (Artº 237, nº 2 do Decreto Lei nº 14/87).

Os requisitos legais para essa aposentação obrigatória só estão definidos em caso de limite de idade: 65 anos, no homem, e 60 anos, na mulher, e não nas demais condições.

5. Parece-nos, porém, que um requisito já não quanto a idade mas quanto ao tempo mínimo de serviço deverá existir, e que são 15 anos de serviço.

Na verdade, se o tempo mínimo para a aquisição do direito à pensão é de 15 anos, não faria sentido que, em caso de aposentação por iniciativa da em-

presa CFM e não sendo por razões de limite de idade, não fosse respeitado o pressuposto legal do tempo mínimo para aquisição do direito (cfr Artº 238, alínea b).

6. Outra possibilidade é o recurso à aposentação voluntária (Artº 238 Decreto nº 14/87), ou seja, aquela que é requerida por iniciativa do trabalhador. São seus requisitos os seguintes:
 - a) Ter satisfeito ou vir a satisfazer os encargos para a aposentação.
 - b) Possuir o trabalhador, sendo homem, 60 anos de idade, sendo mulher, 55 anos e, pelo menos, 15 anos de serviço; ou
 - c) Possuir 35 anos de serviço.

7. É ainda possível, para situações pontuais, o recurso ao figurino legal da "aposentação extraordinária" (Artº 256), cujo factor determinante é a incapacidade do trabalhador. Como aspecto caracterizador deste regime está o facto de se considerar o tempo de serviço sempre equivalente a 15 anos, se o trabalhador não possuir tal mínimo de anos de serviço.

Porém, se o factor determinante da incapacidade for acidente em serviço ou doença grave e incurável contraída em virtude das funções exercidas, o tempo de serviço considera-se sempre equivalente a trinta e cinco anos.

8. O cálculo da pensão de aposentação é feito ten-

do por base a seguinte fórmula:

$$P = \frac{R \times A}{35}$$

em que:

P = pensão de aposentação

R = remuneração auferida à data da aposentação

A = anos de serviço (incluindo todas as situações equiparadas aos anos de serviço como seja o caso dos que estiveram na luta de libertação nacional e que têm direito a um acréscimo de 100% na contagem do tempo de serviço, até ao limite máximo de trinta e cinco anos.

9. Numa perspectiva de descongestionamento e racionalização da força de trabalho, têm os CFM prosseguido a adopção de uma medida específica de reforma antecipada, com o acordo dos interessados, dentro dos limites legais que caracterizam a figura de aposentação voluntária, a saber:

15 anos de serviço e 55 anos de idade, sendo mulher, e 60 anos, sendo homem; ou

35 anos de serviço.
10. Com esta medida, foi possível uma redução substancial da força de trabalho na ordem dos sete mil trabalhadores.

Os encargos decorrentes desta "aposentação voluntária" estão a ser suportados pelo Orçamento Geral do Estado e pela empresa, nos casos em que é necessário perfazer a diferença para a pensão completa, por os trabalhadores não atingirem os trinta e cinco anos de serviço.

11. Neste contexto, parece-nos defensável, uma vez que se insere na continuação do quadro de medidas de racionalização já existentes, que se continuasse a investir numa estratégia de reforma antecipada que teria a configuração de reforma voluntária porque teria sempre o acordo do trabalhador interessado, obedecendo aos seguintes requisitos:
 - 15 anos de serviço e 50 anos de idade, sendo mulher, e 55 anos, sendo homemcom direito a optar ou por uma bonificação da pensão no valor de 20%, sem prejuízo do limite máximo da mesma corresponder a 35 anos, ou por uma indenização correspondente a X meses de remuneração.
12. Os encargos seriam do OGE na parte que correspondesse ao valor da pensão pelos anos de serviço prestado, ficando a bonificação dos 20% ou a indenização, qualquer destas opções, a cargo da empresa CFM.
13. Esta medida, apesar de introduzir um limite de idade não previsto no "Estatuto Geral do Funcionário do Estado", não constituiria um facto inédito no ordenamento juslaboral moçambicano, uma

vez que nas relações reguladas pela Lei Geral do Trabalho (direito privado), está consagrada a possibilidade de se requerer uma reforma antecipada aos 50 anos (Artº 7º do Decreto nº 46/89 de 28.12.89).

14. A consequência maior seria a pressão sobre o Orçamento Geral do Estado resultante de uma aposentação desta natureza, mesmo que a bonificação ou a indenização para perfazer a pensão completa ficasse a cargo dos CFM.

Acresce que os CFM obrigados, nos termos do Estatuto Geral dos Funcionários do Estado (Artº 248º), a proceder ao desconto legal de 7% sobre a remuneração ilíquida do funcionário (para efeitos do direito à aquisição por este da pensão de aposentação) e consequente remessa desses descontos à Direcção Geral do Tesouro (Ministério das Finanças), nunca o fizeram constituindo, actualmente, uma dívida dos CFM ao Orçamento Geral do Estado, a qual poderá vir a integrar o fundo de constituição do Estado (capital de crédito) na futura empresa pública em que os CFM se poderão transformar.

15. Outra alternativa e esta elegível à luz do quadro legal vigente, ainda que aplicável a situações de reestruturação de serviços do Estado, mas que se poderia estender à empresa CFM mediante a criação de um normativo jurídico próprio, seria a criação de um quadro de supranumerários ou excedentes que acolheria os disponíveis ou subutilizados por virtude de medidas de reestruturação e-

quivalente a "supressão ou compressão da estrutura orgânica", como dispõe o artigo 94º alínea c) do Estatuto Geral dos Funcionários do Estado.

16. A opção por esta alternativa seria para os trabalhadores efectivos, considerados excedentários e que não optassem pelas medidas de reforma antecipada.

As vantagens desta alternativa eram óbvias:

- A legitimidade de tal medida à luz do quadro legal;
- A receptividade junto da estrutura sindical, comprometendo-a na sua perfeita execução;
- Uma gradual e progressiva reforma do sector, permitindo como que um adiamento quanto ao momento de desvinculação definitiva da Empresa.

17. Este quadro de supranumerários teria como aspectos fundamentais definidores do seu regime, os seguintes:

- Os trabalhadores mantinham:
 - . o vínculo laboral e a categoria;
 - . o vencimento por inteiro, por exemplo nos primeiros 6 meses e depois 60 (70)% até 2 anos, incluindo o subsídio de Natal;
 - . os abonos de prestações complementares, para aqueles que a elas tivessem direito, tais como abonos por filhos menores, subsídio de renda de casa;

- . o direito à assistência na doença.
 - O tempo dos trabalhadores na situação de supranumerários contaria para todos os efeitos, nomeadamente, antiguidade, aposentação e progressão na carreira.
 - Em caso de serem chamados para acções de formação e aperfeiçoamento profissional, receberiam o vencimento como se estivessem em actividade.
 - Durante o tempo que permanecessem como supranumerários ou poderiam ser reintegrados nas novas empresas que resultassem da reestruturação do sector ou, se o não fossem, poder-se-ia verificar uma de duas situações:
 - . o pessoal supranumerário, na situação seguida ou interpolada de inactividade por dois anos e que contasse 15 anos ou mais de serviço seria aposentado, obrigatoriamente, sem qualquer bonificação;
 - . o pessoal que permanecesse como supranumerário por doze meses, seguidos ou interpolados, poderia aposentar-se, voluntariamente, optando pela pensão bonificada (20%) ou por uma indemnização.
18. Estas e outras medidas conducentes à redução da força de trabalho excedentária nos CFM careciam, naquilo que são os elementos inovadores, de um quadro legal específico, ou seja, da elaboração de um diploma próprio.

B - TRABALHADORES ADMITIDOS A PARTIR DE 01.01.89

19. Passemos, agora, em análise a situação juslabo-
ral dos trabalhadores admitidos após 01.01.89 os
quais, tal como referimos anteriormente, estão
sujeitos à Lei Geral do Trabalho.
20. Quanto a estes, a sua relação de trabalho ca-
racteriza-se por uma prestação de serviços conti-
nuada e permanente que a permite subsumir no fi-
gurino legal de "contratos de trabalho por tempo
indeterminado" (Artº 9 e 10 da Lei nº 8/85).

A faculdade de pôr termo aos contratos de tra-
balho por vontade unilateral, de qualquer das
partes, de modo a fazer cessar os seus efei-
tos, é uma das características da sua discipli-
na jurídica. Diferentemente da relação de em-
prego público, onde a cessação por vontade uni-
lateral de qualquer das partes tem fortes con-
dicionanismos (por exemplo, por parte do Estado,
o funcionário público só vê cessar o seu vín-
culo jurídico pela aposentação ou, eventualmente,
na sequência de uma medida punitiva aplicada em
processo disciplinar), a relação juslaboral pri-
vada pode cessar pelas situações tradicionais de
"rescisão com pré-aviso" e "rescisão com justa
causa" apurada em processo disciplinar (Artº 24º
da Lei nº 8/85).

21. Só que a interacção entre o direito público e
o direito privado, em matéria de questões de
trabalho, produz uma crescente aproximação entre
os dois regimes, esbatendo, gradualmente, as di-
ferenças entre eles, por exemplo, no que res-
peita à questão da estabilidade no posto de

trabalho.

Assim, no direito privado assiste-se, igualmente, a restrições à cessação da relação laboral por iniciativa da entidade empregadora.

22. À luz do direito moçambicano, a cessação do contrato de trabalho por meio de rescisão com pré-aviso, por iniciativa dos CFM, só é possível na situação objectiva expressamente prevista na lei da adopção por aquela de medidas técnico-organizativas que imponham a adequação da força de trabalho (Artº 26).

Neste último caso, o processo seguido é o do pré-aviso mínimo de 90 dias, seguido do parecer do órgão sindical, garantindo-se o direito a uma indemnização, calculada na base do tempo de trabalho prestado (três meses por cada dois anos) e a comunicação à Secretaria de Estado do Trabalho para a recolocação preferencial dos trabalhadores (Artº 26 da Lei nº 8/85 e Artº 7º do Decreto nº 9/89 de 03.06.89).

23. Para os casos em que se verifique existir uma prestação continuada de serviço sujeita a um termo final, em caso de cessação antecipada do contrato, os CFM ficariam obrigados ao pagamento de uma indemnização equivalente às remunerações devidas até ao termo do período convencionado.
24. Os trabalhadores cuja relação de trabalho está plenamente regulada pela Lei Geral do Trabalho, podem ser reformados por limite de idade (60

anos para o homem, 55 anos para a mulher), mas podem ainda ser objecto de reformas antecipadas com 50 anos de idade, nos casos em que acusem um desgaste físico prematuro.

25. As pensões estão a cargo do Instituto de Segurança Social sendo suportados, e dada a recente criação de toda a legislação sobre segurança social, alternadamente ou conjuntamente por aquele organismo e pela entidade empregadora (os CFM). (cfr Decreto nº 46/89 de 28.12.89; Decreto nº 5/89 de 18.09.89).

As contribuições para a segurança social são de 7%, sendo 3% a cargo do trabalhador e 4% a cargo dos CFM.

26. Poder-se-ia, então, estender a todos os trabalhadores dos CFM o regime legal da reforma antecipada da Lei Geral do Trabalho e propor a respectiva reforma com 50 anos? Se tal decisão de reforma tivesse aceitação por parte do trabalhador era, afinal, uma outra modalidade de reforma voluntária que nos parece legítima. No fundo, tudo se passava como se aos trabalhadores dos CFM fosse dado o direito de optar, para efeitos de reforma pelo sistema de direito privado, desde que este não resultasse em consequência menos favorável.

A questão é que as contribuições pagas ao Orçamento Geral do Estado teriam de ser transferidas para o Instituto de Segurança Social e tal transferência revestir-se-ia de alguma complexidade uma

vez que os CFM, apesar de procederem ao desconto de 7% sobre as remunerações auferidas, não fizeram, realmente, a entrega dessa contribuição.

J V - ALGUMAS REFLEXÕES SOBRE A CRIAÇÃO
DE UM NORMATIVO ESPECÍFICO PARA
REDUÇÃO DA FORÇA DE TRABALHO NOS CFM

1. Qual a legitimidade, à luz do ordenamento jurídico actual, para a aplicação de medidas específicas para o sector dos CFM que contemplem, seja pela aposentação antecipada, seja pela rescisão com pré-aviso (nos casos em que esta figura fosse aplicada), a redução maciça da força de trabalho?
2. Importa ter presente que o que ressalta dos textos legais é o princípio da causalidade do despedimento; qualquer cessação da relação de trabalho, por iniciativa da entidade empregadora, para ser legítima carece de ser fundamentada, seja por razões económicas ou outras, de modo a que essa causa, essa motivação, ganhe dimensão tal que se imponha sobre outros valores, como seja por exemplo, o direito da empresa e da sua rentabilidade sobre o direito à protecção no trabalho e justifique o sacrifício deste.
3. No caso em apreço, é a causalidade "reestruturação, redimensionamento e revitalização dos CFM" que confere a legitimidade necessária à redução da sua for-

ça de trabalho e às medidas inerentes.

4. Mas uma vez que as medidas a adoptar se revelam inovadoras, quer quanto à situações por elas abrangidas (aposentação antecipada, regresso temporário ou definitivo à inactividade), quer quanto aos procedimentos reparadores ou compensadores a seguir (bónus, indemnização, reorientação profissional, reemprego), impõe-se já não como questão de legitimidade, mas da sua validade jurídica e eficácia prática a criação de um quadro legal específico, cujas vantagens nos parecem inegáveis.

5. Vejamos algumas dessas vantagens:

- Consagraria uma solução concreta e, portanto, mais ajustada à real situação da empresa e à peculiar situação dos trabalhadores dos CFM;
- Daria maior dignidade ao sector, plenamente justificável pela sua importância económica;
- Comprometia, na sua execução, não só os órgãos do Estado e a direcção da empresa, como a estrutura sindical, cujo parecer é obrigatório em todo este processo;
- Contribuía para a transparência nos critérios a seguir;
- Objectivava as situações factuais abrangidas pela redução da força de trabalho o que dava maior certeza aos seus destinatários;
- Consagraria o carácter excepcional das medidas compensadoras ou reparadoras (incentivos), indispensáveis para a sua aceitabilidade pelos destinatários.

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6. A não se optar pela elaboração de um quadro legal específico que contemple estas ou outras medidas para a redução da força de trabalho nos CFM, só pela aposentação voluntária, na base dos 60 anos de idade, para os homens, e 55 anos, para as mulheres, e 15 anos de serviço, será possível continuar a investir na redução da força de trabalho. Para os poucos casos de trabalhadores admitidos após 01.01.89, será possível a rescisão com pré-aviso de noventa (90) dias, mas sempre sujeita ao parecer favorável do órgão sindical e a atribuição de uma indemnização.

7. A elaboração de um quadro legal específico para o sector dos Caminhos de Ferro, legitimado pela causalidade dessas medidas (razões económicas, razões de reestruturação e redimensionamento do sector) teria, igualmente, que abranger medidas preferenciais de reemprego.

Na verdade:

8. Nos casos em que a relação de trabalho permanente fosse extinta, fosse por aposentação antecipada, fosse por rescisão com pré-aviso, não assistiria ao trabalhador dos CFM um direito subjectivo de ser reempregado neste ou em outro sector de actividade económica mas, apenas, o direito mais geral, comum a todos os cidadãos, de acesso ao trabalho.

Porém, com a elaboração de um normativo específico, ficaria assumido um compromisso público e institucional (Ministério do Trabalho, Ministério dos Transportes e ministério que tutela a área econó-

mica elegível para o reemprego, por exemplo, Agricultura, Recursos Minerais, Indústria e Energia, Construção e Águas, de, preferencialmente, reempregarem nos seus sectores os trabalhadores atingidos por medidas de redução da força de trabalho ou dar-lhes preferência no acesso à livre iniciativa económica (ex: fundo de fomento à pequena indústria, fundo de fomento mineiro, fundo de fomento agrário e de desenvolvimento rural, fundo de desenvolvimento de hidráulica agrícola, fundo de fomento pesqueiro).

9. Deste modo, os trabalhadores dos CFM não beneficiariam do direito de exigir reocupar um posto de trabalho neste ou naquele sector. Mas beneficiariam de um direito de preferência em ser recolocados ou reorientados para iniciativas de emprego, novas ou em curso.

Se assim não for, correr-se-á o risco dos custos sociais resultantes de uma inactividade forçada, num sector tão sensível e de tradição organizativa histórica, se sobreparem ao fim útil da sua reestruturação.

10. Em reforço de tudo o que se acaba de afirmar, quanto à necessidade de elaboração de um normativo jurídico específico para a redução maciça da força de trabalho nos CFM, está o facto de tal redução assumir carácter inédito e não previsto no ordenamento jurídico vigente.

Portanto, difilmente, tal redução se pode espartilhar no quadro da legislação juslaboral vigente, seja no âmbito do direito público, seja no âmbito do direito privado, uma vez que a mesma foi elaborada na previsão de resolução de casos pontuais da cessação da relação de trabalho e não para ser aplicada em situações de "despedimento colectivo".

11. No quadro dos objectivos traçados neste PPA, outra das questões centrais é o redimensionamento da empresa CFM no recente quadro legal das privatizações, pela transferência, total ou parcial, da exploração dos caminhos de ferro para uma entidade privada e pela transferência, total ou parcial, da propriedade dos respectivos bens que, mediante decisão do governo, sejam desafectados do domínio público.

Vejamos, então, as implicações legais do redimensionamento (privatização) da empresa estatal CFM, à luz da nova Constituição da República de Moçambique e da legislação económica vigente.

J VI - SISTEMA ECONOMICO CONSTITUCIONAL:

UM SISTEMA PLURIFORME

1. A nova constituição económica moçambicana, que entrou em vigor em 30.11.90, consagrou a coexistên-

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cia de várias formas económicas de acordo com a respectiva propriedade e gestão dos meios de produção.

Vejamus cada uma dessas formas económicas:

0 Sector Estatal - constituído pelas empresas estatais, pelas empresas públicas e outras entidades públicas, qualquer que seja o seu estatuto jurídico (empresas públicas em sentido restrito, empresas de capitais públicos, institutos públicos, fundos públicos);

0 Sector Cooperativo - que integra as empresas cooperativas;

0 Sector Privado - bastante heterogéneo, integrando desde o pequeno artesão, passando pelo sector familiar até à grande empresa;

0 Sector Misto - integrando as empresas de capitais públicos e capitais privados.

2. A característica essencial do sistema económico constitucional moçambicano não é a existência de vários tipos de propriedade e de gestão comuns a qualquer economia de mercado, nem da maior ou menor dimensão de qualquer deles, embora resulte uma tendência hegemónica do sector estatal.

Mas o que é essencial no quadro constitucional

é a garantia do pluralismo das diferentes formas de propriedade.

3. Por sua vez, a garantia destes três sectores de propriedade implica a existência de três formas de iniciativa económica:

- a pública
- a privada
- a cooperativa

A iniciativa pública económica é um dos aspectos dominantes da constituição da Constituição da República de Moçambique, porque nenhuma área económica lhes está reservada.

4. Ao invés, existe reserva de propriedade pública de certos bens (Terras, Reservas Naturais, Espaço Aéreo, Zona Marítima, Recursos Hídricos, Recursos Minerais). Mas isto não significa, necessariamente, reserva de exploração pública podendo alguns destes bens ser objecto de exploração por entidades privadas (ex: regime de concessão no uso e aproveitamento da terra, regime de concessão na pesquisa e exploração de recursos minerais).

5. Mas, em alguns sectores e domínios de actividade, existe acesso condicionado à iniciativa privada. Quais, então, esses sectores ou essas actividades?

Tal definição é matéria da competência do governo, nos termos do Artº 4º da Lei nº 15/91, de 03.08.91, diploma este que, por sua vez, determinou alguns desses sectores, apenas com carácter exemplificativo mas não exaustivo e que são os seguintes:

- atribuição dos direitos mineiros;
- produção e emissão da moeda;
- exploração de jogos de fortuna e azar.

Estes sectores estão vedados à iniciativa privada, permitindo-se apenas o exercício das respectivas actividades por empresas do Estado, em regime de exclusividade.

6. Outros sectores, porém, estão parcialmente vedados à iniciativa privada porque permitem o exercício da respectiva actividade em concorrência (sector público, sector privado), cabendo ao Estado o que a lei designa por "um papel regulador da economia".

As formas jurídicas desta concertação entre o sector público e o privado são, usualmente, as sociedades de capital misto (joint ventures) e os contratos de concessões públicas.

7. Apesar de o Governo ainda não ter fixado, expressamente, quais os demais sectores cuja actividade económica deva ser exercida em regime de exclusividade por empresas do Estado, ou de concorrência com o sector privado, a Lei nº 15/91 estabeleceu, desde já, os princípios informadores

de quais deverão ser esses sectores.

Assim, devem permanecer no sector empresarial do Estado, as actuais empresas estatais que "desenvolvem actividades de carácter estratégico", considerando como tal "a prestação de serviços públicos à comunidade em que, pela sua essencialidade, devam ser proporcionados ou controlados pelo Estado".

8. Só que o que não está identificado e, portanto, à luz do recente quadro legal económico, é omissos, são quais serão as actividades económicas de carácter estratégico que devem permanecer em regime de exclusividade no sector Estatal e as que podem concorrer com a actividade privada.

J VII - A EMPRESA ESTATAL CFM
SUA LOCALIZAÇÃO NO QUADRO
CONSTITUCIONAL ECONOMICO

1. Juridicamente, os Caminhos de Ferro de Moçambique são uma empresa estatal e, como tal, integrada no sector empresarial estatal entendido este, de acordo com os textos legais em vigor, como o conjunto de unidades empresariais em sentido económico, sob tutela ou direcção da Administração Pública.

A forma jurídica que, no direito económico moçambicano, reveste o sector empresarial do Estado, são

- as empresas estatais

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- as empresas públicas
- as sociedades anónimas de capitais exclusivamente públicos

Até há bem pouco tempo, a empresa estatal foi a forma jurídica dominante de que o Estado se socorreu para intervir na actividade económica.

Porém, com uma estrutura interna similar à de qualquer serviço público, marcadamente burocrata e administrativa, ligado ao órgão de Tutela (Ministérios, Secretarias de Estado) por vínculos hierárquicos a estrangular qualquer autonomia de gestão, estas unidades económicas, organizadas em moldes mais administrativos que empresariais, parecem encontrar-se, hoje, em fase de declínio.

Na verdade, com toda a nova legislação económica moçambicana sobre empresas públicas e sistema de privatizações, as empresas estatais tenderão, necessariamente, a transformar-se em empresas públicas ou sociedades de capitais públicos ou a extinguir-se e a dar lugar a empresas privadas.

2. Parece não fugir a esta regra a empresa estatal CFM. Apesar de recentemente criada, em 1989, sob a forma de empresa estatal (importa aqui recordar que foi o primeiro passo na transformação daquilo que era e que, historicamente, sempre foi, um serviço público) o passo seguinte parece ser a sua transformação em empresa pública.
3. Processos idênticos, aliás, estão a ser seguidos no sector dos transportes, como é o caso da

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transformação em empresas públicas, respectivamente, da empresa estatal "Correios de Moçambique" e da empresa estatal "Telecomunicações de Moçambique".

4. Razões de ordem económica, por um lado, mas também legais, determinam esta transformação.
5. Na verdade, qualquer daquelas empresas, bem como os CFM, prestam um serviço público à comunidade o que as insere no domínio das actividades de carácter estratégico. No caso dos CFM, o diploma da sua criação refere, expressamente, que a empresa CFM presta um "serviço público de transporte de pessoas e bens" e constitui um "importante veículo de unidade nacional" (Decreto nº 6/ /89, de 11.05.89).
6. Isto significa que se está perante uma das actividades que deve permanecer no sector empresarial do Estado (Lei nº 15/91).

A dúvida que permanece é se esta actividade é exclusiva do Estado ou se pode ser exercida em concorrência com o sector privado.

Mas, em qualquer situação, as empresas estatais que devam permanecer no sector empresarial estatal, como é o caso dos CFM, seja em exclusivo, seja associadas a particulares, têm de ser transformadas em empresas públicas, antes de revestirem qualquer outra forma jurídica.

A empresa pública é como que o primeiro degrau da reestruturação e redimensionamento do sector

estatal empresarial (Artigo 3º da Lei 15/91).

7. As vantagens da transformação das empresas estatais em públicas, apesar de ambas integrarem o sector estatal empresarial, está na diminuição drástica da intervenção dos poderes públicos na gestão interna destas últimas. Ex: As empresas públicas, diferentemente das estatais, podem transaccionar, livremente, os bens móveis e imóveis que integram o seu património, à excepção dos que integram o domínio público e que formam o que a lei chama de "universalidade". São bens do domínio público os que a lei determina (ex: Terra) e aqueles que estão afectos a uma função de utilidade pública constituindo uma universalidade (Artº nº 206 do Código Civil).

É o caso das linhas do caminho de ferro, com todos os seus componentes, infra-estrutura e superestrutura de linha, suas dependências e obras acessórias - edificios, sinais, linhas telegráficas e telefónicas e todo o material fixo de qualquer natureza.

Tais bens, quando desafectados da sua actividade de utilidade pública, já podem ser objecto de transacção. Isto é, se separar os carris, as cancelas das passagens de nível, os sinais, cada uma destas coisas, singularmente, porque têm autonomia, quando subtraídas à universalidade que compõem, perdem o carácter de domínio público e podem ser negociadas, livremente, pela empresa, à excepção daqueles que, por força da lei, são sempre bens do domínio público (ex: Terra).

8. Flexibilidade e autonomia na gestão, possibilidade

de recorrer a esquemas de heterofinanciamento e auto-financiamento iguais aos de outros agentes económicos privados, uma gestão moldada à imagem das sociedades anónimas e a possibilidade de transaccionar bens e serviços no mercado mediante um preço calculado segundo critérios económicos, são outros tantos aspectos vantajosos na transformação das empresas estatais em empresas públicas.

9. Importa, ainda, referir que a subscrição no capital estatutário não é apenas do Estado, entendido este apenas como o Orçamento Geral do Estado, mas pode ser de outros entes públicos. (Ex: outras empresas públicas, fundos públicos, sociedades anónimas de capitais exclusivamente públicos).
10. Uma das dificuldades da transformação das empresas estatais em empresas públicas está na necessidade do seu saneamento interno financeiro, uma vez que são, na sua quase totalidade, altamente deficitárias junto do Orçamento Geral do Estado.

No caso dos CFM, desenha-se a possibilidade do Estado participar no capital estatutário capitalizando as dívidas da empresa.

11. Chegados a este ponto, parece-nos importante extrair duas conclusões:
 - a) O processo da reestruturação e redimensionamento das empresas estatais que exerçam uma actividade de carácter estratégico é, à luz do quadro legal económico, um processo gradual e sucessivo, porquanto a empresa estatal tem de primeiro ser transformada numa empresa pública e, só após adquirir este estatuto, é que poderá vir a assumir outras formas jurídicas empresariais de natureza privada (sociedades comerciais).

b) As empresas estatais não situadas em sectores estratégicos podem ser privatizadas de imediato.

12. Identificadas as formas jurídico-económicas a que o Estado recorre quando pretende intervir na actividade económica, analisadas as opções possíveis no quadro legal do redimensionamento do sector empresarial estatal, de libertar total ou parcialmente a componente pública da titularidade do capital e da titularidade da gestão (empresas públicas, sociedades anónimas de capitais públicos, empresas mistas, sociedades de capital privado), vejamos em concreto as implicações legais do redimensionamento e reestruturação da empresa estatal CFM.

J VIII - A PRIVATIZAÇÃO DOS CFM:
ASPECTOS RELEVANTES DO SEU REGIME JURIDICO

13. Identificada como uma empresa que presta serviço público à comunidade e que, portanto, exerce uma actividade de natureza estratégica, tudo indica que a empresa CFM deverá permanecer no sector empresarial estatal e, como tal, assumir a forma jurídico-económica de empresa pública.
14. Mas o processo de reestruturação dos CFM pode ser precedido de ou em simultâneo com medidas de alienação total ou parcial do seu património.

As leis vigentes sobre esta matéria (Lei 15/91, de 03.08.91, Decreto 28/91, de 21.11.91, Decreto 21/89, de 23.05.89) permitem que as empresas es-

tatais possam ser alienadas total ou parcialmente e que tal alienação pode revestir, essencialmente, duas formas:

- a) negociação particular,
- b) concurso público.

No caso dos CFM, em simultâneo com a sua transformação em empresa pública, poder-se-á alienar e privatizar os bens que sejam desafectados da sua função de utilidade pública (encerramento de linhas e consequente venda de edifícios, oficinas, etc.).

O procedimento administrativo para esta alienação está regulado na Lei 15/91, de 03.08.91, Decreto 28/91, de 21.11.91.

A decisão sobre a alienação dos CFM, por negociação particular ou concurso público, é da competência do Primeiro Ministro, assessorado pela Comissão Interministerial para a Reestruturação Empresarial e criada pelo Decreto nº 27/91, de 21.11.91.

15. Concluindo:

- 1 - Qualquer privatização dos Caminhos de Ferro de Moçambique depara com este limite: a universalidade do sistema ferro-portuário (linhas férreas com todos os componentes já referidos anteriormente) é um bem do domínio público, uma vez que está afecto

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a uma função de utilidade pública: transporte de pessoas e bens.

Isto significa que tais bens não podem ser alienados nem, por exemplo, objecto de:

venda

penhora

- 2 - Tal alienação só é possível depois desses bens serem subtraídos ao estatuto de bens do domínio público, por autorização do Governo.

(Acresce que a universalidade dos bens que compõem o caminho de ferro e que, à luz do direito português, faziam parte do domínio público do Estado, mantiveram o mesmo estatuto à luz do quadro legal moçambicano, uma vez que integravam o património de um serviço público (ex-Direcção Nacional dos Portos e Caminhos de Ferro) e, com esta qualidade de bens submetidos ao domínio público, foram transferidos, posteriormente, para a empresa estatal CFM, operando-se apenas uma mudança de dominialidade, mudança esta que se verificará, também, caso esta empresa se transforme em empresa pública, porque também esta integra o sector estatal.)

16. Poder-se-á então questionar qual o regime aplicável às coisas do domínio público, Nos termos da lei vigente (Artº 1304 do Código Civil), as coisas do domínio público podem ser objecto de di-

reitos públicos, tais como:

- Concessão de exploração a privados
- Propriedade somente por outros entes públicos
- Uso e Fruição Pública (cobrança de taxas pela utilização de bens).

17. A concessão de exploração é o instrumento jurídico privilegiado de que os poderes públicos, normalmente, se socorrem para a gestão de bens do domínio público.

A concessão do serviço ferroviário, por exemplo, implica a passagem para a posse e gestão do concessionário da respectiva linha férrea.

Mas o que é importante reter deste regime de concessão é que o titular da concessão da exploração é um "gestor" que se encarrega de gerir, por sua conta e risco, e proporcionar a utilidade pública (o funcionamento) do sistema ferroviário, por exemplo, facultando o seu uso pelos modos adequados (ex: cobrando tarifas, preços, elaborando regulamentos, fiscalizando e exercendo a polícia, se for caso disso).

18. O sistema da "concessão de exploração" permite um compromisso recíproco entre o cumprimento das obrigações de serviço público de que se não possa prescindir (transportes de pessoas, por exemplo) e a aplicação de métodos de gestão comercial privada, de acordo com as oportunidades comerciais evidenciadas para o mercado de transportes, dando à concessionária a flexibilidade para encerrar, temporariamente ou parcialmente, algumas linhas ou ra-

mais concedidos ou, eventualmente, estações de tráfego reduzido, sempre que tais explorações se não revelem comercialmente viáveis nem justificáveis.

19. O instrumento jurídico para a "concessão de exploração" é o contrato de concessão mediante o qual o CONCEDENTE (Ex: CFM) transfere para o CONCESSIONARIO (Ex: entidade privada) os direitos que, legalmente, lhe foram atribuídos, para que este possa proporcionar o uso das coisas que lhe são confiadas e se definam, com rigor, os direitos e obrigações de ambos, por forma a clarificar as relações entre:

CONCEDENTE e CONCESSIONARIO

e

entre estes e os utilizadores do
serviço caminhos de ferro

20. Uma questão decisiva para a validade de um contrato desta natureza, é a da sua autorização pelo Governo.

Na verdade, se os CFM optam por conceder, a uma entidade privada, direitos que lhe foram atribuídos pelo governo, no acto da sua constituição (Decreto 6/89, de 11 de Maio, que criou a empresa estatal ou, eventualmente, o diploma legal que determinará a sua transformação em empresa pública) essa transferência só pode operar-se, validamente, com a intervenção do governo.

E, das duas, uma:

- ou se autoriza, previamente, por Decreto ou resolução do Conselho de Ministros, a empresa CFM a celebrar um contrato de concessão com uma empresa privada, fixando-se, quanto a esta, alguns requisitos estatutários e de capital social e a capacidade do Governo participar na administração da referida empresa (Ex: 1 delegado, 1 administrador).
 - ou o Governo, mediante resolução de Conselho de Ministros, a posteriori, ratifica o contrato de concessão celebrado entre os CFM e o concessionário, por forma a dar-lhe plena validade e eficácia.
22. Só assim a entidade privada poderá ficar, validamente, investida nos direitos da empresa CFM que lhe permitam gerir os bens públicos que integram a universalidade dos caminhos de ferro e adquirir, por exemplo, o título de Uso e Aproveitamento da Terra para fins industriais ou outros necessários à sua concessão, ou constituir direitos a favor de terceiros beneficiando dos rendimentos que assim obtiver (ex: arrendamento de imóveis).
23. Alguns aspectos do regime de um contrato desta natureza nos parece oportuno referir:

Assim:

- O contrato de concessão pode fixar o carácter evolutivo desta, conforme se procede à actualização da rede ferroviária no território e de acordo com o progresso técnico.

- . A possibilidade de extensão do contrato a outras infra-estruturas de transporte terrestre e que tenham analogia técnica com o transporte ferroviário.
- . O prazo de concessão.
- . A conformidade com a política de transportes definida pelo Governo.
- . A modernização das linhas e do equipamento e os investimentos de acordo com o progresso técnico e as oportunidades do mercado.
- . Os direitos para a realização de obras que não sejam de simples conservação ou renovação das linhas férreas e suas dependências.
- . O financiamento dos investimentos.
- . As receitas e despesas.
- . A gestão financeira e patrimonial.
- . O termo da concessão no quadro jurídico das garantias em vigor para os investidores estrangeiros.
- . O estatuto jurídico do pessoal (nacional e estrangeiro) e os planos de formação profissional.
- . Etc., etc., etc.

24 Salienta-se que, em caso de concessionário estrangeiro, haverá que reproduzir no texto contratual, as regras de actuação do investimento estrangeiro, no respeito, porém, pelo disposto no quadro legal vigente (Lei 4/84, de 18 de Agosto e Decreto 8/87, de 30.01.87, de que se salienta:

- segurança e protecção jurídica da propriedade sobre bens e direitos compreendidos no investimento
- transferência para o exterior dos lucros exportáveis e do capital reexportável
- incentivos genéricos e especiais (ex: fiscais) compatíveis com a importância do projecto no quadro da economia nacional
- recurso, em caso de conflito, à arbitragem internacional
- etc., etc., etc.

25. Outras soluções jurídicas se poderão ainda delinear no processo de privatização dos CFM, como seja, o Estado pretender ter um papel de agente económico intervindo, directamente, na produção de serviços (transporte de pessoas e bens).

Aliás, as concessões em áreas como os caminhos de ferro, quando exigem avultados investimentos para o seu equilíbrio e dado servirem o resto da indústria, tendem a cessar, passando para a órbita do Estado, o que é favorável aos interesses privados.

26. Uma estratégia de grupo empresarial pela lógica Holding Estatal (e/ou sub-Holdings) e sociedades participadas (holding + operadores privados, nacionais e estrangeiros) nas quais os trabalhadores dos CFM poderiam ter preferência na subscrição do capital social, é outra opção elegível no quadro da legislação económica vigente.

Estas ou outras alternativas dependem, porém, de estratégias e opções de políticas públicas de investimento.

27. Importa referir que, neste último caso, a questão da desafecção dos bens do domínio público só tem de se colocar nos casos em que, no capital das sociedades participadas, a Holding Estatal fosse minoritária.

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ANNEX H

LIST OF PERSONS CONTACTED

USAID

Julio Schlotthauer	Director
Peter Argo	Engineering Officer
Timothy Born	Project Coordinator
Luiz Santos	Assistant Project Coordinator

EMPRESA NACIONAL DE PORTOS E CAMINHOS DE FERRO DE MOCAMBIQUE (CFM)

Mario Dimande	Director General
Luiz Ah-Hoy	Deputy Director General
Roy Fonseca	Deputy Director General
Afonso Virailiv Tivane	CFM/S
Moises Mubome Matsimbe	Delegado, CFM/S
Rafael Vasco Tovela	Delegado Camionagem
Simão Muhia	Director of Informatics
Lucas Machava	Railways Director, CFM/C
Pedro Figueiredo	Director of Planning
Orlando Jaime	Director of Human Resources
Alberto J. Elias	Commercial Director
Mugama A.I. Matolo	Commercial Division
Luiz Dahlila	USAID RRSS Project Chief of Party
Alexandro Andrade	Delegado, Inhambane
Afonso Membir	Director, CFM/Z
Joaquim Henrique	Chefe do Serviço de Operações Portarias, CFM/Z
Francisco Crispim	Chefe do Serviço dos Transportes Ferroviarios, CFM/Z
Manuel Correia	Chefe de Serviço Vias e Obras, CFM/Z
Francisco Malolun	Chefe de Estação, Mocuba
Frederico Mulaleaca	Director de Camionagem, Mocuba
Alfredo X. Da Couto	Chefe do Serviço de Recursos Humanos, CFM/Z
Marcelo C.F. Simão	Chefe do Serviço Comercial, CFM/Z
Vitor Silveira	Chefe do Serviço Oficina Geral, CFM/Z
Harry Carr	Consultant
Falcão Machado	Human Resources
Placido Fernandes	Director of Human Resources, CFM/C

QUELIMANE REPRESENTATIVES

Carlos A. de Rosario	Governador da Provincia de Zambezia
Armando J. Oliveira	Director Provincial do Transporte, Zambezia

BEIRA REPRESENTATIVES

Adilnho Mesquita Beira Corridor Authority

XAI-XAI REPRESENTATIVES

Olívio Manuel Pinto Director Provincial Dos Transportes
Jaime Macuacua Director Provincial Do Trabalho
Timoteo Bila Director Distrital de Agricultura
Rui Barbosa Técnico Agrario da DPA-Gaza

MINISTERIO DOS TRANSPORTES E COMUNICACOES

Maria Helena Paulo Director Finance and Investment
Fragoso Departamento Nacional de Estradas e Pontes

OVERSEAS DEVELOPMENT AGENCY (British)

John Winter First Secretary (Aid/Commerical)

SINDICATO NACIONAL DOS PORTOS E CAMINHOS DE FERRO

Dinis E.F. Nhangumbe Secretário-Geral

UNITED NATIONS DEVELOPMENT PROGRAM

Fernando F. Mendes Project Coordinator

MINISTERIO DO TRABALHO

Mauricio M. Ezequiel Coordenador do Projecto de Apoio as Micro-Empresas Urbanas
Fion De Vletter Consultor do Projecto de Apoio as Micro-Empresas Urbanas

INSTITUTO DE DESENVOLVIMENTO DA INDUSTRIA LOCAL (IDIL)

Henriqueta Hunguana Departamento Técnico e de Projectos

NATIONAL INSTITUTE FOR RAIL DEVELOPMENT (INDER)

Armando Manhengane Director Adjunto

WORLD BANK

Nils Tcheyn Representative

MINISTERIO DA JUSTICA

Abdul Carimo Legal Advisor

MINISTERIO DAS FINANÇAS

Correia

OTHERS

Daniel Attorney
Guilherme de Oliveira Attorney

MINISTERIO DOS RECURSOS MINERAIS

John Kachemila Minister

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