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Revamping the Regional Railway Systems in Eastern and Southern Africa

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Revamping the Regional Railway Systems in Eastern and Southern Africa

Table of Contents

Executive Summary

Railway concessioning in eastern and southern Africa has not yielded the desired result, and is viewed as a failure. The concessionaires are generally operating in an atmosphere of conflict and there are accusations and complaints of non-performance from both sides. The necessary investments in infrastructure and equipment are not being made and traffic volumes and income have fallen below those required for sustainable operations. The income generated is first spent on salaries and fuel, with inadequate funds left over for maintenance and repair of both infrastructure and equipment. Up until recently the situation has been unsustainable as railways have continued to decline and lose customers, unable attract the necessary funding required to return to competitive levels of reliability. There is a need to chart the way forward. In some cases this will require a renegotiation of existing concessions. There is an obvious need for the railways as the road system itself is not able to meet the transport needs of the region on its own, especially if the region is to trade its way to levels of economic growth necessary to meet its MDGs and sustainable poverty reduction and wealth creation. Governments in the region are addressing the underlying causes of the demise of the region's railway system and the private sector is taking an active a keen interest in playing a lead role in revitalising the railway system.

1. Issues Addressed

Most of the regional railway systems in eastern and southern Africa are not functioning as they should, in virtually all respects. Their reliability is extremely poor; there are high accident and failure rates; operating costs are high and volumes of goods transported are low compared to that transported by road in that about 5% of regional traffic volumes (excluding South Africa) travel by rail; and they are financially loss making. It can be safely said that the railway systems in east and southern Africa, outside of South Africa, in their present state and condition, are not operationally sustainable.

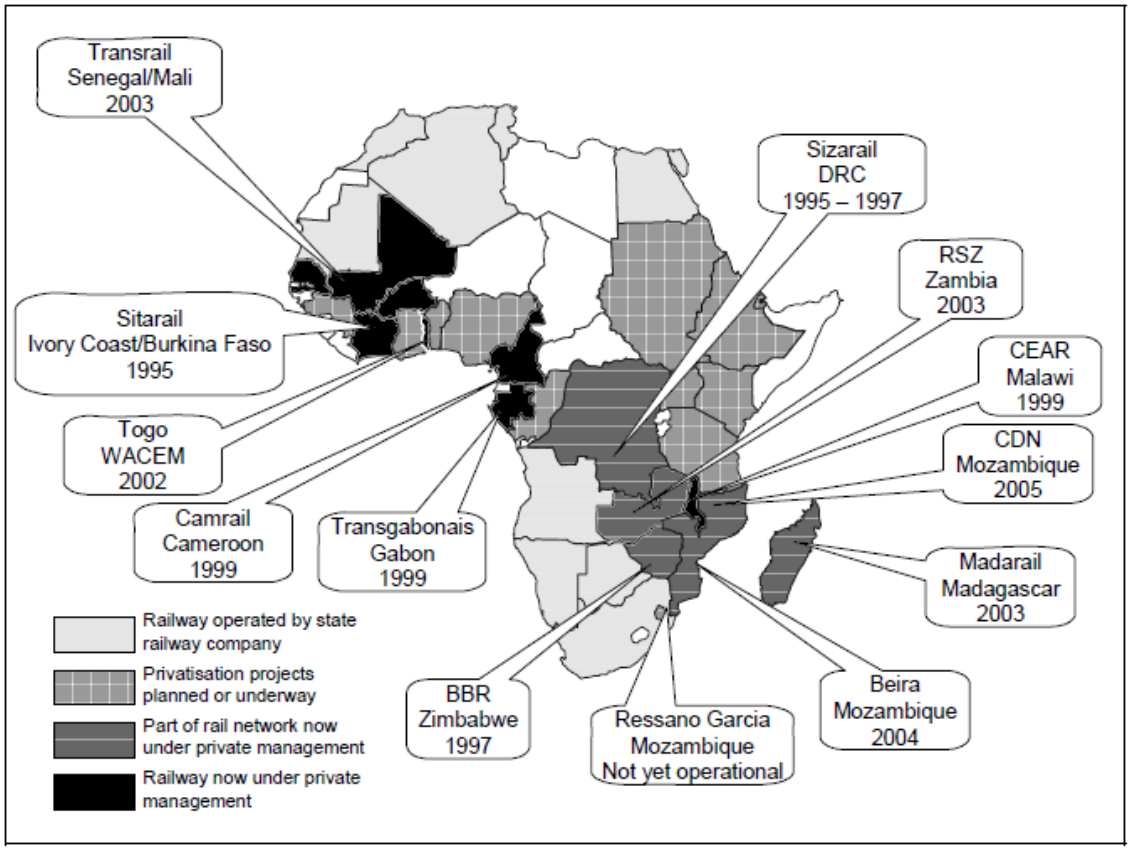
The reasons for the decline of the regions' railways have been well documented and are as a result of a lack of investment in the railways and poor management, coupled with the rise in importance of the road sector which has received high levels of public sector investment and subsidies[1]. The road sector has been deregulated, compared to the rail sector, and,

[1] In most sub-Saharan African countries roads are regarded as a public good and the construction, maintenance and rehabilitation of roads have been covered using public funds from donors and the government budget. Although recently there have been moves to introduce taxes, such as fuel tax, to finance the upkeep of the road network, it is still that case that road users are subsidised from public funds. Conversely, railways operate on a user-pays-all basis with no or limited public sector subsidies.

coupled with advances in technology, has allowed trucks to carry higher payloads at lower costs. This has introduced competition between service providers in the road sector and between the road and rail sectors. The road sector is now much more competitive than the rail sector so the railways have lost traffic and business to the road sector so railway revenue has declined, resulting in deferred maintenance, leading to further unreliability, loss of capacity, further loss of business and revenue and a spiral of decline.

The region's governments responded to this crisis mainly by concessioning the railways to private sector operators – one for each railway system. Concessioning has taken place throughout the Eastern and Southern Africa region, including in Mozambique, Malawi, Zambia, Zimbabwe, Kenya, Uganda, and Tanzania.[2]

Figure 1: Railway Concessions Awarded in Africa 1990-2005



Source: Results of Railway Privatization in Africa – Richard Bullock. World Bank Transport Papers TP-8 September 2005
Note: Since 2005, railway concessions have been concluded in Kenya (RVR, 2007, with a change of main commercial shareholder in 2010) and in Tanzania (TRL, 2007, cancelled in 2010/11). In addition, concessions on the Nacala Corridor in Mozambique, CDN and CEAR, underwent a change of majority shareholding in 2009.

The process of privatisation of railway systems through long term concessioning was in many cases flawed. The process took much too long, during which time there were no provisions for funding, the agreements were generally weak and the choice of

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In fact, because fuel tax is an across-the-board tax, the railway system usually subsidises the road system through tax of diesel.

[2] The basic model followed by the concessioning countries has been a model developed by the World Bank but the challenges faced in making the concessions operate effectively and efficiently are more to do with the way the concessions were negotiated and the text of the final agreement.

concessionaire was often poor in that there was a lack of serious bidders with the appropriate skills and resources.

2. Objectives Pursued

The objective is to revamp the region's railways so that they are able to play a greater role in inter-regional and international trade, to reduce the costs of cross-border trade and to improve transport safety.

After many years of neglect of the railways, governments and other stakeholders have shown a renewed interest in the railways and efforts are being made to explore ways of how best to revive the railway systems so that they are part of a more efficient multi-modal transport system and take the pressure off the road transport sector. The road sector is now at a stage where it is having difficulty in meeting the region's surface transport needs, resulting in high wear and tear on the road network, and associated high costs of road rehabilitation and maintenance and congestion at borders that delay freight movement and increases costs of imports and exports. In addition, there are environmental, safety and economic benefits to moving some goods, such as fuel, acid, coal, minerals, cement and grain, by rail rather than by road.

3. Problems Encountered

The current situation for several of the regional railway systems is that the traffic volumes and income have fallen below that required for sustainable operations. The income generated is first spent on salaries and fuel, with inadequate funds left over for maintenance and repair of both infrastructure and equipment. The budgets and performance indicators clearly show this. The railways thus continue to decline and lose customers, and are unable to attract the necessary funding required to return to competitive levels of reliability. On average traffic and income levels would have to increase by three to four times if financial viability and a sustainable level of operations are to be achieved.

At present it is difficult to foresee where the required funding to revamp the region's railway systems will come from. National governments, on their own, do not have the resources to revamp the railways; it is unlikely that the large International Financing Institutions or Development Banks have the ability to fully finance the complete revitalisation of the railways; and the private sector will not invest in railways to the required level unless some forms of guarantees, in terms of securities, and revenue earning opportunities (such as contracts with mines, fuel distributors, etc.) can be locked in in advance.

The solution probably lies in financing packages involving public funds (from government budgets); grants and concessionary loans (from donors, IFIs and Development Banks) with the private sector providing the bulk of the financing and management.

4. Factors for Success/Failure

If the railways that are concessioned are to be turned around the following needs to be done:

i) In some cases the concession agreement may need to be revised and/or renegotiated. The concessionaires are generally operating in an atmosphere of conflict and there are accusations and complaints of non-performance from both sides. The necessary investments in infrastructure and equipment are not being made. Traffic projections and budgets are a long way off the stated targets. The present situation is unsustainable and there is a need to chart the way forward. One way may be to renegotiate the concessions so that it is clear that government owns the track and the concessionaire should provide the service. This would allow service

providers to agree a ton/km tariff with users and for government to have a guaranteed revenue stream. This, in turn would allow government to borrow money to maintain the infrastructure and allow the private sector to provide the service on the track owned by the public sector.

ii) Railway operators need to prepare realistic and detailed business plans, focussing initially **only** on the core activities necessary to increase targeted bulk and intermodal freight volumes, leaving out all items that are not absolutely necessary for the efficient operations of the railway, such as studies for new lines, state of the art signalling systems, new locomotive and wagon fleets, upgrading to standard gauge, etc. Detailed cash flow projections should be prepared, linked to performance targets and agreements/MoUs with key customers, showing the long term and short term financing requirements.

iii) In simple terms, the regional railways will all have to increase their freight volumes substantially in order to become viable. Building new lines and linkages will not assist the situation, unless linked to specific contracted anchor projects (such as Moatize coal). Prior to the 1980's, railways were partially protected in respect of volumes and tariffs charged. This is no longer the case unless there is market interference through governments. In most cases, there is not enough bulk traffic to sustain the railways, and the railway will have to win back both bulk and intermodal traffic from road and this will require much improved reliability and associated investment.

The single most important motivating factor for continued long term investment in the regional railways, is most probably the fact that diesel-powered rail transportation uses about 25% to 30% of the diesel fuel used by road transportation (per net tkm). This means that when fuel prices double, relative to other operational costs, then railway costs will increase by about 15%, whereas road costs will increase by about 40%. Rail transportation is likely to become a good business again, and will therefore attract increasing interest from the private sector in future.[3]

5. Results Achieved

There have been some improvements in the environment under which the railways operate over the last 6 months. For example, the concession for Rift Valley Railways (RVR) has been restructured with Citadel Capital from Egypt, becoming the major shareholder in the concession. Citadel Capital have already started to make investments in RVR that will improve service delivery and railway performance and are planning to improve transport logistics along this transport corridor by offering a total multi-modal solution (including lake transport across Lake Victoria) to its customers. It would appear that Citadel Capital see a strong and positive return on their railway and linked investments but in the long term.

The TAZARA railway[4] is owned by the governments of Zambia and Tanzania. It has a design capacity of 5 mtpa but has been operating for many years at about 0.5 mtpa. It has made losses for many years and is heavily dependent on financial support from the Government of China which is reflected in the fact that 14 financial protocols have been

[3] One indication of this is that Warren Buffett, widely regarded as one of the most successful investors in the world, recently purchased BNSF, the largest railway company in the USA.

[4] The Tanzania-Zambia Railway (TAZARA) rail track is from Dar es Salaam in Tanzania to Kapiri Mposhi in Zambia and has a total length of 1,860km with 975km in Tanzania and 885km in Zambia. It is physically linked to the Zambian railway network as well as the Tanzanian network, although the TAZARA gauge (Cape gauge) is different to the Tanzania railway gauge (narrow gauge).

signed between the Governments of Zambia and Tanzania on the one hand and the Government of China on the other hand. However, TAZARA is making efforts to change this situation by preparing and implementing a strategic and a business plan that will, amongst other things, clean up the balance sheet (by removing the original Chinese loan and pension debt) so that it is able to go to the market to borrow money against firm contracts with the private sector.

6. Lessons Learned

Cost Structures of Railways:
The fixed costs for railway operations generally vary between 60% and 80%, mostly depending on the freight volumes and related asset utilisation. For road services, fixed costs make up about 40% of operating costs. This is why it is important for rail to achieve a very high level of infrastructure and equipment utilisation[5].

Indicative capital costs for track:
The cost of a complete upgrade of a railway, with new sleepers and rails to a 20t axle load, is in the order of US$400,000 to US$500,000/km. The cost of a new track of 1067mm gauge (Cape gauge, which is the predominant gauge in use in Eastern and Southern Africa) with new formation and structures is approximately US$1million to US$1.5 million per kilometre and up to US$2.5 million per kilometre for heavy haul high speed railway lines.

Operating Speed
There has been a policy decision by the governments of the East African Community to change the gauge of the two main railway lines in East Africa from narrow gauge (1000mm) to a standard gauge line (1435mm) meaning a rebuilding of the railway line. The main reason for wanting to move from narrow gauge to standard gauge is to increase the operating speed from the current speed of about 30km/hour to a speed of about 120km/hour. However, it should be noted that an increased operating speed will not necessarily result in shorter journey times. The current transit time on Rift Valley Railways (RVR) from Mombasa to Kampala is about 10 days, sometimes longer. The actual train travelling time, at 20 km/hour average speed, is 2.5 days. This means that the train is effectively standing still for 7.5 days, owing to scheduling, breakdowns and derailments. If a 2.5 day guaranteed transit time could be offered to customers, with a competitive tariff, then RVR would most probably capture a large proportion of the cargo that currently travels on the road. The first priority for the railways should, therefore, be to make operations safe for a given speed restriction, say 20 or 30km/hour, and to avoid the breakdown of equipment. Properly maintained equipment hardly ever suffers breakdowns – the main problem is deferred maintenance, and the equipment is therefore used until it breaks down.

Threshold Traffic Volumes
A very preliminary analysis has indicated that existing railway systems require minimum freight volumes of about 1.5 mtpa to 2mtpa to be financially viable, taking into account that most, or all, of the existing infrastructure has been written off. For new railways, the minimum traffic volumes should be more than 10mtpa, and more than 20mtpa for high speed

[5] On the coal line in South Africa, the freight volume is about 60mtpa, train turnaround time about 2 days, tariff about US$ 0.015 per t.km. and the operation is very profitable. On TRL in Tanzania the volume is 0.5mtpa, the train turnaround time is 17days (should be 7 days), the tariff is US$ 0.065 per t.km., and the operation is severely loss making. An operational model has indicated that if TRL was able to reduce the turnaround time to 7 days, increase traffic to 1.5mtpa (the previous level in 2004), tariffs would be reduced to less than US$ 0.05 per t.km., achieving an operating margin of 12%, after servicing of a US$105 million loan at 8% pa over 10 years.

heavy haul lines. The region's railways, therefore, need to attract significantly larger traffic volumes, and in the order of at least twice the existing volumes to be economically viable.

Capacity

All the regional railway systems are operating at well below their original 'design capacities', but are currently suffering severe capacity constraints because of poor track condition, poor locomotive and wagon availability (many units stabled). In other words, the railway systems are not able to handle more traffic without substantial investment in the repair and upgrading of track and equipment, and the provision of working capital.

Financing

Whatever is written in the concession agreements, it is unlikely that the concessionaires will be willing or able to fund major upgrades of track infrastructure. The initial investments from government to pay for rectifying deferred maintenance and upgrades have often being based on the loan repayments being serviced by the concession payments, which in many cases have not materialised, and hence the funding has been held back. If the concessionaire cannot see how his investment will be returned, irrespective of what the agreement says, he will also stop funding. If one party is deemed to be in default, then the other party will withhold payment – this 'atmosphere of conflict' can carry on for many years.

New Projects and converting to Standard Gauge

The decision has been made (policy adopted) that all new railway projects in Africa should be built to standard gauge specifications. This is a perfectly logical approach, assuming that the new projects can be ring fenced and can be shown to be economically and/or financially viable which should be based on committed or guaranteed traffic volumes and income streams, rather than speculative projections. The new lines will be implemented when they are shown to be bankable, whether they are standard gauge or not. The first priority should be to improve the existing operations to the point where they are financially viable. In most cases this will require a substantial investment of between US$100 million and US$200 million to cover deferred maintenance in track and equipment, new equipment and track upgrades[6]. One current proposal is that upgrades of existing track should be done to standard gauge specifications in respect of the track formation, structures, track ballast and sleepers, allowing for a third rail to be installed in a progressive manner, and possibly permitting the simultaneous operation of both the narrow gauge and standard gauge systems. However, the standard gauge specifications of higher speeds and axle loads will require a new track to be realigned in areas of difficult topography, and it may be more practical to build the whole line on a new alignment. If a programme of progressive upgrading of existing narrow gauge track to standard gauge is adopted, this will require a detailed design for the whole standard gauge line to be completed first, showing which sections are to be realigned, and which structures are to be strengthened. The track formation will also be required to be strengthened, at additional cost, to handle substantially heavier axle loads.

In addition, there are a number of proposed new railway projects, some of which have been proposals for many years (for example the Kafue (in Zambia) to Lions Den (in Zimbabwe) railway that was first suggested in the 1920s but is still a project proposal). The important, and perhaps obvious, lesson learned is not to base new project decisions on political criteria but to ensure that the project is economically, financial and environmentally viable; to take account of previous proposals and feasibility studies as these new projects have often been researched and studied previously, sometimes more than once, and to take full account of the impact of a new investment on existing and alternative surface transport investments.

[6] Information from proposals to upgrade the East African railways from narrow to standard gauge suggest that the cost of upgrade will be between US$2 million and US$4 million per kilometre, depending on the amount of re-alignment needed.

Renegotiation of Concession Agreements

Most concession agreements are not performing as well as they were expected to and there is frustration on both sides, with both parties to the concession agreement (Government and the concessionaire) usually at fault in that neither party implements the agreed concession in full. Because of this it is unlikely that the entire blame for the failure of a concession to reach acceptable levels of service delivery can be placed at the door of either party. This implies that legal action by one party against another party will result in a long and expensive litigation process with no obvious outcome. During this litigation process the railway concerned is bound to decline even further, perhaps reaching a point where it may no longer be a viable business operation. Under these circumstances it may be more efficient and effective to renegotiate the concession using an independent arbitrator so that it is clear what the responsibilities of each party are and to have binding performance indicators inbuilt.

7. Conclusion (applicability to other programmes)

It can be concluded that the revitalisation of the East and Southern Africa is not an option; it is essential if the region is to reach the levels of economic growth needed to achieve the MDGs and trade its way out of poverty and into sustainable growth and income generation. It is clear that volumes of freight that will need to be moved in the short to medium term are going to increase significantly and this will place additional strain on the region's transport system, meaning that no single mode of transport will be able to meet the region's requirements. The additional freight requirements are expected to come from, amongst other sources:

- Coal deposits in Moatize, Mozambique (there is a deposit of approximately 2.8 billion tonnes of high grade coking coal and most of this will need to be exported), in Hwange, Zimbabwe and in Mamabula, Botswana;
- New-found copper deposits in the Zambia's and DR Congo's Copperbelt which are expected to lead to a three-fold or four-fold increase in copper exports, and associated imports needed to run the mines, in the medium term;
- Manganese deposits in Zambia that are currently being exported out of Dar es Salaam;
- Oil deposits in Uganda and Sudan, requiring large volumes of inputs and possibly also rail transportation of outputs;
- Increased regional trade in agricultural commodities;
- Significant increases in imports such as fuel and heavy machinery that will be required to allow this increased production of minerals and primary commodities to take place; and
- Increased regional trade in bulk grains - regional railways have always performed better during periods of drought, when large volumes of bulk grain imports are carried by rail, because of the limited capacity of road to handle sudden increases in demand.

There are many significant challenges to overcome in getting the railways to a level in which they are able to provide an efficient, competitive and reliable service delivery but these challenges are not insurmountable. The railways are at the moment not viable businesses but they have not deteriorated to such an extent that they cannot be made to be viable sustainable businesses that play a vital role in the economic recovery of the region.

Annex 1

Description of the Region's Railway Systems – extract from "Results of Railway Privatisation in Africa", Richard Bullock WB Transport Papers Sept 2005[7] (with additional notes and updates by the author)

Malawi

The 787 km Malawi railway was historically linked to Beira via a southern connection to the Sena line in Mozambique but in 1970 a connection was built to the inland CFM line from Nacala and it thus gained a second outlet. In 1982, the southern route was closed due to war in Mozambique and damage to the Zambezi bridge, and Malawi became totally dependent on the Nacala line. That was also damaged and closed for several periods of the war. After the war the EU funded its rehabilitation over most of its length and as far as Cuamba. However, the Cuamba–Entre Lagos connection to the border remains in very poor condition, with average speeds of no more than 10-15 km/hr and this has been a severe constraint on train operation in the corridor. The southern leg of the Malawi network was further affected when in 1997, the Shire River washed away a 300m section of earth embankment, north of the sugar terminal at Bangula, 77 km north of the border. Prior to the wash-away, the rail link to Nacala, via Limbe had been used for sugar exports (the alternative much shorter rail link to the port of Beira to the south having been out of commission since 1985). As a result, there has been no rail traffic of any kind from Bangula for the last 14 years, and more than 100,000 tpa of sugar is transported 900km by road to Beira via Blantyre, at a cost of about US$80/t, about US$60/t more than an expected rail tariff would be on the 360km link to Beira. The northern arm of the network runs due west through Lilongwe to the Zambian border and has recently been extended to Chipata in Zambia and there is a long-standing proposal to extend this line further into Zambia as part of a major east-west corridor running from Nacala into central Africa and then to the Atlantic but it is unlikely that this extension can be economically viable with existing potential traffic.

In December 1999, Central East Africa Railways (CEAR) took over the 20-year concession on the Malawi Railways, renewable in 5-year tranches; this is effectively the same consortium (see below) that operates the concession to Nacala on the Mozambique side of the border. The terms of the concession are:

- 5 percent of gross revenues (with a minimum of $0.5 million p.a.) plus $0.5 million initial payment;
- $0.9 million p.a. for five years for the rolling-stock (18 locomotives and 410 wagons), and
- to operate two passenger services for the first five years of the concession, for which a payment of $150,000 has been made by the Government, effectively netted off against the concession fee. There-after, the payment and service offered will be by negotiation.

The concession operated reasonably well for the first two years, although the delay in closing the concession in Mozambique meant it was still dependent on CFM for the Mozambique leg of the trip. This clearly created operational difficulties, particularly as it appears that CFM did little heavy maintenance during this period, creating a poor level of service for the corridor as a whole. This fed into the CEAR finances and until 2002 it was cash-negative. 2002 was a better year, with a working ratio of 96 per cent, but in January 2003 a bridge at Rivi Rivi was destroyed by Cyclone Delfina and the northern arm of the network, including Lilongwe, was cut off from the rest of the network. This effectively killed-off almost all local traffic, which dropped from 183,000 tonnes in 2002 to about 20,000

[7] Where appropriate the text has been updated by TradeMark Southern Africa and all omissions or errors are those of TMSA.

tonnes p.a. and also marooned rolling stock and two locomotives north of the bridge. The bridge was repaired using grant funds from DFID but this took over two years to be completed, only returning to service in May 2005.

DR Congo

This was a short-lived “concession” (actually a five-year performance-based management contract) in which a consortium of Transurb and Transnet assumed responsibility for the network from Zambia north into the DR Congo minerals belt, operating as ‘Sizarail’. The arrangement lasted about two years, at which point the foreign management was arbitrarily ejected by the new Kabila government, after the exit of Mobuto.

Beitbridge Railway

The Beitbridge Bulawayo Railway (BBR) is the only concession in recent times in the classical BOT form of constructing a new line (as distinct to rehabilitation). The route runs from Beitbridge, on the South African border on the Limpopo, to Heany Junction, near Bulawayo, where it re-joins the main Zimbabwe system. There was about 150km of new construction at the eastern end, with the western end consisting of the existing 170km Nicholson West branch, a sharply graded branch line which received some upgrading. If the 28km of NRZ track from Heany Junction to Mpopoma yard in Bulawayo is included, the BBR trains operate over 345km. It is 184km shorter than the previous National Railways of Zimbabwe (NRZ) route via Rutenga and Somabhula. This substantial saving in rail distance was cited as being the main motivation for the new BBR railway. However, the existing ’traditional’ route between Gauteng and Bulawayo via Mafikeng and Botswana, is in fact only about 20km longer than the BBR route, and Spoornet in South Africa, which had an agreement to operate the BBR line, adopted to ‘shortest rule principle’ to divert all traffic originating to the east of a defined line to the west of Gauteng, via the BBR route. This was followed shortly thereafter by an increase in rail tariffs on the BBR route, which made it several times more expensive than the Botswana route. This implies, at least, that there was collusion between NRZ, BBR and Spoornet to increase operating revenue.

The history of the project dates back to the 1960's but until Botswana Railways was separated in 1987 there was little incentive for NRZ to construct the line as they would have created a short-cut reducing their haul to South Africa by about 400km compared to the existing route via Mafeking.

BBR is a privately-owned Zimbabwe registered railroad company. NLPI own 85 percent of the shares while NRZ has the remaining 15 percent. The line was opened in July 1999 at a reported cost of US$85 million, having been constructed in 17 months. It was designed to Spoornet standards, with a 20 tonne axle-load, and has a capacity of 4 million tonnes p.a.

The terms of the concession have never been made public. It is understood that the concession agreement included clauses requiring (or encouraging) NRZ to direct as much traffic as possible over the line. For example, it is understood that the concession agreement included a “take or pay” clause covering oil carried for the National Oil Company of Zimbabwe and this has, at times, led to oil traffic for Harare being diverted south onto the BBR and then reconsigned from Bulawayo, adding over 100 km to the distance travelled. A similar clause is thought to apply to all traffic between the south and Zambia and DR Congo so not permitting the use of the Botswana route.

Strenuous efforts have been made to dissuade NRZ from consigning or accepting traffic to or from the generally lower-rated Botswana Railways route, even where it is also the shortest route. This has led to an almost complete cessation of transit traffic through Botswana, with transit traffic declining from 800,000 - 1 million tonnes in the late 1990’s to its

current level of under 100,000 tonnes. This has resulted in the traffic levels on BR falling below that required to operate on a sustainable basis.

Zambia

The Zambian Railways (ZR) consists of a north-south main-line, linking with Zimbabwe at Victoria Falls in the south and with DR Congo at Sakania in the north. The TAZARA line to Dar-es-Salaam joins at Kapiri Mposhi, and is dependent on ZR to collect and distribute its traffic to its customers some 200km north on the Copperbelt. The system serves two main purposes: carrying imports and exports overwhelmingly to and from the south, and hauling mineral-related traffic within the Copperbelt, some of it with very short hauls.

The standard of both the infrastructure and the assets had steadily deteriorated over many years and for several years before the concession it had expatriate senior management under contract. During this period, it also received a loan from IBRD, which had been used to help upgrade the track with concrete sleepers and to rehabilitate four locomotives. Immediately prior to the concession, the railway was handling about 1.8 million tonnes of freight and 400,000 passengers. About 30 percent of the freight by tonnage was local traffic moving between industrial plants within the Copperbelt.

In December 2003, operation of most of the Zambian Railway Corporation network (excluding the Mulobezi branch) was handed over to Railway Systems of Zambia (RSZ), a company controlled by New Limpopo Bridge Projects Investments (NLPI), the parent company of that operating the Beitbridge – Bulawayo line, but also partially owned by Spoornet. Actual management was undertaken by Spoornet under contract to RSZ but Spoornet very quickly pulled out of the concession[8] and as a shareholder and since then RSZ has had no other railway technical partner.

Two separate concessions were negotiated, one for freight of 20 years, extendable to 30 years, and one for passenger of seven years. The terms of the concession are understood to be highly dependent on traffic volumes:

- for freight transport, an entry fee of $0.75 million together with 5 per cent of gross railway income. There was also a fixed fee which depends on a threshold profit being achieved; on reaching this threshold, half the additional profit is paid as a fee; this was the basis of the very large price (about $250 million) reported in the press at the time, and

- for passenger transport, RSZ agreed to progressively increase the minimum service frequency on the mainline from 3 to 7 trips per week, in return for which they are entitled to reduce the fixed fee (assuming this was being paid) by an amount increasing from $0.7 million p.a. at the start of the concession to $1.3 million after about 3 years.

In addition, RSZ agreed to invest $14.8 million in the freight business over five years and about $0.5 million in the passenger business over four years;

[8] It is understood that Spoornet agreed (at least initially) a contract in which they were paid on the basis of a fixed rate per net tonne-kilometre. Given that the infrastructure-related costs are largely independent of traffic volumes, and must be covered whatever the tonnage carried, they were exposed to considerable traffic risk over which they had little direct influence and started to lose money almost immediately, resulting in them extracting themselves from the concession. According to TFR, Spoornet handed over 12 mainline locomotives, valued at about US$20million, as compensation to RSZ/NLPI for their withdrawal from the RSZ concession.

During the time between the concession being awarded and the time the concessionaire took over, one of the main potential new sources of traffic, the development of the Konkola Deep mine in the Copperbelt was cancelled. This directly impacted the freight forecasts underpinning the threshold profit in the concession agreement

The concession has been consistently dogged by generally poor relations between RSZ and Zambia Railways Limited, the government asset manager, owing to differences in interpretation of the concession agreement. Although concession payments were made, little or no reporting on traffic, revenue or asset condition has been made by RSZ.

The monitoring process itself has been a particular problem, as RSZ refused to accept Zambia Railways Limited as the Monitoring Agent. As a result no information concerning either management accounts or operating and revenue statistics were supplied to the government, in spite of the concession agreement requiring this on a quarterly basis. It is understood that, initially, regular concession payments were made, quarterly in arrears (although the government had no way to check their compliance with the concession agreement) but that these payments are now not being made, or are made at best on an intermittent basis.

There is similarly little information available on traffic volumes but it seems clear that traffic levels have gone down and that RSZ does not provide an inter-mine service.

Mozambique (Beira)

This concession covers the 317km Mozambican section of the Zimbabwe–Beira route, from the border at Mutare (the “Machipanda line”), together with the 578km line north towards Malawi and Moatize (the Sena line), where there are large coal resources, and the Marromeu (88km) and Vila Nova Frontera (39km) branches. In August 2004, a concession was signed with Companhia dos Caminhos de Ferro de Beira (CCFB), comprising RITES and IRCON (Indian Railways Construction Corporation) of India (51 percent) and CFM (49 per cent, of which 16 per cent is held by CFM for subsequent disposal to Mozambican investors) to rehabilitate and operate the lines for a 25 year period.

The CCFB concession has also been disappointing, and is currently also operating in an atmosphere of conflict with the conceding authority, CFM, with threats of cancellation.

The Machipanda line, which was for many years the main route for Zimbabwe’s overseas trade, and which for much of its distance runs parallel to the oil pipeline from Beira to Zimbabwe, continued to operate throughout the civil war in Mozambique. The planned upgrading and investment in the Machipanda line, and also the projected increase in rail volumes have not taken place. This is partly due to the poor economic climate in Zimbabwe, but also because of the limited depth of Beira port owing to siltation and lack of maintenance dredging. This has prevented Beira from attracting freight from the Copperbelt, despite its substantial distance advantage – 400km closer than any other port by road. However, a dredging contract to return Beira to its design depth of 12m on the tide has commenced and is due to be completed in 2012. This will increase the competitiveness of the Beira corridor.

The Sena line was closed in 1983 owing to war damage and was reopened in 2010 with a reported capacity of 7 million tonnes p.a. The completion of rehabilitation has been delayed, with severe cost overruns – the final commissioning of the line still has to be completed. One of the main problems has been the inability of CCFB to negotiate a rail tariff for the coal exports with the two main developers – Vale and Riversdale – and also the Sena Sugar Estates at Marromeu. This has been an impasse for about 4 years, and has, reportedly, delayed the coal mining development. CCFB have been asking a tariff of about 250% more

than that offered by the coal mines. The likely result appears to be that the coal exporters will pay a rail access fee to operate their own trains. The Sena line has been upgraded with 45 kg/m rail on concrete sleepers and 20.5t axle loads, permitting 70 wagon trains carrying 4500t of coal. CCFB has stated the capacity at 7 mtpa, but with the possibility of increasing to about 12 mtpa by adding additional passing loops, and some realignment, at an additional investment of about US$150 mill. However, is seems clear that the Sena line will not be able to accommodate all the projected coal exports from Moatize.

The link from Sena to the Malawi system remains closed, despite that fact that the rail systems on both sides of the border are concessioned and that the cost of reopening of the line is likely to be financially viable, and much cheaper than the longer road route through Tete.

Mozambique (Nacala)

During the 1970's, after completion of the rail link to Malawi, Nacala was an important port for Malawi. During the 1980's this route was closed because of the Mozambican civil war and now most of Malawi's international imports and exports go by road through Beira (in Mozambique), while most imports come in by road from South Africa. Because of the discounted truck return loads to South Africa, some Malawi exports are still routed through Durban. The rail service between Malawi and Nacala is considered unreliable, and there is no direct surfaced road connection.

Corredor de Desenvolvimento do Norte (CDN), a consortium led by CEAR, signed concession agreements for a 15-year concession of both the Nacala railway and Nacala port with CFM in early 2000. This concession links directly with the CEAR operation in Malawi (from Nacala to Malawi) and this is intended to generate significant economies of scale for both concessions. Finalisation of the concession was delayed for five years while funding was arranged for rehabilitation of the 77km stretch of line between Cuamba and the Malawi border at Entre Lagos. This was done with a US$29.7 million loan by the US Overseas Private Investment Corporation (OPIC) in 2003, which also covered other works in Malawi and at the port. The loan, although guaranteed by the two governments, is on commercial rather than concessional terms, with interest at about 500 points above the base rate. Owing to the delays and difficulties with concluding the concessions and seamless operations between CDN and CEAR, this project has not been implemented.

The concession finally started in January 2005. It covers both the 610km main line as well as the 262km Lichinga branch line. Although the condition of the main line inland to Cuamba is good, much of it having been rehabilitated with concessional loans, the remainder to the Malawian border and the branch line to Lichinga are both in very poor condition, with speeds limited to 10-20 km/hr. The concession essentially provides operating rights only; no rolling stock was involved in the sale, although CFM provided about 220 wagons as their equity contribution to the concessionaire.

The concession payments include a fixed fee and a variable component. The fixed fee is set at US$0.5 million for years two to five, after which it increases to US$1.5 million until year ten, and US$1.5 million thereafter. The variable component is 5 per cent to year five, then progressively increasing to 15 per cent after year ten. During 2009 it was reported that the Mozambican company Insitec has taken over the interests of the US investors RDC and Edlow Resources. Negotiations are taking place between Insitec and private sector stakeholders for possible control of the Nacala railway to be operated and upgraded as the major coal export conduit for the Moatize coal fields, with the first phase of coal exports to be routed via Beira, about 6 mtpa, followed by a projected 12 mtpa via a new marine terminal at Nacala.