Maputo Corridor

A Transport Logistics Diagnostic Tool Study

March 2007

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1. Introduction

PROJECT BACKGROUND AND OBJECTIVES

The Transport Logistics Diagnostic Tool (TLDT) is intended to assist USAID, other donors, governments, and the private sector in developing countries in identifying and addressing transport logistics problems.[1] It measures the performance of transport logistics chains in terms of time, price, and reliability and identifies bottlenecks and assesses their impact on transport systems that constrain the seamless flow objective of freight.

The TLDT process is designed to help USAID and developing country stakeholders and policymakers prioritize problems and communicate with each other about port and logistics chain inefficiencies and potential solutions. The TLDT contains a screening system that (1) assesses and quantifies the relative importance of a problem in a logistics chain, and (2) helps users prioritize improvements credibly and transparently so that all parties can participate in the analysis to arrive at a mutually acceptable result. The tool also evaluates possible interventions to resolve these problems.

TLDT Version 1.0 was delivered to USAID in September 2006. Nathan Associates recently analyzed the Maputo Corridor and two freight corridors in the ASEAN region as test scenarios for TLDT under the TCB Bridge Task Order to improve the tool's effectiveness and ease of use. Also, as an ancillary product of our TLDT application, the team is using the TLDT to carry out a diagnosis of the Maputo Corridor, highlighting barriers in the import/export logistics chain related to infrastructure, services, processes, and policy and regulations that result in delays, increased costs, and poor service or reliability; the team is also identifying and evaluating potential interventions.

REPORT STRUCTURE

This report is the first technical report under the TLDT implementation activity. It first presents an overview of the Maputo Corridor and its transport logistics system. Then, it presents results and findings from stakeholder interviews, emphasizing the identification of constraints along the corridor. The report also analyzes market and traffic flows, makes observations, and presents preliminary conclusions about the inefficiencies in Corridor performance. These findings will be

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[1] The TLDT was developed with funding from both USAID (under the Trade and Capacity Building contract) and Nathan Associates and its partners.

elaborated on, and improvements suggested, in the corridor Performance Assessment Report, to be submitted later.

2. Maputo Corridor Transport Logistics System

OVERVIEW

The Maputo Corridor is a major import/export route that connects the northeast provinces of South Africa with the capital and main port of Mozambique, as shown in the map in Figure 2-1. It also serves the South African provinces of Limpopo, Mpumalanga, and Gauteng (to a lesser extent), as well as Swaziland and southwest Mozambique. The corridor runs through some of the most industrialized and productive regions of southern Africa, including mining and agricultural areas and large concentrations of manufacturing, processing, mining, and smelting industries, which are located in Johannesburg and Pretoria on the western end of the corridor.

In the past 12 years the governments of South Africa, Mozambique, and Swaziland have promoted the revival of the Maputo Development Corridor with bilateral policies and substantial public and private sector investment, designed to stimulate sustainable growth and development in the region.[2] Private businesses, however, have been cooperating recently through the Maputo Corridor Logistics Initiative (MCLI) to promote the development and use of the Maputo Development Corridor.

TRANSPORT FACILITIES IN THE CORRIDOR

The corridor's transport facilities include roads, rail lines, and ports. These are briefly described here.

Road Network

The main road on the South African side is the N4, a two- to four-lane national toll road. In Mozambique the N4 becomes the EN4 after crossing the Mozambique border and progresses to Maputo. The EN4 completed in 2004 is operated by the concessionaire Trans African Concessions (TRAC). TRAC is responsible for building, operating, and maintaining the EN4 highway until 2028. The EN4 is connected to the port in Maputo by a special access road completed in 2006 with a modern gate facility at the entrance to the port (see Figure 2-3 and 2-11). The entire network is built to carry the 56-ton trucks that are used for heavy international freight. The lengths and capacities of these road links are given in Table 2-1.

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[2] The South African Spatial Development Initiatives program began in 1995 with the Maputo Development Corridor.

Figure 2-1
Map of the Maputo Corridor

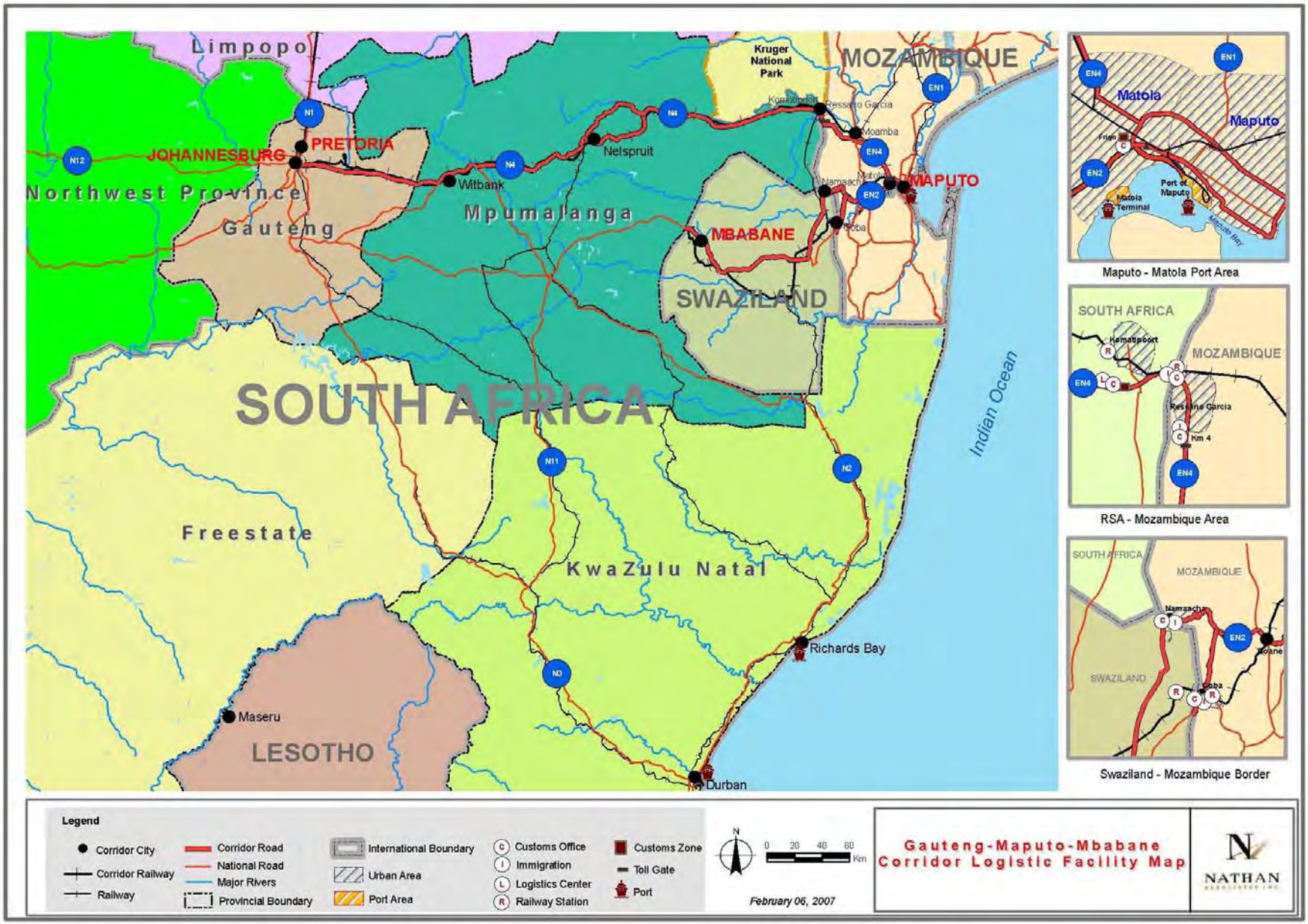


Table 2-1
Land Transport Facilities on the Maputo Corridor

Facility	Length (km)	Type	Capacity (Passenger car equivalent vehicles)
N12-N4-EN4 HIGHWAY, 587KM			
N12 Johannesburg –Witbank	150	4-lane, divided highway, toll road	2,600 per lane per hour
Witbank -Nelspruit	229	4-lane, divided highway, toll road 2-lane, divided highway, toll road (i.e., Wonderfontein to Border)	4-lane 2,000 per lane per hour 2-lane: 1,600 per lane per hour
Nelspruit- Border	108	2-lane, divided highway, toll road	1,600 per lane per hour
Border -Ressano Garcia	1.7	2-lane, divided highway, toll road	1,600 per lane per hour
Ressano Garcia –Maputo	91	2-lane, divided highway, toll road	1,600 per lane per hour
Maputo –Port of Maputo	1.4	2-lane highway	1800 per lane per hour
EN2, SWAZILAND–MAPUTO HIGHWAY			
Mbabane–Goba	236	2-lane highway	1,600 per lane per hour
Goba–Maputo Junction (EN4)	83	2-lane highway	1,600 per lane per hour
SPOORNET–CFM RAIL LINES			
Johannesburg - Witbank	146	Double track, main line	80-110 trains/day
Witbank - Nelspruit	240	Double track, main line	80-110 trains/day
Nelspruit- Border	113	Double track, main line	80-110 trains/day
Border - Ressano Garcia	5	Single track, mail line	20-35 trains/day
Ressano Garcia – Maputo	88	Single track, mail line	20-35 trains/day
Maputo – Port of Maputo	10	Single track, mail line	20-35 trains/day
SWAZILAND–CFM RAIL LINES			
Mbabane (Matsapha)–Goba	110	Single track, mail line	40-50 trains/day
Goba – Maputo	74	Single track, mail line	20-35 trains per day

SOURCES*: SPOORNET, www.routes.co.za, Maputo Port Development Company, Maputo Corridor Logistics Initiative*

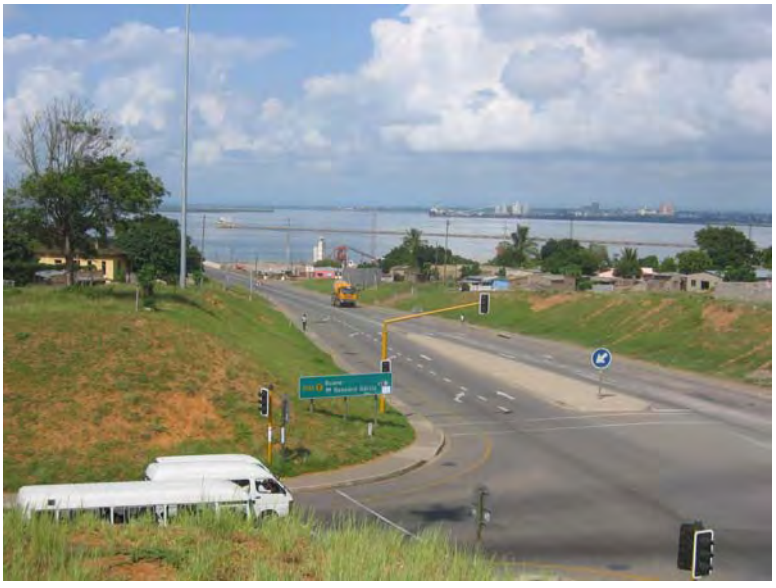
Rail Network

In South Africa, the rail lines are owned and operated by South Africa's national railway Spoornet. Caminho de Ferro de Moçambique (CFM-Sud) operates the rail line on the Mozambican side. In 2006, CFM-Sud undertook repairs on the line's worst portions and reinforced three major bridges on the Ressano Garcia-Maputo Port segment to reduce the transit

time to four hours. An ongoing project will raise the line to South African standards and make it capable of running nonstop locomotives for seamless movement across the border by July 2007.[3] This involves a US$20 million investment in the rail infrastructure for the procurement of new 54 kg/m rail, modernization of a concrete sleeper factory, the re-sleeper and re-ballast of the track, inspection and repair of bridges, and the procurement of new equipment at yards and stations. The lengths and capacities of these rail links as of January 2007 are given in Table 2-1. Pictures of the road and rail links and a toll gate are shown in Figures 2-2 through 2-7.

Figure 2-2
Rehabilitated Rail Link Inside Port of Maputo

Figure 2-3
Port Access Road



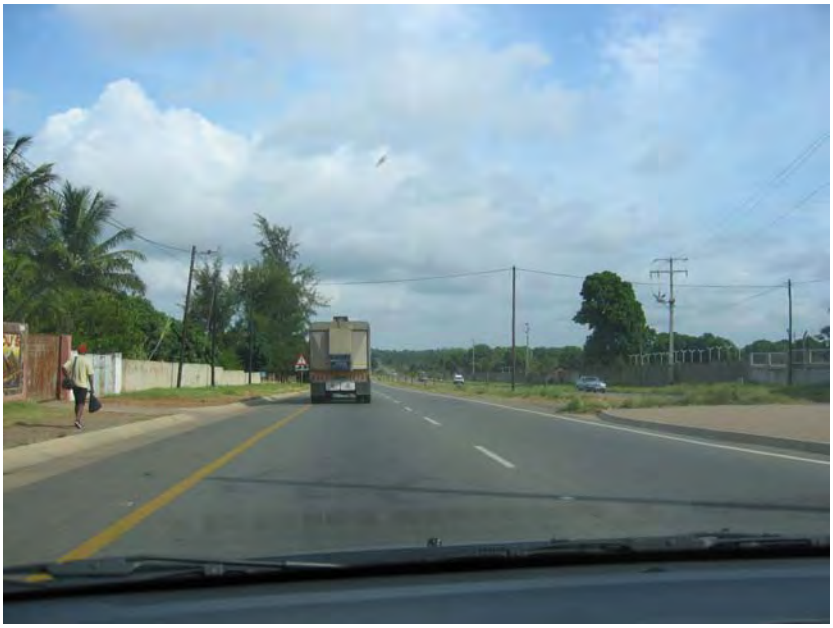
[3] Minutes of Mpumalanga Freight Logistics Forum, November 8, 2006.

Figure 2-4
Maputo Toll Gate on EN4

Figure 2-5
A Segment of the N4 Toll Route in South Africa

Figure 2-6
EN4. Two-lane Section

Figure 2-7
EN4. Two-lane Section



Ports—Maputo and Matola

The corridor includes the Port of Maputo, which has two main terminals, Maputo and Matola (see inset in Figure 2-1). The Matola Bulk Terminal, six kilometers upriver from the Maputo Terminal, handles primarily bulk cargo, such as coal, aluminum, light and heavy fuels, mineral oil products, and cereals. Maputo Terminal handles all other cargo, including general cargo,

containers, and some specialized bulk cargos. The deepwater port is concessioned to the Maputo Port Development Company (MPDC). The concession commenced in 2003 for a period of 15 years with the option for a 10-year extension. MPDC has been granted the rights to finance, rehabilitate, operate, manage, maintain, develop, and optimize the port area. The characteristics of each of the terminals are presented in Table 2-2 along with their handling equipment.

Table 2-2
Terminals and Capacity in Maputo and Matola Ports

Facility	Annual Capacity (Tons, TEU)	Length	Quay Area (m2)	Depth (m)	Storage (m^2)	Crane Capacity	Berth Capacity (Ships)
MAPUTO CARGO TERMINALS							
Fuel Oil	350,000	230	3,600	10.5	See note a		1
Molasses	60,000	179	3,060	10.5	See note b		1
Fish	5,500	80	1,760	9.2	See note d	One 4-t	4
Cabotage	200,000	300	6,200	11.0	25,000	Two 10-t, one 5 t, two 4-t	3
General Cargo	1,100,000	1,820	33,660	10.5	31,371	One 60 t, one 10-t, one 4-t, six 3-t	8
Citrus	185,000	380	2,780	10.5	15,000	Six 5-t	2
Sugar	615,000	370	6,120	11.0	14,640		2
Coal (Maputo)	750,000	300	5,710	10.5	31,800		1
MIPS CONTAINER TERMINAL							
Containers (TEUs)	100,000	300	12,000	10.3	40,000	2 Portico	2
MATOLA BULK TERMINALS							
Coal (Matola)	2,500,000	205	4,000	9.5	170,000		1
Cereals	400,000	210	20,900	11.5	See note c		1
Minerals	900,000	300	6,000		64,570	One 22-t, three 20-t	2
Aluminum	1,000,000	210	5,250		See note e		1

[a] *Tanks with capacity of 80,000 tons*
[b] *Four tanks with capacities of 6,000, 7,000, 9,000 and 11,000 tons*
[c] *The silos' capacity is 30,000 tons*
[d] *The terminal has a freezing storage capacity of 950 tons*
[e] *The total capacity of the silos is 56,000 tons.*

SOURCE: *Portos e Caminhos de Ferro de Mozambique (CFM) Statistics Book 2005*

The channel to the Maputo and Matola ports is continually dredged to a depth of 10.3 meters. This allows ships of up to 60,000 DWT to enter the ports. Pictures of the ports and their operations are shown in Figures 2-8 through 2-14.

Figure 2-8
Cement Unloading and Containers Being Loaded on a MACS Ship at Maputo

Figure 2-9
Ship at Mozambique International Port Services

Figure 2-10
MIPS Gantry Cranes

Figure 2-11
Sugar Entering the New Bagged-Sugar Warehouse

Figure 2-12
Rail Discharge of Ferrochrome for Export

Figure 2-13
Maputo Port's New High-Security Port Entrance Gate

SOURCE*: Maputo Port Development Company*

Figure 2-14
Truck Being Scanned by Kudumba X-ray Machines Located inside the Port

BORDER FACILITIES

South Africa–Mozambique Highway Border Facilities

The border posts in the corridor between South Africa and Mozambique are about 90 kilometers from Maputo at Lebombo on the South African side and Ressano Garcia on the Mozambican side (see inset in Figure 2-1). Pictures of these two border posts are shown in Figures 2-15 and 2-16.

Figure 2-15
Lebombo Border Post: Trucks Waiting to Enter Mozambique

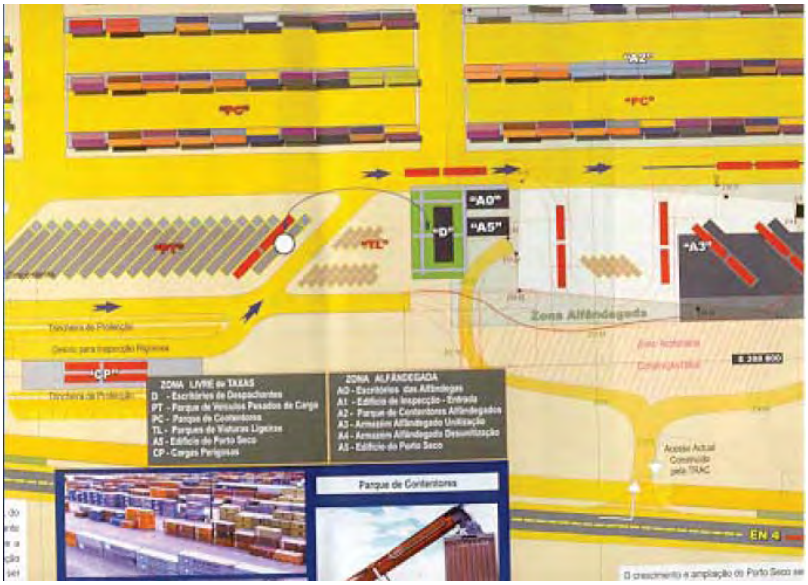
Figure 2-16
Ressano Garcia Border Post

There is also a customs facility at Kilometer 4 on the Mozambican side that is used for clearing trucks in the Christmas and Easter seasons when border traffic is heavy. This location is scheduled to become a one-stop border post in the near future, when negotiations are completed between the two governments and funding becomes available. The idea is to concentrate all the border operations of both South Africa and Mozambique border control departments in a single post to speed customs clearing, limit paperwork, improve security control, and in general facilitate trade and optimize the Maputo Corridor's freight transportation capacity. The project has been spearheaded by the Mozambique customs department which reports to the Minister of Finance and provides quarterly reports for the national ministers meeting.

The post, which would be located in the 500 hectare area granted by the Mozambican government for the new dry port, would have a bypass road from the N4 directly into the terminal, with divided areas to separate cargo not destined for direct export market from cargo destined for the port, and would include other facilities, such as infrastructure for clearing agents, freight forwarders, hotels, banks, and housing. The one-stop post may have separate locations for the two directions.

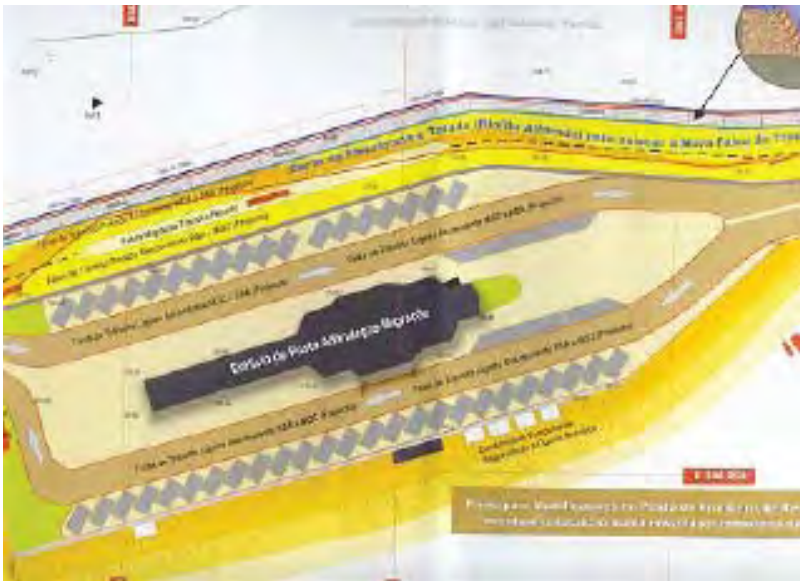
The costs of the project were estimated in a prefeasibility study at US$40–50 million. It will be designed to handle 400,000 containers per year in the first phase of its development. Preliminary plans for one version of the proposed one-stop border post are shown in Figures 2-17 and 2-18. A view of current Kilometer 4 facilities is shown in Figure 2-19.

Figure 2-17
Proposed One-Stop Border Post: Customs Offices, Parking, Other Facilities



SOURCE*: Maputo Corridor Logistics Initiative*

Figure 2-18
Proposed One-Stop Border Post: Customs Offices



SOURCE*: Maputo Corridor Logistics Initiative*

Figure 2-19
Kilometer 4 Mozambique—Future Location of the One-stop Border Post

South Africa–Mozambique Rail Border Facilities

Customs for rail imports are handled by agents based in the Komatipoort Customs Zone, known as "the Airfield." Exports are normally registered with customs at the rail starting point for the shipment. Trains with export cargo do not stop at the Komatipoort station for customs, only for dispatching.

The Komatipoort Spoornet dispatcher has a goal of five trains per day (three coal and two manganese). If all functions normally, Spoornet can meet this target. If the dispatcher has more than three coal trains, the trains will be kept in the yard as staging for the next day. The dispatcher also handles the occasional train with sugar or other export goods.

Coal and manganese shipments are precleared by customs. These trains continue with Spoornet locomotives to the port. As the trains cross the border at Ressano Garcia, Mozambican drivers take over, but they are Spoornet drivers, not CFM's.

For sugar and general cargo exports, the dispatcher at Komatipoort telephones CFM to send a locomotive. If one is available, it comes, but often there is a wait, which could take hours or days, depending on the availability of locomotives. Also, the CFM locomotive may be underpowered and the train split up. In this case, the second half may have to wait for up to three days to be picked up. CFM is expecting a delivery of locomotives that will solve this problem.

Swaziland–Mozambique Border Facilities

The corridor crosses the Swaziland–Mozambique border at two locations: Goba–Mhlumeniand and Naamacha-Lomohasha. The Naamacha-Lomohasha border post is shown in Figures 2-20 and

2-21. This report does not examine this border crossing in depth, but concentrates on the Mozambique–South Africa border.

Figure 2-20
Naamacha-Lomohasha Border Post

Figure 2-21
Naamacha-Lomohasha Border Post

Logistics Service Providers

There are many types of logistics service providers in the corridor, both public and private:

- Transport operators (road and rail)
- Port and port terminal operators

- Port, clearing and forwarding agents and shipping brokers
- Shipping lines
- Customs
- Public–private partnerships (e.g., dry port and one-stop border posts)

Rail Services

As earlier noted, rail services are provided by both Spoornet and CFM. Although rail service in the past was discontinuous, there is an agreed objective to operate through trains from South Africa to Maputo on the renovated rail line through the corridor to the port. The implementation of this concept has taken a long time. At this point in the initiative, CFM and Spoornet participate in a task group to develop the rail corridor. They have been mandated to implement a program to double the capacity of the rail and change the rolling stock to increase capacity. In the development phase, air brake trains will run to TCM, which will enable Spoornet and CFM to swap assets to increase load volume. Train conductors for CFM-Sud are being trained by Spoornet to handle the increased traffic and longer trains. The initial goal in 2007 will be to run 22 coal trains and 12 magnetite trains per week.[4] Table 2-3 summarizes the rail service projected for the corridor in 2007.

Table 2-3
Expected Rail Service in Maputo Corridor, 2007

Service	No. of Trains per Week	Operator	Expected Starting Date	Expected Capacity
Witbank–Maputo	34	Spoornet and CFM	June 2007	49
Nelspruit–Maputo	34	Spoornet and CFM	June 2007	49

Shipping Services to Port of Maputo

Shipping services to the Port of Maputo are limited because of low volume. Volume is low because of competition from other ports that offer higher service frequency. The recent start-up of shipping services from Maputo to the Far East and the Middle East are starting to break down this bottleneck, however. Current shipping services are summarized in Table 2-4. Typical detailed schedules for the different shipping lines are given in Appendix A.

[4] Minutes of Mpumalanga Freight Logistics Forum, November 8, 2006.

Table 2-4
Shipping Service to/from Maputo Port, January 2007

Service	Operator	No. of Calls per Month	Ship Size (TEU)	Port Rotation
Maputo–Durban	MACS	2–4	1200-1900	Maputo Durban rotation below
	OACL	4	605	Durban-Maputo-Beira-Nacala-Dar Es Salaam-Nacala-Beira -Maputo-Durban
	Navige	2-4	204 TEU	Not a regular service, only a supplement to OACL
Maputo–Europe	MACS	2	1200-1900	Walvis Bay -Cape Town-Port Elizabeth-Durban-Maputo-Durban-Richards Bay-Durban-Cape Town- Westerburg-Vigliano-Rio de Mouro-Hamburg- Antwerpen
Maputo - Asia	MOL	2	1200-1700	Maputo-Port Louis-Singapore-Hong Kong-Singapore-Port Louis-Maputo
Maputo–Middle East–Europe	Ignazio	2	1600-1620	Marsiglia-Genova-Naples-Jeddah-Mombasa-Dar es Salaam-Durban-Maputo-Dar es Salaam-Jeddah-Marsiglia

Lebombo Dry Port Facility

There is a private initiative to create a dry port near Komatipoort called the Lebombo Dry Port. This is located in the former Komatipoort airport just off of N4 (see inset in Figure 2-1). The airport site has offices for freight forwarders, clearing agents, and road freight associations. It has also a space for general cargo storage, truck parking, restrooms, and restaurants. It is planned for development into a dry port with customs facilities, bus terminal, overnight lodge, regional shopping center, warehouses, and an emergency clinic. This initiative, however, is caught up in political discussions about the one-stop border post (described in Chapter 4). It is not known how these discussions will end or whether this facility will attain its desired dry port status. Meanwhile, it functions as a logistics center for some logistics service providers. Figure 2-22 shows these facilities.

Figure 2-22
Freight Forwarders Offices at Lebombo

Customs

South Africa Revenue Services (SARS) and Alfândegas de Moçambique are the primary border customs control agencies.

Komatipoort Airport

On the South African side, goods are not cleared at the Lebombo border post, but 4 kilometers in, on the N4, in a facility built in 1998 at the old airport, and is therefore known as “the Airport.” Commercial traffic is inspected in Komatipoort. The facility and its operations have improved, thanks to the provision of more infrastructure for commercial processes and to the shift of cargo processing to these facilities. The commercial facility has an area for clearing agents and facilities for the many people crossing the border, something that has also contributed to the decongestion ar the border post. Figure 2-23 shows these facilities.

Figure 2-23
Customs Offices in the Lebombo Customs Zone

Tiro, or “Frigo”

On the Mozambican side, clearance of goods destined for the Mozambique market that exceed a US$500 value takes place at Tiro (also known as Frigo). From the Ressano Garcia border, where the truck driver presents the customs document, goods are transported to Tiro offices, about 80 km from the border. Depending on the type of cargo, trucks may be transported under customs control to avoid freight being offloaded on the way. In TIRO, trucks can be offloaded and wait for the custom clearance to be completed. Most of the commodities analyzed for this study are in transit through Mozambique, and therefore are not cleared here. The Frigo entrance is shown in Figures 2-24.

Figure 2-24
"Frigo" Entrance

STAKEHOLDERS

The Maputo Corridor Logistics Initiative (MCLI) was formed in 2004 and is located in Nelspruit.[5] Its mission is "to support the development of the Maputo Corridor into a sustainable, highly efficient transportation route, creating an increasingly favorable climate for investment and new opportunities for communities along the length and breadth of the corridor." It serves as a voice for the private sector, and plays a major role in coordinating the development of logistics policy between the public and private sectors. Its activities include

- Coordinating initiatives and engaging authorities in planning service and infrastructure improvements;
- Organizing events, fact-finding missions, forums, and meetings;
- Communicating progress and developments through electronic newsletters and the media;
- Promoting positive attitudes toward and perceptions of the corridor, and logistical benefits offered by the corridor;
- Facilitating training opportunities, including industry cross-training of public and private stakeholders to ensure full understanding of the supply chain;
- Putting users in touch with service providers and providing information on all aspects of how to use and benefit from the corridor;
- Developing of a corridor supporter and service provider directory and website;
- Organizing strategic quarterly forums; and
- Organizing service provider forums.

A wide spectrum of stakeholders from South Africa, Mozambique, and Swaziland have shown interest in and supported MCLI. These include government departments, cargo owners, road

[5] See the MCLI website at www.mcli.co.za for more detail.

haulers, intermodal operators, rail service providers, logistics companies, clearing agents, forwarding agents, shipping lines, port agents, shipping brokers, professional bodies, associations, financial institutions, border post management, and officials.

3. Market and Traffic Flow

GEOGRAPHIC MARKET

The geographic market served by the Maputo Corridor covers one of the most industrialized and productive regions of Sub-Saharan Africa. This area includes

- ***South Africa***
  - ***Gauteng Province (Johannesburg and Pretoria).*** This region forms the western axis of the corridor. Also known as the Witwatersrand, this area is the commercial, financial and services hub of South Africa. It also has a large concentration of manufacturing, processing, mining and smelting industries.
  - ***Mpumalanga Province.*** Mpumalanga, with its capital Nelspruit, has a diversified economy supported principally by manufacturing, mining, electricity generation, tourism, chemicals, agriculture, and forestry. Landlocked and with a large commodity export base, Mpumalanga is seen as the primary beneficiary of the Maputo Corridor.
  - ***Limpopo Province.*** Bordering Mpumalanga in the north, Limpopo Province forms a subcorridor connecting to the vast magnetite deposits of Phalaborwa to the South African/Mozambican border at Komatipoort by 280 km of rail.
- ***Swaziland.*** To the south Swaziland uses the Port of Maputo for significant exports of bulk and bagged sugar, citrus and forest products and for imports of cereals.
- ***Mozambique.*** At the eastern end of the corridor the Mozambican deep-water Port of Maputo has traditionally provided the nearest facilities for the importers and exporters of the regions above. The port also serves the rapidly strengthening industrial base of Maputo and southern Mozambique.

FREIGHT FLOWS

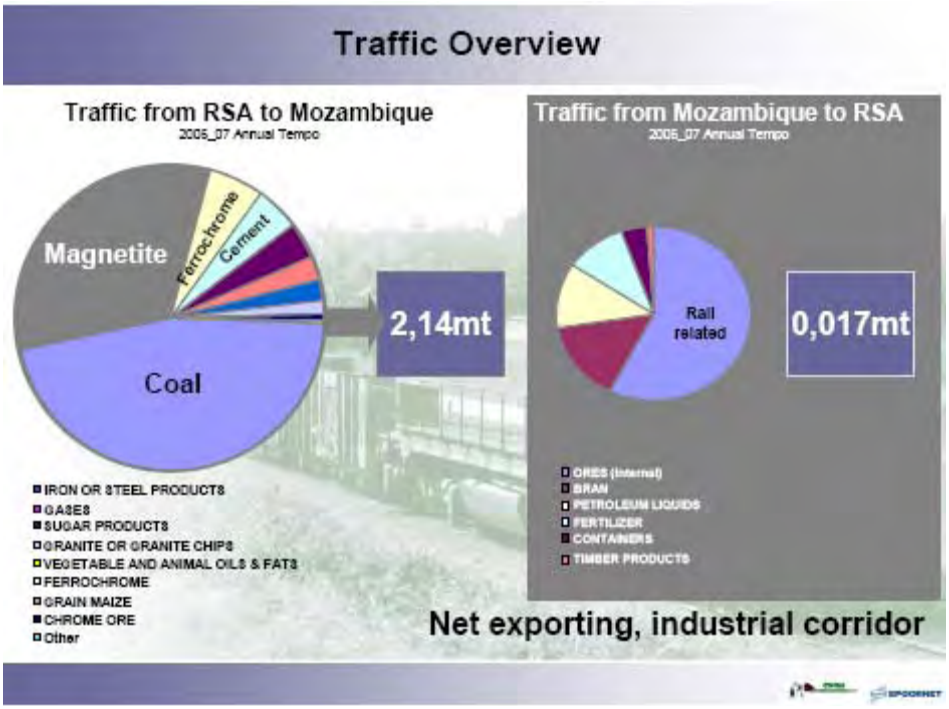
There are two main freight flows along the Maputo corridor:

- ***Road freight*** consists of bulk and other commodities from Mpumalanga and goods from Gauteng for domestic consumption in Mozambique.
- ***Rail freight*** consists mainly of bulk exports from Mpumalanga and Limpopo Provinces destined for export through Maputo Port.

In 2004, 5.7 million tons of rail freight and 9.1 million tons of road freight moved along the corridor. In 2005, rail freight declined to 4 million tons, while road freight grew to 11.4 million tons. The breakdown of traffic by commodity is shown in Figure 3-1. Corridor traffic is

dominated by Coal and Magnetite (an iron ore) transported by rail. It is also important to note that the corridor presents an imbalance between import cargo from South Africa and export cargo from Mozambique. Detailed estimates of total annual tonnage by commodity are presented in Appendix B.

Figure 3-1
Rail Traffic Overview



SOURCE: *Maputo Corridor Logistics Initiative*

Road Freight Transit Flow

The freight transported on the corridor from South Africa to Mozambique or to the Port of Maputo by road is approximately 3.4 million tons per year. The estimated annual number of vehicles crossing the border is 168,780, with an average of about 560 vehicles per day. Because of the constraints on the rail line, what is traditionally rail cargo is transported to the port by road.

Rail Freight Transit Flow

The rail corridor currently carries 4.3 million tons of port-bound cargo per year, but has a capacity to carry 18 million tons. In 1980, The Maputo Corridor carried 14 million tons of traffic on rail. Express trains operated on the corridor, moving both containers and perishables. But because routine maintenance was discontinued in Mozambique and South Africa, the volume of rail cargo has declined dramatically.

Port of Maputo

Port potential is currently seen as 11 million to 16 million tons per annum. MPDC sees the optimal capacity of Maputo Port terminals as 11 million tons per year and that of the Matola bulk

terminal as 6 million tons per year. Ultimate capacity through further investment in infrastructure is thought by MPDC to be in excess of 20 million tons. Of total port traffic, South African exports comprise 56 percent of all exports and 74 percent of all transit trade. Table 3-1 presents a summary of tonnage handled in 2006 and shows that transit trade for exports exceed national trade except for imports for the national market.

Table 3-1
Summary of Tonnage Handled at Maputo Port in 2006 (tons)

Imports/Exports	Tons
EXPORTS	
Transit Trade	2,605,442
National	1,093,752
South Africa	2,009,045
Zimbabwe	332,611
Swaziland	263,786
Zambia	-
Total Exports	**3,699,194**
IMPORTS	
Transit Trade	105,080
National	2,754,564
Botswana	6,558
Malawi	10,024
South Africa	8,177
Zimbabwe	59,321
Swaziland	12,000
Zambia	9,000
Total Imports	**2,859,644**
National Trade (Coastal)	49,817
International Trade	6,558,838
Total	6,608,655

SOURCE: *Maputo Port Development Company. Commercial Director*

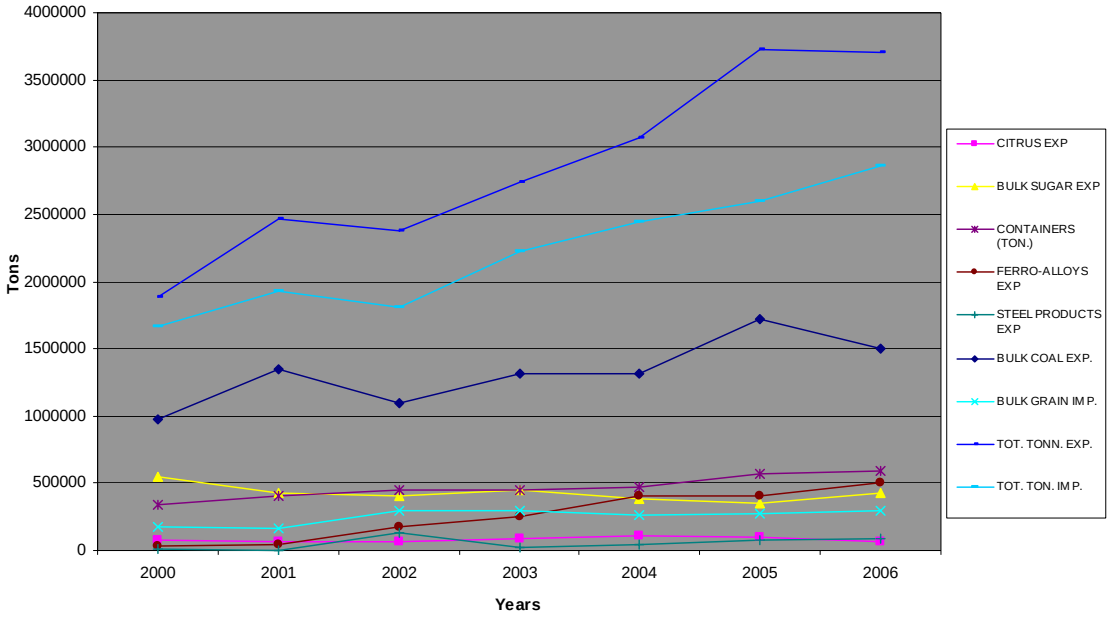
CORRIDOR GROWTH

According to MPDC, the port operator, as a result of new investments and the reawakening of interest in the Port of Maputo, 6.4 million tons of throughput was achieved in 2005, a 16 percent increase over the previous year and a growth rate that highlights market confidence in the port's future. In 2006, growth continued, with a 10 percent increase from the previous year.

Despite infrastructure, operations and policies constraints, the corridor has shown significant growth. As shown in Figure 3-2 and Table 3-2 the corridor experienced total growth of 185 percent in annual tonnage handling in the past six years. This growth is the result primarily of recent improvements in the road link, rehabilitation works at the Port of Maputo, ongoing Spoornet and CFM joint rehabilitation efforts, and general stabilization program of the Ressano-Garcia line. Some commodities, such as bulk coal and container cargo, which are transported by rail, showed a decrease in 2006. This decrease took place as a result of some Ressano-Garcia rehabilitation works that happened during this period. Other planned infrastructure-related projects in the corridor are summarized in Chapter 4. This mix of initiatives will contribute to the corridor's development and positioning. Complete port summary traffic statistics are presented in Appendix C.

Figure 3-2

Maputo Port Export and Import Flows 2000–2006



SOURCE: *MPDC tables*

Table 3-2
Port Traffic, 2000–2006

	Import or Export	2000	2001	2002	2003	2004	2005	2006
MAPUTO								
Citrus	Export	75,189	60,678	61,469	89,519	105,248	97,450	68,003
Bulk sugar	Export	545,138	423,198	404,186	452,174	378,668	352,369	427,688
Containers (TEU) (*)	Import and Export	31,876	32,425	35,010	39,486	44,349	54,088	62,516
Containers (tonne)	Import and Export	337,659	404,352	452,456	448,984	475,128	572,311	595,044
Ferroalloys	Export	34,338	48,565	178,797	249,515	402,899	403,430	504,713
Steel products	Export	6,775	155	133,097	20,503	48,928	71,587	88,409
MATOLA								
Bulk coal	Export	976,641	1,348,077	1,097,590	1,314,764	1,316,325	1,720,997	1,504.475
Bulk grain	Import	175,380	168,356	295,763	290,708	259,725	272,247	296,259.000
MIPS CONTAINER TERMINAL								
Container (tonnage)		51,544	45,777	33,334	35,851	45,735	39,922	39,643
TOTALS								
Total tonnage exports		1,886,100	2,464,100	2,376,700	2,741,556	3,067,999	3,722,474	3,699,194
Total tonnage imports		1,663,200	1,923,600	1,804,400	2,222,618	2,443,491	2,599,014	2,859,644
Total tonnage		3,035,980	4,001,463	4,430,063	5,036,586	5,567,784	6,381,722	6,608,761
PORT CALLS								
Port Calls Maputo		371	348	386	361	370		461
Port Calls Matola		97	155	156	176	205		209
Total vessels		468	503	542	537	575	640	670

* Mostly Durban feeder service to 2005. Now more direct service is available.

POTENTIAL MARKETS

Table 3-3 presents the short-term potential market for the corridor. This potential has been identified by Spoornet and does not correspond to an exhaustive market study of the other potential commodities that could use the corridor. However, it is a good starting point. Spoornet identified these markets on the basis of the commodities that currently use the corridor. Some of these commodities would normally be transported by rail, but are currently transported by road as a result of Spoornet and CFM's infrastructure and operational problems.

Table 3-3
Short term Market Potential for the Maputo Corridor

South Africa Exports through Maputo Port		South Africa Imports through Maputo Port	
Product	Location	Product	Location
Granite	Rustenburg	Containers	Maputo
Automotive	Pretoria	Fuel	Maputo
Containers	Gauteng	Fertilizer	Maputo
Coal	Witbank	Cement	Maputo
Steel	Middleburg		
Ferro Chrome	Steelpoort		
Timber	Kaapmuiden		
Magnetite	Phalaborwa		
Sugar	Komatipoort		
Citrus Fruit	Nelspruit		

SOURCE: *Spoornet*

TRAFFIC FORECAST

Rail Freight Transit Flow

The Centre for Supply Chain Management at the University of Stellenbosch in South Africa forecasts that combined road and rail cargo of South African exports to Mozambique and transit cargo using the Maputo Port will grow from six million tons to 19 million tons by 2009 and much higher by 2025, as shown below:

Year	*Volume (million tons)*
2009	19.3
2014	24.1
2019	29.8
2025	38.6

The market potential for rail along the corridor through Mozambique to and from Maputo is seen by Spoornet, the South African rail operator, as 15 million tons per year by 2010. The potential and forecast volumes in Table 3-4 are based on the rehabilitated rail line being brought back into full service.

Table 3-4
Actual, Potential, and Forecast Industry Volumes for Rail (000 metric tons)

Commodity	Import or Export	Actual 2006	Potential (Not on Rail)	Forecast 2010
Containers	Imports and export	3	100	2,200
Steel	Export	0	500	600
Ferrochrome	Export	300	600	1,000
Sugar	Export	100	100	150
Citrus	Export	1	60	150
Cereals	Import and export	0	0	200
Bulk Coal	Export	1,800	2,000	2,200
Magnetite	Export	1,700	3,000	9,000
Timber	Export	0	40	50
Other Break-bulk	Export	0	250	300
Other Bulks	Import and export	0	200	300
Granite	Export	0	250	300
Fuel	Import	300	310	340
Cement	Import and export	120	150	175
Total Port Rail Traffic		4,324	7,560	14,765
Approximate Trains Per Day		3	10	29

SOURCE : *MCLI / MPDC*

The market potential for road along the corridor through Mozambique to and from Maputo is seen by MCLI, as 2, 5 million tons per year by 2010. The figures for potential and forecast traffic in Table 3-5 are subject to 24-hour border transit operations and the availability of port investment.

Table 3-5
Actual, Potential, and Forecast Industry Volumes for Road ('000 metric tons)

Commodity	Import or Export	Actual 2004	Potential 2006(*)	Forecast 2010
Steel	Import and export	47	225	250
Ferrochrome	Export	162	500	1000
Sugar	Export	60	100	200
Citrus	Export	95	120	400
Forest Products	Export	6	25	350
Other Breakbulks	Import and export	30	120	120
Granite	Export	1	66	100
Vehicles	Import and export	0	12	38
Total port road traffic		401	1,168	2,458
Approx truck loads @ 30 million tons		13,367	38,933	81,933
Approx trucks / 24 hours		45	130	273
Approx trucks / hour		2	5	11
Approx value of trade (USD 000)		274,971	800,914	1,685,485

SOURCE: *MCLI / MPDC*

(*) Note: currently shipped through ports other than Maputo

Conclusions

Although 10 years in the making, the Maputo Corridor has yet to fulfill its potential in terms of traffic flows, which are estimated at 19 million tons by 2009 and 30 million tons by 2019, equally divided between road and rail. This would be triple the current level of traffic by 2009 and five times by 2019. Today, the six million tons of traffic shipped from Maputo and Matola represent only 34 percent of potential port-bound road cargo and 57 percent of potential rail transit cargo. The reasons for this are varied and are addressed in the following chapter.

4. Diagnosis of Corridor Performance

The TLDT audit methodology includes checklists for five transport and logistics sectors and a detailed survey of stakeholders. The team conducted fieldwork in Mozambique and South Africa to (1) determine the status of the transport logistics system; (2) identify issues, types of documentation, and regulations that constrain the transport/logistics system in the corridor; (3) identify any planned developments in infrastructure or information systems and (4) quantify corridor performance in terms of time, cost, and reliability for each step of the import and export logistics chains for selected industries. This chapter presents (1) a summary of the current status of the transport logistics system in the corridor, (2) critical issues that have been identified by stakeholders at this stage of the project, (3) critical issues related to cost comparison of the Ports of Maputo and Durban, and (4) preliminary conclusions of the analysis. Results from the TLDT analysis and benchmarking results will be presented in the corridor Performance Assessment Report.

LOGISTICS SYSTEM AUDIT

Status of Transport Logistics System

To understand the status of the existing transport logistics system, a sector checklist was discussed with officials from the different sectors involved in the Maputo Corridor. The checklists covered (1) the general conditions of the transport infrastructure and fleet for each mode, (2) the level of development of transport services and (3) the structure of the freight forwarding industry. Table 4-1 shows the percentage of reforms or improvements that are underway, planned, or could be introduced to improve the logistics environment, relative to the total improvements needed to meet international standards that are specified on the checklist (e.g., 11 reforms or improvements applicable to customs agencies, 22 for the road sector). More detailed information on reforms and improvements by sector can be seen in Appendix D.

Table 4-1
Summary of the Audit of the Transport Logistics Sector

Status of Implementation	Customs		Port and Maritime Shipping	Road Transport	Rail Transport		Logistics Service Provider
	MZ	SA	MIPS and MPDC	Road Development Authority	CFM MZ	Spoornet SA	Delta Clearing
Complete	73%	80%	44%	43%	33%	40%	53%
Limited	9%	0%	6%	17%	0%	7%	35%
Planned	9%	0%	12%	17%	20%	0%	6%
Not Planned	9%	20%	38%	23%	47%	53%	6%

SOURCE: *TLDT Logistics Audit Checklist*

The port of Maputo and rail sectors in both regions have the fewest implemented reforms and improvements suggested by the checklist audit methodology (44 percent, 33 percent in Mozambique, and 40 percent in South Africa), while the customs agencies in both regions have adopted most of the reforms of the World Customs Organization (73 percent in Mozambique and 80 percent in South Africa). Customs in South Africa uses an electronic single window connecting customs to a central office, while Mozambique does not have a similar IT platform. Although the Mozambican customs agency indicated that it plans to implement this type of system, the system will not be completed in the short term. This is creating a bottleneck in the logistics coordination between the two countries and should be raised to a high priority.

Additionally, customs in Mozambique uses the UN ASYCUDA system (Automatic System for Customs Data) for processing import and export data while South African customs uses CAPE for import documents and Export System for export documents. South Africa implemented the Single Administrative Document (SAD) 500, that has also been expanded to the major corridors in the region to reduce the cost of moving goods across the borders. Mozambique is still considering implementing the SAD 500. UN ASYCUDA customs document collects the same information as the SAD 500, but in a different format; the use of different platforms lengthens the clearing process and prevents integrated border processing and management.

The port of Maputo is growing and attempting to reach international standards and respond to the demands of the global shipping industry, but it needs to improve its mechanization and automation, equipment, and information systems. The port has a landlord scheme that allows it to be flexible and offer facilities for operation by private sector operators. This is the case of the MIPS container terminal that is operated by Dubai Ports World (DPW). The Maputo port offers no off-dock container yard or bonded distribution facility to support operations. Although it has direct main line services calling, it needs to increase services frequency, main factor for port development and indicated as important issues for stakeholders as MMC, TSB and Nomad Freight Mozambique. Connectivity to the Far East was a major issue but a new service to Maputo was added.

Rail transport in South Africa and Mozambique is changing rapidly to meet market demand. Spoornet is moving some cargo (coal and manganese) with its own locomotives to Maputo port, and CFM is planning to move from an analog system to a satellite-based system using onboard computers. The audit found that neither railway uses track-and-trace systems for cargo or dedicated track for freight. Also, there are no electrified lines in the corridor railway network, although this is not a significant constraint..

Logistics services are more developed in South Africa than in Mozambique. Still a need was identified for cross-docking facilities, a national booking center, and standard service contracts in South Africa. Integrated logistics service providers are concentrated in the Johannesburg area.

The completed checklists for Mozambique and South Africa and comparative benchmarking analysis of the state of development of the transport logistic systems in South Africa, Mozambique, Singapore, Thailand, and Bangladesh are presented in Appendix D.

Issues Identified by Stakeholders

In consultation with the stakeholders and with support from MCLI, the team conducted surveys to collect data from corridor users in nine key industries in both countries (see Table 4-2).

Table 4-2
Companies Surveyed, by Industry, Service Sector, and Location

Company	Industry	Location
SERVICE PROVIDERS		
Rholig Grinrod	Freight Forwarders	Lebombo Customs Area, South Africa
Nomad Freight Mozambique		Mozambique
Mocargo		Mozambique
Delta Clearing		Lebombo Customs Area, South Africa
Focus Clearing		Lebombo Customs Area, South Africa
Trans Africa Logistics	Logistics Service Provider	Pretoria, South Africa
Kuehne & Nagel		Mozambique
UTI		Johannesburg, South Africa
SHIPPERS		
Palabora Mining Company (PMC)	Magnetite	Phalawara, South Africa
TSB	Sugar and Citrus	Melalane, South Africa
MMC	Manganese	Nelspruit, South Africa
Columbus Stainless Pty Ltd	Steel	Middleburg, South Africa
Centametal (Pty) Ltd	Chrome Ore	Machadadorp, South Africa
CONSIGNEES		
Omnia Fertilizers Ltd	Fertilizer	Lindenburg - S.A/Hectorspruit - S.A
Xtrata	Ferrochrome	Steel Port, South Africa

The major issues identified by the stakeholders are listed in 4-3 by category and stakeholder except for logistics services that are discussed below. A more detailed analysis of all the issues that we identified by stakeholder is presented in Appendix D.

Appendix E lists each of the major problems cited by those surveyed and their level of importance for six different industries. Table 4-3 shows 35 of the major problems catalogued for the various sectors. Seventy-one percent of the issues were catalogued as important for at least one stakeholder. Of these, approximately 31 percent relate to infrastructure, 54 percent to operations, and 15 percent to policy.

Table 4-3 does not include the major problems cited by logistics service providers because this industry identified almost all of these issues as major problems. The following issues are important to logistics service providers but in the surveys were not counted as major problems by the shippers and consignees:

- Expensive customs supervision of trucks crossing the border because of gap between border posts
- Inefficiency at the border because of inadequate staffing and organization.
- Excessive paper documentation required for Mozambique customs.
- Border posts on both sides are not operational 24/7. Border open only 10 hours per day, with commercial clearing closes at 3 p.m. daily.
- Mozambican legislation does not allow for extra-jurisdictional execution of clearing and control functions at border posts.
- The draft of the Maputo and Matola port channels (12 m) is inadequate for larger vessels.
- Poor conditions of alternative roads other than the EN4 that connects South Africa with Mozambique.
- Insufficient parking facilities, service areas, and truck stops on the EN4.
- High tolls add to transport costs along corridor.
- Few value-added services (cross-docking, customization, manufacturing support, labeling, subassembly, reverse logistics), especially in Mozambique.

Table 4-3

Issues Identified by Shippers as Major Problems of the Transport and Logistics System

Transport and Logistics Issue	Sugar (SA to Mz by Rail)	Magnetite (SA to Mz by Rail)	Manganese (SA to Mz by Road)	Fertilizer (Mz to SA by Road)	Ferrochrome (Mz to SA by Road)
INFRASTRUCTURE					
Space limitations at current Lebombo/Ressano Garcia border post for parking and future development	√	√	√	√	√
No EDI link between Mozambique and South Africa customs	√	√	√	√	√
No "one stop" border post.			√	√	√
No bonded warehouses near customs zones (Koomatiport) or Maputo Sea port		√			
No modern gate information system at the port (barcodes, cameras, computer systems)	√				
Lack of an advanced computerized information system to allow port and users to exchange information on the status of cargo	√	√		√	√
Insufficient railway capacity in the link between South Africa and the port, related to line rehabilitation	√	√			
Insufficient and inadequately equipped freight facilities along Pretoria - Maputo rail corridor	√	√			
Lack of true Logistics Centers in the corridor, outside of Johannesburg, to promote competitiveness of the industries					√
Turnaround time of trains very long - 20 to 40 days	√	√			
Lack of an advanced computerized information system, throughout the corridor, linking the countries to allow port and users to exchange information on the status of cargo (related to border EDI issues-see above)	√	√			
OPERATIONS					
No dry port operations near the border between Mozambique and South Africa		√	√	√	√
Delays and long time needed for clearing goods through border post, including congestion caused by combined passenger and freight processing			√	√	√
High level of congestion: separate clearing and immigration system for commercial and passenger/ tourists.		√	√	√	√
Customs declaration is done twice and requiring different procedures and documentation				√	
Some bribery and corruption related to requests for more speedy service from officials			√	√	√

Transport and Logistics Issue	Sugar (SA to Mz by Rail)	Magnetite (SA to Mz by Rail)	Manganese (SA to Mz by Road)	Fertilizer (Mz to SA by Road)	Ferrochrome (Mz to SA by Road)
No single administrative document or electronic single window for customs clearance on Mozambique side, leading to inefficient operations			√		
Short working hours of Frigo Customs Area and lengthy processing times		√			
No public information regarding standard operating procedures for cargo processing at the border	√	√			
No rail passenger service across the border			√	√	√
Underutilization of Maputo and Matola ports		√			
High compulsory scanning fee	√	√	√	√	√
Relatively low frequency and number of vessels calling at Maputo port	√	√			
High cost of coastal shipping from Maputo to and from Durban	√				
Transshipment of imports through port constrained by bond requirements	√	√			
Informal payments required at police checkpoints on EN4		√		√	√
Inefficient cooperation between CFM and Spoornet and no common train schedule	√				
Lack of locomotives and rolling stock to operate on rehabilitated line, especially CFM. Underpowered CFM locomotives sometimes require trains to be split, causing delays	√	√			
Lack of regularly operating trains in the corridor (although five-train schedule is target which is sometimes achieved with Spoornet locomotives)	√	√			
Lack of trained logistics personnel (e-commerce skills, data management and interface solution, supply chain distribution, etc.)	√	√	√	√	√

Transport and Logistics Issue	Sugar (SA to Mz by Rail)	Magnetite (SA to Mz by Rail)	Manganese (SA to Mz by Road)	Fertilizer (Mz to SA by Road)	Ferrochrome (Mz to SA by Road)
POLICY					
Lack of clarity and transparency from Government regarding plans for border post, retarding private sector investment in infrastructure.	√				
No regulations requiring electronic single window or single administrative document	√	√	√	√	√
Inflexible, non-transparent policy imposed by recent scanning regulations	√	√	√	√	√
No public pricing schedule from Spoornet	√	√	√	√	√
Lack of integrated transport strategy between countries (Mozambique and South Africa), although corridor committees are working on common problems and South Africa has a Transport Corridor Development policy	√		√	√	√

Note: Most of the commodities handled by the sample of stakeholders are not for the local market of Mozambique so they do not need to clear customs in Frigo.

Issues Highlighted by Cost Comparison of Maputo and Durban Ports

The port of Maputo is the strategic node for sustainable development of the corridor and Mozambique. It has been in ongoing development to fulfill the requirements of the new shipping industry and global economy, but as in many other developing countries, basic economic factors and market conditions constrain the needed pace of change. The MIPS container terminal has access by rail and road to warehouses inside the terminal and is connected to a new two-lane access road, linking it to the EN4 (see the map in Figure 1-1). These links have allowed the terminal to improve its service to shippers and consignees, which is a key factor of preference for some customers of the port, according to previous studies.

Other studies also consider port and transport costs as factors in selecting a seaport gateway. Tables 4-4 and 4-5 show a cost comparison of Maputo and Durban ports, which share the same hinterland—Pretoria, Middleburg, Witbank, Nelspruit, and vicinities in South Africa; and Mbabane and vicinities in Swaziland—which could be attracted to the Maputo Corridor for exporting cargo.

Table 4-4 shows that for all these locations except Pretoria, the total cost to transport cargo by road and export it via Maputo is lower than via Durban. And for all locations, transporting cargo by rail through Maputo costs less than transporting it through Durban. Furthermore, shippers and logistics service providers (including freight forwarders) can save one to two days when they transport cargo by road and two to five days when they transported cargo by rail and export it via Maputo.

Table 4-5 shows that shipping costs to Europe, EAF, the Far East, the United States, and the Middle East are higher via Maputo than via Durban. The largest difference, to Europe, is approximately US$4,600, and the smallest difference, to the United States and the Middle East, is approximately USD$325. Exporting cargo to EAF, however, does not cost more via Maputo. Shippers or logistics service providers could save as much as US$1,144 by transporting cargo to EAF by road, and US$1,228 by rail, through Maputo.

Preliminary Identification of Issues from TLDT

In addition from the identification o issues from stakeholders, the team entered key data into the TLDT software for a preliminary comparison with international benchmarks. This analysis identified the following significant points:

- Port charges in Maputo are relatively high in comparison to international standards but are less than Durban Port charges.
- Time for container going through the port is fair in comparison with international standards, not considering frequency in service.
- Rail link average time, when it is working smoothly, is fair to good. However reliability is very poor, due to the wide variation in transit time.
- Road link average time and reliability are in the fair to good range.
- Road and rail unit prices are very high in comparison with international standards, but much more for the Mozambican side than the South African side. One reason for this is the relatively short haul distances involved.

Complete results of the TLDT analysis will be presented in the corridor Assessment Report

Table 4-4

Total Cost and Time to Move a TEU to Maputo and Durban Ports (Without shipping cost) (US$)

Origin	Cost by Road via		Difference	Cost by Rail		Difference	Days by Road		Days by Rail	
	Maputo	Durban		Maputo	Durban		Maputo	Durban	Maputo	Durban
JNB/Pretoria	$1,431.00	$989.57	$441.43	$585.14	$708.86	($123.71)	2	3	4	6
Middleburg	$1,202.43	$1,544.57	($342.14)	$572.14	$1,271.00	($698.86)	2	3	3	8
Witbank	$1,202.43	$1,490.29	($287.86)	$572.14	$1,216.71	($644.57)	2	3	3	8
Nelspruit	$916.71	$2,061.00	($1,144.29)	$426.43	$1,708.86	($1,282.43)	1	4	2 - 4	8 - 9
Swaziland	$916.71	$1,746.71	($830.00)	$609.57	$682.43	($72.86)	1	4	4	8

Total cost includes port, export documents and transport charges (not including shipping cost).

Exchange rate 7 Ren = 1 US$

SOURCE: *MCLI South Africa Costing Model*

Table 4-5

Total Shipping Cost of a TEU

Origin	EUR		EAF		Far East		United States		Middle East	
	Maputo	Durban	Maputo	Durban	Maputo	Durban	Maputo	Durban	Maputo	Durban
JNB/Pretoria	$2,132.57	$1,727.71	$776.14	$776.14	$1,007.29	$635.86	$2,766.14	$2,441.14	$1,246.14	$921.14
Middleburg	$2,132.57	$1,727.71	$776.14	$776.14	$1,007.29	$635.86	$2,766.14	$2,441.14	$1,246.14	$921.14
Witbank	$2,132.57	$1,727.71	$776.14	$776.14	$1,007.29	$635.86	$2,766.14	$2,441.14	$1,246.14	$921.14
Nelspruit	$2,132.57	$1,727.71	$776.14	$776.14	$1,007.29	$635.86	$2,766.14	$2,441.14	$1,246.14	$921.14
Swaziland	$2,132.57	$1,727.71	$776.14	$776.14	$1,007.29	$635.86	$2,766.14	$2,441.14	$1,246.14	$921.14

The conversion rate is 7 Ren = 1 US $

SOURCE *MCLI South Africa Costing Model*

PLANNED PROJECTS AND INITIATIVES

To address some of the above mentioned issues, stakeholders in the corridor are planning to implement the following future projects. These will provide a partial solution to the problems facing the rail, road, and port sectors. Table 4-6 summarizes these future projects.

Table 4-6
Future Projects

Improvement	Description	Entity	Expected Completion Date
One-stop border post	The proposed border facility to be located 4 km from the border post on the highway to Maputo would provide a one-stop service to the trade and travelers passing through the border post. The proposed one-stop, 24-hour border post would be managed by a bilateral authority with officials from both governments. The facility is to be used for clearing trucks during peak seasons when traffic is heavy. A draft design includes facilities for (1) commercial traffic, (2) light vehicular traffic, (3) pedestrians, taxis and buses, and (4) trains. The facility would comprise several buildings in one perimeter straddling the border. The target year for completion, 2010, is contingent on funds being available.	South Africa Customs and Mozambique Customs	Before 2010
Modernization of the fresh produce terminal	A US$16 million redevelopment of the fresh produce terminal is expected to be operational for the 2007 export season, and further modernization completed for the 2008 season, when new steri-facilities will be available for Far East citrus exports. By 2008, an additional 5,000 pallet slots will have been created and the terminal's capacity will be approx 260,000 tons per annum.	MPDC	Operating in 2007 and modernized in 2008
Rehabilitation and improvement project	MPDC will continue with its substantial US$70 million rehabilitation and improvement project that includes • Upgrade Maputo Port access for post Panamax-type vessels • Expansion container, coal/magnetite terminal • Construction of a new granite terminal • Multipurpose new bulk terminal • New car terminal • New iron or and heavy sands terminal • New ferrochrome terminal • New crude oil terminal at Ponta Dobela • New oil pipeline Dobela to Matola refinery	MPDC	N/A
Stabilization program	CFM and Spoornet are engaged in a task group to develop the rail corridor. The initiative is twofold: Deal with current problems and, in the future, double the capacity of the rail and changing the equipment to increase capacity. Short-term projects: the rehabilitation of Ressano Garcia Line following an infrastructure investment of US$20 million will	CFM and Spoornet	July 2007 for the short term and immediate projects and 2009 for the rehabilitation of the rolling stock

Improvement	Description	Entity	Expected Completion Date
	ensure 20-ton axle capacity on bridges. CFM will also modernize the concrete sleeper factory, open procurement of new 54 kg/m rail, re-sleeper and re-ballast the track, inspect the bridges, and procure for new turnouts at yards and stations. Immediate actions: • Increase wagon fleet from 600 to 690 • Infrastructure upgrade • Service design for 6 locos • Service design for 21 trains of coal service per week to TCM Other project: CFM will rehabilitate 48 locos and 640 wagons with a rolling stock investment of US$50 million.		
Rolling stock maintenance and line expansion	Spoornet plans to expand the coal and ore lines, and implement a program for locomotive renewal (110 AC/DC for the coal line, 212 diesel-electric and 163 AC/DC for general freight). For general freight, Spoornet plans to invest in rolling stock renewal and modernization, infrastructure electrical systems, and train authorization systems (Rand 34 billion investment.)	Spoornet	2012
N4 upgrades	Trans African Concessions (TRAC) announced a $24 million upgrade of the N4 between Wonderfontein and Belfast. The upgrade will provide users with a 4-lane double carriageway road between Pretoria and Belfast. The Belfast interchange bridge will also be widened to accommodate the new road profile	TRAC	June 2009
Nelspruit Ring Road	TRAC is working on a preliminary design for the proposed Nelspruit Northern Ring Road. The proposed road is intended to provide an alternative east-west route for motorists now using the N4 through Nelspruit central business district. TRAC and the South African National Roads Agency Limited will construct the new road. If the project proceeds, implementation is expected to start at the end of 2007.	TRAC	2010

CONCLUSIONS

The transport logistics system between South Africa and Mozambique is in the process of development. It has a high-standard highway, but some bottlenecks occur in the rail system and border posts. Cargo is shifting gradually to the Port of Maputo as a result of the congestion in Durban, but also on account of the active participation of the governments and the private sector in developing the corridor and encouraging users to select it as its first option. In 2006, the total freight transported by road in the corridor from South Africa to Mozambique or through the Maputo Port was approximately 3.4 million tons, and total freight by rail was 4.3 million tons. This falls far short of the potential 30 million tons that could be transported (half by rail and half by road) through the Maputo Corridor by 2014. Three main conditions would enable this potential: The one stop boarder post, the Electronic Single Window and a better cooperation between Spoornet and CFM. Increase in volume will stimulate the increase in frequencies and connectivity.

There is also a lack of integrated logistics service providers, especially in Mozambique and areas close to Komatipoort, basically because shippers are usually small companies that do not require many specialized services. Companies could be more competitive if they rely on logistics service providers. In the near future, these types of companies must participate more in the transport logistics business to support innovation in the corridor logistics system.

Critical projects are planned for the corridor—such as the stabilization and rehabilitation program for the railway between Komatipoort and Maputo, and the single border post—that will resolve some of the problems. New terminals at MPDC will create major flows in the corridor. Other potential improvements will be examined in the corridor Performance Assessment Report

In summary, the main impediments to the smooth flow of imports and exports along the corridor are

- ***Compulsory scanning generates extra costs for shippers and consignees.*** Scanning charge is applied to every cargo handled in the port even if this is not scanned. This procedure is not common in other ports and is generating complains, especially among foreign shippers that are not willing to pay extra costs to subsides other governments and freight forwarders in Mozambique who are losing businesses. Compulsory scanning presents opportunities for corruption. The scanning system is very rigid; it does not scale the price according to value and volume of the cargo
- ***Lack of a one-stop border post*** makes the import and export processes more costly and time consuming because transporters must present different documents in the two custom areas.
- ***Narrow roads and insufficient parking space at Lebombo border.*** Cargo with a value of less than US$10,000 clears customs at this point. At peak hours, congestion is heavy, which also affects passengers in transit.
- ***Cost of coastal shipping.*** Coastal shipping in Mozambique is not well developed, and the few feeder shipping lines use old vessels. For TSB to move cargo from Melalane to Maputo by rail and then to Durban by feeder vessel is more costly than sending the cargo from the plant to Durban (500 km distant).
- ***No single administrative document to clear customs or related EDI system.*** Freight forwarders and clearing agents must prepare two different documents in Komatipoort Customs Zone, one for South African customs (SD 500) and another for Mozambique customs (DA 500, 500 and Memorandum). An efficient system requires a single set of documents and data transfer by EDI and a move to a single border post as planned.
- ***Lack of CFM locomotives and railway infrastructure.*** To offer proper freight service from Komatipoort railway node to Maputo Port requires more CFM locomotives. Currently, some cargo is delayed more than one day at the border until locomotives from Mozambique arrive. The transit time from Nelspruit to Durban is approximately eight days, while from Nelspruit to Maputo the transit time is four days. According to stakeholders, this time could be decreased to two days if the situation in Komatipoort improved. Coordination and cooperation between CFM and Spoornet also needs to be enhanced to develop a reliable and competitive service.

- ***Inadequate frequency of vessels calling Maputo Port and connections.*** Shippers and logistics service providers (including freight forwarders) pointed out the necessity to increase the frequency of service and the connection of the port to attract more business. MIPS has been losing approximately 1,000 TEU per year from MMC because of a lack of direct lines and freight rates to the Far East, but this service has now been added to Maputo.
- ***No rail passenger service across the border.*** The congestion generated at Ressano Garcia could be minimized if some passengers shift from road to rail.

Appendix A. Shipping Schedules

IGNAZIO MESSINA & COMPANY

Red Sea/east-south Africa - Sailing Update: 20/02/07 15.40.42

To...	Jolly Verde 0008/07	Jolly Rosso 0017/07	Jolly Bianco 0025/07	Jolly Marrone 0034/07	Jolly Oro 0050/07	Jolly Verde 0048/07
	ETA ETS	ETA ETS	ETA ETS	ETA ETS	ETA ETS	ETA ETS
Marsiglia	14/01 15/01	26/01 27/01	09/02 11/02	18/02 19/02		13/03 14/03
Genova	16/01 22/01	27/01 30/01	12/02 16/02	20/02 25/02	23/02 25/02	15/03 18/08
Naples	22/01 22/01	31/01 /02	17/02 17/02	26/02 27/02	26/02 7/02	19/03 20/03
Aqaba			22/02 23/02	03/03 04/03		25/03 26/03
	28/01 9/01	07/02 8/02	24/02 5/02	05/03 6/03	05/03 6/03	19/03 20/03
Jeddah	x	x	x	x	x	x
> Hodeidah	x	x	x	x	x	x
> Port sudan	x	x	x	x	x	x
> Massawa	x	x	x	x	x	x
> Mombasa					x	
> Dar es salaam					x	
> Djibouti	x					
Djibouti		10/02 11/02	27/02 28/02		08/03 9/03	30/03 31/03
Mombasa	06/02 08/02	17/02 18/02	05/03 06/03	13/03 14/03		05/04 06/04
Dar es slaam	05/02 06/02	19/02 19/02	06/03 07/03	15/03 15/03		06/04 07/04
Adurban	12/02 16/02	23/02 26/02	11/03 14/03	19/03 22/03		11/04 14/04
>Johannesburg	x	x	x	x		x
> Cape town	x	x	x	x		x
> Port elizabeth	x	x		x		x
Maputo	17/02 20/02	27/02 01/03	15/03 17/03	23/03 26/03		15/04 17/04
>Beira	x	x	x	x		x
Dar es saaam	24/02 25/02	04/03 05/03	20/03 21/03	29/03 29/03		20/04 21/04
Lmombas	25/02 26/02	06/03 07/03	21/03 22/03	30/03 31/03		21/04 22/04
Ajeddah	05/03 06/03	14/03 15/03	29/03 30/03	07/04 08/04		29/04 30/04
> Port sudan	x	x	x	x		x
> Hodeidah	x	x	x	x		x
> Massawa	x	x	x	x		x
> Abu dhabi	x	x	x	x		x
> Dubai	x	x		x		x

To...	Jolly Verde 0008/07	Jolly Rosso 0017/07	Jolly Bianco 0025/07	Jolly Marrone 0034/07	Jolly Oro 0050/07	Jolly Verde 0048/07
	ETA ETS	ETA ETS	ETA ETS	ETA ETS	ETA ETS	ETA ETS
> Kuwait	x	x	x	x		x
> Dammam	x	x	x	x		x
> Doha	x	x	x	x		x
> Bahrein	x	x	x	x		x
> Bandar Abbas	x	x	x	x		x
> Muscat	x	x	x	x		x
> Karachi	x	x	x	x		x
> Mundra	x	x	x	x		x
> Jebel ali			x			
> Nava Sheva			x			
Marsigia	13/03 14/03	21/03 /03	05/04 06/04	14/04 1/04		07/05 08/05
Aqaba	07/03 08/03					
Genova					17/03 18/03	
See next voy	0048/07					

MACS

DIAMOND LAND 2668/7106

ARR WVB 11/12 11H30

SLD WVB 13/12 16H30

ARR CPT 16/12 03H45

SLD CPT 17/12 06H05

ARR DBN 19/12 12H37 (C-Berth)

SHIFTED 23/12 21H05 (MW 9)

SLD DBN 28/12 03H38

ARR RCB 28/12 08H25

SLD RCB 05/01 04H00

ARR DBN 05/01 10H15 (D-BERTH)

SLD DBN 08/01 00H05

ARR CPT 10/01 07H15

SLD CPT 10/01 18H55

ETA WVB 12/01 17H30

ETD WVB 13/01 06H00

ETA VIG 22/01

ETA RTM 26/01

ETA HBG 28/01

DELAYS:-

Berthing:64.6hrs

Weather:15.8hrs

Sdores:29.6hrs

SAPO: 5.6hrs

Ships:12.5hrs

Receivers:7.9hrs

PLZ Containers to be transshipped at Cape Town

All Maputo cargo now being transshipped on Cheyenne

ALGOA BAY 2670/7107

ARR WVB 20/12 20H00

SLD WVB 22/12 19H30

ARR CPT 24/12 22H00

SLD CPT 26/12 18H06

ARR DBN 29/12 05H30(MW 11)

SLD DBN 03/01 19H35

ARR RCB 04/01 04H20

SLD RCB 08/01 03H10

ARR DBN 08/01 10H18(D Berth)

ETD DBN 13/01 14H00

ETA SDB 16/01 06H00

ETD SDB 20/01 22H00

ETA CPT 21/01 06H00

ETD CPT 22/01 06H00

ETA RTM 02/02

ETA ANT 05/02

FIRM STACKS

JHB/DBN DBN

OPEN21/12 0600 04/07 1800

CLOS03/01 1700 07/07 1800

CPT JHB/CPT

10/01 0600 05/01 0600

12/01 1700 09/01 1700

DELAYS:-

Berthing:44.1hrs

Weather:12hrs

Sdores:14.9hrs

SAPO: 2.8hrs

Ships:16.1hrs

Receivers:0hrs

PE containers to be transshipped at CPT

MPM containers to be transshipped on to UBC Sacramento 9610

PURPLE BEACH 7201/7108

ARR WVB 31/12 06H00

SLD WVB 03/01 15H30

ARR CPT 05/01 15H55

SLD CPT 06/01 12H55

ARR PLZ 07/01 16H30

SLD PLZ 08/01 16H55

ARR DBN 09/01 18H00(C-BERTH)

SHIFTED 12/01 04H20(MW-11)

SHIFT 15/01 06H00(NP 100)

ETD DBN 17/01 06H00

ETA RCB 17/01 14H00

ETD RCB 22/01 06H00

ETA DBN 22/01 14H00(D-BERTH)

ETD DBN 26/01 14H00

ETA CPT 28/01 14H00

ETD CPT 29/01 14H00

ETA VIG 11/02

ETA RTM 14/02

ETA ANT 16/02

FIRM STACKS

JHB/DBN DBN

OPEN 16/01 0600 19/01 0600

CLOS 18/01 1700 23/01 1800

JHB/CPT CPT

19/01 1700 24/01 0600

23/01 0600 26/01 1800

MPM containers to be transshipped on Grey Fox 7202

GREY FOX 7202 / 7109

ARR WVB 07/01 15H00

SLD WVB 08/01 12H30

ARR CPT 10/01 17H30

SLD CPT 11/01 16H50

ETA PLZ 12/01 21H00

ETD PLZ 13/01 12H00

ETA DBN 14/01 16H00(C BERTH)

SHIFT 17/01 06H00(MW)

ETD DBN 18/01 06H00

ETA MPM 19/01 06H00

ETD MPM 20/01 22H00

ETA RCB 21/01 14H00

ETD RCB 26/01 14H00

ETA DBN 27/01 22H00(C BERTH)

ETD DBN 29/01 06H00

ETA CPT 31/01 06H00

ETD CPT 01/02 06H00

ETA WVB 03/02 06H00

ETD WVB 03/02 22H00

ETA VIG 16/02

ETA RTM 19/02

ETA HBG 21/02

ETA ANT 25/02

PROV STACKS

JHB/DBN DBN

OPEN18/01 0600 23/01 1800

CLOS22/01 1700 26/01 1800

JHB/CPT CPT

23/01 1700 26/01 0600

25/01 0600 30/01 1800

MOL S.A.

Maputo to Asia Service

Port	MOL Niger V.3027B	MOL Dream V.3106B	MOL Volta V.3228B	Sassandra V.3428B	MOL Niger V.3628B
Maputo	11-Dec	5-Jan	19-Jan	31-Jan	19-Feb
Port Louis	15-Dec	9-Jan	23-Jan	4-Feb	23-Feb
Singapore	23-Dec	17-Jan	31-Jan	12-Feb	3-Mar
Hong Kong	27-Dec	21-Jan	4-Feb	16-Feb	7-Mar

Subject to alteration without notice

OCEAN AFRICA EAST COAST SERVICE SCHEDULE

VESSEL	VOY	DUR		MPM		BEW		MNC		DAR		MNC		BEW		MPM		DUR	
RANGE	118	Wed	20/12	Thu	21-22/12	Sun	24-31/12	Tue	2-3/1	Fri	5-13/1	Mon	15-16/1	Thu	18-20/1	Mon	22/1	Tue	23/1
Mai rickmers	1	Thu	28/12	Fri	29-30/12	Sun	31/12-7/1	Tue	9-12/1	---	---	Tue	9-12/1	---	---	Sun	14-15/1	Tue	16/1
SEZELA	50	Fri	5/1	Sat	6-7/1	---	---	Wed	10-11/1	---	---	Wed	10-11/1	Sat	13-17/1	Thu	18-19/1	Sat	20/1
SEZELA	51	Tue	23/1	Wed	24-25/1	Sat	27-29/1	Wed	31/1-1/2	Sat	3-5/2	Wed	7-8/2	Sat	10-12/2	Wed	14-15/2	Fri	16/2
RANGE	119	Thu	25/1	Fri	26-27/1	Mon	29-31/1	Sat	2-4/2	---	---	Sat	2-4/2	---	---	Wed	7-8/2	Fri	9/2
RANGE	120	Sun	11/2	Mon	12-13/2	Thu	15-17/2	Mon	19-20/2	Thu	22-24/2	Mon	26-27/2	Thu	1-3/3	Mon	5-6/3	Wed	7/3
UMGENI	54	Sun	25/2	Mon	26-27/2	Thu	1-3/3	Mon	5-6/3	Thu	8-12/3	Wed	14-15/3	Sat	17-19/3	Wed	21-22/3	Fri	23/3

VESSEL	VOY	DUR		MPM		BEW		DUR	
UMGENI	49	Tue	2/1	Thu	4-5/1	Sat	6-11/1	Sat	13/1
DORIA	14A/B	Thu	11/1	Fri	12/1	Sun	14-16/1	Thu	18/1
UMGENI	50	Mon	15/1	Tue	16-17/1	Fri	19-21/1	Tue	23/1
UMGENI	51	Thu	25/1	Fri	26-27/1	Mon	29-31/1	Fri	2/2
UMGENI	52	Sun	4/2	Mon	5-6/2	Thu	8-11/2	Tue	13/2
UMGENI	53	Thu	15/2	Fri	16-17/2	Mon	19-21/2	Fri	23/2

Appendix B. Detailed Lebombo Border Traffic Information

Table B-1

Estimated Total Annual Tonnage by Vehicle Group and Commodity, Lebombo Border

Commodity	Vehicle Group 02 Rigid Truck			Vehicle Group 03 4x2 Truck Tractor Combination			Vehicle Group 04 6x4 Truck Tractor –5 Axle			Vehicle Group 05 6x4 Truck Tractor –6 Axle			Vehicle Group 06 Interlink or Rigid and drawbar			E Total	I Total	Total
	E	I	T	E	I	T	E	I	T	E	I	T	E	I	T			
Agricultural Products	0	6960	6960	0	0	0	0	0	0	0	0	0	0	0	0	0	6960	6960
Bags / Sacks	0	0	0	0	0	0	20880	0	20880	0	0	0	24360	0	24360	45240	0	45240
Cement / Coal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drinks / Beverages	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Empty	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fuels	0	0	0	0	0	0	0	0	0	0	0	0	73080	0	73080	73080	0	73080
Iron / Steel	0	0	0	0	0	0	0	0	0	0	0	0	0	24360	24360	0	24360	24360
Chemicals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Livestock	0	0	0	0	0	0	0	0	0	21750	0	21750	0	0	0	21750	0	21750
Machinery / Vehicles	0	0	0	0	0	0	41760	20880	62640	87000	21750	108750	0	0	0	128760	42630	171390
Other	6960	13920	20880	15660	46980	62640	0	20880	20880	195750	195750	391500	194880	170520	365400	413250	448050	861300
Perishables	20880	13920	34800	0	0	0	0	0	0	195750	239250	435000	0	0	0	216630	253170	469800
Rock / Stone / Ores	0	0	0	0	0	0	0	0	0	21750	0	21750	0	0	0	21750	0	21750
Sail / Tarpaulin	20880	6960	27840	0	0	0	125280	41760	167040	609000	326250	935250	365400	73080	438480	1120560	448050	1568610
Container	0	0	0	0	0	0	20880	20880	41760	43500	87000	130500	0	0	0	64380	107880	172260
Wood / Timber / Lumber	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
People	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	48720	41760	90480	15660	46980	62640	208800	104400	313200	1174500	870000	2044500	657720	267960	925680	2105400	1331100	3436500

Note: At this point 3.4 million tons are transported on the corridor per year, according to road count figures supplied by SANRAL and TRAC.

E—Export, I—Import, T—Total

SOURCE: *Mpumalanga Province Freight Transport Data-Bank*

Table B-2

Container Proportions by Vehicle Numbers and TEU Count, Lebombo Border

Code	Container Type	By Vehicle Count		By TEU Count		By Vehicle (%)	
		Export	Import	Export	Import	Export	Import
01	1 x 6 metre	870.0	0.0	870.0	0.0	33.3	0.0
02	2 x 6 metre	0.0	0.0	0.0	0.0	0.0	0.0
03	3 x 6 metre	0.0	0.0	0.0	0.0	0.0	0.0
04	1 x 12 metre	1740.0	870.0	3480.0	1740.0	66.7	100.0
05	1 x 6 metre + 1 x 12 metre	0.0	0.0	0.0	0.0	0.0	0.0
1X	1 x 6 metre + Other Goods	0.0	0.0	0.0	0.0	0.0	0.0
2X	2 x 6 metre + Other Goods	0.0	0.0	0.0	0.0	0.0	0.0
3X	3 x 6 metre + Other Goods	0.0	0.0	0.0	0.0	0.0	0.0
4X	1 x 12 metre + Other Goods	0.0	0.0	0.0	0.0	0.0	0.0
5X	1 x 6 metre + 1 x 12 metre + Other Goods	0.0	0.0	0.0	0.0	0.0	0.0
		2610.0	870.0	4350.0	1740.0	100.0	100.0

Note: Annual container movements by road are estimated to be about 4,350 TEU exported from South Africa in the eastbound direction and 1,740 TEU imported from Mozambique to the west.

SOURCE: *Mpumalanga Province Freight Transport Data-Bank*

Table B-3

Commodity Proportions, by Vehicle Numbers and Estimated Tonnage, Lebombo Border

		By Vehicle (%)		By Tonnage (%)	
Code	Vehicle Commodity	Export	Import	Export	Import
A	Agricultural Products	0.0	1.1	0.0	0.5
B	Bags / Sacks	1.9	0.0	2.1	0.0
C	Cement / Coal	0.0	0.0	0.0	0.0
D	Drinks / Beverages	0.0	0.0	0.0	0.0
E	Empty	4.8	27.8	0.0	0.0
F	Fuels	2.9	0.0	3.5	0.0
I	Iron / Steel	0.0	1.1	0.0	1.8
K	Chemicals	0.0	0.0	0.0	0.0
L	Livestock	1.0	0.0	1.0	0.0
M	Machinery / Vehicles	5.8	2.2	6.1	3.2
O	Other	18.3	24.4	19.6	33.7
P	Perishables	11.5	14.4	10.3	19.0
R	Rock / Stone / Ores	1.0	0.0	1.0	0.0
S	Sail / Tarpaulin	50.0	23.3	53.2	33.7
T	Container	2.9	5.6	3.1	8.1
W	Wood / Timber / Lumber	0.0	0.0	0.0	0.0
X	People	0.0	0.0	0.0	0.0
Total Percentage		100.0	100.0	100.0	100.0

Note: The main commodities identified were perishables, machinery and vehicles, and containers. Approximately 50% of vehicles were carrying unidentifiable cargo covered with tarpaulins. Eight percent of import–westbound vehicles were empty, compared to 5 percent of export-eastbound vehicles.

SOURCE: *Mpumalanga Province Freight Transport Data-Bank*

Appendix C. Port Summary Traffic Statistics

Table C-1

Maputo Port Tonnage Statistics 2000–2006

Port Zone	Cargo Type	Imp/Exp	2000	2001	2002	2003	2004	2005	2006
Maputo	General dry cargo	Import and export	230,533	200,916	539,968	250,351	252,357	337,660	406,760
	Citrus	Export	75,189	60,678	61,469	89,519	105,248	97,450	68,003
	Fuel oil, etc	Export	13,186	9,667	6,367	773	0	0	0
	Molasses	Export	26,074	17,654	8,503	0	0	6,530	28,000
	Bulk sugar	Export	545,138	423,198	404,186	452,174	378,668	352,369	427,688
	Containers (TEU)	Import and export	31,876	32,425	35,010	39,486	44,349	54,088	62,516
	Containers (tonne)		337,659	404,352	452,456	448,984	475,128	572,311	595,044
	Ferro-alloys	Export	34,338	48,565	178,797	249,515	402,899	403,430	504,713
	Other bulk cargo	Import and export				112,635	92,116	227,902	338,413
	Steel scrap	Export	9,087	16,258	25,825	30,448	34,393	22,517	29,537
	Steel products	Export	6,775	155	133,097	20,503	48,928	71,587	88,409
Matola	Bulk coal	Export	976,641	1,348,077	1,097,590	1,314,764	1,316,325	1,720,997	1,504,475
	Bulk grain	Import	175,380	168,356	295,763	290,708	259,725	272,247	296,259
	Mozal	Import and export	291,431	896,257	872,567	1,408,584	1,820,476	1,889,513	1,931,223
	Petroleum	Import	263,005	361,553	320,141	322,375	325,227	346,800	368,474
Coastal	Containers (teu)	Import and export	2,995	3,752	2,351	2,165	4,188	3,588	3,039
	Containers (tonne)		51,544	45,777	33,334	35,851	45,735	39,922	39,643
	General dry cargo	Import and export				9,402	10,559	20,487	10,120
	Total tonnage		3,035,980	4,001,463	4,430,063	5,036,586	5,567,784	6,381,722	6,608,761
Total Tonnage Exports			1,886,100	2,464,100	2,376,700	2,741,556	3,067,999	3,722,474	3,699,194
Total Tonnage Imports			1,663,200	1,923,600	1,804,400	2,222,618	2,443,491	2,599,014	2,859,644
Port Calls	Maputo		371	348	386	361	370		461
Port Calls	Matola		97	155	156	176	205		209

Port Zone	Cargo Type	Imp/Exp	2000	2001	2002	2003	2004	2005	2006
	Total Vessels		468	503	542	537	575	640	670

Notes: Average berth occupancy is 53; therefore, there is almost no delay waiting for a berth.

- *Crane moves per crane per hour—15 TEU*
- *Average dwell time for cargo in the port—12 days*
- *Average waiting time for trucks—15 minutes*

There are five regular container services per month:

1. UniFeeder, Southern and Eastern African Coast—Weekly service

2. MSC, East Africa and South Asia—Every 10 days

3. GCL, East Africa and South Asia—Every 10 days

4. MACS, Southern Africa and West Europe—Monthly service

5. Messina, East Africa and Mediterranean—Monthly service

On average, 16 departures per month

Appendix D. Checklist Summary Results

Table D-1

Logistics Services Audit Results and Comparisons with Other Countries

Logistics Services	Mozambique	South Africa	Singapore	Thailand	Bangladesh
Domestic containers	Partial	Partial	Yes	Yes	No
Track & Trace	Yes	Partial	Yes	Yes	Partial
Distribution centers	Partial	Yes	Yes	Partial	No
Cross docking facilities	No	Partial	Yes	Partial	No
National booking centers	No	Partial	Yes	Partial	Partial
Standard Service Contract	No	Yes	Partial	Partial	No
House B/L	Yes	Yes	Yes	Partial	Yes
Multimodal Transport Document	Yes	Yes	Yes	Partial	Partial
Forwarding Industry concentration	Yes	No	No	No	No
Concentration of foreign LSP	Partial	Partial	Yes	Partial	No
Trucking industry concentration	Yes	Yes	Partial	NO	No
Truck leasing	Yes	Yes	Yes	Yes	Partial
Advanced information services	Partial	Partial	Yes	YES	Yes
Multiple mobile phone providers	Partial	Yes	Yes	YES	Yes
Multiple ISP providers	Yes	Yes	Yes	Yes	Yes

SOURCE: *TLDT Logistics Audit Checklist*

Table D-2

Customs Audit Results Compared to Other Countries

Customs	Mozambique	South Africa	Singapore	Thailand	Bangladesh
Electronic single window	Planned	Yes	Partial	Partial	Planned
Integrated border management	N/A	N/A	N/A	N/A	Partial
WCO Harmonized system code	Yes	Yes	Yes	Yes	Yes
Customs valuation based on WTO rules	Yes	Yes	Majority	Majority	Yes
Reduced number of tariff bands	Yes	Yes	Yes	Yes	Yes
Computerized input of customs declaration data	Yes	Yes	Partial	Partial	Yes
Direct trader input	Partial	Yes	Partial	Partial	Partial
ASYCUDA or similar system	Yes	Yes	Yes	Yes	Yes
Green Channel	Yes	Yes	Yes	Yes	Partial
Clearance on documents with post-audit	Yes	Yes	Partial	Partial	Yes

SOURCE: *TLDT Logistics Audit Checklist*

Table D-3

Road Transport System Audit Results and Comparisons with Other Countries

Road transport	Mozambique	South Africa	Singapore	Thailand	Bangladesh
Multilane dual carriageways	Partial	Partial	Yes	Yes	No
Limited access highways	Yes	Partial	Yes	Partial	No
Toll roads	Yes	Yes	No	Yes	No
Ring road around the capital	Yes	Yes	Yes	Yes	Partial
Ring roads around other major cities	Planned	Yes	No	Yes	Planned
Partial truck bans in the capital	No	Yes	No	Yes	Yes
Partial truck bans in other major cities	No	Yes	No	Partial	No
Control of axle load limits	Yes	Yes	Yes	Partial	Partial
Articulated trucks	Yes	Yes	No	Partial	Partial
Modern commercial trucks	Partial	Yes	Partial	Yes	Partial
Road worthiness certificates	Yes	Yes	Yes	Yes	Yes
Pollution control	Planned	Planned	Yes	Yes	Partial
Collateralization of trucks for commercial borrowings	Partial	Yes	Yes	Yes	Partial
Truck Manufactures	No	No	No	Yes	No
Low import duties for trucks	Yes	Yes	No	Partial	No
Truck Part Manufactures	No	No	No	Partial	No
Low import duties for truck parts	Partial	Partial	No	Partial	No
International Transport of Goods TIR	No	No	No	No	No

SOURCE: *TLDT Logistics Audit Checklist*

Table D-4

Rail System Audit Results and Comparisons with Other Countries

	Mozambique	South Africa	Thailand	Bangladesh
Unified gauge	Yes	Yes	Yes	No
Standard gauge	No	Yes	No	No
Double track	No	No	No	No
Dedicated track for freight services	No	No	No	No
Centralized train control	Yes	No	No	No
Advanced train control	Planned	No	No	No
Electrified lines	No	No	No	No
Bogie Wagons	Yes	Yes	Yes	Yes
Heavy Load Wagons	Planned	No	No	No
Long train	Planned	No	No	No
Modern locomotives	No	Yes	Partial	Partial
Unit container train operations	Yes	Partial	Yes	Yes
24 hours freight terminal operations	Yes	Yes	Yes	Yes
Privately owned rail wagons	No	No	Yes	No
Private freight trains operations	No	No	Yes	No

SOURCE: *TLDT Logistics Audit Checklist*

Table D-5

Maritime and Port System Audit Results and Comparisons with Other Countries

	Mozambique	South Africa	Singapore	Thailand	Bangladesh
Direct mainline services	Yes	Yes	Yes	Yes	No
Feeder services	Yes	Yes	Yes	Yes	Yes
Regional services (>1,500TEU)		Yes	Yes	Yes	No
Landlord port	Yes	Yes	Yes	Partial	Yes
Container terminal concessions	Yes	No	No	Yes	No
Day of the week shipping services	No	Yes	Yes	No	Yes
Portnet or equivalent	Planned	Yes	Yes	Yes	Planned
Direct debit payment system	No	No	Yes	Yes	Yes
Pilot free entry for large vessels	No	No	Partial	No	No
Post panamax gantry cranes	No	Yes	Yes	Yes	No
Computerized terminal control system	Partial	Yes	Yes	Yes	Planned
Automated gate entry	No	No	Yes	Planned	No
Off- dock container yard	No	Yes	No	Yes	Partial
Bonded distribution facilities	No	Yes	Yes	Yes	No
Full truck scanners	Yes	Yes	Yes	Partial	Planned
Shunting lines to port	Yes	Yes	No	Yes	Yes

SOURCE: *TLDT Logistics Audit Checklist*

Appendix E. Issues Identified by Stakeholders in Each Sector

Table E-1

Summary of Issues Identified by Stakeholders and Their Importance

Transport & Logistics Issue	Sugar (South Africa to Mozambique by Rail)	Chrome Ore (South Africa to Mozambique by Rail)	Manganese (South Africa to Mozambique by Road)	Fertilizer (Mozambique to South Africa by Road)	Ferro Chrome (Mozambique to South Africa by Road)	Logistics and Freight Forwarders (Import and Export)
CUSTOMS / BORDER						
Infrastructure	+	+	++	++	++	++
Space limitations at current Lebombo/Ressano Garcia border post for parking and future development	++	++	++	++	++	++
No EDI link between Mozambique and South Africa customs	+	++	++	++	++	++
No one-stop border post	-					++
No bonded warehouses near customs zones (Koomatiport), or Maputo Sea port	-	-	-	-	-	++
FRIGO INFRASTRUCTURE						
Operations	-	-				++
No dry port operations near the border between Mozambique and South Africa	+	++	++	++	++	++
Delays and long time needed for clearing goods through border post, inlcuding congestion caused by combined passenger and freight processing	-	-	++	++	++	++
High level of congestion: No separate clearing and immigration system for commercial and passenger/ tourists.	+	++	++	++	++	++
Customs declaration is done twice and requiring different procedures and documentation.	+	-	+	++	+	++
Expensive supervision by customs of trucks crossing the border, due to gap between border posts	+	+	+	+	+	++
Staff inefficiency at the border premises due to inadequate staffing and organization	+	+	-	+	+	++

Transport & Logistics Issue	Sugar (South Africa to Mozambique by Rail)	Chrome Ore (South Africa to Mozambique by Rail)	Manganese (South Africa to Mozambique by Road)	Fertilizer (Mozambique to South Africa by Road)	Ferro Chrome (Mozambique to South Africa by Road)	Logistics and Freight Forwarders (Import and Export)
Some bribery and corruption related to requests for more speedy service from officials.	+	+	++	++	++	++
No single administrative document or electronic single window for customs clearance on Mozambique side, leading to inefficient operations	+	+	++	+	+	++
Excessive size of paper documentation required for Mozambique customs.	-	-	-	-	-	++
Short working hours of Frigo Customs Area and lengthy processing times	+	++	+	+	+	++
Lack of good operational communications between customs of two countries (see EDI infrastructure)						
Border Posts on both sides not operational 24/7. Border only open for 10 hours per day with commercial clearing closing at 15:00 daily.	-	+				++
No public information regarding standard operating procedures for cargo processing at the border?	++	++	+	+	+	++
No rail passenger service across the border	NA	NA	++	++	++	++
Policy						
Lack of clarity and transparency from Government regarding plans for border post retarding private sector investment in infrastructure.	++	+	+	+	+	++
No Mozambican legislation to allow for extra-jurisdictional execution of clearing and control functions at border posts.	+	+				++
Regulations allow seven days for import freight from Mozambique by rail to clear customs, leading to delays and security problems?	-	-	-	-	-	+

Transport & Logistics Issue	Sugar (South Africa to Mozambique by Rail)	Chrome Ore (South Africa to Mozambique by Rail)	Manganese (South Africa to Mozambique by Road)	Fertilizer (Mozambique to South Africa by Road)	Ferro Chrome (Mozambique to South Africa by Road)	Logistics and Freight Forwarders (Import and Export)
No regulations requiring electronic single window or single administrative document	++	++	++	++	++	++
MAPUTO AND MATOLA PORTS AND COASTAL SHIPPING						
Infrastructure						
Draft of Maputo and Matola port channel (12m) inadequate for larger vessels	+	+	+	+	+	++
No modern gate information system at the port (barcodes, cameras, computer systems)	++	+	+	+	+	++
Lack of an advanced computerized information system to allow port and users to exchange information on the status of cargo	++	++	+	++	++	++
Operations						
Underutilization of Maputo and Matola ports	-	++	-	-	-	++
High compulsory scanning fee	++	++	++	++	++	++
Relatively low frequency and number of vessels calling at Maputo port	++	++				++
High cost of coastal shipping from Maputo to and from Durban	++	-				++
Transshipment of imports through port constrained by bond requirements.	++	++				++
Policy						
Inflexible, non-transparent policy imposed by recent scanning regulations	++	++	++	++	++	++

Transport & Logistics Issue	Sugar (South Africa to Mozambique by Rail)	Chrome Ore (South Africa to Mozambique by Rail)	Manganese (South Africa to Mozambique by Road)	Fertilizer (Mozambique to South Africa by Road)	Ferro Chrome (Mozambique to South Africa by Road)	Logistics and Freight Forwarders (Import and Export)
ROAD TRANSPORT						
Infrastructure						
Poor conditions of alternative roads other than the EN4 that connects South Africa with Mozambique	+	+	+	+	+	++
Insufficient parking facilities, service areas and truck-stops on the EN4 road	-	-	+	+	+	++
Operations						++
Informal payments required at police checkpoints on EN4	+	++	+	++	++	++
High toll fees adds to transport costs along corridor.	-	+				++
RAIL TRANSPORT						
Infrastructure						
Insufficient railway capacity in the link between South Africa and the port, related to line rehabilitation.	++	++	+	+	+	++
Insufficient and inadequately equipped freight facilities along Pretoria - Maputo rail corridor.	++	++	+	+	+	++
Turnaround time of trains very long - 20 to 40 days.	++	++	+	+	+	++
Operations						
Inefficient cooperation between CFM and Spoornet and no common train schedule.	++		+	+	+	++
Lack of locomotives and rolling stock to operate on rehabilitated line especially CFM, qne underpowered CFM locomotives sometimes require trains to be split, causing delays	++	++	+	+	+	++

Transport & Logistics Issue	Sugar (South Africa to Mozambique by Rail)	Chrome Ore (South Africa to Mozambique by Rail)	Manganese (South Africa to Mozambique by Road)	Fertilizer (Mozambique to South Africa by Road)	Ferro Chrome (Mozambique to South Africa by Road)	Logistics and Freight Forwarders (Import and Export)
Lack of regularly operating trains in the corridor, (although five train schedule is target which is sometimes achieved with Spoornet locomotives.)	++	++	+	+	+	++
Policy						
No public pricing schedule from Spoornet.	++	++	++	++	++	++
OTHER LOGISTICS SERVICES						
Infrastructure						
Lack of true Logistics Centers in the corridor, outside of Johannesburg, to promote competitiveness of the industries	-					++
Lack of an advanced computerized information system, throughout the corridor, linking the countries to allow port and users to exchange information on the status of cargo (related to border EDI issues-see above)	++	++	+	+	+	++
Policy & Operations						
Most agents in Komatipoort were not using the EDI system, and could not see the benefit, becaause Mozambique requires paper documents and the EDI paperwork goes in same pile as manual paperwork	+					++
Lack of trained logistics personnel (e-commerce skills, data management and interface solution, supply chain distribution, etc.)	++	++	++	++	++	++
Few added-value services (cross-docking, customization, manufacturing support, labeling, subassembly, reverse logistics), especially in Mozambique.	+	-				++

Transport & Logistics Issue	Sugar (South Africa to Mozambique by Rail)	Chrome Ore (South Africa to Mozambique by Rail)	Manganese (South Africa to Mozambique by Road)	Fertilizer (Mozambique to South Africa by Road)	Ferro Chrome (Mozambique to South Africa by Road)	Logistics and Freight Forwarders (Import and Export)
INTERMODAL TRANSPORT POLICY						
Lack of integrated transport strategy between countries (Mozambique and South Africa), although corridor committees are working on common problems and South Africa has a Transport Corridor Development policy	++	+	++	++	++	++

Notes: “N/A”—not applicable; “—“—No particular problem; “+”— Minor problem; “++”— Major problem