Mozambique

Diagnostic Trade Integration Study

VOLUME 3

CROP SUBSECTOR ANALYSES
RESULTS OF TRADE TRANSPORT FACILITATION AUDIT

November 2004

Additional copies of the Mozambique Diagnostic Trade Integration Study may be downloaded at www.tcb-project.com .

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1. Crop Subsector Analyses

Basic Crops Subsector

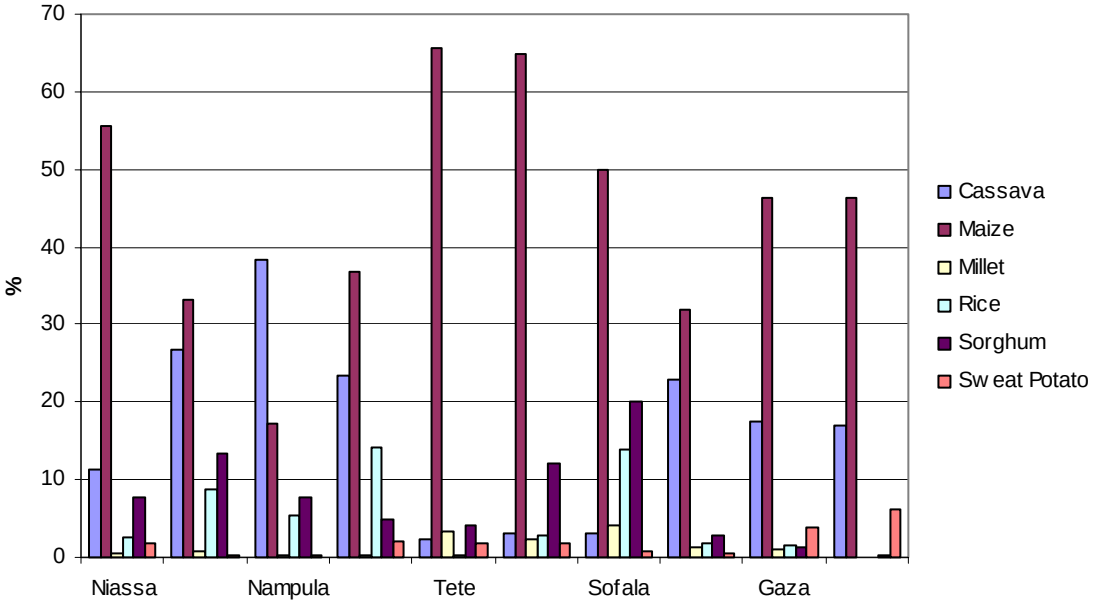
In this appendix we examine conditions and prospects for a number of crops grown by the same smallholder producers under very similar production and market conditions. We concentrate our analysis on food crops and "diversification" crops. Basic food crops include maize, cassava, rice, and sorghum; diversification crops include beans, pulses, oilseeds, and groundnuts. Though exports of these crops are not significant, some opportunities are worth investigating.

ORGANIZATION OF PRODUCTION

In all provinces, basic food crops predominate in terms of area cultivated (Figure 1-1). Maize, for example, occupies more than 50 percent of the cultivated land in Niassa, Tete, Manica, and Sofala. Cassava, the second most cultivated crop, is important in Nampula, Cabo Delgado, Zambezia, and Inhambane. Sorghum is important in the central regions of Sofala and Manica. Most smallholders produce maize and cassava simultaneously, which explains these crops' broad geographic distribution (Table 1-1).

All the basic food crops are produced in rain-fed and zero-input agriculture systems, except for maize, which is sometimes used as a break crop for tobacco and may receive some leftover fertilizer. Other than rice, all crops are produced in association with other crops, which usually results in low yields. Small improvements in cultural practices and the use of improved seeds could double current yields.

Figure 1-1
Distribution of Basic Food Crops (% of area cultivated by province)



SOURCE: *MADER, 2003.*

Table 1-1
Percent of Households Producing Basic Food Crops, by Crop and Size of Household Production

Crop	Small (less than 10 ha)	Medium (less than 50 ha)	Overall
Maize	78.5	87.8	78.6
Cassava	63.4	29.3	63.2
Rice	20.7	8.9	20.7
Sweet potato	11.9	17.8	11.9
Sorghum	26.9	25.2	26.9
Millet	4.6	14.5	4.7

SOURCE: *MADER, 2003.*

Increasing the use of inputs would seem to be a logical remedy to low productivity. But a recent study indicates that the price of inputs and crops (at the time of the study) tended to make the crops' gross-margins negative when inputs were used, while production without inputs appeared more viable. Hence, low productivity is less of an agronomic or technological issue than one involving the economics of production.

Most basic food crops are grown for household consumption. For example, maize, along with sweet potato, is one of the most marketed crops, but less than 1/5 of total production is sold (Table 1-2). The rest is retained for consumption by the farming household. These proportions have remained fairly constant over recent years.

Table 1-2
Marketing of Basic Food Crops by Households

Crop	Households Growing (%)	Households Selling (%)	Percent of Production Sold
Maize	79.1	21.3	19.5
Cassava	59	6.9	6.4
Sorghum	36.1	2	4.2
Rice	25.8	3.5	9.4
Sweet Potato	9.4	1.4	27.7
Millet	6.6	0.3	0.6

SOURCE: MADER- TIA 1995-1996.

The principal markets for basic food crops are local (especially for cassava and sweet potato) or regional (maize). Northern Mozambique does supply maize to Malawi when the latter is in deficit. Malawi could be a stable market for the maize produced in the north of Mozambique. The Government of Malawi, however, distributes "production packages" that tend to generate domestic surpluses that reduce demand for Mozambican maize.

Diversification crops are more market-oriented than the basic food crops, whose production they tend to complement. Because of variations in demand and agro-climatic conditions, some specialization exists among the different provinces: groundnuts are grown principally in Nampula, Cabo Delgado, Inhambane, Gaza, Maputo; beans in Niassa and Tete; and other pulses in Zambezia. Producers also tend to grow a mix of diversification crops simultaneously to minimize losses in case of adverse market and growing conditions (Table 1-3).

Like basic food crops, diversification crops are normally produced without inputs under rain-fed conditions using farm-kept traditional seeds, unless improved varieties are provided through the extension services of NGOs. Crop yields are far below what can be achieved with or without inputs because of poor seed, incorrect farming practices, and post-harvest losses. Greater use of inputs may not viable, however, given their costs and the market price for crops.

Table 1-3
Percent of Households with Crop Diversification by Type of Crop and Size of Household

Crop	Small (less than 10 ha)	Medium (less than 50 ha)	Overall
Groundnuts	40.5	53.7	40.6
Pigeon peas	17.4	4.4	17.4
Bambara beans / nuts	20.9	19.7	20.9
Common beans	7.6	17.6	7.6
Cowpeas	42.5	51.1	42.5

SOURCE: MADER.

Households growing diversification crops market their production more often and in greater proportions than those growing only staple crops (Table 1-4). Market linkages for these smallholders are therefore stronger than for other crops and their supply elasticity is higher. Markets for diversification crops are not normally limited to local or provincial outlets. Groundnuts, for example, have an important marketing channel from the northern to the southern provinces of Mozambique. Beans are traded from the northern provinces (Niassa and Nampula) to the south, while pigeon peas are normally exported to Malawi for processing and then exported to India.[1]

Table 1-4
Marketing of Diversification Crops by Households

Crop	Households Growing (%)	Households Selling (%)	Percent of Production Sold
Groundnuts	44.1	15.2	28.4
Cowpeas	39.5	4.4	12.2
Common beans	6.4	2.2	35.3
Other beans	26.5	4.1	24.7

SOURCE: MADER- TIA 1995-1996.

In contrast to other diversification crops, oilseeds have linkages with agro-processing units. The oilseeds sector has been expanding, especially through the interventions of various NGOs, principally in Manica, Zambezia, and Nampula. Since the colonial period, the principal oilseed has been sunflower. The sector suffered a marked

[1] Installation of a plant for processing this type of bean in Gurue has reduced exports to Malawi as products are processed locally.

decline during the civil war, but has been expanding since 1995 thanks to the distribution of manual hand presses. Sunflower production is linked mainly to the market demand attributable to these small presses and by medium electric presses.[2] Mozambique's larger industrial oil plants process mainly imported raw oil.

Soya production has piqued interest recently. One project, still in its early stages, intends to export raw beans to Norway for processing into animal feed.[3] White sesame, another important oilseed, is not processed locally but exported whole because it fetches higher prices as seed on the international market. Sesame is produced mainly in Nampula and Zambezia and exported to Japan and India for the confectionery industry. Like other diversification crops, yields of oilseeds tend to be low and the margin for improvement is good if production techniques are improved.

SUBSECTOR PERFORMANCE AND DETERMINANTS

Once the war ended and smallholders returned to rural areas and cultivated the land, production of basic food crops increased dramatically (Figure 1-2). Only yield increases of cassava are attributable to better seeds and agronomic practices. Here, however, the reliability of the data is in question because productivity levels are higher than one would expect with the use of inputs—and absence of inputs characterizes the entire sector.

Market dynamics for basic crops have been unstable in recent years, especially for maize because of Malawi's "starter packs." These packs transform a long-term food deficit into a surplus, dampening prices in Mozambique. In years without such assistance, demand in Malawi surges and drives up prices for Mozambican maize. Maize prices fluctuate widely throughout the year,[4] usually to the benefit of traders with sufficient financial and storage capacity. Thus, for smallholders with poor access to market information, the market for maize is an unreliable source of revenue. In any case, smallholders are interested mainly in ensuring sufficient food for their own consumption, selling only the surplus. Market price and demand signals may influence their production decisions but do not determine them.

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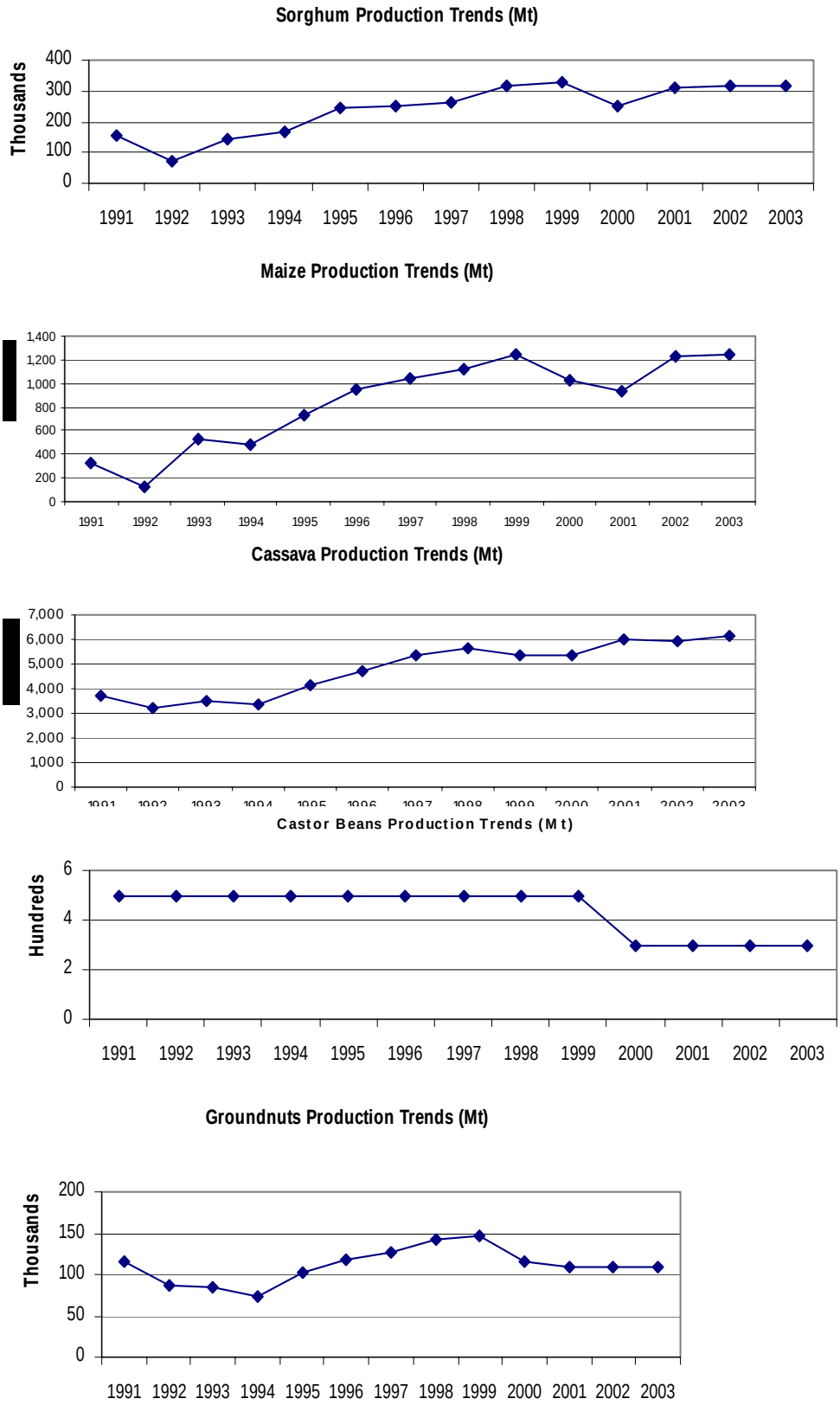
[2] With a capacity between 300-5,000 tons per year.

[3] In 2004 fewer than 1,000 tons of soybeans are expected to be produced in Nampula through the associations supported by CLUSA as a pilot project for expanding exports to Norway.

[4] Between December 1999 and April 2001, maize prices (based on SIMA) oscillated between 467 and 1,480 mt/kg.

Figure 1-2
Production Trends in Basic Food Crops (Source: FAO Statistics)



Production of diversification crops has also increased. More land is being cultivated, and as more rural infrastructure and rural markets are rehabilitated producers are better able to respond to demand. Small agro-processing units have provided a secure outlet for oilseed, which is largely why that crop has expanded production. Other diversification crops have not fared as well. For example, the recent defaults of buyers of paprika and sunflower have made smallholders very cautious in responding to short-term market trends

POLICY AND INSTITUTIONAL ENVIRONMENT

Apart from established research and extension services, these sectors receive no specific policy or institutional support in Mozambique. Other countries in the region implement domestic agricultural support policies that cause strong price fluctuations, disrupt trade, and undermine market relationships.

DEVELOPMENT OPPORTUNITIES AND OBSTACLES

Basic Food Crops

A recent study[5] provided a favorable rating for the regional market potential of maize, especially in Malawi. The study predicted attractive gross margins using low levels of inputs and better agronomic practices. Another study[6] identified a viable investment opportunity in a new maize mill in Lichinga. Other regional export opportunities may exist for maize during June and the end of August before the North American harvest comes to the market. Mechanisms such as commodity exchanges, crop insurance, and inventory credit can also expand markets, but are not yet practical because productivity is low and production geographically dispersed. Their potential should be re-examined as production expands.

For cassava, development opportunities lie mainly in processing units for the production of starch, for which the market is strong and margins attractive. South African starch producers recently shifted their raw material supply from maize to cassava because of rising maize prices. Various investors are exploring the possibility of setting up a processing plant in Inhambane but have encountered high logistics costs for raw material supply because cassava production is dispersed. In addition, the price of cassava as an industrial input is lower than its price as a food crop.[7]

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[5] Tickner *et al*. (2001).
[6] GPSCA / MADER (2002).
[7] External Market Task Force – FAO (2004).

Cassava could also be substituted for maize in animal feed (up to a limit of 20 percent) if supplemented with nutrients. Expansion of livestock production in Mozambique could present an opportunity for cassava in the central and southern provinces.

Diversification Crops

Beans also have present interesting opportunities. Pigeon pea could be processed in Mozambique, instead of Malawi, and directly exported to India during the two weeks when India production has not started and prices are attractive. This would require only fast-growing varieties. A recent study identified lucrative market opportunities in South Africa for various other types of beans (i.e., dry beans, cowpea, green and black grams). [8]

Oilseed production expanded during the second part of the 1990s and then stabilized. According to Technoserve, an NGO, the best prospects are in animal feed rather than edible oil. Production of sunflower and soybeans could be expanded in the central provinces of Manica and Sofala, if the crops are linked to agro-industrial investment in a plant to process animal feed to benefit from the expansion of the livestock sector.[9] The tariff advantages that Mozambique enjoys as a developing country could also give rise to export opportunities, particularly for the Norwegian market. But productivity must be improved and logistics and transport costs lowered before such trade can develop.

Some export opportunities for groundnuts exist in South Africa and Europe, provided that aflatoxin contamination is eliminated. CARE is working on developing new seeds and better agronomic techniques as well as market linkages for exporting groundnuts through niche markets (i.e., fair trade, organic) in the UK. An entrepreneur in Nampula is developing an outsourcing scheme that links smallholder production of groundnuts with cashew production. The scheme provides technical assistance and seeds to the farmers and ensures a market for the produce through the same Netherlands importer that is buying the cashew.

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[8] External Market Task Force – FAO (2004).

[9] This plant for animal feed has yet to be produced, but the entrepreneur will invest into an 'extruder' for producing animal feed from soybean while seeking other required investments.

Cashew Subsector

Thirty years ago Mozambique led the world in raw cashew exports and was a major exporter of cashew kernels. War, neglect, and a negative policy environment led to a sharp decline in cashew production during the 1980s and 1990s, from which there is now an incipient but uncertain recovery. Cashew remains an important cash crop in coastal areas and it is estimated that about 40 percent of Mozambique's farmers possess cashew trees. It is also an important export crop as shown in Tables 1-5, 1-6, and 1-7. The key production areas are Nampula, Cabo Delgado and Inhambane (Table 1-8).

Table 1-5
Raw Cashew Exports

Years	Quantity (Tons)	Average Price (US$/Ton)	Total Export Value ('000 US$)
1998 / 99	30,391	695.33	21,132
1999 / 00	28,537	708.39	20,215
2000 / 01	27,548	408.27	11,247
2001 / 02	25,592	373.93	9,570
2002 / 03	36,288	392.63	14,248

SOURCE: INCAJU

Table 1-6
Processed Cashew

Year	Quantity (Tons)	Average Price (US$/Kg)	Total Export Value ('000 US$)
1995	1,863	3.74	6,968
1996	4,500	3.88	17,460
1997	3,910	3.65	14,272
1998	4,888	3.89	19,014
1999	2,401	4.29	10,300
2000	3,174	4	12,696
2001	1,037	2.11	2,188
2002	540	1.79	967

SOURCE: INCAJU

Table 1-7
Total Export Revenues from Raw Cashew

Year	Revenues ('000 US$)
1998	40,146
1999	30,516
2000	23,943
2001	11,758
2002	15,214

Note: Assuming that the exports of raw cashew from a campaign are concentrated in the first part of the year

SOURCE: INCAJU and author's calcuations.

Figure C-3
Raw Cashew Marketed Output, Raw Cashew Exports, and Processed Cashew Exports, 1937–1998

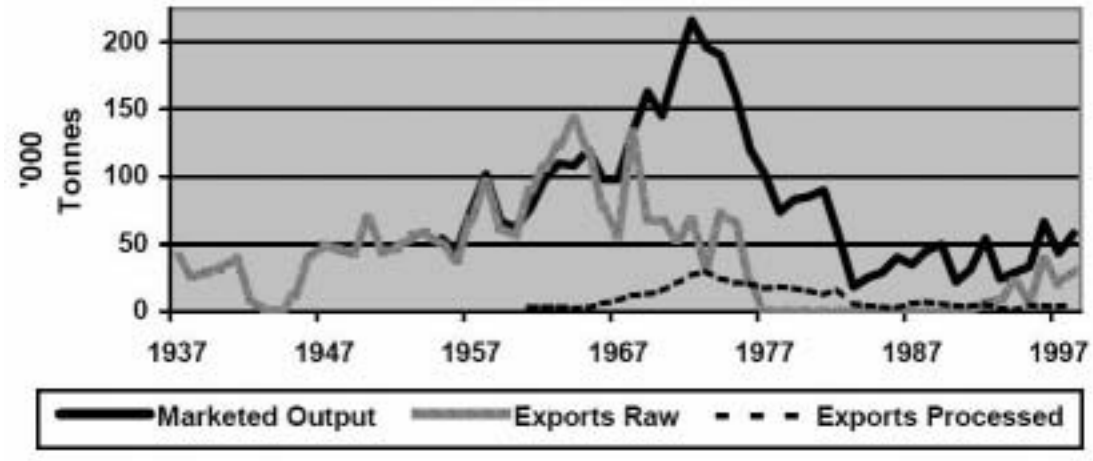

Table 1-8
Cashew Production by Region

Years	Total	Gaza	Inhambane	Zambezia	Nampula	Cabo Delgado	Other Provinces
1995 / 6	66,510	10,231	8,912	3,988	36,650	2,087	4,642
1996 / 7	43,325	4,819	5,610	1,802	29,892	990	212
1997 / 8	51,700	5,966	4,569	3,865	35,601	1,554	161
1998 / 9	58,720	11,124	7,000	5,756	32,200	1,813	827
2000 / 1	52,088	5,966	4,569	3,865	35,601	1,544	543
2001 / 2	50,176	2,188	750	2,956	41,042	3,111	129
2002 / 3	63,818	2,646	3,386	10,529	41,471	5,686	100

SOURCE: Incaju (National Institute of Cashew –Instituto Nacional do Caju).

ORGANIZATION OF PRODUCTION

Cashew is largely a smallholder crop; only about 5 percent of the marketed crop originates from commercial farmers or vertically integrated producers.[10] The average cashew-producing household has about 60 trees on a plot of about 1.2 ha, though major variations from this figure exist. Differences between the south (i.e., Inhambane and Gaza) and the north (i.e., Nampula) are also significant. In the north about 80 percent of the cashew nuts produced by smallholders are marketed, while in the south—where cashew is a significant food crop—only 30 to 50 percent is sold.

Yields are extremely low, less than 3 kg of raw nuts per tree per year. Farmers provide no agrochemicals and very little labor for their trees, which are generally old and suffering from diseases, such as *oidium anacardium*[11] and the *helopeltis.*[12] Farmers' lack of interest in optimizing output per tree is attributed to a variety of factors including

- Competition for scarce resources from annual food crops such as maize and cassava;
- Low prices, poor marketing channels, high transport costs, lack of quality-linked price incentives; and
- Poor extension services.

The government's attempts to promote pesticide use and other techniques for increasing productivity have so far produced mixed results, partly because of the wide dispersion of individual trees and the absence of clearly defined orchards, even in the main growing areas. This increases the cost of cultivation for growers and of procurement for processors. For instance, only a minority of farmers with larger areas and larger numbers of trees have responded to the Institute of Cashew's programs of cashew tree re-population and "integrated pest management." Some processors are now investing in their own plantations as well as promoting new orchard-style plantings by smallholders on at least one hectare in an attempt to benefit from vertical integration. If successful, this could lead to the emergence of commercial cashew growers in addition to the existing small-scale "gatherers" of nuts from highly dispersed and rundown trees.

The cashew subsector is also characterized by competition among processors and traders for limited quantities of raw nuts. This was particularly acute during the

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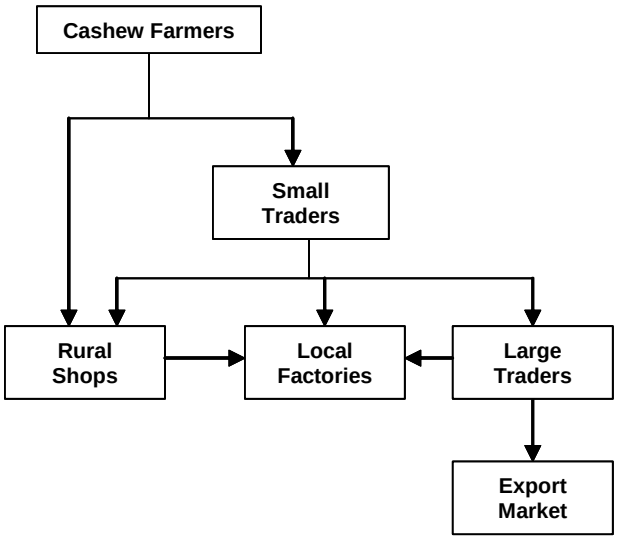
[10] INCAJU estimates that smallholders produce 95 percent of commercialized cashew.
[11] A fungus that reduces yield up to 70 percent.
[12] Pest that can cause complete crop loss.

mid-1990s, when it was more profitable to export raw nuts than to process them for their kernels. Even today traders can offer farmers better prices than many processors, although processors are slowly ascending in Nampula as a more cost-effective cashew processing capability emerges with government and donor support.

Cashew marketing involves a variety of actors, as Figure 1-4 shows.

Figure 1-4
Raw Cashew Market Structure



SOURCE: Garrido-Mirapeix and Sequeria-Wensnaider.

Farmers normally sell to small itinerant traders or rural shops ("postos de venda") serving rural areas, who sell to larger traders (concentrated in urban areas) or to processing units. Farmer associations are still few in number but have the great advantage of cutting out the middleman between farmers and large traders or processing units. The large traders export the cashew raw to India, the world's dominant raw nut buyer and world leader in kernel production. The traders often have parental or ethnic ties with their customers in India, rendering their business relationships very robust.

Despite the number of actors in the marketing system it is not competitive or efficient and suffers from a high degree of asymmetry. Farmers' information on markets and prices is weak and the small size of their transactions puts them at a disadvantage when negotiating with traders. Traders are few and tend to deal in large volumes and therefore have strong negotiating positions and good market knowledge and

linkages. High transaction costs and high marketing costs hamper the entry of associations and other non-traders into the system.

SUBSECTOR PERFORMANCE

We can distinguish five periods in the evolution of the cashew subsector: (1) boom in the 1950-1960s; (2) decline post-independence; (3) partial recovery after privatization; (4) decline after liberalization; (5) incipient long-term sustainability.

The cashew boom of the late 1950s and throughout the 1960s led to a peak in 1972 of 216,000 tons of raw cashew, 67,700 of which were exported raw and the rest processed into about 30,000 tons of cashew kernels. In that year cashew export revenues reached 26 percent of total export revenue and were the principal source of revenue for about one million rural households (about 60 percent of the rural population).[13] Mozambique was the world leader in the production of raw cashew nut and an important actor in the processed cashew market.

Post-independence was a period of dramatic decline. By the end of the 1970s production was at a level similar to that of the 1930s. The war and the emigration of Indian traders, the imposition of official farm gate prices below market value that removed producer incentives, and the promotion of collective farming villages that moved farmers away from their cashew orchards had disrupted rural marketing channels (Garrido-Mirapeix and Sequeira-Wenadsneider 2000). Capital-intensive state-owned processing factories stood idle for lack of raw material and financial viability.

After privatization in the early 1990s, the processing units partially recovered thanks to private investment and the return of producers to their lands after the war. In 1994-95 the World Bank proposed to end quantitative restrictions on the export of raw nuts and eliminate the export tax. With production so low, however, the old processing units could not compete for procurement of raw nuts without restrictions or taxes on the export of raw nuts. Thus, the industry vigorously opposed World Bank proposals. Exhibit 1-1 summarizes the ensuing negotiations, which ended in a compromise to phase out the export tax over five years.

This was one of the most hotly debated policy decisions in the country. Industrialists who had purchased government factories under a protected regime claimed that the government had undermined the new business ventures by changing the “rules of

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[13] Pereira Leite

the game" before they had time to finance new investments that were needed to improve efficiency and become more competitive. Pro-liberalization proponents claimed that the export tax was reducing prices received by farmers, dampening incentives to market raw cashew nuts, and discouraging investment in productivity and quality improvements. They also claimed that the processing units were inefficient and obsolete, that their existence constrained the development of a competitive subsector in the medium term. In addition, the export barriers were seen as being essentially unfair, because they penalized over a million small farmers (i.e., producers of raw cashew) to benefit urban processors and their employees, who numbered about 6,800 at the time.[14] Indeed, after the export tax was reduced in 1995, the inflation-adjusted farm-gate price of raw cashews did rise substantially for the next five years. [15]

Amidst this controversy, the government decided in 1999 to retain the export tax, while increasing the rate to 18 percent—where it has since remained. Although the decision to end the export tax was not fully implemented and subsequently reversed, the processing industry nonetheless faced severe disruptions.

By 2001, all of the old processing units had shut down. This was partly due to a sharp decline in the world market price for cashews starting in 2000 (Tables 1-1 and 1-2), which squeezed out inefficient producers. In addition, despite the increase in farm gate prices after 1995 the expected supply response did not occur.

Evidently this was because of

- Imperfect price transmission;
- Low supply elasticity due to high transaction costs for raw nuts from existing trees, long lead time between planting of new trees and first crop (4-6 years), weak extension services, and weak farmer response to improved technology;
- Lack of market price information among farmers;
- Higher margins on alternative crops;

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[14] Various documents cite a wide variety of employment figures – up to 40,000 in at least on BBC report, According to the World Bank, "Briefing Note on Cashew Policy," November, 2000, employment in the processing industry as a whole was 6,800 in 1995, rising to 10,100 in 1997 as new owners continued to add capacity following the policy decision in 1995. The latter figure is also cited in McMillan, Rodrik and Welch (2001), based on consulting studies undertaken in 1997 and 1999.

[15] Source: Study calculations using cashew price data from INCAJU and consumer price data from INE. From 1995/96 to 1999/2000, the farm-gate price also rose as a percentage of the f.o.b. export price. Source: McMillan, Rodrik and Welch (2001).

Exhibit 1-1
The Cashew Export Tax

In 1991/92, the ban on exports of raw cashews was lifted, but administrative controls were used to ensure an adequate supply for local processors, and a tax of 60 percent was levied on the difference between the f.o.b. export price and the factory gate price. The tax rate was reduced to 30 percent in 1992/93. In 1994/95, the tax was restructured as 30 to 32 percent tax on the export value, as such.

In 1995, the World Bank sought to eliminate both the administrative control and the tax on raw cashew exports, as condition for a 1996 adjustment credit. This proposal alarmed the owners of newly privatized cashew processing companies, who had acquired factories on the understanding that the supportive policies would remain in place for at least several years. As a counterproposal, the processors and traders suggested reducing the tax rate gradually to a new level of 8 percent. Specifically, the industry proposed the following schedule:

1995/96	25 percent
1996/97	20 percent
1997/98	20 percent
1998/99	16 percent
1999/00	12 percent
2000/01	8 percent

After intense negotiations, the government agreed to a compromise involving gradual elimination of the export tax over five-years, as follows:

1995/96	20 percent
1996/97	12 percent
1997/98	12 percent
1998/99	7 percent
1999/00	5 percent
2000/01	0 percent

In actuality, the government reduced the tax on raw cashew exports to 20 percent in 1995/96 and to 14 percent in 1996/97. The rate held at 14 percent until 1999/00, when it was increased to 18 percent in the face of strong political pressure to protect the domestic processing industry. The tax rate has been fixed at 18 percent since that time.

Sources: *Ministry of Tourism, Trade and Industry*, Cashew Marketing Liberalisation Study: Mozambique. *Maputo. August 1997 (conducted by Deloitte & Touche); and McMillan, Rodrik and Horn (2002).*

- Farmers' tendency to sell for cash income during the low-priced main harvest period; and
- Less market competition for raw cashew than for cashew kernel.

The long-term sustainability of the sector appears to be possible under a new business model emerging in the processing sector, whereby new, small-scale labor-intensive, quality-focused units processing a maximum of 2,000-2,500 tons per year are set up near the sources of raw material. Procurement and investment costs are low, and rural labor is relatively cheap.[16] In 2004, six units will operate in Nampula province, one in Maputo and another in Gaza. A small unit is producing for

[16] The yearly increase of the minimum wage is considered a threat to the development of this labor-intensive business model.

"retailers directly" in Cabo Delgado. Nampula expects to have 10 units operating in 2005 and is leading the way in this technology. Processed raw nut production went from about 115 tons in 2002 to 2,700 in 2004 and is expected to reach 9,000 tons in 2005, with expected export revenues of about US$8 million employing about 2,000 workers.[17] This growth, though dynamic, is still a fragile and somewhat spontaneous response to current market forces. It is therefore vulnerable to world price fluctuations for both raw and processed nuts.

KEY PERFORMANCE CONSTRAINTS

Production

- Current yields of approximately 2.9 kg per tree are one-third the level of yields of the 1970s.
- Raw nut quality has deteriorated because of poor crop practices.[18]
- Smallholders with few trees dominate the sector.
- Trees are normally scattered and very old.
- Government attempts to replenish the national stock of cashew trees by offering partial subsidies on new plants have met with poor response among farmers.
- Lack of strategic guidelines on new plantings is leading to a repetition of the existing scattered distribution of individual trees, limiting the sector's long-term sustainability.
- Volatile world market prices, including a steep decline during the 2000-2001 recession.
- Weak market incentives do little to encourage long-term investment in new plantations.

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17 To understand the relevance of cashew processing we can consider the following elements: (1) a worker in a cashew processing unit can gain about US$ 40-50 in one month when the average income of a family from the sale of all its agricultural surplus in one year (including cashew) is US$50-100; (2) the value added through processing is more than 100 percent the value of the raw nut. Of course, the industry can only be competitive if the processing cost is less than the value added at world market prices.

18 Comparing the two principal quality indicators of raw nuts between Mozambique and Tanzania is illustrative

	Mozambique	Tanzania
Outturn (%)	19	21
Pound productivity (%)	44-46	46-50

- The acrimonious debate on cashew liberalization in the mid-1990s still obscures long-term vision on the sector's future.

Processing

The two main business models are (1) capital-intensive, mechanized technology; and (2) low investment, labor-intensive technology. The capital-intensive units are idle and in a poor state of repair. The labor-intensive units are mushrooming because of lower unit fixed costs, higher quality and productivity, lower raw nut transport costs, and higher capacity utilization ratio due to smaller size. This model's reliance on labor increases the risk of uneven quality and consequent price penalization, while the older model's more industrialized process had could produce more uniform quality if properly maintained and managed, and if raw nut stocks were stored correctly. Both systems require solid management, quality control along the supply chain from farm-gate to end-buyer, direct market linkages, and full compliance with market norms and standards. Both suffer from the same contextual constraints:

- Reduced availability of high-quality raw cashew;
- Non-supportive financial sector;
- High degree of competition with exporters; and
- Lack of supportive police framework for long-term sustainability.

The scarcity of high-quality cashew requires that installed capacity be kept low relative to the total raw cashew available. Given producers' weak supply responses this will not be possible for much longer as these low-cost processing units proliferate. Because competition for high-quality cashew can be expected to put pressure on prices, there is already a trend to vertical integration in order to ensure the availability of high-quality raw nuts. Currently, the province of Nampula's installed processing capacity is about one-tenth of the total raw cashew production but is expected to reach about one-third in 2005, while some processors are already talking of scarcity of good quality cashew.

This problem is compounded by processors' difficulties in accessing adequately priced and timely credit for raw nut procurement during the September–February harvesting season. Working capital credits are denominated in *meticais* at high rates of interest, despite the output being exported, which should qualify them for lower cost credit in dollars.

Domestic processors face tough competition from traders—who have access to non-bank financial resources—exporting raw cashew to India. Hence, the nascent Mozambican processing industry confronts the full efficiency advantages of the

world-dominant Indian processing industry with its diversified structure and ability to make uses of sub-products today unused in Mozambique (i.e., CNSL, cashew apple).

Finally, when designing sector policies, we should bear in mind the risk of traders re-entering the processing industry to take advantage of favorable market conditions, as this could severely exacerbate current problems of raw material availability. The reverse of this process took place in the 1990s as processors switched to exporting raw nuts in order to cash in on a short period of high prices, partly due to supportive Indian domestic policies. The linkages between the Indian and the Mozambican industry so dramatically demonstrated by the liberalization of the 1990s should be kept in mind when strategizing for the future.

POLICY AND INSTITUTIONAL ENVIRONMENT

The policy environment of the cashew sector has been tainted by intense debate on the "export tax" between advocates and skeptics of liberalization. This debate has prevented constructive dialogue among stakeholders and led to the neglect of more important policy issues such as a long-term development strategy for the sector. Policy has been erratic, first establishing a "fast track" for liberalization, followed by a slow down and then a near- to-complete reversal of liberalization. This has discouraged investors and producers from committing to long-term development.

INCAJU (Cashew Institute) was created in 1997 and replaced the "Secretary of State for Cashew." The institute falls under the Ministry of Agriculture and Rural Development and has as its remit to promote, coordinate, and monitor research and extension activities. It shares with the Ministry of Industry and Trade responsibility for promoting small-scale processing units. INCAJU funds come principally from the revenues of the 18 percent export surcharge on the raw nut exports and from the EC. It is important to recognize that the tax is essentially borne by local producers and traders through a combination of lower farm-gate prices and reduced trading margins.

The main priorities of the Institute today are rejuvenation of the tree stock through new plantings of more productive varieties and dissemination of integrated pest management to combat disease. In this the Institute is supported by NGO-operated "outsourcing projects" financed by the European Union. The impact of these programs is diminished by the lack of a targeted strategy based on priorities developed jointly with other stakeholders.

Improved access to financing also receives attention from government and donors. INCAJU, using part of the revenues from the export surcharge, set up a guarantee fund for facilitating processing units' access to investment and working capital. Similarly, a USAID-backed guarantee fund set up jointly with Banco Comercial e Investomentos (BCI) has been supporting processors' access to working capital. While recognized by all stakeholders as valuable initiatives, the resources available are insufficient and as the units expand so do the problems. Both instruments only allow access to funds in local currency, which, despite the lower interest rates because of the existence of the guarantee, implies a premium of about 10 percent over a similar loan in dollars.

Producer and Processor Support Services

While research and extension services are well below the level required to re-launch the cashew subsector with its 53 million trees and 1.2 million producers,[19] some experiences are encouraging. Technoserve's business advisory program provides entrepreneurs investing in the cashew industry with services, such as business plan development and implementation and research and negotiation of financial resources. Technoserve is supporting the Indian business model for cashew processing using small labor-intensive units. While the model has quickly taken root, its dependence on donor support makes it vulnerable to policy changes outside the sector, besides not being available to all potential beneficiaries. This highlights the need for a more far-reaching and sustainable system of business development services to support the emergence of a competitive and sustainable agro-processing sector.

PROSPECTS AND OBSTACLES

Despite its previous size and importance, and its geographic spread, the cashew sector currently contributes little to farm income because of the low productivity of the old cashew trees. For the sector to have a significant effect on development and poverty reduction, production and processing must become cost-effective and internationally competitive.

Small-scale cashew processing has great potential: productivity at the new plants is good, buyers are pleased with product quality, buying production up-front. Existing producers are creating a quality brand for Mozambique that attracts a premium price. The labor-intensive technology and rural location do much to reduce poverty.

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[19] Source: INE, Agriculture and Livestock Census, 2001.

Sector policies need to (1) promote the incipient processing industry and (2) capture the sector's medium-term production capacity by revitalizing stagnant or declining production. The strategy should be to encourage the processing industry to develop without harming producers. This will require focusing on measures such as duty drawbacks, tax exemptions, labor regime, infrastructure, and finance rather than the old standby of tariff protection. Because cashew processing is highly dependent on smallholder production, at least in the short term, a smallholder support strategy should also involve the processors.

The industry's dependence on trade with India links Mozambique's cashew development with conditions in a market over which it has no control. It appears also that India is increasing production and has plans to achieve self-sufficiency.[20] At present, the interests of producers and processors may appear divergent in such changing markets, but the industry's survival requires that the two work closely together.

In sum, the development of the cashew subsector will depend on the degree to which it achieves (1) closer integration between sector players; (2) more compact, densely populated, and productive growing areas; (3) lower transaction costs (e.g., through associations); and (4) focused research and extension that raise productivity and quality.

Coconut Subsector

Coconut production is important in Mozambique's coastal areas, where smallholders predominate, as well as in regions like Zambezia, where private estates predominate. The wide range of products derived from coconut presents opportunities for adding value. Approximately half of the 60,000 tons per annum of total coconut production in Mozambique are consumed by the smallholders; the rest is sold on the domestic market fresh, processed as copra for export, or used as an input in the production of sub-products (i.e. oil, soap). The recent rural income survey by the Ministry of Agriculture and Rural Development suggests that farmers possessing more than 20 coconut trees have significantly higher incomes than those with less than 20 trees. Though it has potential, the sector faces some important challenges.

[20] It is not clear whether this objective is achievable given the high opportunity cost of scarce land in cashew growing regions of India.

ORGANIZATION OF PRODUCTION

Coconut production is concentrated in Zambezia and Inhambane. Smallholders are heavily involved in the sector, either on their own plantations or as workers on commercial estates (Table 1-9). Local processing companies produce oil and soap as well as coal briquettes and turf coir pith. Attempts to diversify the product range, however, are being thwarted by rising copra prices attributable to declining production.

Table 1-9
Coconut Production by Province

	Area (Ha)	Production (tons)	Share of Production (%)
Zambezia	110,000	41,250	68.8
Inhambane	30,000	11,250	18.8
Nampula	12,000	4,500	7.5
Cabo Delgado	8,000	3,000	5.0
TOTAL	160,000	60,000	100.0

SOURCE: MADER

SUBSECTOR PERFORMANCE

During the colonial period Mozambique was one of the world's biggest coconut producers but, as with so much of the country's agriculture, production has declined dramatically since then, dropping to about 265,000 tons per year (Figure 1-5). Copra production is about 50,000 tons per year (Figure 1-6). In 2002 exports of copra were worth $1.5 million per year while processed products were worth $3.5 million dollars per year (Table 1-10).

The causes of the decline in production date back to the civil war, during which time plantations became too expensive and dangerous to patrol and maintain. As a result, investments in new trees were few. The region, particularly the Zambezia province, also suffers from yellow wilt, which can wipe out entire plantations. Only one company, MADAL, is re-planting with wilt-resistant hybrid dwarf trees, but has so far only covered about 1,800 of 22,000 ha. It is particularly difficult to fight yellow wilt because most trees belong to smallholders, who are unwilling to remove infected trees until it is too late to check the spread of the disease.[21]

[21] The trees surrounding the infected tree should also be removed, with considerable loss of revenue for the smallholder.

The coconut processing industry has failed to develop and the country still exports mainly copra and copra oil. Those in the sector are aware of the need to diversify and some attempts are under way to do so. For instance, MADAL produces charcoal from coconut shell and coir pith for the export market and has plans to build a 6,000 ton-capacity desiccated (dried) coconut factory. Severe financial difficulties led to the recent transfer of company ownership to a workers' management committee, which has postponed plans for the new factory. Geralco is also considering extending its outsourcing production system to include the processing of two new products: coir and activated carbon. The company currently lacks the production and marketing expertise to implement the project. A coconut timber project being considered by both Geralco and MADAL has also run into technical difficulties (coconut timber is extremely hard to cut and demand is limited to wooden pallets). Demand for copra and coconut oil is also declining because of competition from palm and soya oils, either refined or as raw materials, in the production of soap and detergents. In recent years coconut oil prices have been volatile (Figure 1-7).

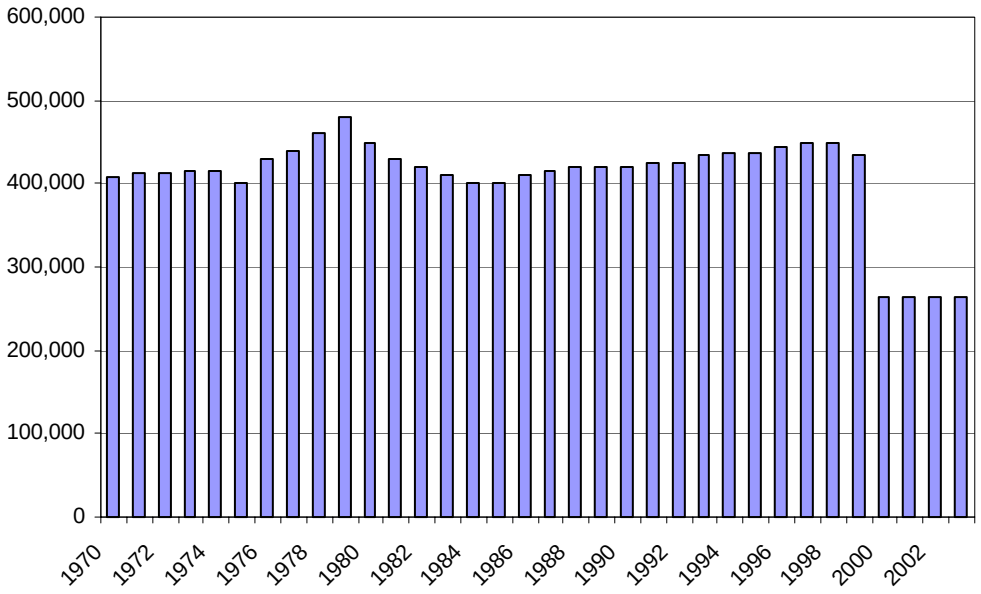
DEVELOPMENT OPPORTUNITIES AND OBSTACLES

Mozambique's coconut subsector has strong potential for growth that could benefit both trade and rural development. Development faces a number of opportunities and obstacles:

- Copra and coconut oil, the subsector's main export products, are traditional commodities for which global demand is declining. Mozambique needs to examine ways of improving the competitiveness of its copra and oil exports while diversifying along the lines of the Philippines model (Figure 1-8). There appears to be market potential for processing coconut byproducts into charcoal, activated carbon, coir, and coir pith. Two recent studies highlight the economic opportunities of diversification.[22]

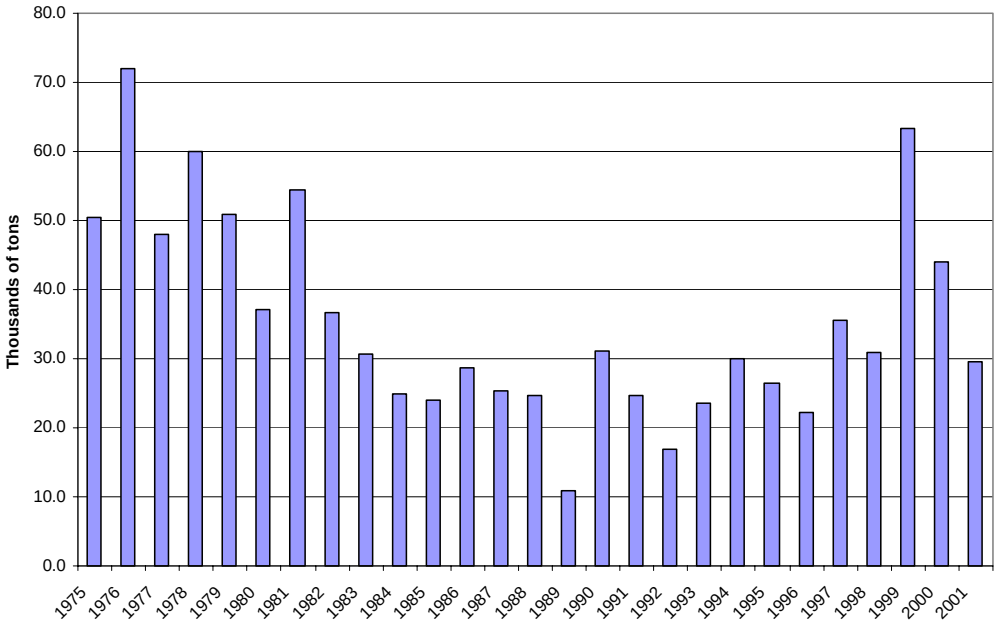
[22] See MADER (2002) and MIC-PODE (2003).

Figure 1-5
Coconut Production (Tons)



SOURCE: FAO.

Figure 1-6
Copra Production



SOURCE: DNC/DNI – Ministry of Industry and Trade.

Table 1-10
Exports of Coconut Products, 2003 ('000 US$)

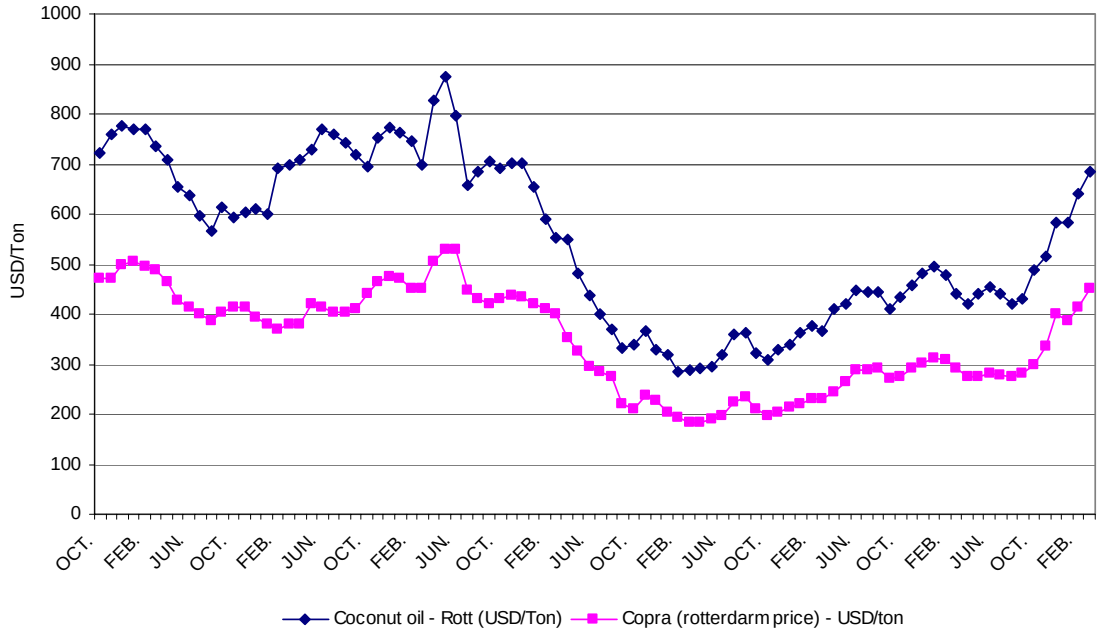
HS CODE	Product	2000	2001	2002	2003 (temp)
12.03.00	Copra	2,777	639	949	0
15.13.00	Copra Oil	710	6,352	3,477	1,313
23.06.50	Bagasse from copra	80	14,761	645	197
TOTAL		3,567	21,752	5,071	1,510

SOURCE: *Mozambique Customs.*

- The decline in the country's stock of coconut trees due to age and disease must be arrested and reversed to maintain the supply of raw material. This will require concerted and vigorous action by all players.
- High charges through Quelimane port and over the Zambezi river make transport costs out of Zambezia, the principal coconut-producing area, excessive.

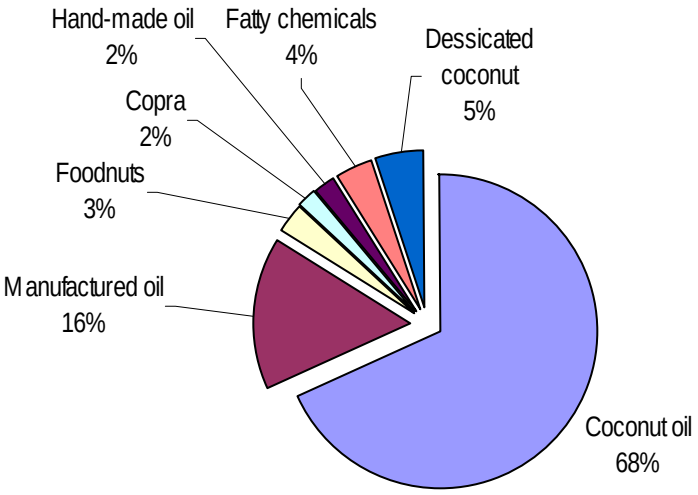
Developing the sector to the point of having several major incumbent producers will require considerable external financing and know-how (i.e., technology, marketing). This will require a policy framework conducive to investment and the support of existing entrepreneurs to create linkages with new partners and markets.

Figure 1-7
Monthly Coconut Oil and Copra Prices (October 1996-March 2004)



SOURCE: *FAS/USDA.*

Figure 1-8
Coconut Production in the Philippines



Cotton Subsector

Long a key sector for Mozambique, cotton involves many rural smallholders, generates significant export revenue, and has strong upstream and downstream linkages through input use and technology, initial processing, value adding, marketing, and international trade. In cotton-growing areas the crop is the main source of income, ranging from 52–84 percent of the total value of household cash income, helping "smooth" consumption fluctuations.[23] The sector also generates significant export revenues, though these have suffered from the commodity's weak prices in recent years. Currently, production has stabilized at around 55,000-80,000 tons of seed cotton (18,000-26,000 tons of lint), with export revenues ranging between US$10 million to US$30 million, depending on international prices.

The importance of cotton in Mozambique can be traced back to the colonial period. Introduced in the 1920-1930s, the crop expanded very fast under a system of "concessionaries" based on forced peasant labor. A high degree of vertical integration existed through ginning, spinning, and textile production for a protected Portuguese market. When forced labor in cotton production was abolished in the 1960s, "commercial" farmers displaced peasant production. In 1973 commercial farmers accounted for about 60 percent of the seed cotton produced, up from only 2

[23] Wandschneider and Mirapeix , 1999; Ofico and Sherley, 2003.

percent ten years before. The same year production peaked at 144,000 tons, then fell until the late 1980s.

Production began to revive in the 1990s with the introduction of a new policy framework designed to attract badly needed investments. The government opened the cotton sector to private operators and formed joint ventures with private investors. These companies were given concessions in specific "areas of influence" where the companies have the monopsonistic right to buy cotton and the obligation to provide technical assistance and inputs on credit to small farmers. The new policy was successful in that the production of cotton reversed its downward trend, though many problems persist, as the following sections will show.

ORGANIZATION AND STRUCTURE OF PRODUCTION

At present, cotton is produced mainly in the northern provinces of Nampula and Cabo Delgado and in the central provinces of Zambezia and Sofala (Table 1-11). Ninety-nine percent of cotton is produced by 350,000 smallholders, as individuals and in associations, on 158,000 hectares. Since the 1990s the number of commercial producers and private companies has declined markedly. Smallholders now account for more than 98 percent of cotton seed production in Mozambique (Figure 1-9). The terms of trade worsened during the 1990s as input costs increased and cotton prices fell to below the level at which commercial farming was viable. Smallholders were able to continue producing cotton by not accounting for their own labor costs, and because of the premium they set on cash income. The higher profits now possible from tobacco, however, threaten to weaken cotton's hold on the small farm sector.

Smallholders operate under contract to private companies who provide them with inputs and technical assistance and in exchange have the right to buy their seed cotton after deducting the costs of inputs provided. This system is established by law (i.e., *regulamento do algodao*) as the private companies (known as *fomentadoras* or "promoters") obtain from the government the legal monopsonistic power over certain areas for up to 20 years.

The seed cotton is processed by ginneries owned mainly by concessionaires. The cotton regulation stipulates that these be two distinct operations, though the requirement is not always observed. For instance, in Nampula there is processing over-capacity because the concession system was relaxed so farmers could sell cotton independent of the concessionaire when support was considered insufficient.

Table 1-11
Cotton Production by Province

Provinces	Area		Production	
	ha	%	tons	%
Cabo Delgado	29,265	18.5	13,376	24.7
Nampula	89,601	56.6	21,029	38.8
Niassa	9,913	6.3	1,850	3.4
Zambezia	6,111	3.9	1,889	3.5
Tete	10,233	6.5	2,209	4.1
Sofala	13,111	8.3	11,061	20.4
Manica	0	0.0	2,595	4.8
Inhambane	0	0.0	101	0.2
Gaza	0	0.0	34	0.1
Maputo	0	0.0	0	0.0
Total	158,234	100.0	54,144	100.0

SOURCE: *IAM (Institute of Cotton, Mozambique).*

Mozambique's once vibrant textile industry is now defunct; accordingly, the final link in the value chain are the lint traders (e.g., Plexus, Olam, Jofesa and Dunavant). They mediate between the private producers (i.e., companies) and the textile companies abroad. This extra layer probably hampers quality improvement and national brand development. In recent years, however, trading companies have been entering production through domestic subsidiaries or by acquiring shares of operating companies. This trend could spur vertical integration, but its extent will depend on the relationship between the producing arm and the trading arm.

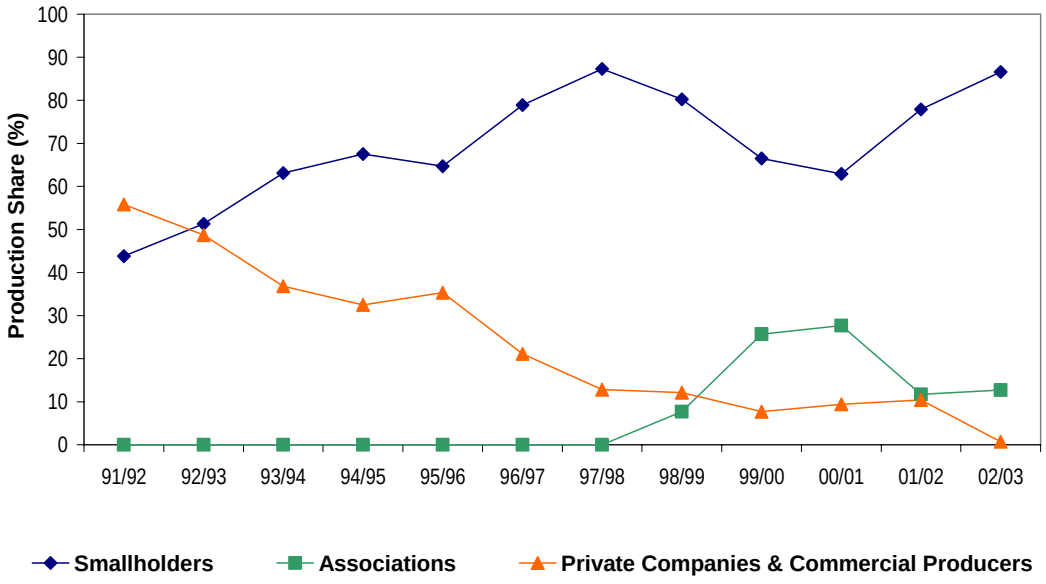
Raw cotton seed, exported at low prices, is a sub-product of the ginning stage that could be used for oil production and animal feed.

SUBSECTOR PERFORMANCE

Cotton yields in Mozambique are low: 0.4 ton/ha, declining nearly 50 percent since the mid-1990s (Table 1-12). They are now only one-third of West African yields. The main reason for the decline is the increase in smallholders, whose rising numbers have stretched the limited technical and financial capacities of the concessionaries to ensure timely supply of inputs and technical assistance. However, yields vary considerably between regions and cotton companies. In Nampula yields were less than 300 kg/ha in 2000/01 while in Sofala they were more than double that. Companies' strategies also vary, as do their relationship with farmers as influenced

by a province's business environment (Nampula's in particular appears to be especially difficult). Variations in strategies produce variations in farming practices, systems of input supply, and technical assistance.

Figure 1-9
Cotton Supply—Trends in Producer Types



SOURCE: *IAM*.

Like cotton yields, performance in the processing sector is poor. This is partly due to a shortage of cotton in some areas, leading to overcapacity, which in Nampula is at least 50 percent (Table 1-13). The result is high fixed-unit costs and intense competition between processors for raw cotton. Industrial productivity, as measured by the "outturn rate,"[24] is also low, about 32–35 percent whereas the average in West Africa is close to 42 percent. Along with decreases in lint quality, prices have also plummetted. Some variation between companies exists depending on whether there is a proprietary relationship between the trader and the buyer and whether the company uses the minimum possible price (i.e., the 5 percent margin below market price required by cotton regulation[25]). Finally, it must be noted that the Mozambican

[24] The ratio between the raw seed cotton and the cotton lint obtained from ginning,

[25] Export contracts are evaluated by the Institute of Cotton which, on the basis of Index A, determines the "minimum reasonable price" for export. Companies can export at prices lower than this reasonable price but only within a margin of 5 percent.

product is among the most contaminated cotton crops on the world market,[26] behind only a few countries: India, Pakistan, Turkey Uganda, Tanzania, and Uzbekistan.

Table 1-12
Cotton Yields by Province (Kg/Ha)

Campaign	Cabo Delgado	Gaza	Inham -bane	Manica	Maputo	Nampula	Niassa	Sofala	Tete	Zambezia	Total
1990/91	881	1,838	961	427	1,700	357	166	1,138		224	855
1991/92	556	2,471	713	106	2,250	400	288	630		88	834
1992/93	899	2,087	983	823		461	211	1,148		500	889
1993/94	502	2,243	1213	663		307	292	1,190		152	820
1994/95	460	1,108	490	862		317	420	1,252		73	623
1995/96	570	1,759	195	205		297	316	586		39	496
1996/97	571	1,061	308	276	188	473	277	612	156	183	410
1997/98	501	2,120	430	356	333	435	244	697	585	361	606
1998/99	562	1,984	139	227	226	581	502	743	323	722	600
1999/00	292		164	407		299	176	808	437	319	363
2000/01	349		129	702		261	326	593	276	452	303
2001/02	324		162	952		312	647	907	427	1,011	376
2002/03	457		101			235		844	216		342

SOURCE: IAM.

Table 1-13
Installed Capacity for Cotton Processing

Province	Installed Capacity (hours per day)		Actual production of seed cotton (2003)
	16	24	
Cabo Delgado	13,737	20,605	13,376
Niassa	3,703	5,554	1,850
Nampula	85,495	128,242	21,029
Zambezia	37,714	56,571	1,889
Sofala	9,143	13,714	11,061
Inhambane	2,560	3,840	101
Total	152,352	228,526	49,306

SOURCE: IAM.

[26] This poor ranking is due to contamination by plastic or jute fabrics or string debris, but also by some inorganic matter (sand, dust, rust, metal, wire). Such contamination is related to harvest, collection, and ginning. Mozambican cotton also has a high seedcoat fragment content, a genetic condition worsened by inappropriate ginning processes (e.g., excessive ginning speed).

POLICY AND INSTITUTIONAL ENVIRONMENT

Table 1-14 presents a chronology of policy changes affecting Mozambique's cotton subsector. Since the late 1980s the Government of Mozambique has based its cotton policy on a system of closed concessions as a way of overcoming market failure in the supply of inputs and credit. The system gives concessionary companies exclusive rights to buy cotton and distribute inputs and extension services on credit. By the end of the 1990s the government moved toward a more open system, relaxing the exclusive rights so farmers could sell cotton to a company other than the concessionaire—so long as they did not receive inputs or support from the concessionaire. This system aimed to intensify competition among companies and reduce their market power to the benefit of the weaker smallholders. But difficulties in monitoring and control led (especially in Nampula where demand for raw cotton was highest) to conflicts between companies and with the farmers, because of "pirate" buying. In 2001 the government returned to the system of closed concessions.

Table 1-14
Principal Policy Changes in the Cotton Subsector

Year	Policy
1975-1989	Independence, nationalization, civil war
1989	Three joint venture companies awarded concessions in north of country
1989-1995	JVC model with closed concessions remains dominant approach
1996-1999	Three private companies awarded concessions
1998	Producer associations with >= 20 ha cotton allowed to contract with cotton company of their choice
2000	Government announces "open concession system"
2001	Government returns to closed concession system, awards concession to largest new entrant, eliminates right of associations to freely contract for input provision.

SOURCE: *Boughton* et al. *(2003).Concessions.*

Minimum Prices

Another important element of the policy environment is the minimum price system. Each year at the beginning of the campaign (i.e., April-May) the National Commission for Prices and Wages (Comissão Nacional de Salários e Preços) sets a minimum national price for raw cotton for the entire season that is negotiated between MADER-IAM, cotton companies, and smallholders' representatives.

The purpose of the minimum price is to (1) prevent companies from abusing their legally granted monopsonistic position, and (2) provide farmers with a reliable minimum price to reduce under-production because of great uncertainty in the international market. The system has been heavily criticized and two alternatives to link the system more closely to prevailing seed cotton conditions and to international prices have been proposed: (1) a two-tier price with a basis determined before the season and the second price linked to international prices and quality incentives; (2) avoid a "national" price and allow greater freedom for prices to reflect quality and availability at the regional level. The proposals are not mutually exclusive and both require improvements in the system of classification.

The need for such a change is evident from the performance over time of the minimum price and Index A,[27] which are not always correlated and create distortions and financial distress within the sector. The creation of a fair pricing system that sets effective producer and processor incentives is essential for the development of this embattled and very weak segment of Mozambique's rural economy.

Cotton Institute (Instituto do Algodao de Mocambique – IAM)

IAM was established in 1991 to coordinate and monitor the production, marketing, and processing of cotton and lint. It has been effective in resolving disputes among stakeholders, but less so in promoting investment and upgrading productivity and quality, partly because of funding difficulties. IAM is financed from a tax on the lint produced equal to 2.5 percent (previously 5 percent). As the tax rate has declined, so have revenues, depleting the institute's development and mediating capacity. A recent influx of funds from the European Union for crop diversification in cotton-growing areas will facilitate collaboration between private concessionaires, NGOs, research centers, and government jointly promoting a more stable sustainable agriculture system within which cotton can develop alongside other crops.

KEY CONSTRAINTS

Production

Inputs. Cotton is highly dependent on purchased inputs and crop practices, especially pest management. As with most crop sectors in Mozambique, fertilizers

[27] Index A, an index of the prices of eight classes of cotton of various origins traded in northern Europe, is widely used as the best indicator of world price levels for cotton. It is calculated daily by Cotlook, based in Liverpool, UK.

and pest management products are hardly used in the cotton sector, which explains most of the sector's low yield problems. This scant usage is due largely to failures in input marketing channels that reflect problems with agricultural credit. The time lag between the import of inputs by private companies and the sale of cotton lint and seed is about 18 months. This places a heavy financial burden on private companies (yearly interest rates are about 25 percent). One solution is to shift this burden to a specialized rural finance institution, something that is being tried in Zambezia by a financial institution (GAPI) and AGRIMO, a private company. AGRIMO provides technical support and extension services to farmers' associations that receive credit for inputs from GAPI. When AGRIMO buys the seed cotton they discount the cost of the input credits and will reimburse GAPI directly. The scheme has been successful so far and may represent an interesting model for other areas.

Concession Management. Low productivity and production leading to overcapacity in the ginning sector has led to competition for raw cotton among ginneries. Some companies are resorting to "pirate buying" outside their concession areas, even though the producers may have received inputs or finance from other ginneries. This compounds the financial problems in the input supply chain and leads to conflict and confusion within the sector which, in turn, damages the sector's productivity and competitiveness.

Competitiveness. Boughton[28] has ranked SSA cotton industry competitiveness by (1) yields and quality throughout the chain and (2) farmers' share of the chain's total value-added. Because of excessive installed capacity and the number of players in the sector (partly a function of low production) Mozambique scores among the lowest on yields and quality. The country fares no better on the second criterion because of the monopsonistic bias of concession system. This bias is not counterbalanced by producer organizations with effective negotiating power.

Technology. Research for the development and multiplication of improved seeds (disease- and drought-resistant) has only recently gotten underway at the Research Institute of the Ministry of Agriculture. Historically, public investments in this area have been minimal and Mozambique lags other African producers. Extension services are provided mostly by private companies, which are often overstretched and unable to provide effective services to all farmers within their concessions. Two persistent constraints reflect weaknesses in Mozambique's agricultural extension coverage and depth. One is smallholders' aversion to risk and reliance on traditional

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[28] Boughton *et al*., 2003.

low-input, low-output technologies. This impedes crop diversification.[29] Another constraint is the entry of inexperienced farmers into cotton production, which reduces average productivity.

Terms of Trade. Cotton also suffers from unfavorable terms of trade between the prices of inputs, such as pesticides and fertilizers, and the price of cotton lint. Coupled with the high cost of working capital, this is the main reason for the disappearance of commercial cotton farmers. The absence of a pricing system based on an objective quality classification also removes an important incentive to improve quality and productivity throughout the production chain.[30]

Processing

Mozambique's ginning outturn is approximately 33 percent, compared to Zambia (38 percent), Zimbabwe (40 percent), and West-African countries (42 percent). A 40 percent improvement in the outturn rate would, ceteris paribus, reduce the cost of production of lint by about 20 percent. In addition to the issue of overcapacity and high unit fixed costs, is the age of the ginneries, most of which were established 50 years ago. Not all were rehabilitated during the 1980s. Only two companies, AGRIMO and SANAM, have built modern ginneries with modern technology and machineries. The rationalization and upgrading of the processing sector is now indispensable and could greatly contribute to its competitiveness.

Value Adding and Marketing

International Prices. All the cotton operators in Mozambique are financially distressed because of the long-term downward trend in international prices for cotton. That trend is due to the weak demand for cotton after the Asian crisis of the late 1990s and to U.S. production subsidies. The low prices are damaging producers and companies and the minimum price policy appears to have made the situation worse.

Value Adding. After independence, Mozambique lost its entire textile industry. Its business environment has hampered the country's ability to take advantage of opportunities provided by AGOA and other preferential access schemes. The country also lacks a cotton seed processing industry and sells its raw seed onto the world market at low prices, despite the potential for the production of vegetable oil,

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[29] Labor constraints often lead to late planting and insufficient weeding.

[30] Mozambique lags far behind other countries in the region in classification technology. It relies on an old method based on manual and visual aids as opposed to the High Volume Instrument (HVI).

soap cake, and animal feed. A driver of sector development is therefore absent, leaving the country exposed to the vagaries of international commodity trade and the domestic policies of OECD countries.

Marketing Strategies. Cotton is sold to middleman traders on a spot market basis, who then grade and ship to the end user. Hence there is no link between producers and consumers, weakening processors' ability to respond to quality improvement requests from foreign spinners. In addition, the entire chain is exposed to market fluctuations. To reduce uncertainty over trading conditions, some companies are considering different trading arrangements (i.e., brokers, futures) and others are beginning vertical integration (i.e., DUNAVANT).

PROSPECTS AND RECOMMENDATIONS

Cotton is an essential source of income for about 350,000 farmers, many of them in the northern provinces. The potential for expansion is strong, given that current production is only around 80,000 tons while some estimates consider the industry capable of producing 400,000–600,000 tons of raw cotton each year.

Expansion will require better linkages and coordination among stakeholders, both horizontally and vertically. Smallholders especially require better support, which the government, through IAM, is best placed to oversee. Their role, however, should be supervisory, with farmer and industry associations, civil society, and NGOs taking the lead. In poorly organized subsectors government agencies are prone to adopting paternalistic relationships and losing accountability vis-à-vis the stakeholders. Strong trade associations are the most effective vehicles for subsector development and should be at the center of the country's cotton strategy.

The pan-territorial minimum price and the closed concession system should be revised and replaced with a more market-sensitive, incentive-based system oriented toward productivity and quality gains.

At present cotton is a low-input, low-output cash crop whose producers live in poverty.[31] But, as the experience of Mali shows, cotton farming can engender technological change in other crops and help raise smallholder incomes while generating wealth and employment through value adding. Mozambique's cotton strategy should aim to maximize agricultural synergies through diversification and

[31] Analysis of the TIA 2001 data (a rural household survey) suggests that the impact of cotton production on producers' household income is negligible.

yield improvements in other cash crops, and facilitate the emergence of downstream industries, of which cotton seed processing could be a viable first step.

Cotton development in Mozambique also depends on linkages to the international market and on regional and global trade agreements. Mozambique should become more involved in negotiations to improve market efficiencies by taking part in cotton-related activities within the multilateral trading system, such as the debate on production and export credits and subsidies in OECD countries, the impact of MFA expiry and the "China factor," along with other market-awareness activities. Its sector strategy should also cover the building of negotiating positions on regional trade issues such as SACU and market diversification to reduce dependence on the South Africa market, which has been troubled by the appreciation of the *rand*.

Horticulture Subsector

Horticulture comprises floriculture products, mainly cut flowers; high quality tropical fruits; and off-season and exotic vegetables (vis-à-vis the import market). In Mozambique, the horticultural export sector has great growth potential because of agronomic conditions (e.g., climate, soils, water and soils, available land) and enabling social and economic conditions (e.g., availability of field labor, logistical and transport linkages, moderately progressive environment for private investment). Growth in this sector could affect rural employment and export revenues significantly. Kenya, for example, has developed a $150 million export industry around horticulture; Zimbabwe's exports to the EU were worth nearly $50 million in 2000; Zambia and Uganda are supplying the EU market; and Ethiopia is making progress in rose production. Mozambique could share in this growth, especially given its proximity to South Africa's market for tropical produce and its shipping links to the Arabian Peninsula and points east.

CURRENT PRODUCTION

Mozambique is a newcomer to high-value horticulture exports. Until very recently the industry served only domestic and regional markets. Growth was slow and quality variable, while penetration of the South Africa market was weak. The most successful subsector appears to be grapefruit, with sales of high-grade fruit from Southern Mozambique being shipped to Johannesburg for export to Europe by Capespan. Despite the superior quality of the Mozambican product, exports of bananas to South Africa from the south of the country have been unable to secure a foothold in the market because South Africa suppliers dominate the supermarkets.

One Mozambican producer also faces problems selling to the South Africa-owned retail stores in Maputo, a problem that highlights local industry's relatively weak marketing capabilities.

Important changes in the center of the country, however, could make the country a player in world horticultural markets, particularly the EU. Manica Province, which lies on the Beira-Harare axis, is experiencing an influx of foreign investment in intensive horticultural crops and tobacco because of instability in Zimbabwe. Experienced Zimbabwean and South African exporters, some backed by substantial capital, have started shipping roses, open-field cut-flowers, and vegetables through Harare to the EU. Paprika exports to Spain are also developing fast.

Considerable technical resources are being mobilized to support these initiatives, both by the operators themselves and by the NGO Technoserve, which has examined the prospect of export development in Manica in great depth. In March 2004, Technoserve presented its findings at a conference in Maputo, which appears to have mobilized further support for development. For many farmers the relationship between horticulture and tobacco is symbiotic, since the latter has provided initial capital for land-clearing and irrigation on a sufficient scale (+100 hectares) that can be used for the more intensive and potentially more profitable horticultural crops as part of diversified crop rotation. For horticulture to displace tobacco in importance in the region, however, many bottlenecks and constraints need to be removed.

Unfortunately, assessing the status of horticultural products is difficult because no production data are available. Data refer only to the number of fruit trees or the number of "farm exploration with fruit trees;"alternatively, FAO presents some statistics on fruit production but it not clear which are the basis of this estimation. These data don't allow determining quantities produced or sold or their varieties and quality.

PROSPECTS FOR EXPORT DEVELOPMENT

Production

Technoserve's recent studies of Mozambique's horticultural prospects identify the Beira Corridor as an area with *superior agro-ecological conditions* for high-value horticulture exports. The studies estimate that more than 550,000 hectares of such land are available for a wide variety of fruit, vegetable, and floriculture crops. Emigrating Zimbabwean farmers are beginning to develop the land. About 50 such farmers, some with no other resources than their production and management skills,

have settled near Chimoio and Manica, toward the western end of the corridor, where production conditions are well suited to export horticulture. They are growing for export to the EU market roses under cover, along with field crops of paprika, baby corn, chillie, mangetout peas, and flower crops, such as proteus.

We interviewed several of these commercial farmers and visited their farms. The visits confirm the farmers' skills, industriousness, and wholehearted commitment to export horticulture. We also observed the constraints under which they work and their strategy for overcoming them. Burley tobacco production is the springboard of this strategy. Eager to ensure quality leaf, tobacco companies have for several years pre-financed tobacco-growing among commercial growers. This has allowed them to start operations with the financing provided for land clearance and preparation, basic infrastructure (e.g., irrigation, housing, storage facilities, machinery and equipment), and a secure market. Some of these tobacco farmers are now diversifying into other crops, either substituting new crops for tobacco or adding to the area farmed. Some field crops—and even livestock—are produced for the local and regional market alongside horticultural production; this is the case for sunflower and soy for cooking oil and dairy products (domestic market) and sugar beans and maize seed (regional market).

Access to financing and logistical services permitting, a process of agricultural expansion, vigorous in scope and scale, is taking place under the impetus of immigrant farmers, driven by tobacco and progressively linked to high-value exports.

Key Constraints

The initial dynamism of this new growth in an area not previously noted for high-value agriculture is confronting many challenges to sustainability. These challenges are articulated in Technoserve's studies and by farmers and exporters directly. Better transportation and logistics infrastructure are necessary to improve market access; start-ups and expansions do not have sufficient channels for financing; and excessive bureaucracy is leading to high transaction costs.

TRANSPORTATION INFRASTRUCTURE

Airfreight is essential for horticultural exports. The Beira Corridor region has several airfreight options. The most obvious is Beira airport, which has capacity for freighters and needs only some handling equipment for fresh produce. But access to Beira port and airport from the inland growing region is via Highway EN6. Regrettably, the 130km stretch from Inchope to Beira is in very poor condition with a

history of flood disruptions and a constantly deteriorating surface. The section between Tica and Dondo in the Pungue River floodplain suffers from occasional flooding and consequent hydraulic lift of the road surface, followed by rapid deterioration, which temporary fixes have not remedied. If this vital transport link is not improved it could be a major impediment to horticultural exports from the Beira Corridor and a considerable disincentive to prospective investors in the industry. A complete rehabilitation of Highway EN6 between Inchope and Beira could cost $44 million: $20 million to upgrade the 130km stretch between Inchope and Beira, $4 million to raise the road across the main floodplain, and 20 million for bridgeworks across the Pungue.

Airport handling costs in Beira (tariffs applied by the Airport Authority for landing/navigation, loading, and royalties) are estimated at $0.10 per kilogram, which is much higher then the $0.04 per kilogram charged in Harare. The policy of levying exporters with such high handling fees may encourage exporters to use the cheaper Harare option. Beira airport would also require the purchase of a high loading scissors jack ($350,000) to load and off-load pallets. Produce handling costs could be eliminated if the produce is palleted and trucked from Chimoio, which would then require a fully developed export handling facility and the specialized transportation to load the produce directly onto the aircraft in Beira. Beira does not currently benefit from regular passenger traffic to Europe, so all freight will be expensive chartered freighters, while Johannesburg offers some spare capacity in cheaper belly cargo on passenger flights.

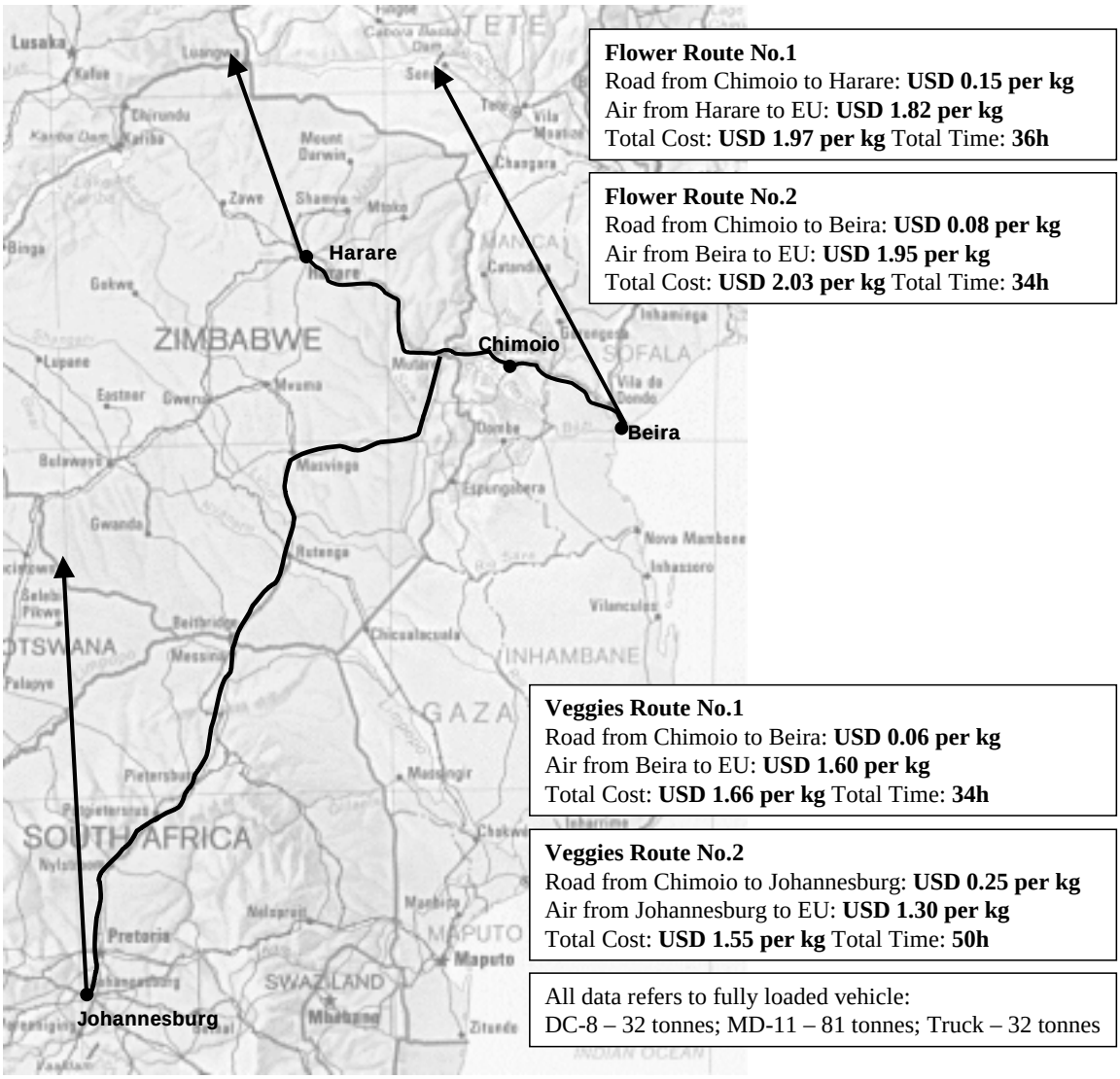
Another option is the small regional airport in Chimoio. To accommodate small or medium freighters, this facility requires the following significant improvements, at an estimated cost of $5-10 million:

- Lengthen the runway to increase mass bearing capacity
- Install refueling facilities
- Reinstall runway, approach, and PAPI night-flying lighting
- Secure perimeter fence and upgrade airfield security
- Install instrument landing system
- Construct an air traffic control tower
- Install ramp handling equipment (e.g., high-loader, pallet transport).

The cost of upgrading this airport is considerably lower than the upgrade of the Beira road, but road improvements would almost certainly be required under any scenario because current road conditions are hampering access to inputs and sea freight. In addition, air freight rates out of Chimoio could be high, given the lack of demand for in-bound freight, meaning costly empty haul legs either from

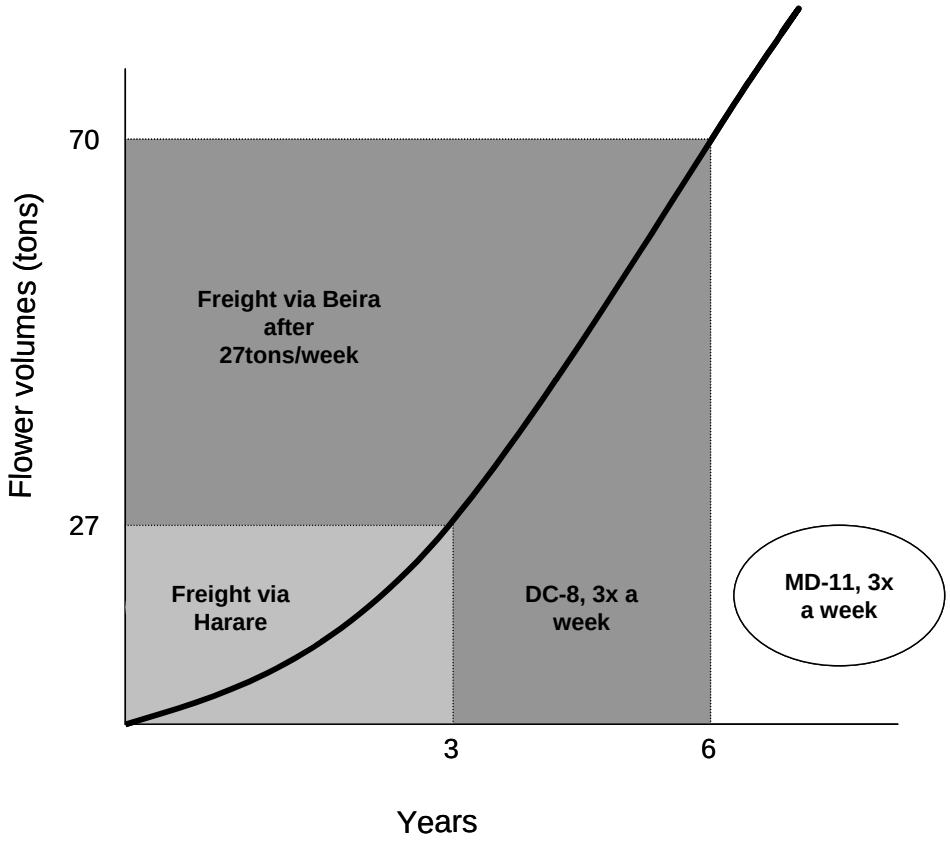
Johannesburg or Harare. Figure 1-10 summarizes the options examined by the Technoserve team; Figure 1-11 shows how different production scenarios could influence freight costs for cut flowers exported to Europe.

Figure 1-10
Airfreight Options



SOURCE: All cost estimates from Beira were obtained from MK and Martain air freighter companies, while those for Harare and Johannesburg are actuals.

Figure 1-11
Freight Costs of Cut Flowers



Beira Port offers an alternative to air freight for exports of hardier fruits and vegetables, such as banana, mangos, filler flowers, and fine beans to Middle East and Asian ports, where transit times to the UAE via Mombassa are approximately 15 days. The 21-day transit times to Europe would probably preclude exports of such products to more distant destinations. Recently renovated, the port offers more than 100 power points capable of supporting refrigerated containers, which would be essential for most products. The only constraint in using port facilities is the limitation to certain crops as well as insufficient road linking Chimoio.

LOGISTICS AND FREIGHT HANDLING

As the Beira Corridor's horticulture sector develops, the need for a central handling facility will become apparent. The Technoserve team proposes a large modular cold storage facility in Chimoio through which packaged product can be received, stored, and prepared for road transport to Harare, Johannesburg, or Beira. They foresee a 1000 m^2 facility (with potential for a further 1000 m^2) able to vacuum, cool, and pallet produce for direct loading at the airport. If 3m wide trailers were used for transport to the airport and direct loading onto the airplane, construction of a cold room facility in Beira or hiring space in cold stores at Harare and Johannesburg airports

would not be necessary; trucks would leave Chimoio to arrive at the airport in time for loading into the freighter. The Beira airport needs only a high-level scissor jack to transfer cargo from the truck to the plane. A fully equipped 1000m facility is estimated to cost $1.4 million.

In Zimbabwe and Zambia the initiative for such a complex has come from numerous freight companies that united to establish and use the facility. A similar initiative is likely to drive demand for this facility in Mozambique.

FINANCE

Horticulture, like any other agricultural activity in Mozambique, is excluded from most bank financing because it is unable offer land as collateral, the landing being leased from the government rather than owned by the farmer. Foreign farmers cannot benefit from an exception to this rule provided to some Mozambican farmers by certain national financial institutions. Even where sufficient collateral is available, commercial interest rates are in excess of 30 percent, rendering loan financing uneconomical. Recourse to joint ventures and venture capital is the most immediate solution for cash-poor producers and exporters. The study team confirmed during its visit that interest in the sector among outside investors, with whom several producers and exporters are negotiating, is strong.

This is clearly not satisfactory for industry development, given horticulture's large potential size and current lack of development. If Mozambique is to benefit from its land and labor resources and its potential access to EU and other markets, it must arrange affordable and sustainable financing for farmers and businesses in the sector. Not acting decisively on this matter will delay and hamper development in a sector that is highly competitive and in which Mozambique has no unique advantages.

BUREAUCRACY

New investors often cite bureaucracy as the main deterrent to investing in Mozambique. Key constraints include the following:

- ***Customs and immigration***. Customs clearance for inputs takes at least 48 hours, even with all documentation in order. One to two week delays are common, compared to only a few hours of delay in South Africa. Importing procedure have been cut from 24 to 8 points, but delays still inflate costs. According to a major transport company, demurrage built in to price by transporters now averages 15 percent for Mozambique.

- ***Different interpretations of the law*** and duties can lead to confusion and differing customs charges (e.g., 5 percent on irrigation pipes but 17.5 percent on the bends on the ends of the pipes).
- ***Corruption.*** While many government officials aim to attract investment, potential investors indicate that some officials purposefully delay decisions in order to receive an "incentive" to accelerate the process.
- ***Excessive fines*** have been levied on local businesses (e.g., retailers and businesses in Chimoio have been fined up to US$25,000–50,000) which some believe is a way for local government to access funds.
- ***Slow business start-up***. Registration can take up to 6 months and obtaining CPI documentation can take 18 months. During this waiting period, companies are not exempt from tariffs.
- ***Lack of farming legislation.*** Legislation to prevent the spread of disease and water contamination needs to be introduced.

SPS INFRASTRUCTURE

The development of a sanitary and phytosanitary (SPS) infrastructure (e.g., human capacity, physical infrastructure, appropriate legislation) is a precondition for development of a high-value crops industry. Fresh produce is subject to stringent SPS requirements with which Mozambique is not yet able to cope. Even where the private sector is able to cope, the incapacity of the government to certify this and comply with international agreements is an impediment. Important for all agricultural and agroprocessing industries, the development of SPS infrastructure is crucial for high-value crops which must not only be safe but be recognized and accepted as such.

A recent case illustrates the risks of not developing such infrastructure. A few months ago South Africa banned fresh produce from Mozambique because their request for pest risk status reports, which dated back to 2000, had not been satisfied. Mozambican authorities were unable to provide the pest risk status reports due under the agreed procedures of CODEX and IPPC. The Ministry of Agriculture is developing an action plan to improve the situation and is seeking external assistance through FAO and WTO. In the meantime, fresh produce in the south was blocked at the border and had to be transported sealed; in the hot sun all the produce deteriorated.

Domestic Markets

Mozambique's domestic markets for horticultural products are organized along traditional wholesale–retail lines, with a multiplicity of small vendors purchasing from the wholesalers transport lorries and warehouses to ply their trade at numerous street markets and market squares. Despite their growth, supermarkets still play a minor role in the distribution of fresh local produce. Because the sector has no formal structures to regulate supply and avoid price peaks and troughs, periodic glut and dearth afflict highly perishable sectors such as bananas and tomato. Under these conditions, incentives for commercial producers to focus on supplying the country's urban centers are few.

Competition at the supermarkets with imports from South Africa also impedes domestic market development. A Mozambican banana grower recently confronted a South Africa chain's preference for inferior imports. Long delays in payment also discourage producers from supplying supermarkets, which generally enjoy strong negotiating positions because of weak competition in their sector.

Regional Markets

The principal export market for Mozambican produce is South Africa, but the range of products available there is wider than that offered by Mozambique and only in bananas does it have a quality and price advantage over its wealthier neighbor. South Africa's restrictions on Mozambican banana exports have dissuaded growers from developing exports for South Africa, despite the superior growing conditions in the center of Mozambique.

Clearly, a potentially profitable role for Mozambique in regional agricultural trade lies in exploiting its comparative advantage in resources and labor costs by specializing in crops where South Africa has higher costs or lower quality and availability. This would require that (1) South Africa's buyers be prepared to switch to Mozambican suppliers and that the latter could operate under the commercial conditions (especially terms of payment) that apply in South Africa's more formal economy and (2) that CIF Johannesburg prices of Mozambican origin products be at least on par with, if not lower, than products from South Africa. At present, these conditions cannot be met so near-term prospects for substantial exports to South Africa are dim.

Global Markets

Mozambique's key international markets for fresh produce are the EU, the Middle East, and the Indian subcontinent. Exports further afield, either to the west (North

America) or the Pacific are constrained by cost, distance, lack of direct air transport links, market opportunities, and contacts. The most important market is the now expanded EU, followed by the Arabian Peninsula, Pakistan, and India.

A recent study of the EU market for horticultural products by V.E.K. Adviesgroep B.V., characterized the challenges faced by sub-Saharan African (SSA) horticultural exporters as follows:

- ***Mature Markets.*** The EU market for fruit and vegetables is close to maturity (especially in the original 15 countries) and approaching saturation. Consumption is stabilizing in volume, at least until the 10 new members have reached disposable income levels on a par with the rest of the EU. Consequently, SSA exporters can create value only through pre-packed "convenience" foods or by supplying a greater range of products *year-round.* European consumption of ornamentals, however, is still growing. With the exception of the large German market for flowers, per capita consumption is still increasing and imports are growing faster than EU production.
- ***Buyer Power.*** The importance of the traditional horticulture wholesale markets (spot markets) is dramatically decreasing in favor of the standing order markets (i.e., a small number of large supermarket chains supplied by a limited number of specialized food providers and flower providers). For fruit and vegetable products (and increasingly flowers and ornamentals), the head of the value chain is dominated and effectively controlled by the large and sophisticated European multiple retailers, such as Tesco, Sainsbury, and Marks and Spencer. Competition among suppliers for this market has reached the point where it is no longer sufficient to supply product of comparable quality or at a cheaper price. To gain market entry, suppliers must now offer the best quality *and* the lowest price.
- ***Grower Concentration.*** For fruit, vegetables, and flowers, the supply chain is increasingly dominated by transnational producer groupings (e.g., Flamingo Trading, which joins growers in Kenya, Zambia, South Africa and Guatemala, and Mitchell and Mitchell in Zimbabwe, Zambia, and South Africa). Such groupings give growers strength in negotiations with large buyers and enable them to fill large orders year round.
- ***Rising Standards.*** Access to standing order markets is based on a license to produce and a license to deliver. These licenses are laid down in procedures such as EUREP-GAP, "just in time," "just in shape" designed to ensure consistency in quality and food safety through the recorded and demonstrated traceability of products, as well as strict observance of delivery schedules and specifications on grading and packaging. Devised by major retailers and distributors for their own

benefit, these procedures have become a license to supply. Exporters' product suppliers must all be registered; and while this still makes it possible for very small outgrowers to participate in the value chain, it does mean that they have to be very well organized and consistent. Commercial suppliers must ensure that they have a sufficient and efficient supporting infrastructure of cold chain, logistics, and production coordination, for which they should prepare a joint country-level development strategy.

Figure 1-12 and Table 1-15 show the composition of the supply of vegetables to the EU market. The overwhelming importance of domestic supply is clear, with African suppliers representing only 0.7 percent of the total volume. If Morocco and Egypt, are discounted as non-representative of conditions applying south of the Sahara, about 100,000 tons remain, of which nearly half are produced by Kenya. Other significant SSA suppliers are South Africa, Senegal, Zimbabwe, Ghana, Zambia, Ethiopia, and Uganda.

Buyers can choose from a variety of origins with which they already have ties, so it is doubly important for a new supplier to ensure beforehand its ability to comply fully with the EU's stringent market requirements and achieve competitive standards on price, quality, and reliability. This will require a dynamic growth strategy for the country to quickly establish the required infrastructure and business environment for commercial horticulture exports.

Table 1-16 shows Africa's exports to Europe of cut flowers—the main floriculture product exported by SSA. In 2001 those exports had a value of almost US$300 million, equivalent to 8 percent of the world market. Kenya is the largest African exporter with 55 percent of the region's total, followed by Zimbabwe with 22 percent and Zambia with 6 percent. Approximately 71 percent of the flowers from Kenya are roses. Other flower exports from Kenya are carnations, (7 percent), chrysanthemums (1 percent), and various summer flowers. Roses also dominate exports from Zimbabwe and Zambia. The EU flower market is segmented by maturity or growth rate as follows:

- Immature market with per capita annual consumption below $20 (Ireland, Spain, Greece, Portugal, as well as non-EU Central and Eastern Europe).
- Emerging market with per capita annual consumption between $20 and $40 (France, Italy, Belgium, Luxemburg, Finland, UK, Denmark, Sweden).
- Mature market with per capita annual consumption above $40 (Netherlands, Germany, Austria, as well as non-EU Switzerland and Norway).

Figure 1-12
Composition of Supplies to the EU Market for Fresh Vegetables

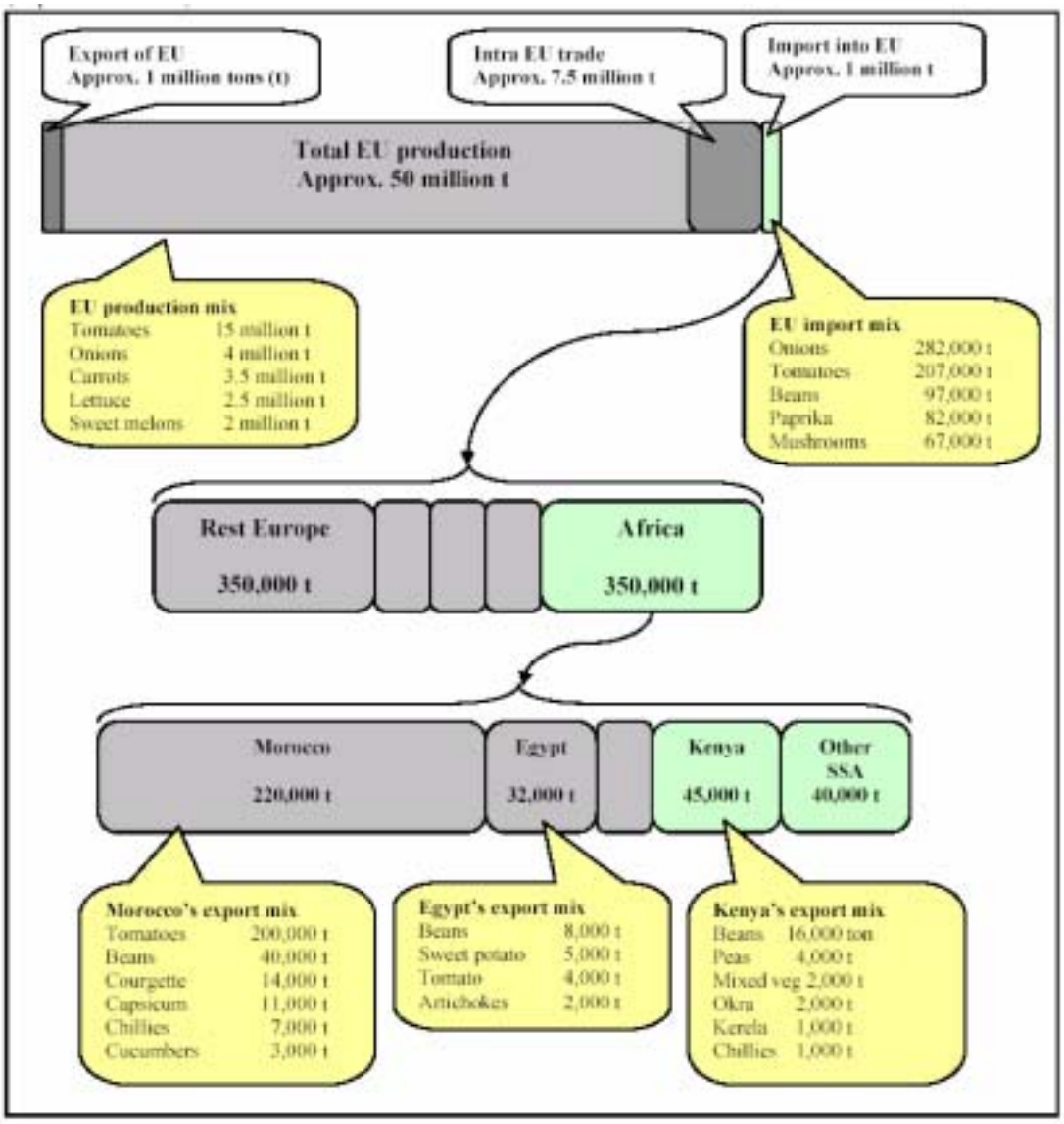


Table 1-15
Import of Fresh Vegetables from Africa to the EU (tons)

Producing Country	1995	1996	1997	1998	1999	2000	2001	Growth 95-01 (%)	% of total
Morocco	152,427	162,088	172,527	209,725	238,805	192,532	220,280	144.5	63.6
Kenya	25,073	30,205	30,351	31,602	41,192	45,699	40,742	162.5	11.8
Egypt	33,109	27,424	26,565	36,783	28,162	32,330	32,606	98.5	9.4
South Africa	8,442	3,916	3,472	11,180	13,141	3,858	9,958	118.0	2.9
Senegal	3,159	5,409	5,745	6,173	6,701	8,098	7,791	246.6	2.2
Zimbabwe	4,941	5,525	5,957	7,769	8,410	7,381	6,843	138.5	2.0
Ghana	2,196	3,058	3,568	4,542	5,183	6,255	6,808	310.0	2.0
Zambia	1,043	1,958	2,909	3,137	4,017	4,246	6,288	602.9	1.8
Ethiopia	2,961	2,845	3,190	2,309	3,302	3,533	3,092	104.4	0.9
Tunisia	1,737	1,121	1,975	2,299	1,833	2,950	2,440	140.5	0.7
Uganda	645	1,058	1,576	2,239	2,512	2,335	2,295	355.8	0.7
Madagascar	371	393	2,302	2,103	2,809	2,767	1,948	525.1	0.6
Burkina Faso	3,327	2,096	3,207	2,633	2,613	2,454	1,411	42.4	0.4
Cameroon	1,275	1,490	891	940	1,089	1,206	969	76.0	0.3
Gambia	1,574	1,418	1,400	1,373	1,585	981	872	55.4	0.3
Togo	290	247	315	344	360	501	615	212.1	0.2
Tanzania	353	331	98	6	3	392	583	165.2	0.2
Ivory Coast	485	415	401	481	440	694	453	93.4	0.1
Mali	672	537	667	616	487	572	245	36.5	0.1
Nigeria	193	87	72	229	191	142	192	99.5	0.1
Mauritius	40	32	40	46	50	94	149	372.5	0.0
Niger	15	15	26	.	.	0	0	0.0	0.0
Rwanda	-	6	-	-	-	0	0		0.0
Burundi	175	138	23	-	2	10	0	0.0	0.0
Total Africa	244,503	251,812	267,277	326,529	362,887	319,030	346,580	141.7	-

SOURCE: ZMP – Marktbilanz Gemüze 2002.

Table 1-16
Africa's Leading Export Countries of Cut Flowers ('000 US$)

Producing country	1998	1999	2000	2001	Share (%)
Kenya	131,550	141,326	144,441	165,336	55.1
Zimbabwe	61,925	58,810	63,797	65,520	21.9
Zambia	14,146	16,969	16,155	16,404	5.5
South Africa	14,656	13,468	12,086	12,793	4.3
Uganda	6,226	6,615	10,049	11,429	3.8
Tanzania	6,361	7,800	6,752	9,142	3.0
Morocco	9,661	7,067	5,804	5,433	1.8
Mauritius	4,857	3,779	4,080	3,742	1.2
Ivory Coast	2,112	2,182	2,533	3,509	1.2
Rwanda				2,650	0.9
Ethiopia	457	351	841	891	0.3
Cameroon	642	703	858	856	0.3
Malawi	3,147	1,110	558	651	0.2
Egypt	435	576	476	595	0.2
Tunisia	346	344	775	382	0.1
Burundi				217	0.1
Somalia				70	0.0
Ghana				69	0.0
Swaziland				65	0.0
Eritrea				51	0.0
Sudan				36	0.0
Total	256,521	261,100	269,205	299,841	100.0

SOURCE: *Adapted from VEK, 2004 (original author : Pathfast Publishing).*

Given the predominance of immature and emerging markets, the growth prospects of the industry are encouraging for SSA suppliers, who already have a significant presence in the "old" EU of 15. The EU's expansion will necessarily lead to better market access to the east for SSA suppliers.

According to VEK's recent survey, there are good opportunities for SSA to develop a strong presence in EU markets for fresh cut flowers and starting material for cut flowers and pot plants (cuttings and young plants). The prospects for starting material are especially favorable because of the relative high value–volume ratio and labor intensity precluding production in Europe. Ornamental plants, however, have unfavorable value–volume ratios. Opportunities in cut foliage are better than in

ornamental plants but lower than cut flowers, as this industry segment is intercontinental and based on large, relatively extensive farms connected to efficient sea transport. Commercial production of starting material should be seriously considered, however, as it is a growth segment within international horticulture.

Under the Lome Agreement, developing countries in Africa, the Caribbean and the Pacific, are entitled to duty-free entry into the EU markets. But these entitlements were not meant to be in perpetuity, and it was intended that LDC status would be revoked as each country developed. For example, Kenya might lose its LDC status in 2006 and face duties and tariffs on all of its exported flowers and vegetables entering the EU market. This presents an onerous challenge to Kenyan exporters already struggling with rising costs, and many of these exporters are now looking to move into neighboring LDCs not threatened with loss of entry privileges to the EU markets. This dynamic could present an opportunity for Mozambique (and other SSA suppliers) to move into the production and export of flowers, possibly with assistance from the Kenyan intermediaries who have been linking African growers with EU buyers.

For fruit, the opportunities for SSA are more limited because

- The growth rate of fruit imports into the EU is modest compared to vegetables;
- The fruit product range imported from outside EU consists mainly of "commodities" with a relatively low value per kg that demands highly efficient and effective production and distribution;
- Fruit is generally less perishable and in combination with the low value–volume ratio, sea transport is the most important transport mode (thus, competition is on a even more intercontinental scale with major players such as South Africa, Australasia, the Americas, and Asia);
- The fruit sector globalized decades ago and is now controlled by a few large, intercontinental operating companies. Opportunities for SSA lie in perishable fruit varieties (comparative advantages over Australia, the Americas, and Asia) and varieties of current fruit commodities (dwarf fruits for garnish) with a high value–volume ratio to allow air transport as the primary export transport mode.

A study of alternative global markets for Mozambican horticultural exports does not yet exist, but potential exists for bananas to Dubai, mangoes to India and Pakistan, and world market citrus production.

Growth Projections

If production constraints are ameliorated and if required market conditions are met for six key crops that are best suited to the Beira Corridor, annual export revenue could reach $36.2 million (Table 1-17). We estimate the time horizon for this level of development to be not less than 10 years.

Conditions for Horticultural Development

According to a series of World Bank-funded studies the following are prerequisites for development of successful horticultural exports in Africa:[32]

- A multidisciplinary horticultural task force to coordinate a sector development strategy.
- Region-crop combinations adjusted to local circumstances and market demand.
- Research and development focused on practical capacity-building measures.
- A horticulture business incubator.
- Minimum critical scale of production facilities according to market demand.
- Better coordination between production and marketing through joint euro-afro initiatives.

Table 1-17
Annual Export Revenue Possible for Key Crops in the Beira Corridor

Crop	Commercial Hectares	Outgrower Hectares	Annual Revenues ($)
Paprika	500	120	3,100,000
Roses	50	0	9,000,000
Hypericum	50	0	4,585,000
Summer flowers	50	0	1,650,000
Vegetables	1200	500	5,304,000
Large fruit estate	2000	200	11,000,000
Fruit Farm	1200	100	1,560,000
Total	5050	920	36,199,000

SOURCE: Technoserve, October 2003.

[32] See Annex 1.

CONCLUSION

Both the World Bank studies and Technoserve's work on Manica confirm that horticultural development in Mozambique is a highly specialized activity requiring considerable investment from public and private sector promoters. The onus is now on all stakeholders—producers, exporters, importers, government, NGOs, private sector representatives, and civil society—to show their ability to respond with vigor and foresight to the sector's needs in order to profit from the generous returns on offer.

Rice Subsector

Today Mozambique consumes 367,000 tons of rice[33] and produces only 167,000 tons; it imports about 200,000 tons. But Mozambique possesses the agricultural conditions for being not only self-sufficient but also a net exporter in a region where the structural deficit of rice is expected to reach more than 6 million tons in 2020.[34]

ORGANIZATION OF PRODUCTION

Rice in Mozambique is produced under two main farming systems: rain-fed smallholder production on low-lying land in Zambezia and Southern Nampula and irrigated commercial farming in Chockwe and Gaza.

In 2000, smallholder production accounted for about 90 percent of domestic supply, mostly for home consumption,[35] which explains the weak market linkages and insensitivity to price changes.[36] A yield assessment during 1996/97 found average productivity in Zambezia was 1.16 ton/ha.[37] More recent studies point to average yields of 2 ton/ha (WVI in Gurué, Morrumbala andNicoadala/Namacurra districts), while another recent study found yields of 1 ton/ha.[38] This more conservative estimate is confirmed by discussions with various experts in Mozambique.

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[33] MADER.
[34] Rosengrant M. W., M. Agcaoili-Sombilla, N.D. Perez. 1995. Global Food Projections to 2020: Implications for Investment. Food, Agriculture, and the Environment. Discussion Paper 5. Washington, D.C.: International Food Policy Research Institute.
[35] A World Vision study (2002) shows that in Zambezia 59 percent of smallholders produce rice but only 7 percent produce for sale.
[36] FAO-DNCI 2001.
[37] MADER 1999.
[38] Hilton 2000.

Rice has traditionally been grown commercially under irrigation in Chockwe district, although the area was harmed by the floods and is still being rehabilitated. When rehabilitation is completed in three years, capacity will expand from the 5,000 ha to about 16,000 ha. Small family producers make up 70–80 percent of producers and achieve yields of 2.5 ton/ha, with operating costs of around US$275/ha or US$114/ton. While these growers use mechanical land preparation, fertilizers, and improved seeds, they use few crop chemicals and rely more on unpaid family labor. The commercial farmers have yields in the range of 3–5 ton/ha using more purchased inputs and wage labor. At US$466, their costs per hectare are higher than for smallholders, but roughly the same per ton (US$117/ton).[39] See Table 1-18.

Table 1-18
Costs of Rice Production in Chockwe

Costs and Yields	Type of Farm	
	Family-owned	Commercial Farmers
Cost per hectare (US$)		
Equipment	119	190
Labor	100	55
Inputs	66	221
Total	285	466
Yield per hectare (tons)	2.5	4
Cost per ton (US$)	114	117

SOURCE: Muendane and Zandamela (2003).

Rice Processing

Once harvested, the rice is hulled and polished in industrial milling units located mainly in the Chokwe district. The rain-fed Zambezia area has little processing capacity because on-farm hulling and polishing is not done in Mozambique. This technology is widely available in many rice-growing countries and benefits farmers directly by adding value *in situ* and allowing farmers to sell polished rice directly onto the local market. The price difference between polished rice and paddy varies from 135–500 percent, while the cost of processing need not exceed 100 percent the price of paddy.

[39] Muendane and Zandamela 2003; MADER 2004.

A recent study by Cardoso and Zandamela analyzes the structure of the value chain in Mozambique, focusing on the viability of a rice industry in Mozambique based on small-scale industrial rice processors of 2 and 6 ton-per-hour capacity. Tables 1-19 and 1-20 show positive net present values (NPV) for each.

Table 1-19
Feasibility of Rice Processing Using 2 Ton-per-hour Processing Units

Price of Paddy Rice	Price of processed rice (US$)					
	210	231	254	280	307	338
105	-113,271	131,854	401,492	698,094	1,024,356	1,383,245
110	-211,053	34,072	303,71	600,312	926,574	1,285,463
116	-421,523	-176,403	93,235	389,837	716,099	1,074,987
122	-778,376	-533,250	-263,612	33,990	359,252	718,140
128	-1,343,162	-1,098,037	-828,399	-531,797	-205,535	153,354

Note: The values refer to the NPV of the investment calculated in the feasibility plans.

SOURCE: Muendane and Zandamela, 2003.

Table 1-20
Feasibility of Rice Processing Using 6 Ton-per-hour Processing Units

Price of Paddy Rice	Price of processed rice (US$)			
	200	220	242	266
110	-701,489	324,775	1,453,666	2,695,446
116	-1,166,112	-139,847	989,043	2,230,823
121	-2,166,211	-1,139,947	-11,056	1,230,724
127	-3,861,810	-2,835,545	-1,706,655	-464,875

Note: The values refer to the NPV of the investment calculated in the feasibility plans.

SOURCE: Muendane and Zandamela, 2003.

These tables show that for a minimum farm gate price of US$115, the ex-factory price of polished rice would be in the range of US$240-250. Transport costs to Maputo of around US$50/ton would give a minimum price in Maputo of rice from Chokwe of US$290-300. The world market price for rice CIF Maputo wasUS$336 and US$250,[40] respectively, for first and second quality rice from Thailand and Pakistan. And although Zambezia has optimal agro-climatic conditions it has few processing units,

[40] October–November 2003.

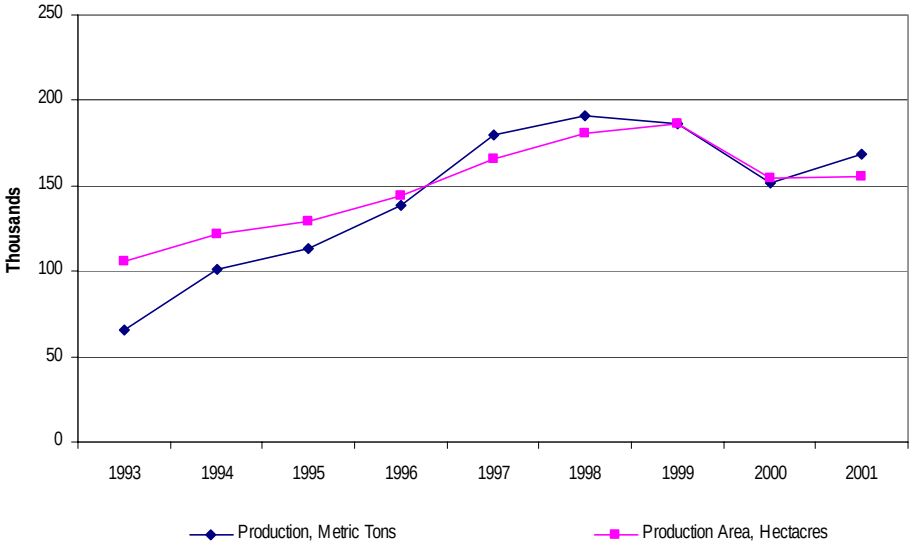
and paddy transportation costs to Chockwe would be prohibitive. This indicates a need for processing capacity *in situ*. At present, processing capacity is concentrated in Chokwe and Maputo province, and is less than 1/20 the production at the national level.

SUBSECTOR PERFORMANCE

The gap between current and potential agricultural yields is significant. Average rain-fed rice yields are 1.1-1.2 ton/ha; potential yields are 2.5-3 ton/ha. Irrigated yields in the smallholder sector are 2.5 ton/ha; potential yields are 5 ton/ha.[41]

In the aftermath of the Peace Agreements the production of rice has expanded (Figure 1-13). But this expansion is the result of farmers returning to rural areas and rural markets reviving. Most rice produced is for auto-consumption, mainly in Zambezia (Figure 1-14). The expansion has not been led by increased productivity, investments, or opening of new markets. The floods in 2000 caused most of the decline in rice production. The irrigation infrastructure in Chokwe district, which is being rehabilitated, was very badly damaged.

Figure C-13
Rice Production Trends



[41] Potential is based on interviews with rice producers and processors but it stands fundamentally as a reference of the "achievable" yield if correct agronomic techniques and climatic conditions were in place.

Figure 1-14
Area Cultivated (average 1999-2001)

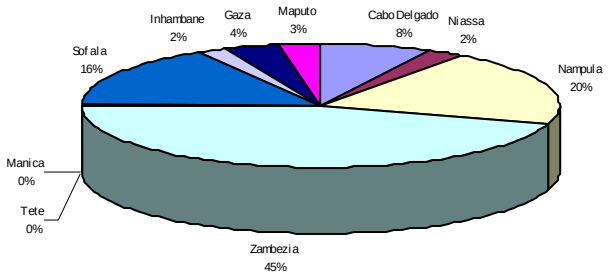
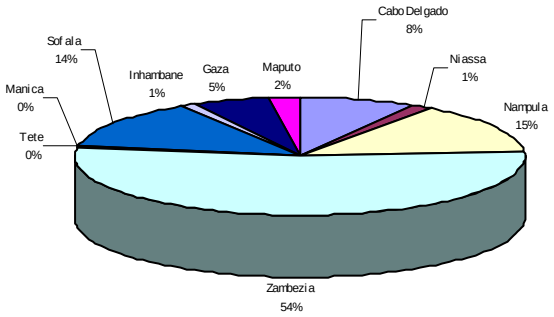


Figure 1-15
Production (average 1999-2001)



POLICY AND INSTITUTIONAL ENVIRONMENT

Reliable information on Mozambique's rice sector is scarce and focused mainly on Chokwe. The rice subsector does not have a policy framework, although a consultative group that brings together producers, traders, processors, and government has been established. The GPSCA/MADER and the GCA[42] will soon begin examining the competitiveness of the rice subsector in Mozambique, as well as market opportunities. The study should provide a basis for future policy and will address the question of tariffs on polished rice, which have recently been under discussion.[43]

Tariffs will not on their own induce a supply response from farmers, as the sector is hampered mainly by insufficient water management infrastructure, poor production technology, low input use, and the lack of processing capacity in Zambezia. Moreover, tariffs hurt many consumers in poor, urban households in the south and, by protecting domestic production, delay investment needed to build a competitive and efficient sector that can use the country's strong resource base for intensive rice production.

---

[42] Grupo consultivo do Arroz (GCA) was created in 2004 to promote of a national policy for developing a competitive rice subsector. It has representatives from government, private sectors (producers, processors, traders), and independent experts.

[43] The rice tariff is 7.5 percent for processed and semi-processed rice (only 2.5 percent for paddy rice) while the tariff on processed maize and other processed products is 25 percent.

KEY CONSTRAINTS

Concentrated in Zambezia, small family farms suffer from weak farmer organizations, the high cost of transporting paddy to processing units, weak markets for inputs and credit, consumption-oriented production, lack of extension services to promote the use of improved seeds and cultural practices, and lack of processing units. For commercial farms, the major infrastructure bottleneck is the rehabilitation of Massingir dam in the irrigated perimeter of Chokwe, an area prone to drought as occurred in 2003-2004. Irrigation and drainage management in Chokwe is weak. Coupled with the lack of rice drying equipment, this has led to poor quality paddy with a high proportion of broken grains that adversely affects market prices. The general problem of high input costs is most severe among commercial producers who rely more heavily on them than small family farms. Stronger farmer organizations pursuing bulk purchasing could help control costs and draw agrochemical companies to develop the Mozambican market.

Mozambique's rice subsector needs (1) more adaptive agricultural research and variety development to support future rice development; (2) better water management practices through strong water user groups and improved extension services; (3) investment in irrigation and drainage infrastructure and development of new rice areas for commercial farming, large and small, supported by specialized extension services; and (4) working and investment capital for high-yield rice production and processing.

DEVELOPMENT PROSPECTS

Mozambique has good conditions for rice production and a capability already in place in the south, close to its main urban market and to the Maputo corridor with South Africa. The domestic market for rice is constantly growing. In addition, southern Africa offers major market opportunities for rice exports. South Africa alone imports more than $100 million in rice annually and few countries in the region have the necessary agro-climatic conditions for large-scale commercial rice production.

The EU market under the EBA zero-tariff arrangements offers new opportunities. Given the strength of other suppliers to these markets (Vietnam, Pakistan, Thailand, India) tapping into this market will require major commitments from both the public and the private sector to obtain and sustain the required investments in infrastructure and support services.

A realistic assessment of market conditions is also necessary, as the international market is both thin and volatile (less than 5 percent of world production is traded) and highly differentiated in quality grades. Managing the complexities of the market is a major challenge that Mozambique would need to take on if it is to be successful as a supplier of foreign markets, even those in neighboring countries.

Sugar Subsector

At its peak in 1972, sugar was Mozambique's largest agro-industrial sector, producing 325,000 tons and employing about 45,000 workers, and stood third in export revenues. The droughts of the late 1970s, an adverse policy environment, and the sabotage and destruction of the civil war brought about the industry's near-total collapse: in 1986 production stood at a mere 16,000 tons. Then, privatization in the late 1980s and a variable duty on sugar imports attracted more than US$300 million in foreign investment. Among agricultural subsectors, it now stands second in export revenues. Agronomic potential for future growth is good, as are the employment benefits of sugar production in rural areas, both in the field and the factory, while ancillary industries and service providers also stand to benefit.[44]

ORGANIZATION OF PRODUCTION

Sugar is produced on four rehabilitated sugar estates—two in Maputo province (Maragra and Xinavane), two in Sofala province (Mafambisse and Marromeu)—while two more await rehabilitation. Large vertically integrated companies are responsible for production, which is mostly under irrigation conditions with only minimal production by outgrowers. Rehabilitation, which followed privatization in the 1990s, was possible through substantial investment from South Africa (Maragra, Mafambisse and Xinavane) and Mauritius (Marromeu). The current owners of these estates are Tongaat-Hulett (Mafambisse, Xinavane), Illovo (Maragra), and a Mauritian consortium (Marromeu). Table 1-21 shows that sugar alone accounts for about one-third of value added in the agricultural sector, which suffers from severe under-investment in agroprocessing.

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[44] The National Institute of Sugar is studying the impact of the sugar policy and investment in Mozambique.

Table 1-21
Value-added in Sugar Sector

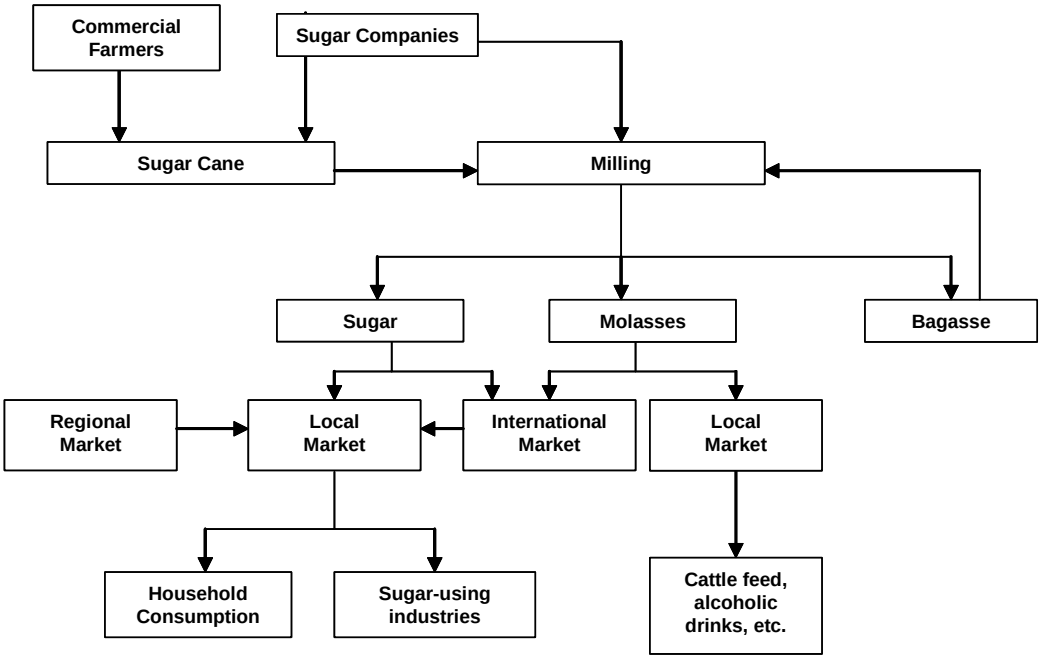
Value-Added	1997	1998	1999	2000
Agriculture (% of GDP)	30	29	29	28
Manufacturing, without Mozal (% of GDP)	10	10	10	9
Sugar (% of GDP)	37	43	52	31
Sugar (% of manufacturing value-added)	3.78	4.38	5.16	3.45

SOURCE: *INA.*

Export revenues from sugar have increased in recent years because of the combined effects of production growth and improved access to markets. In 2003, the export revenues of the sugar industry were more than US$18 million, or more than 2 percent of all exports (including Mozal) and about 20 percent of agricultural exports.

Mozambique's sugar industry is only partially integrated (Figure 1-16). Molasses is not exploited, though opportunities in alcohol production for export markets exist.

Figure 1-16
Sugar Industry Value Chain



SUBSECTOR PERFORMANCE

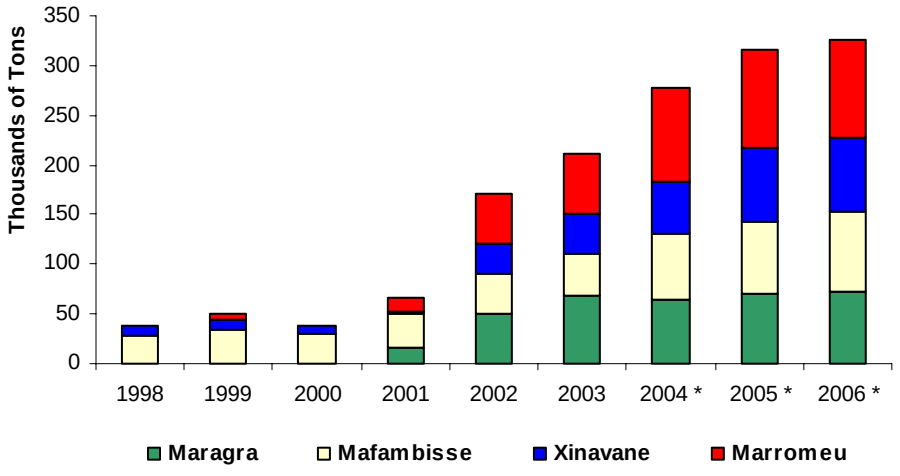
The fast growth of the sector is constrained only by the size of the domestic market and access to major markets (Figure 1-17). Key growth factors are

- Availability of good quality irrigable land,
- Privatization,
- Foreign investment, and
- Guaranteed prices levels on the domestic market through import duties (see policy and institutional environment for details).

Both total production and agricultural productivity have increased, with some fluctuations due to weather. Agricultural yields are more than 90 tons per hectare and sugar yields are about 11 percent of total cane crushed, which equates to approximately 10 tons of sugar per hectare.

Depending on market opportunities, the industry could find itself in a competitive position for further expanding production up to 450,000 tons even in the absence of investment in new sugar estates. These market opportunities are still uncertain, however, given the reform of the EU regime, the possible expansion of LDC quotas and the recent challenge of EC export subsidies in the WTO raised by Australia, Brazil and Thailand.

Figure 1-17
Sugar Production, Actual and Projected, 1998-2006

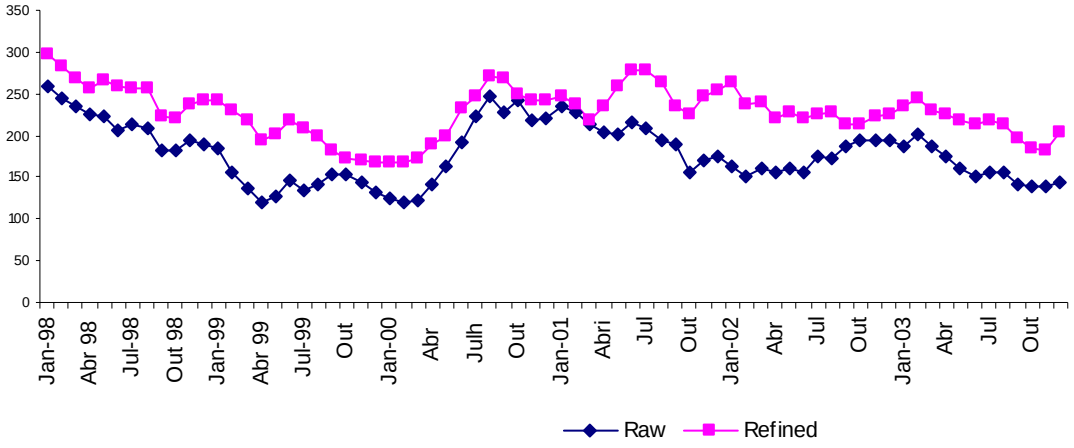


SOURCE: INA.

POLICY AND INSTITUTIONAL ENVIRONMENT

During the 1990s the Government of Mozambique adopted a policy of sugar development through inward sufficient investment for sugar estate rehabilitation. It was clear that investors would require stronger incentives than uncertain international markets could offer. After a vigorous policy debate and an independent study, the government opted for a variable duty system to protect the domestic market from cheap imports from the fluctuating world market. The minimum price is US$385 per ton for raw sugar and US$450 per ton for processed sugar. Duty is calculated monthly and varies inversely to changes to the international prices (Figure 1-18).

Figure 1-18
Sugar Variable Duty (Percent Ad-valorem), Historical Dynamics Since 1998



SOURCE: INA.

A principal justification for introducing a variable levy on sugar was the nature of international sugar markets: a "surplus" market with most countries protecting domestic markets and dumping "excess" production on international markets at extremely low prices thanks to a system of domestic and export subsidies.

At first, the system faced a stiff challenge from smuggling, exacerbated by the Zimbabwean black market, where a ton of sugar could be purchased for US$60-80 against the official rate of US$600 and US$400 per ton under Mozambique's pricing policy. The coordinated response of government and the sugar industry, together with the reduction in the black market premium, finally brought the situation under control.

KEY CONSTRAINTS

Industrial and agricultural productivity are at acceptable levels, given the technology in use. Provided current productivity levels are maintained or improved, Mozambique could become a very competitive producer. Economies of scale can be achieved in transport and logistics through Beira port, where charges are high and existing port infrastructure is inadequate.

Sugar companies are carrying heavy debt burdens because of cost overruns for rehabilitation, especially Maragra and Marromeu which, in the absence of "soft loans," have had to resort to the financial markets.

Since the world sugar market acts as a residual market and sugar is a protected commodity in most developed countries, the international market for sugar is characterized by high volatility and low prices. The price difference between in-quota exports to protected markets and out-of-quota exports to international markets ranges between 120-250 percent (Table 1-23). Mozambique must acquire access to in-quota prices. This is occurring on a small scale with Barbados's unused quota of 18,000 tons, which Mozambique will share with other ACP producers.

Table 1-23
Sugar Export Quantities and Prices (FOB) in 2003

Market	Quantity	Price US$/Ton	Revenues (US$)
United States	13,000	410	5,330,000
EU – EBA	10,400	526	5,470,400
SACU	11,481	330	3,788,730
International Market	27,874	150	4,181,100
Total	62,755	299 (weighted average)	18,770,230

SOURCE: INA.

DEVELOPMENT PROSPECTS

Mozambique's agro-climatic conditions, installed capacity, technical expertise, and multinational management all favor development of a competitive sugar industry on both regional and world markets. Potential gains from molasses processing are not yet being pursued.

A few constraints and conditions must be overcome. For example, high transport costs and poor logistics affect some estates (e.g., Marromeu) and increase costs across the industry. And profitability is low because of heavy debt burdens from

unforeseen infrastructure costs, drought, and lower than expected domestic market demand due to smuggling from Zimbabwe.

Expanding, upgrading, and strengthening the competitiveness of the industry in Mozambique will need to take into account opportunities provided by potential changes in international sugar markets, especially protected markets. In the long-term such changes will eliminate preference margins, but the short term (5-10 years) could provide room for substantial growth in Mozambican exports, which does not yet enjoy the benefit of a major quota, but could obtain very substantial expansions in quotas. Dependence on international markets is considerable, but opportunities for quota acquisition are opening up. Such acquisitions could give the industry the financial resources it needs to overcome its present financial troubles, develop its molasses industry, pursue more value adding, and establish a stronger presence in global markets.

Tobacco Subsector

Established in Mozambique in the late 1990s, tobacco production is bringing far-reaching change to parts of the central-northern provinces by dramatically improving household incomes and introducing modern production techniques that are then transferred to other crops. Export revenues from tobacco in 2003 are estimated to be more than US$30 million. Though difficulties remain, investments in tobacco processing are following pioneering investments in production and the crop is succeeding in Mozambique.

ORGANIZATION OF PRODUCTION

Burley is the most common type of tobacco grown in Mozambique because it requires less capital and simpler technology than the higher value "Virginia" and "dark fire." Producers are predominantly smallholders (approximately 120,000 families) working in Tete, Zambezia, Niassa, and Nampula while some commercial farmers (believed to employ about 1,000 wage workers) are farming in Manica (Figure 1-19).

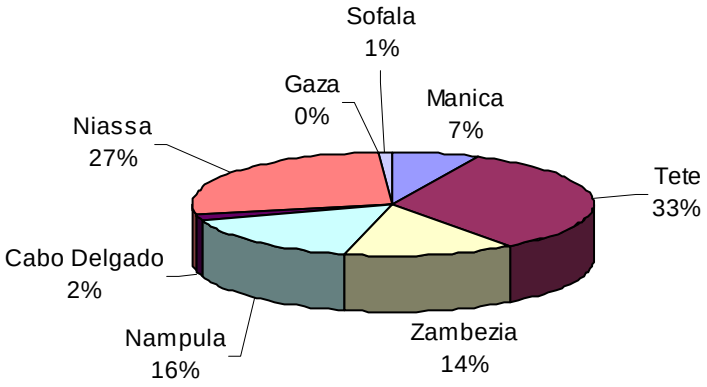
Private companies, or *fomentadoras*,[45] provide smallholders and commercial farmers with inputs and technical assistance on credit and buy the tobacco under contracts

[45] Fomentadoras are private companies that promote the production of tobacco by supplying inputs and technical assistance on credit against buying the output and discounting the costs of inputs from the

regulated by government, whereby the companies are assigned zones of influence to promote production and purchase the tobacco produced under contracts with growers. Provided farmers do not require inputs on credit they are free to sell to any company they wish, though this is unusual because of the absence of other sources of credit.

The average smallholder plot is about 0.5-0.6 hectares, but this is increasing, and in Tete some experienced small growers are farming as much as 10 ha. The importance of tobacco is confirmed by a recent paper that found that tobacco cultivation had positive impacts on all analyzed welfare indicators: household income, poverty, perception of economic conditions.[46]

Figure 1-19
Distribution of Smallholders Producing Tobacco



In Manica, where commercial farmers are concentrated on farms of 50-100 ha, the companies provide working and investment capital for machinery and curing facilities. This has attracted cash-poor Zimbabwean farmers and a small nucleus of national commercial farmers to start commercial units.[47] These commercial farmers also act as "development poles" by providing inputs and technical support to about ten smallholders each.[48]

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final price. These companies are domestic firms with relationships with international tobacco buyers. In some cases they are subsidiaries of international buyers (i.e., Dimon), in others independent companies (i.e., JFS).

[46] Walker, T. 2004. *Determinants of Rural Income in Mozambique in 2001-2002*.

[47] This year MLT is expecting to support about 84 farmers and in 2007up to about 250.

[48] They provide them with inputs on credit as well as with technical assistance and extension services

At present, four private companies are operating in Mozambique: Mozambique Leaf Tobacco (MLT), Dimon, Joao Ferreira dos Santos (JFS), Standard Comercial (STANCOM) (Table 1-23). MLT is responsible for more than half of tobacco production in Mozambique, localized in Tete and Manica. It is building a processing unit in Tete to be operative by the 2005 harvest. MLT, a subsidiary of Universal Leaf Tobacco, is the world leader in tobacco production and is in all the neighboring countries. As this company has interests in other agricultural products such as tea, oilseeds, fruits, and timber, the success of their tobacco venture could help mobilize investments for other crops.

Table 1-23
Distribution of Tobacco Production by Province and Company

Province	Company	Number of Farmers
Niassa	JFS	27,303
	STANCOM	7,510
Cabo Delgado	JFS, CANAM	2,050
Nampula	JFS	12,000
	Sonil	8,000
Zambezia	JFS	10,156
	STANCOM	8,500
Tete	MLT	39,000
	Dimon	4,464
Manica	MLT, STANCOM, Dimon, Tabaco de Moçambique	9,000
Sofala	Dimon	791
Gaza	JFS	22
Total		128,796

SOURCE: *MADER.*

The second biggest producer of tobacco in Mozambique is JFS with about 33 percent of the national production mainly in Cabo Delgado, Niassa, Nampula, and Zambezia. This national company also produces cotton crops. Because JFS is a subsidiary of Universal Leaf Tobacco, it effectively controls more than two-thirds of total production. Dimon, a local subsidiary of an international group, is the third largest company with about 10 percent of national production and is established only in Tete and Manica. Like MLT, Dimon has processing units in neighboring countries. STANCOM owns two firms, Sonil in Nampula and Mosagrius in Niassa, which produce about 4 percent of tobacco in Mozambique

Mozambique does not have the capacity to process tobacco beyond the burley and flue-cured stages; thus, tobacco is exported raw to Malawi and Zimbabwe for processing before being re-exported for final manufacture. MLT's processing unit in Tete, which will begin operations in June 2005, will have an initial capacity of 37,000 tons, expandable up to 52,000 tons by 2007. This will bring significant value-adding advantages and eliminate dependence on the uncertain trade flows with Malawi that currently beset the industry.

SUBSECTOR PERFORMANCE

Mozambique's tobacco industry has emerged at the initiative of multinational companies with strong regional interests in response to instability in Zimbabwe, with government adopting a regulatory role. The main determinants of growth are:

- An assured market with high farm-gate prices that more than compensate for the high labor requirements;[49] and
- Availability of technical assistance, inputs on credit, and, for commercial farmers, capital for drying and packing sheds and agricultural equipment.

As the crop becomes established, however, it appears that companies are reducing prices to commercial growers and concentrating more on smallholders, who do not use wage labor and have lower cost profiles, albeit at the expense of quality and yield. Technical assistance is also of variable quality and coverage, as companies seem still hesitant to invest fully in creating the necessary service infrastructure for full development. This is probably a consequence of regional uncertainties, particularly with regard to Zimbabwe.

POLICY AND INSTITUTIONAL ENVIRONMENT

The policy framework of the tobacco subsector is the 2002 *Regulamento do Tabaco,* developed jointly by stakeholders with government as facilitator. The regulation establishes the rights and obligations of the different players and is designed to create incentives for foreign investors. The approach is similar to that of the cotton subsector, where weak finance and input markets are strengthened by targeted services from private investors in exchange for protected rights for tobacco purchase in the areas they provide inputs and technical assistance on credit. The concession is annual, but because of poor government performance monitoring, renewal is

[49] One ha of land can yield 2,000 kg of tobacco producing a net income of US$2,000-3,000.

virtually automatic. MLT has benefited from even stronger protection because of its investment in the processing unit in Tete, receiving a concession for ten years that allows it exclusive rights to buy tobacco and provide inputs at prices it sets internally. This may well prove prejudicial for smallholders and is an intrinsic weakness of Mozambique's concession system for several crops.

DEVELOPMENT PROSPECTS

The speed of growth in Mozambique's tobacco subsector is a consequence of declining production in other countries in the region, particularly Zimbabwe. Investor caution over dependence on one country limits the sector's growth in Mozambique. Meanwhile, the global tobacco industry is under pressure from the recent "Framework Convention on Tobacco Control," which, according to World Bank sources, will begin to affect supply in the coming decade.[50]

The dependence of tobacco companies on small holders using slash and burn techniques instead of the sustainable farming systems of commercial growers is resulting in deforestation. Firewood consumption for the curing of "Virginia" and "dark fire" tobacco compounds the problem; the dangers of environmental damage on the scale of Malawi or Haiti are becoming clear to the authorities. A reforestation plan to be financed by the tobacco companies is being prepared and could help avoid major environmental damage.

School attendance is severely affected because farmers need to use their children as labor at peak times if they are to benefit from the high returns that the crop offers them.

Now that the crop has become established and is affecting the lives of many people, as well as the country's natural resource base, an integrated strategy for sustainable development of the tobacco sector should be put in place. Such a strategy could help ensure that tobacco remains a force for development in rural areas by protecting the environment, stimulating commercial farming among small and large growers, encouraging value-adding through further processing of raw products, and facilitating the emergence of an agricultural credit and input supply system that responds to the rural sector's broader needs. Because of its profitability, tobacco can induce high dependence but this risk can be mitigated through diversified crop rotations that should be part of the development strategy.

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[50] This has been approved and signed by more than 100 countries, though only 14 have ratified it and a minimum of 40 ratifications are needed for it to come into force.

2. MOZAMBIQUE – TRADE AND TRANSPORT FACILITATION AUDIT

Submitted to:
World Bank

Submitted by:
René Meeuws
NEA Transport research and training

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Rijswijk, The Netherlands, September 2004

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1 EXECUTIVE SUMMARY

Mozambique is a country situated in the south-eastern part of Africa on the Indian Ocean with an area of 799,380 km2 and 2,515 km of coastline. It is the natural economic gateway for the north-eastern part of South Africa, Swaziland, Zimbabwe, Zambia and Malawi. The ports of Maputo, Beira and Nacala are used by its neighboring countries to export and import a substantial part of their commodities. As such, Mozambique is a transit country.

Since 1986 Mozambique has been undergoing radical changes. The centrally planned state-controlled economy is transforming into a market-oriented one maintaining its pro-poor budget policies. These changes are not gradual and uni-directional as they provoke social reactions leading to contradictory developments in the socio-economic sphere.

Mega projects involving investments of billions of US dollars are recently being implemented. Although they boost socio-economic development and already causing economic spread effects by attracting supporting industries, they are highly capital-intensive and form no permanent solution for the abundantly available labor force. Ports and railways are being privatized. Customs is mentored by foreign agencies. However, the legal and regulatory framework, in particular labor law, commercial law and transport legislation, apparently remain behind still reflecting the old bureaucratic reality. This results in excessive paperwork, red tape and corruption regarding business development and trade.

There is also an enormous backlog of maintenance of transport infrastructure. The transport sector is constrained by high freight transport costs; unpredictability of railway operations; inability of public sector entities in the transport sector to generate enough surplus to keep their assets in a good condition; deteriorating condition of the rail and road infrastructure because of lack of maintenance.

All these factors make access to the international markets difficult for Mozambican producers and exporters as they are not competitive. Therefore, it is of utmost importance that the legal and regulatory framework will be urgently renewed to reflect this new economic reality and that mechanisms will be put in place to rehabilitate existing and to invest in new transport structure.

At the same time, conditions must be created to strengthen domestic production of agricultural and industrial commodities and investments in the internal transport infrastructure network and feeder roads.

A pro-active attitude from the Mozambican Government is needed to link the development of the transit potential through the transport corridors directly with the development of the home-based agricultural, industrial, mining and services sectors by removing the physical and non-physical barriers to trade and transport and stimulating competition.

2 INTRODUCTION

Mozambique is a country in development. Rapid changes are taking place in the socio-economic sector. Mega projects are being implemented successfully like the establishment of MOZAL nearby the capital Maputo with an installed capacity of producing 506,000 tons of primary aluminum; the major ports are being privatized; Mozambique Railways is still in the process of privatization; and Mozambique Customs is mentored by Crown Agents. Also important steps have been made to liberalize external trade. At the same time, however, the existing regulatory framework for business development and trade activities still facilitates excessive bureaucracy, red tape and corruption. This, together with a backlog in maintenance of transport infrastructure, makes it extremely hard for Mozambican producers to compete on international markets.

The objective of this Trade and Transport Facilitation Audit (TTFA) is to establish a diagnostic, as comprehensive as possible, on the situation in Mozambique in terms transport costs and efficiency related to external trade and international transportation services providing an integrated approach.

The area of focus includes:

- Foreign trade patterns.
- Organization and quality of transport and logistics services and infrastructure available to exporters and importers from Mozambique and its neighboring countries.
- Assessment of procedural and documentary requirements necessary to move goods through borders or in transit operations.

Ultimately the audit aims at providing a comprehensive understanding of supply chain management constraints in Mozambique irrespective of their cause: governance, regulation, private sector practices and organization.

The audit, therefore, focuses on:

- The nature of existing constraints in regulatory, documentary and procedural requirements related to international trade transactions and corresponding transport operations.
- The availability and the organization of transport services to trade in Mozambique and obstacles to their modernization and development.
- The transit issues and the potential of Mozambique as a transit country using the main transport corridors.

Based on the identification of the shortcomings, an action plan and an implementation strategy are proposed for the measures to be taken for the short and longer term.

3 OVERVIEW OF THE MOZAMBICAN ECONOMY

Mozambique's economy is diversified in terms of shares of the different economic sectors in the Gross Domestic Product. The share of agriculture is about 20 percent of GDP. The main crops produced are maize, rice, cassava, groundnuts, beans, sweet potatoes and sugar cane. The most important exports are sugar, cotton, copra, cashew nuts, tea, and citrus fruit. The agricultural sector plays a crucial role in the development more than 78 percent of the Mozambican population is living on the countryside, where their main economic activity is agriculture. The share of industry in GDP is about 30 percent, mainly caused by the some recent investments in large industrial projects like the production of aluminum. The service sector contributes with 50 percent to GDP, of which 18 percent by trade.

In 2001 the Government of Mozambique adopted an Action Plan for the Reducing Absolute Poverty. This program targets a real GDP growth rate of 8 percent a year over 2001-2005. This has been achieved as Table 1 shows with real GDP growth estimated at 10 percent a year, on average, and in 2001-2002, and projected at 7 percent in 2003. The figure of 85,206 billions of MT GDP in 2002 in Table 1 may need to be adjusted to 82,747.4 billions of MT according to the National Institute of Statistics[1]. This growth in 2001-2002 is mainly caused by a rebound from the devastating effects of the floods in 2000 and is brought forward by the agricultural and construction sectors and by the positive impact of the implementation of mega projects like MOZAL.

Although in absolute terms the agricultural sector has increased since 1998 by more than 30 percent, its relative share in GDP fell back from 27.2 percent in 1998 to 19.5 percent in 2002. The industrial sector increased from 1998 to 2002 from 10,090 billions of MT to 26,096 billions of MT mainly caused by the construction boom in 2002. The relative share of the industry raised from 21.5 percent in 1998 to 30.6 percent in 2002. The starting of the mega projects affected also the transport and communications sector, which increased from 6,811 billions of MT in 2001 to 9,468 billions of MT in 2002 with a share in GDP of 11.1 percent.

The average annual inflation rate has varied from 2000 to 2003 from 7.5 percent to 16.6 percent.

Year	**2000**	**2001**	**2002**	**2003**
Annual average inflation rate (in percent)	12.7	9.1	16.6	7.5

Source: Ministry of Finance and Planning Mozambique; March 2003

The interest rates for lending, however, are increasing from 23 percent in 1999 towards 37 percent in 2002.

[1] Statistical Yearbook 2002 Moçambque; p. 130; INE 2003

Table 1 *Mozambique: Composition of Gross Domestic Product, 1998-2002 (in billions of MT)*

	1998	1999	2000	2001	2002
Agriculture	12,756	13,231	12,346	15,555	16,645
Fishing	1,418	1,310	1,378	1,601	1,366
Industry	10,090	11,534	13,623	17,742	26,096
Mining	143	73	206	254	227
Manufacturing	5,113	5,993	6,830	9,852	9,676
Electricity and water	938	1,447	1,281	1,466	2,640
Construction	3,896	4,021	5,307	6,170	13,553
Services	22,648	25,838	29,570	36,237	41,099
Commerce	10,078	10,997	11,859	14,960	15,304
Repair services	369	404	494	120	563
Restaurants and hotels	534	626	797	838	836
Transport and communication	4,299	4,924	5,297	6,811	9,468
Financial services	1,264	1,045	2,240	2,785	2,990
Real estate rentals	1,093	1,146	1,089	1,719	1,257
Corporate services	600	451	444	...	...
Government services	2,383	3,584	4,220	5,510	5,394
Other services	2,029	2,660	3,130	3,494	5,287
Gross domestic product	46,912	51,913	56,917	71,135	85,206
		(in percent of GDP)			
Agriculture	27.2	25.5	21.7	21.9	19.5
Fishing	3.0	2.5	2.4	2.3	1.6
Industry	21.5	22.2	23.9	24.9	30.6
Mining	0.3	0.1	0.4	0.4	0.3
Manufacturing	10.9	11.5	12.0	13.8	11.4
Electricity and water	2.0	2.8	2.2	2.1	3.1
Construction	8.3	7.7	9.3	8.7	15.9
Services	48.3	49.8	52.0	50.9	48.2
Commerce	21.5	21.2	20.8	21.0	18.0
Repair services	0.8	0.8	0.9	0.2	0.7
Restaurants and hotels	1.1	1.2	1.4	1.2	1.0
Transport and communication	9.2	9.5	9.3	9.6	11.1
Financial services	2.7	2.0	3.9	3.9	3.5
Real estate rentals	2.3	2.2	1.9	2.4	1.5
Corporate services	1.3	0.9	0.8	...	...
Government services	5.1	6.9	7.4	7.7	6.3
Other services	4.3	5.1	5.5	4.9	6.2
Gross domestic product	100.0	100.0	100.0	100.0	100.0

Source: IMF Country Report No.04/51

The Government of Mozambique is trying to persist in its efforts to maintain macro-economic balance by controlling public expenditure and with persevering realistic fiscal, monetary and exchange rate policies.

The evolution of the current expenditures of the Government from 1998 to 2002 follows precisely the same pattern as the development of the total revenues for the Government as Table 2 shows. The revenues increased from 5,324 billions of meticais in 1998 to 12,057 billions of meticais in 2002; the current expenditures increased in the same time period from 5,268 billions of meticais to 13,469 billions of meticais.

The share of the government revenues in GDP increased from 11.3 percent in 1998 to 14.2 percent in 2002. Taxes on international trade formed 2.2 percent of GDP in 2002; V.A.T. 5.4 percent.

Table 2 *Mozambique: Government Finances, 1998-2002 (in billions of meticais)*

	1998	1999	2000	2001	2002
Total revenue	5,324	6,207	7,535	9,469	12,057
Tax revenue	4,932	5,733	6,862	8,400	10,629
Taxes on income and profits	963	867	1,034	1,519	2,116
Taxes on goods and services	2,882	3,638	4,329	5,169	6,404
Taxes on international trade	937	1,046	1,279	1,477	1,851
Other taxes	150	183	235	235	258
Nontax revenue	392	474	672	1,070	1,428
Total expenditure and net lending	10,141	12,815	15,556	24,579	29,032
Current expenditure	5,268	6,332	7,685	10,345	13,469
Budget year	5,259	6,347	7,802	10,410	13,492
Compensation to employees	2,097	2,995	3,817	4,946	6,206
Wages and salaries	1,873	2,806	3,525	4,946	5,712
Other	224	189	292	0	494
Goods and services	1,544	1,646	2,052	2,429	2,776
Interest on public debt	463	324	109	477	1,274
Domestic	21	6	11	330	952
External	442	318	99	147	322
Transfer payments	874	1,085	1,677	2,208	2,826
Local and district governments	102	105	224	273	385
Political parties	57	66	71	75	137
Households	463	646	937	1,348	1,625
Pensions	390	559	748	1,020	1,327
Welfare payments	37	87	129	176	211
Other	36	0	61	153	87
Subsidies to enterprises	46	54	69	69	132
Abroad	206	214	376	443	547
Embassies	182	214	340	412	485
International organizations	24	0	36	32	62
Other	281	297	146	350	410
Net float 1/	9	-15	-117	-64	-23
Current balance	56	-125	-150	-876	-1,412
Capital expenditure	4,575	6,001	6,060	11,808	12,149
Budget year	4,843	5,734	7,195	11,901	12,684
External project grants	2,091	2,710	2,509	6,052	6,226
External project loans	1,673	1,306	2,418	2,160	2,635
Locally financed	1,079	1,717	2,268	3,091	3,359
Net float	-268	267	-1,136	-92	-535
Net lending	298	482	1,812	2,426	3,414
Of which: locally financed	-291	-6	1,812	2,426	1,970
Unallocated revenue (+)/expenditure (-)	-106	-220	42	-101	209

Table 3 *Mozambique: Government Finance, 1998-2002 (concluded) (in billions of meticais)*

	1998	1999	2000	2001	2002
Overall balance before grants	-4,923	-6,828	-7,980	-15,211	-16,766
Grants received	3,818	6,073	4,576	10,520	10,020
Project	1,894	2,787	2,112	7,044	6,728
Nonproject	1,924	3,287	2,464	3,475	3,292
Overall balance after grants	-1,105	-754	-3,403	-4,691	-6,745
Net external borrowing	2,172	910	1,983	2,797	5,401
Disbursements	2,671	1,394	2,268	3,108	5,886
Project	1,641	1,394	1,724	1,624	2,512
Nonproject	1,030	0	544	1,484	3,374
Cash amortization	-499	-483	-286	-311	-485
Domestic financing (net)	-1,067	-156	966	1,382	806
Banking system	-1,067	-156	221	682	-1,022
Bonds for bank restructuring	...	...	745	700	1,828
Other (including residual)	0	60	0	0	0
Memorandum items:					
Primary current balance 2/	519	199	-40	-399	-138
Domestic primary balance before grants 3/	-289	-1,780	-3,856	-6,065	-5,066

Sources: Mozambican authorities; and staff estimates.

1/ Budget procedures in Mozambique allow for a three-month complementary period, meaning that each year, from January to March, expenses can be incurred in executing the previous year's budget. The net float corresponds to the expenses incurred from January to March but which relate to the previous year budget, minus what is left in the budget at the end of the previous year to be paid during the next fiscal year.

2/ Current revenue minus noninterest current expenditure.

3/ Total revenue minus noninterest current expenditure minus locally financed capital expenditure and locally financed net lending of the budget year.

The trade balance shows an improvement since 1999, as Table 3 shows. The value of the imports has been stabilized between 1,200-1,300 million U.S. dollars per year, while the value of exports has increased from 283.7 million U.S. dollars in 1999 to 681.8 million U.S. dollars in 2002.

Table 4 *Mozambique: Balance of Payments, 1998-2002(in millions of U.S. dollars)*

	1998	1999	2000	2001	2002
Trade balance	-572.7	-916.1	-799.0	-360.3	-581.1
Exports, f.o.b.	244.6	283.7	364.0	703.1	681.8
Imports, c.i.f.	-817.3	-1,199.8	-1,163.0	-1,063.4	-1,262.9
Services (net)	-176.3	-236.0	-243.3	-606.2	-259.4
Receipts	332.5	355.6	405.1	310.6	544.8
Expenditures	-508.8	-591.6	-648.4	-916.8	-804.2
Of which : interest on public debt 1/	-150.2	-161.6	-160.8	-145.9	-26.7
Current account, excluding grants	-749.0	-1,152.1	-1,042.3	-966.5	-840.6
Unrequited official transfers	313.2	434.1	563.9	469.3	420.0
Current account, including grants	-435.8	-718.0	-478.4	-497.1	-420.6

Source: IMF Country Report No.04/51

Mozambique's economic policy seems to be focused on mega projects in industry, mining, ports and transport infrastructure. This policy will certainly bring benefits to the country as it will not only attract other investments in new areas (tourism), but also for supporting economic activities of existing production facilities, what is already happening in Beluluane Free Industrial Zone nearby the aluminum plan of MOZAL.

Investments in rural infrastructure and agriculture should, however, not be neglected as the overwhelming majority of the Mozambican labor force is engaged in agricultural activities in the countryside. These agricultural activities may enable production of cash crops for export. To achieve this it will be necessary to ban bureaucratic procedures for establishing and running a business and facilitate trade.

4 TRADE PATTERNS

As Mozambique is a large country, divided essentially in 3 regions as far as logistics is concerned, it could be good to tell about the regions of production. The production of marketed crops increased substantially since 2000. The total volume of export crops was expected to rise from 473,200 tons to 1,491,600 tons in 2002/3. This increase is mainly caused by the sugar cane, which constitutes 90 percent of the total volume of marketed export crops in 2002/3. Table 5 also shows that production of marketed basic food crops remains stable and varies between 500,000 and 580,000 tons per year.

Table 5 *Mozambique: Production of Major Marketed Crops, 1997/98-2002/03*

	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03 Prel.
			(In thousands of tons)			
Export crops	559.1	694.9	549.2	473.2	731.9	1,491.6
Cotton	91.0	106.7	32.3	9.8	19.7	23.0
Copra	36.0	44.4	44.0	43.6	63.4	45.4
Tea (leaf)	1.5	5.4	10.5	20.5	17.7	24.7
Sugarcane	368.7	469.5	397.2	336.0	571.6	1,342.1
Cashew nuts	51.7	58.7	51.9	45.9	47.4	44.4
Citrus	10.2	10.2	13.3	17.3	12.1	12.1
Basic food crops	504.4	576.5	494.5	429.0	492.1	572.1
Maize	270.2	304.1	248.8	203.5	235.2	254.5
Rice	26.7	28.9	23.5	19.1	22.6	22.8
Sorghum	4.1	5.7	4.4	3.4	4.3	4.3
Cassava	74.8	83.8	81.0	78.2	87.4	86.7
Peanuts	23.8	26.4	20.6	16.0	15.4	15.5
Beans	45.7	68.1	52.8	40.9	46.3	52.9
Vegetables	50.5	51.0	54.5	58.3	73.0	124.6
Onions	8.5	8.5	9.0	9.5	8.0	10.8
Industrial inputs	38.9	38.1	17.3	38.4	55.1	95.0
Sisal	24.0	24.0	...	...	...	...
Tobacco	0.7	0.7	4.2	25.4	43.8	68.7
Mafurra	1.5	0.7	0.3	0.1	0.1	0.3
Tomatoes	12.2	12.2	12.4	12.6	6.2	22.8
Sunflowers	0.5	0.6	0.4	0.2	5.0	3.2
			Total production in thousands of tons (In billions of meticais, unless otherwise indicated)			
Export crops	690.2	773.5	529.1	964.3	965.3	966.3
Cotton	308.5	341.9	118.3	40.9	90.6	121.0
Copra	69.5	75.6	85.6	96.8	169.2	138.3
Tea (leaf)	1.5	0.5	1.1	2.5	2.5	4.0
Sugarcane	55.3	69.1	61.2	54.2	102.3	274.0
Cashew nuts	227.6	258.6	224.0	194.1	196.5	210.2
Citrus	27.8	27.8	38.9	54.4	338.4	328.9
Basic food crops	931.1	1,143.9	1,037.9	989.2	1,295.7	1,020.1
Maize	354.1	456.6	356.3	278.0	444.5	452.1
Rice	105.2	72.3	61.6	52.5	68.2	67.5
Sorghum	8.8	12.3	10.0	8.1	11.3	10.7
Cassava	67.3	121.3	122.7	124.1	160.9	162.0
Peanuts	95.9	119.1	100.3	84.5	79.8	80.2
Beans	150.9	224.8	192.9	165.5	178.5	194.4
Vegetables	117.0	106.9	143.5	192.7	266.9	382.9
Onions	31.9	30.6	50.6	83.8	85.6	122.4
Industrial inputs	49.8	57.9	118.7	500.4	806.0	1,475.3
Sisal	1.1	1.1	...	...	...	...
Tobacco	9.6	9.2	63.3	435.4	763.4	1,407.4
Mafurra	0.7	0.3	0.1	0.1	0.0	0.1
Tomatoes	36.9	45.8	54.2	64.2	26.3	57.4
Sunflowers	1.5	1.5	1.1	0.8	16.2	10.4
Total production	1,671.0	1,975.3	1,685.8	2,453.8	3,066.9	3,461.6
Memorandum item:						
Total production (in millions of U.S. dollars) 1/	141.0	155.7	118.8	134.8	138.2	145.9

Sources: Mozambican authorities; and staff estimates.

1/ Market exchange rates used for all crop years.

The value of Mozambican exports (f.o.b.) increased from 248.2 millions of U.S. dollars in 1998 to 681.8 millions of U.S. dollars in 2002. The export of aluminum constitutes the major share of the exports on 2002 (52 percent). Also the exports of electricity increased from 36.2 millions of U.S. dollars in 1998 to 107.4 millions of U.S. dollars in 2002.

Table 6 *Mozambique: Commodity Composition of Exports, 1998-2002 (value in millions of U.S. dollars; volumes in thousands of metric tons and unit values in US dollars per metric ton)*

	1998	1999	2000	2001	2002
Total exports, f.o.b.	248.2	268.9	364.0	703.1	681.8
Aluminum 2/	0.0	0.0	60.2	383.3	361.1
Prawns, value	72.6	65.5	91.5	92.4	63.9
Volume	9.8	8.6	...	...	4.4
Unit value	7,408.9	7,631.2	...	...	14472.6
Electricity	36.2	62.9	67.0	57.3	107.4
Cotton, value	22.3	19.9	25.5	18.3	20.7
Volume	18.7	20.5	...	...	50.4
Unit value	1,194.6	968.8	...	...	410.7
Manufacturing products	14.3	13.9	...	...	...
Timber	11.0	8.8	14.2	12.6	17.4
Processed cashew nuts, value	19.1	7.8	8.4	2.1	1.1
Volume	4.9	1.9	...	...	0.5
Unit value	3,894.2	4,175.8	...	...	2018.3
Unprocessed cashew nuts	21.6	25.1	11.9	10.9	16.2
Sugar, value	8.4	5.3	4.3	8.1	18.1
Volume	20.4	13.9	...	...	78.7
Unit value	413.3	395.9	...	...	230.2
Tires and tubes	3.4	1.0	3.6	4.2	0.8
Copra, value	5.0	3.5	2.1	1.1	1.0
Volume	18.2	16.6	...	...	...
Unit value	276.0	210.8	...	...	...
Citrus, value	0.4	5.8	0.8	...	...
Volume	3.6	57.8	...	...	...
Unit value	101.5	100.3	...	...	...
Fishery products 4/	5.6	8.9	...	...	...
Tea , value	0.5	0.2	1.0	...	...
Volume	0.4	0.2	...	...	...
Unit value	1,231.5	1,199.5	...	...	...
Petroleum, value 3/	1.3	4.4	9.0	23.3	18.2
Volume	0.0	7.4	...	...	...
Unit value	430.1	591.3	...	...	...
Coal, value	0.2	0.2	0.1	...	...
Volume	16.0	0.0	...	...	...
Unit value	14.0	14.2	...	...	...
Minerals 2/	3.4	3.6	6.9	...	...
Other	26.9	36.1	65.5	89.6	54.3

Sources: Mozambican authorities; and staff estimates.

1/ Official statistics for the years 2000 to 2001 do not provide information on export volumes and prices.
2/ The data for aluminum exports in 2001 are preliminary and underestimate actual aluminum exports; according to the authorities, a large part of aluminum exports are included under the item "Other" for the year 2001. Also refer to footnote 1 of Table 26.
3/ Petroleum products, including bunkers.
4/ Excludes prawns.

Table 7 shows the exports from 1998 to 2002 by country of destination. The major export partner is the European Union to where MOZAL is exporting its aluminum. The export of aluminum is contained in the 64.6 percent of the category 'Other' under 'Other countries' in 2001 and in the 41.8 percent in the category 'Other' under OECD countries. South Africa remains a stable partner for the export of Mozambican products with 17.7 percent in 2002.

Remarkable is the decline of the export to Zimbabwe since 2000 from 17.7 percent in 2000 to 5.8 percent in 2002.

Table 7 *Mozambique: Exports by Country of Destination 1998-2002 (in percent of total exports unless otherwise indicated)*

	1998	1999	2000	2001	2002
OECD countries	37.8	37.3	39.6	14.8	51.6
Japan	4.8	4.3	4.3	4.2	0.7
Netherlands	2.3	1.7	1.0	1.0	0.3
Portugal	7.6	9.0	11.6	4.0	4.4
Spain	13.0	12.7	10.7	3.8	2.8
United Kingdom	1.4	1.0	0.9	0.0	0.1
United States	5.7	4.7	4.7	0.9	1.6
Other	3.0	3.9	6.4	0.8	41.8
Other countries	62.2	62.7	60.4	85.2	48.4
South Africa	17.6	26.2	14.6	15.3	17.7
Zimbabwe	19.5	14.9	17.7	5.3	5.8
Other 1/	25.1	21.7	28.1	64.6	24.9
Total	100.0	100.0	100.0	100.0	100.0
Memorandum item:					
Total exports (millions of U.S. dollars)	244.6	283.7	364.0	703.1	681.8

Sources: Mozambican authorities; and IMF, *Direction of Trade Statistics.*

1/ Data for 2001 include exports from Mozambique Aluminum (MOZAL) to the European Union (EU), almost 85 percent of the total; the statistics do not provide for a disaggregate view per EU member country.

Mozambique's imports are quite diversified regarding the type of commodity, which is being imported. Agriculture and fishing counts for 10 percent of the import and consists of mainly rice and wheat. From 2000 to 2002 there was a large increase of the import of metals from 10.6 millions of U.S. dollars to 415.2 millions of dollars. This was mainly raw material for the MOZAL aluminum plant. Machinery and equipment dropped from 188.9 millions of U.S. dollars in 2000 to 136.1 millions of U.S. dollars in 2002.

Table 8 *Mozambique: Commodity Composition of Imports, 2000-2002 (in million U.S. dollars)*

Product Group	2000	2001	2002
Total	**1162.3**	**1063.4**	**1262.9**
Agriculture and fishing	165.5	151.4	139.6
Minerals and fuels	190.2	183.6	160.5
Other chemical products	59.9	78.3	87.2
Textiles and clothing	41.5	26.2	19.7
Iron and steel	68.9	39.7	50.6
Other metals	10.6	234.7	415.2
Machinery	188.9	131.7	136.1
Transportation equipment	174.8	80.5	135.5
Other products	262.0	137.3	118.5

Source: INE and several other sources.

Table 9 shows the imports by country of origin from 1998 to 2002. Remarkable is the increasing share of the European Union as country of origin for Mozambican imports. Also under the heading 'Other' under 'Other countries' 50 percent is originating from the EU without further country specification. The share of South Africa dropped from 57.2 percent in 1999 to 30.3 percent in 2002.

Table 9 *Mozambique: Imports by Country of Origin 1998-2002 (in percent of total imports unless otherwise indicated)*

	1998	1999	2000	2001	2002
OECD countries	31.9	27.2	28.6	20.9	22.2
France	2.1	0.9	2.2	1.1	1.7
Japan	3.9	3.9	4.6	0.6	3.4
Netherlands	0.8	0.7	0.5	0.9	0.5
Portugal	7.9	5.6	7.6	8.4	6.2
United Kingdom	2.0	0.9	1.6	1.1	1.0
United States	5.3	6.7	3.5	1.8	4.4
Other	9.9	8.5	8.6	7.9	5.0
Other countries	68.1	72.8	71.4	79.1	77.8
South Africa	39.5	57.2	49.8	40.7	30.3
Zimbabwe	2.3	0.5	0.6	0.8	0.8
Other 1/	26.3	15.1	21.0	37.6	46.7
Total	100.0	100.0	100.0	100.0	100.0
Memorandum item:					
Total imports (millions of U.S. dollars)	-817.3	-1,199.8	-1,163.0	-1,063.4	-1,262.9

Sources: Mozambican authorities; and IMF, *Direction of Trade Statistics*.

1/ About half of the import data for 2001 originate in the European Union. The statistics do not allow for country-specific disaggregation.

5 INFRASTRUCTURE AND TRANSPORT POLICIES

5.1 Transport infrastructure

The pattern of the transport infrastructure in Mozambique reflects the main characteristics of the Mozambican economy in the past. Before 1975 most of the transport infrastructure in Mozambique was directed towards its neighboring landlocked countries and South Africa. Mozambique has always played an important role as a transit country for South-African, Swazi, Zimbabwean, Malawian and Zambian import and export through its ports of Maputo, Beira and Nacala. The main railway infrastructure network was east-west directed: Maputo-Swaziland; Maputo-South-Africa, Maputo-Zimbabwe; Beira-Zimbabwe; Beira-Malawi; Nacala-Malawi. There is no north-south railway connection, as the figure on the transport infrastructure network in the SADC region shows:

Figure 5.1 *Transport Infrastructure Network in the SADC Region*

The same applies to some extent for the road infrastructure, although there is a north-west connection by road. However, this connection has been out of function for many years during the civil war and is only in use since a few numbers of years. Therefore, the transport infrastructure network inherited from the past has a strong regional dimension. This also means that fewer investments had been made in linking the different regions in the country to one infrastructure network. As the economic interests were foreign-based, there had not been much interest in integrating Mozambique's rural economy to the main transport infrastructure network, making the commercialization of the agricultural produce an economically difficult and expensive task.

Mozambique has more than 25,000 km of classified road, of which 22 percent is surfaced. About 4,300 km are classified as primary roads. More than 50 percent of the classified roads are tertiary roads.

Table 10 *Classified Road Network in Mozambique (in km)*

	1996	1997	1998	1999	2000	2001	2002
Total	29190	28463	29951	31955	28463	28463	28463
Classified roads	26194	25467	26955	28959	28463	28463	28463
Main roads	4310	4370	4345	4310	4275	4275	4275
Secondary roads	8126	7846	8325	8126	7880	7880	7880
Tertiary roads	13758	13251	14285	16523	13184	13184	13184
Non-classified roads	2996	2996	2996	2996	3124	3124	3124

Source: Ministry of Public Works; INE

Table 11 *Type of surface for classified roads in Mozambique (in km)*

	1996	1997	1998	1999	2000	2001	2002
Total	29190	28463	29951	31955	28463	28463	28463
Classified roads	26194	25467	26955	28959	28463	28463	28463
Paved	5338	5285	5536	5266	5269	5269	5269
Gravel	6935	8154	7751	6879	7561	7561	7561
Dirt	13876	12672	13407	16814	15633	15633	15633
Other	45	644	261	0	0	0	0

Source: Ministry of Public Works; INE

The quality of the road network has considerably improved during the last ten years. The share of good and fair roads increased from 25 percent in 1996 to 56 percent in 2002.

Table 12 *Quality of the Road Network in Mozambique (in km)*

	1996	1997	1998	1999	2000	2001	2002
Total	29190	28463	29951	31955	28463	28463	28463
Good	3529	4731	6441	8068	7003	7363	7429
Fair	3823	5907	11464	10290	7422	8275	8454
Weak	6017	2874	...	2610	5332	5649	5977
Bad	8277	9524	9178	8418	5424	4390	4241
Impassable	4548	2430	2868	2540	3282	2786	2362

Source: Ministry of Public Works

The costs of road works in Mozambique are very high. Table 12 shows the difference between the cost planned in the appraisal stage of the formulation of a roads project funded by the World Bank and the actual costs at the implementation stage:

Table 13 *Costs of Road Works in U.S. dollars per kilometer*

	appraisal	actual	% increase
Backlogged/emergency works	6000	23500	292
Rehabilitation	150000	286740	91
Feeder roads	17000	61000	259
Periodic maintenance	4500	12093	169
Routine maintenance	250	765	206

Source: Implementation Completion Report Second Roads and Coastal Shipping Project Mozambique; World Bank; December 2003.

Although the cost estimates at the start of the project were much too low, the results of the project were good: 78 percent of the paved roads were classified as good/fair after the completion of the project and travel time had declined by more than 50 percent.

The main aim of the Mozambican Government in the area of roads is the increase the coverage of access roads, with priority for those which:

1. allow that poor regions, isolated but with agricultural potential, have access to national markets;
2. help in the expansion of markets;
3. produce impact in the reduction of transport costs; and
4. promote the development of the main corridors.[2]

[2] Review of 2003 Economic and Social Plan; Republic of Mozambique; March 2004; p. 85.

Map of the road network in Mozambique

(in red the main international corridors and in green the secondary corridors)

Table 14 *Rehabilitation and Maintenance of Roads (in km and percentage of accomplishment relative to the Sectoral Plan)*

	2001		2002		2003		
	Completed (Km)	% Accom-plishment	Completed (Km)	% Accom-plishment	Planned (Km)	Completed (Km)	% Accom-plishment
Rehabilitation of Primary Roads	237.0	68.1	131.8	40.9	275.0	63.7	23.2
Rehabilitation of Secondary Roads	239.0	98.4	206.0	115.7	306.0	171.4	56.1
Rehabilitation of Tertiary Roads	620.0	94.2	375.9	75.2	510.9	592.3	115.9
Total Rehab of Roads	**1096.0**	**87.8**	**713.7**	**71.3**	**1092.0**	**827.4**	**75.8**
Periodic Maintenance	190.0	83.7	843.8	55.9	1941.0	396.4	20.4
Routine Maintenance	12,313.0	82.1	11,612.5	90.4	13,335.0	10,591.6	79.4
Reconstruction and Installation of Bridges	4	66.7	9	69.2	15	15	100.0

Source: Review of 2003 Economic and Social Plan; Government of Mozambique; March 2004.

As can be deducted from Table 14, Mozambique has considerable difficulties in realizing its targets, in particular after 2001 when the Second Roads and Coastal Shipping project was completed. In 2003 serious problems were faced with the rehabilitation of primary roads (accomplishment rate of 23.2 percent) and periodic maintenance (accomplishment rate of 20.4 percent.

At the institutional side, an autonomous Road Agency has been established (ANE) out of the National Directorate for Roads and Bridges (DNEP) to make the road sector more efficient and effective. A Road Fund exists and was initially under ANE, but has become independent with its own separate board. In theory, a direct transfer mechanism of road fund revenue has been agreed. However, in practice it is still not functioning properly. The main problem is the timely transfer of resources to the road fund.

N4 Toll Road Witbank – Maputo

Mozambique has one toll road linking Witwatersrand in South Africa with Maputo. In 1997 the concession contract was signed between the Republic of Mozambique, the Republic of South Africa, the South-African Roads Board and TRAC Trans African Concessions (Pty) Ltd. For design, construction, rehabilitation, financing, operation, financing, maintenance and future expansion of the National Route 4 between Witbank in South Africa and Maputo in Mozambique over a distance of 503 km. The investment is R 3 billion (1996) and the concession period for 30 years. R 1.5 billion has been spent during the first 3.5 years.

The road is fully operational and the concession last until 2028 under Build-Operate-Transfer regime. There are five toll plazas in Maputo and Moamba in Mozambique, and in Nkomazi, Machado and Middelburg in South Africa. TRAC, in conjunction with Vodacom's 147 Emergency Service and operated by International SOS Assistance, have positioned SOS call boxes at 4 km intervals along the entire toll route on both sides of the road. The SOS emergency communication system is a link with ambulance and emergency services, the South African Police Service, traffic authorities, the fire brigade, tow and rescue services.

The toll fees in 2003 were as follows:

Plaza	Class1	Class 2	Class 3	Class 4
Middelburg	R27	R58	R87	R115
Machado	R40	R110	R160	R229
Nkomazi	R30	R61	R88	R127
Moamba	Mmt55000/R19.64	Mmt135000/R48.20	Mmt260000/R96.41	Mmt400000/R144.61
Maputo	Mmt9500/R3.40	Mmt33000/R11.87	Mmt65000/R23.75	Mmt100000/R35.62

Class 1: Light Vehicles

Class 2: Medium Heavy Vehicles with one heavy axle

Class 3: Large Heavy Vehicles with three or four axles where at least one of the axles is a heavy one

Class 4: Extra Large Heavy Vehicles with five or more axles where at least one axle is classified as heavy

In 2004 the toll fees were raised in South African territory between 1.64 percent and 3.33 percent. The toll fee varied from R0.24/km for light vehicles to R1.29/km for extra large heavy vehicles.

The advantage for trucks is multiple:

- No more border tax for vehicles crossing into Mozambique at Ressano Garcia
- No need to change load configuration when crossing into Mozambique (TRAC has negotiated that, provided vehicles remain on the N4, the load configuration does not change between Mozambique and South Africa)
- Improved road conditions and continual road maintenance
- 24-hour road side assistance through TRAC patrols
- SOS telephones at regular intervals along the toll route.

The concession contract did not contain details on law enforcement, and more in particular on load control. During the few years of operation Trans African Concessions faced already R 200 million on damage on the road mainly cause by the overloading of the trucks. Discussion with the South African authorities on possible claims resulted in a strategy that TRAC would assist the authorities of South Africa to enforce road and road transport legislation. An agreement was reached between the Provincial Traffic Department of Mpumalanga, the South African Roads Agency and TRAC in this respect. The South African authorities provided 80 traffic officers and TRAC assigned 60 employees to deal with load control. Weighbridges were procured for the road network, including for possible escape routes. The results are that percentage of overloaded vehicles reduced from 23 percent in the period immediately after the opening of the road to 9 percent in 2004. As the South African legislation prescribes a maximum of nine tons per axle with a margin of 5 percent, the percentage of illegally overloaded vehicles is nowadays less than 1 percent. Four companies are still on the black list of frequent violators of the law. Also the practice of illegally obtained permits for abnormal loads should be combated. TRAC is in negotiation with the Mozambican Government to tackle the problem of overloading on the

Mozambican part of toll road, where in two years damage was caused of R 18 million because of overloading.

The railway infrastructure network comprises 3,048 km of railroad and is subdivided into four geographical areas: CFM-South; CFM-Center; CFM-North; and CFM-Zambezia.

CFM-South is considered to be the most important of Mozambique and consists of the railway line Maputo-Ressano Garcia (88 km) linking with South Africa with a capacity of 15 million tons per year; Maputo-Goba (74 km) linking with Swaziland with a capacity of 7.2 million tons per year; Maputo-Chicualacuala (520 km) linking with Zimbabwe with a capacity of 5.7 million tons per year. CFM-South also includes an industrial link to mines for construction materials in Salamanga. CFM-South also integrates other lines which are presently not operational because of a large degree of degradation: Moamba-Ungubane-Xinavane (93 km); Xai-Xai- Chicomo (90 km); Inhambane-Inharrime (90 km); Manjacaze-Marão (50 km).

CFM-Center includes the railway lines Beira-Machipanda (318 km) linking with Zimbabwe and the Sena line (Dondo-Dona Ana 298 km; Dona Ana-Moatize 240 km; Dona Ana-Vila Nova 43 km; Inhamitanga-Marromeu 88 km).

CFM-North consists of the railway line Nacala-Cuamba-Entre Lagos (610 km) and Cuamba-Lichinga (262 km).

CFM-Zambezia consists of the railway line Quelimane-Mocuba (145 km).

The rolling stock has decreased considerable during the last ten years. The number of locomotives was reduced from 87 in 1994 to 51 in 2001. The number of wagons for cargo decreased from 5126 in 1994 to 2330 in 2001.

Railway Station in Maputo; July 2004

Table 15 *Mozambique: Railway equipment 1994-2001*

	1994	1995	1996	1997	1998	1999	2000	2001
Locomotives	87	83	82	85	62	62	50	51
Passenger wagons	155	158	135	110	111	96	92	93
Cargo wagons	5126	3797	3170	5419	2388	2329	2280	2330

Source: INE, 2001

Mozambique has three primary ports: Maputo, Beira and Nacala. The Port of Maputo had an installed capacity of 12,010,000 tons per year, but is presently 9,255,500 tons per year. The total length of the berths is 3,876 meters and includes dedicated terminals for fish, coastal shipping, general cargo, coal, fruits/citrus, sugar, molasses, containers and steel. The Port of Matola, nearby the Port of Maputo, has an installed capacity of 4,750,000 tons per year with a total berth length of 865 meters including dedicated terminals for coal, petrol, cereals and aluminum. The Port of Beira had an installed capacity of 7,470,000 tons per year, but presently only 4,950,000 tons per year may be used. The multi-purpose container terminal has a berth length of 645 meters with an installed capacity of 100,000 TEU per year. There are also dedicated terminals for general cargo with a berth length of 670 meters and an installed capacity of 2,300,000 tons per year and for fuels with a capacity of 3,000,000 tons per year. The Port of Nacala had a capacity of 2,600,000 tons per year, but presently only 1,600,000 tons per year may be realized. The general cargo terminal has an installed capacity of 2,000,000 tons per year and the container terminal with a berth length of 327 meters a capacity of 30,000 TEU per year. The Port of Nacala also has a liquid bulk terminal. The two secondary ports of Quelimane and Pemba have an installed capacity of 650,000 tons per year and 633,960 tons per year, respectively.

The handling equipment in the ports has been reduced from 1994 to 2001. The number of electric cranes went down from 52 in 1994 to 34 in 2001. Also the number of reach stackers decreased from 69 in 1994 to 15 in 2001.

Table 16 *Mozambique: Ports handling equipment 1994-2001*

	1994	1995	1996	1997	1998	1999	2000	2001
Electric cranes	52	53	51	51	48	45	43	34
Reach stackers	69	67	47	22	17	11	13	15

Source: INE, 2001

Map produced by Manica Freight Services Mozambique

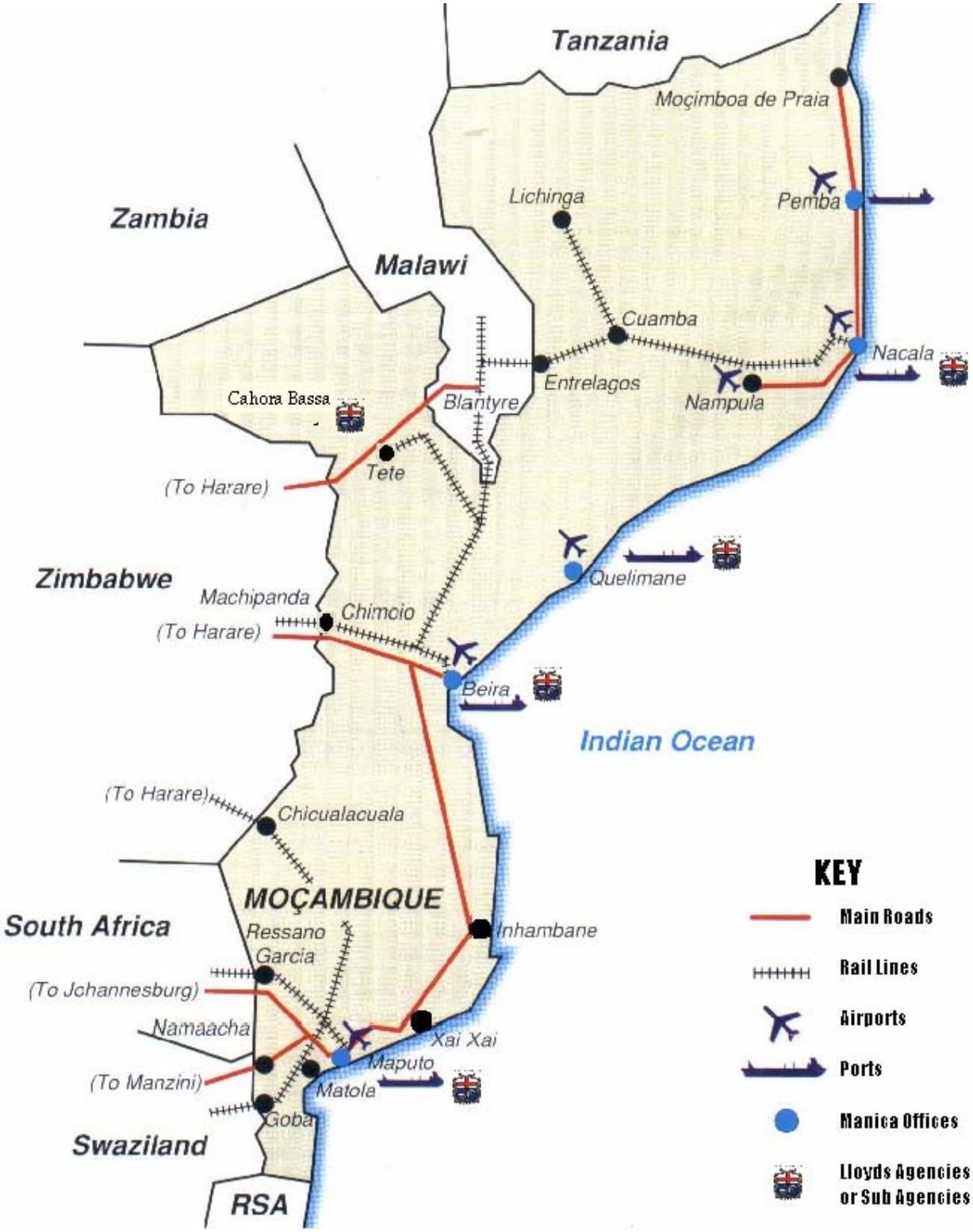

Table 17 *Mozambique: Airport Infrastructure*

Town	*Airport name*	*ICAO*	*IATA*	*Usage*	*Customs*	*Runway*	*IFR*	*Rwy length*
Angoche	Angoche	FQAG	ANO	Civ.	No	Unpaved	No	3600 ft
Beira	Beira	FQBR	BEW	Civ.	Yes	Paved	Yes	7800 ft
Bilene	Bilene	FQBI		Civ.	No	Paved	No	2200 ft
Chimoio	Chimoio	FQCH	VPY	Civ.	No	Paved	No	7800 ft
Cuamba	Cuamba	FQCB	FXO	Civ.	No	Paved	No	8200 ft
Inhaca	Inhaca	FQIA		Civ.	No	Paved	No	2100 ft
Inhambane	Inhambane	FQIN	INH	Civ.	No	Paved	Yes	4900 ft
Lichinga	Lichinga	FQLC	VXC	Civ.	No	Paved	Yes	8300 ft
Lumbo	Lumbo	FQLU		Civ.	No	Paved	No	4900 ft
Maputo	Maputo	FQMA	MPM	Civ.	Yes	Paved	Yes	12000 ft
Marrupa	Marrupa	FQMR		Civ.	No	Paved	No	5600 ft
Mocimboa Da Praia	Mocimboa Da Praia	FQMP	MZB	Civ.	No	Paved	No	6500 ft
Nacala	Nacala	FQNC	MNC	Mil.	No	Paved	No	8200 ft
Nampula	Nampula	FQNP	APL	Civ.	Yes	Paved	Yes	6500 ft
Pemba	Pemba	FQPB	POL	Civ.	Yes	Paved	No	5900 ft
Ponta De Ouro	Ponta De Ouro	FQPO		Priv.	No	Paved	No	2400 ft
Quelimane	Quelimane	FQQL	UEL	Civ.	No	Paved	Yes	5900 ft
Songo	Songo	FQSG		Civ.	No	Paved	No	2900 ft
Tete	Chingozi	FQTT	TET	Civ.	No	Paved	Yes	8200 ft
Ulongwe	Ulongwe	FQUG		Civ.	No	Paved	No	5900 ft
Vilankulu	Vilankulu	FQVL	VNX	Civ.	Yes	Paved	Yes	4800 ft

Explanation:

ICAO-code
International Civil Aviation Organization (ICAO), a 4-letter airport location indicator. The field above is left blank if no ICAO location indicator is available for the selected airport.

IATA-code
International Air Transport Association (IATA), a 3-letter identifier for the relevant airport. The field above is left blank if no IATA code is available for the selected airport.

Usage

Airports are classified in three categories: civil airports open for public use, military airports and private airports not open to the public. Airports that are joint use, both civil and military, are shown as civil airports.

Civ.	*Civil airport, open for public use (including joint use).*
Mil.	*Military airport, not open for public use.*
Priv.	*Private airport, not open for public use.*

Customs

Yes	*Customs service available during airport operating hours.*
No	*Customs service not available.*
O/R	*Airport has customs service, prior notification is required.*
Pto.	*Airport has part-time customs service available, not necessarily identical to the airport hours.*
ADCUS	*An airport within the USA for which the FAA 'ADCUS' method of prior notification may be used.*
ADCUS O/R	*An airport within the USA for which the FAA 'ADCUS' method of prior notification may be used but where restrictions apply.*

Runway

Identification of the surface of the longest runway available:

Paved	*Paved (hard surface) runway*
Unpaved	*Unpaved (soft surface) runway (Only lighter aircraft)*
Water	*Water (for float planes)*

IFR

This field indicates if the airport has any officially published instrument approach procedure.

Yes	*Instrument approach procedure is published.*
No	*Instrument approach procedure is not published. (Airport not suitable for traffic during bad weather or darkness.)*

Runway Length

Shows the length in feet of the longest runway available at the selected airport, rounded down to the next full hundred feet. If the airport has both hard (paved) and soft (unpaved) runways, the length of the longest hard surface runway is shown. If the longest runway is both, hard and soft surface, the length of the hard surface portion is shown.

5.2 Transport policy and the organization of the transport sector

The Mozambican transport policy can be characterized as progressive in promoting the liberalization of transport sector, the introduction of concession regimes for management of basic transport infrastructure and in creating favorable conditions for public-private partnerships in investments in transport infrastructure. The recent achievements in Mozambique in this respect are quite impressive:

- The major road connection between Maputo and Witwatersrand in South Africa, the N4, has been given in concession to Trans African Concessions Inc. And is now functioning as a toll road.
- The Port of Maputo has been privatized and given into concession to Maputo Port Development Company, which started operating in 2003.
- The Ports of Beira and Quelimane have been privatized and given into concession to Cornelder Mozambique, which already started its operations in Beira and will start the operations in Quelimane shortly as the concession just had been granted in July 2004.
- The Port of Nacala had been given in concession to an international consortium. However, there are still serious problems among the main shareholders and operations have not started yet.
- Mozambique Railways CFM is in the stage of concession granting and privatization. The Ressano Garcia and Limpopo Line in the south and the Beira-Machipanda and the Sena Line in the centre of the country have already been given in concession.

There are also concrete plans to privatize the main airports and LAM Mozambican Airlines.

However, these trends of concessioning the main transport infrastructure network and privatizing transport services and operations are still being hampered by outdated legislation and regulations. Another important constraint is lack of capacity building and experience among the main stakeholders in transport infrastructure and transport services and operations, which impedes efficient and effective operations within this new framework, resulting in excessive bureaucracy, red tape and corruption. There are also counter forces operating, which are trying to keep control over the main assets in the field of transport infrastructure and transport services. An example is the way how Mozambique Railways is trying to remain involved in most investment and operational projects in the sector by negotiating shares in the new consortia.

Table 18 below shows in which Mozambique Railways has shares.

Table 18 *Companies in which CFM has shares*

Companies in which CFM has shares	Capital Social (%)
Airplus, SARL	18,4
Bukusha Holliday Resort, LDA	49
BIM-Leasing	5
Cornelder de Moçambique, SARL	30
Cimentos de Moçambique, SARL	4
Central East African Railways	49
Corredor de Desenvolvimento do Norte	40
Ressano Garcia Railway	49
Linha férrea do Limpopo, Goba	49
MIPS-Mozambique International Port Services, SARL	33
ProBrita	40
Sociedade de Desenvolvimento do Porto de Maputo	49
Sociedade de Desenvolvimento do Corredor de Maputo	25
Sociedade de Terminais de Moçambique	50
INTUR Sociedade de turismo	35
Transcarga, LDA	17
Transmarítima, LDA	10
Terminal de Cabotagem do Porto de Maputo	49
Terminal de Citrinos do Porto da Beira	34

Source: CFM 2004

This may turn-out to become one of the major bottlenecks for a successful development of the transport and logistics in Mozambique.

The road transport sector is largely liberalized, although there still exist some legal and institutional constraints for access to the national and international road transport market. Efforts have been made to create an enabling environment to attract private investment in the sector. However, the level of such an investment is still inadequate to meet and sustain the demand for both goods and services. In particular, the rural areas face problems in the commercialization of their products and in access to the main road network.

A Mozambican Federation of Road Transport Associations FEMATRO exists integrating the provincial associations. In the Maputo region the interests of the road hauliers are represented

by ASTROCAMA, the Association of Road Freight Transport Companies of Maputo. ASTROCAMA has 72 members.

Although the international road transport market still is dominated by foreign registered companies and trucks (in particular, South African companies in South Mozambique and Zimbabwean companies in Central Mozambique), the share of Mozambican companies is increasing. The road transport market is dominated by a few larger and relatively many medium sized companies, which are making use of the very small companies (driver-owner) on sub-contracting basis. The fleet of vehicles for international transport is relatively new.

FEMATRO/ASTROCAMA identifies the following obstacles for the development of the road transport sector in Mozambique:

- Opening hours at border crossings should be open until 21.00 h. in the evening. This should be harmonized with the neighboring countries. It would make a return trip Maputo-Witbank the same day possible resulting in considerable savings for the road transport companies. A 24-hour opening is not really necessary as it would make the costs higher. The application of information technology at border crossings should be further developed.
- The system of permits is still managed by the Ministry of Transport and Communications and fees are collected by ANFRENA. The Federation believes that the road transport industry itself should be involved in this process.
- Cabotage by South African road transport companies is increasing, causing damage to the local road transport industry. This argument is understandable from the operator's point of view. It is, however, questionable if this will help the Mozambican road transport industry to develop further.
- Traffic police is invisible and not enforcing legislation making the creation of a level playing field more difficult.
- Road traffic legislation is not designed to handle serious traffic violations by drivers and road transport companies.
- The importation of tires is still in the 25 percent category. This was done to protect the national tire industry (Mabor). Now Mozambique is not producing tires anymore for this purpose, this old legislation is still been applied.
- Spare parts are very expensive. Scania, Volvo and Mercedes-Benz have stopped their operations in Mozambique. Spares should fall in the lowest category for import duties.

5.3 Regulatory framework for the transport sector

Mozambique is signatory of several international agreements in the transport sector. The most important multilateral agreement is the SADC Protocol on Transport, Communications and Meteorology. Mozambique has been member of COMESA, but abandoned the Commonwealth

in 1999. It is considering becoming member again. Mozambique has also signed bilateral agreements facilitating international transportation.

The transport legislation in Mozambique is rather outdated and is not accompanying the rapid socio-economic developments and the radical changes in the management structures of larger transport infrastructure works and transport operations.

Road Transport

Mozambique has signed the SADC Protocol on Transport, Communications and Meteorology, which prescribes that Member States shall progressively introduce measures to liberalize their market access policies in respect of cross-border carriage of goods.[3] The SADC Protocol stimulates its Member States to conclude appropriate bilateral agreements in this respect as a step towards implementation of a fully liberalized access to the regional road transport market. All the agreements should be based on non-discrimination, reciprocity and extra-territorial jurisdiction. Mozambique has also signed bilateral Road Transport Agreements with South Africa (1998), Malawi (1998), Swaziland (2002) and Zimbabwe (2003). These Road Transport Agreements are mainly dealing with the facilitation of international road transport between the respective countries. The agreements include the establishment of joint committees to monitor the implementation of the agreements and to solve disputes between the countries in this respect. Through these committees harmonization of cross border regulations is strived for and relevant information exchanged between the different parties. The joint committees are composed by representatives from the Ministry of Transport, Customs, Immigration, but also traffic police, road inspectors and the road transport industry may be part of the joint committee.

At national level road transport is regulated by Decree no. 24/89 Road Transport Regulations as approved by the Council of Ministers on August 8, 1989. This decree is amended by Decree no. 15/96. The regulations concern mainly the licensing system for road transport operations. The main problem is that the regulations mix passenger transport and freight transport. The licensing authority for national road freight transport is the Provincial Governor or to whom it delegates the authority to issue licenses. Licenses for international road transport are issues by the Minister of Transport and Communications or to whom he delegates this authority. In practice, three types of licenses are being issued: for provincial operations; for inter-provincial operations; and for international operations. The main issuing authority is the Provincial

[3] The SADC Protocol on Transport, Communications and Trade states that this liberalization may go through three stages: "Member States shall introduce the following liberalization phases: Phase 1 Abolition of restrictions on carriers of two Member States to carry goods on a defined route between – (1) such States; or (2) in transit across the territory of another Member State en route to a third Member State or non-Member State: Provided that such transit traffic may only be undertaken if the carrier's vehicle traverses the territory of its home state. Phase 2: Abolition of restrictions on carriers of one Member State to carry goods on a defined route between another Member State and a third Member State or non-Member State, irrespective of whether the carrier's vehicle traverses the territory of its home state; and Phase 3: Abolition of restrictions on carriers of one Member State to carry goods between another Member State and a third Member State or a non-Member State."

Direction of Transport and Communications. The registration costs are 86 USD (July 2004). The requirements are: a) registration as a commercial company; b) good repute (no criminal record); c) registration of residence; d) liability insurance; e) presentation of vehicle fleet and inspection vehicle. The license has a validity of 20 years and may be renewed afterwards. There are no requirements for financial standing or professional competence of the road transport operators. The costs of permits to operate road transport are the following: 14 days, 8 USD; 3 months, 47 USD; 6 months, 93 USD; 1 year, 187 USD. Between 1997 and 2001 1526 licenses had been issued for road passenger operators with a total fleet of 2077 vehicles and 450 licenses for road freight transport operators.

According to this legislation the maximum and minimum tariffs are prescribed by the National Commission of Salaries and Prices based on proposal from the Ministry of Transport and Communications.

Therefore, it is highly recommended:

- To draft new and separate legislation for road passenger transport and road freight transport.
- To introduce qualitative requirements as financial standing and professional competence for obtaining an operator's license.
- To reduce the validity of the license from 20 years to 5 years and establish a system to check compliance with the basic requirements for obtaining an operator's license.
- To liberalize tariffs and prices completely.
- To remove any quantitative restrictions to access the national and international road transport market and the issuance of operator's licenses and permits.

Railway Transport

Management and operation of Mozambique Railways is gradually being handed over to the private sector by granting concessions to operate specific railway tracks. The principle, here for, was approved by Resolution on Transport Policy No. 5/96, which permits private capital to participate in the rehabilitation, operation and management of railway infrastructure and railway operations.

Decree No. 31/2002 grants the concession for exclusive use, operation and management of the railway track Maputo-Ressano Garcia to Ressano Garcia Railway, in which Spoornet has a large share, for a period of 15 years, renewable for five years or additional periods according to the concession contract. The decree mentions that 2 million US dollars has to be paid by the concession holder up to seven days before the start of the operations. The fixed annual amount to be paid is 1.7 millions US dollars. Also a variable amount of 7.5 percent of the gross revenues of the concession has to be paid yearly, as well as an additional 7.5 percent of the gross revenues if traffic during the previous year was more than 4 million tons. The service level of passenger transport has to be approved by the Minister of Transport and Communications.

A similar decree (No. 21/2000) had granted the concession for the exploitation of the railway network in the north – Nacala-Cuamba-Entre-Lagos/Lichinga – to the Corridor of the Development of the North. However, this concession has never been implemented yet because of uncertainties among the partners of the concession holders.

In 2004 the management and operation of the railway network in the centre, including the lines Beira-Machipanda and the Sena Line, has been given in concession to an Indian consortium RITES/IRCON.

The role of CFM after the concessioning of the main railway lines is not clear. CFM maintains shares in the consortia, to which are the operations of the main railway lines had been given in concession. This presence includes the risk of false privatization and may impede efficient and effective railway operations. The Government of Mozambique is the owner of the railway infrastructure.

There is a need for a new comprehensive Railway Code to integrate the latest developments in the restructuring of the CFM; the concessions; and bilateral negotiations with railway companies of neighboring countries to strengthen co-operation and facilitate the operations of block trains and railway shuttles.

Ports

Mozambican transport policy also envisages the concession and privatization of the port operations on broadly the same terms as the railway concessions. The ports of Maputo and Beira have been given into concession and are operating accordingly. The concession of the port of Nacala has not yet been formalized, as there are internal problems in the consortium which won the tender to operate the port and is the same consortium to which concession rights had been granted to operate the northern railway lines. Although the concession agreements for the port of Nacala and the northern railway lines are separate, both concessions were linked with each other. The internal problems are related with the fact that the Malawian partner in the consortium wants to increase its shares in the consortium. In July 2004 also the secondary port of Quelimane was given into concession to consortium led by Cornelder Mozambique, which is also the concession holder of the port of Beira.

The concession holder of the port of Maputo is the Maputo Port Development Company (MPDC), which consists of the British Mersey Docks and Harbour Company, the Swedish company Skanska BOT, the Portuguese company Liscont Container Operators holding 51 percent and Mozambique Railways South (CFM-Sul) and the Government of Mozambique with 33 and 16 percent, respectively. MPDC started its operations in 2003 and plans to invest 70 million US dollars in 2003-2006.

Maritime and Coastal Shipping

In 2002 new regulations on maritime transport were approved. Decree No. 18/2000 regulates the licensing of maritime transport as far as coastal shipping is concerned. In principle, coastal shipping between Mozambican ports is only permitted for national vessels or vessels contracted by Mozambican persons or institutions. The Minister of Transport and Communications may, however, authorize a license to other companies with Mozambican agents if this is in the social or economic interest of the country. A license is valid for 10 years and may be subsequently renewed by ten years. The cost of a new license is about 1,500 USD; renewal costs 1,100 USD.

Air Transport

The air transport is in stage of deregulation and liberalization. In 1999 Mozambican Airlines (LAM), which had just been privatized, obtained a five-year concession to operate flights between Maputo, Beira, Quelimane, Nampula and Pemba. In 2004 new tenders will be launched for operating international and domestics flights in Mozambique.

Also the airports will be privatized. It is expected that this will take place in 2004-2005.

6 TRANSPORT AND LOGISTICS SERVICES

There are no reliable statistical data available about volumes and directions of transport volumes in Mozambique after 2001, in particular concerning the road transport sector. Before that date, Mozambique Company for Railways and Ports published regularly detailed data on railway freight and passenger flows and directions and port statistics. The latest officially published data are from the National Institute of Statistics: 2001 Transport and Communications Statistics and Statistical Yearbook 2002.

According to the statistical data the total amount of freight transport services is relatively constant since 1994 and varies between 1.3 and 1.5 billion tonkilometers. The transport which has been increasing most is the road transport sector, which multiplied its output in tonkilometers by six times from 1994 to 2001. Remarkable also is the increased output on the Nacala corridor from 88 millions tonkilometers in 1999 to 183 millions tonkilometers in 2001.

Table 19 *Mozambique: Freight Transport Services, 1994-2001 (in millions of tonkilometers)*

	1994	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
Total	**1362**	**1363**	**1464**	**1538**	**1425**	**1448**	**1272**	**1507**
Railways	638	886	983	896	775	722	605	774
CFM-Sul	*323*	*487*	*499*	*498*	*471*	*448*	*224*	*337*
CFM-Centro	*234*	*289*	*363*	*279*	*188*	*186*	*231*	*255*
CFM-Norte	*80*	*109*	*121*	*117*	*116*	*88*	*149*	*183*
CFM-Zambezia	*1*	*1*	*1*	*2*	*0*	*0*	*0*	*0*
Maritime	345	83	66	118	113	175	203	247
Road Transport	49	76	129	161	175	193	224	245
Air Transport	10	9	8	34	6	7	7	7
Pipeline	320	309	279	330	356	352	233	234

Source: INE, 2001

The handling of cargo in the ports of Mozambique increased from 6,167,000 tons in 1994 to 9,047,000 tons in 2001.

Table 20 *Mozambique: Handled Cargo in Ports, 1994-2001 (in 1000 tons)*

	1994	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
Total	6167	7508	8405	8960	7606	7741	7717	9047

Source: INE, 2001

The number of passengerkilometers increased dramatically from 11,045 millions in 1994 to 37,096 millions in 2001. The largest share comes from interurban road passenger transport (98.9 percent). The end of the civil war had apparently boosted people's mobility enormously.

Table 21 *Mozambique: Passenger Transport Services, 1994-2001 (in millions of passengerkilometers)*

	1994	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
Total	11045	15448	18269	21839	26587	27385	37202	37096
Railways	124	312	326	403	155	129	142	142
Maritime	4	5	5	7	6	7	2	2
Road Transport	10484	14747	17576	20773	26114	26890	36681	36680
Urban	*4023*	*5269*	*5452*	*5066*	*5643*		*6923*	*9941*
Interurban	*6460*	*9478*	*12124*	*15707*	*20471*	*26890*	*20107*	*26739*
Air Transport	434	384	362	656	312	360	378	272

Source: INE, 2001

Table 22 shows the transport output by mode in tons. Railway transport increased from 2.6 million tons in 2000 to 3.3 millions tons in 2001. Maritime transport declined dramatically from 393,049 tons in 2000 to 96,467 tons in 2001. Road transport increased from 87,192 tons in 2000 to 185,023 tons in 2001. The actual amount of road transport is, however, much and much higher. Only no official data seem to be available in this respect.

Table 22 *Mozambique: Transport by mode in tons 2000-2001*

Mode of Transport	**2000**	**2001**
Pipeline	690033	600000
Road Transport	87192	185023
Railway Transport	2639276	3280335
Maritime Transport	393049	96467
Air Transport	3480	3463
Total	**3813031**	**4165288**

Source: INE, 2002

Although from the same source as Table 22, the figures on rail freight transport from Table 23 differ considerably from those in Table 22. Table 22 gives a total of railway freight of 2,639,276 tons in 2000 and 3,280,335 in 2001; Table 23 3,455,000 and 4,153,000, respectively. The difference is probably that Table 22 provides the data on only *international* transport.

As can be seen from Table 23, railway freight transport is for 84 percent international transport and for 16 percent domestic. CFM-Sul transported in 2001 70 percent of total output of CFM. In 1994 the share of CFM-Sul was still 61 percent.

Table 23 *Mozambique: Railway Freight Transport in 1000 tons, 1994-2001*

	1994	1995	1996	1997	1998	1999	2000	2001
Total Freight	**2458**	**3110**	**4085**	**3845**	**4119**	**3961**	**3455**	**4153**
National	*401*	*340*	*452*	*617*	*834*	*676*	*624*	*664*
International	*2057*	*2770*	*3633*	*3228*	*3285*	*3285*	*2831*	*3489*
CFM-Sul	1500	1826	2667	2607	3082	3073	2307	2904
National	*279*	*151*	*272*	*363*	*568*	*511*	*393*	*448*
International	*1221*	*1675*	*2395*	*2244*	*2514*	*2562*	*1914*	*2456*
CFM-Centro	794	1063	1174	964	765	650	789	886
National	*53*	*109*	*72*	*119*	*147*	*95*	*100*	*125*
International	*740*	*954*	*1102*	*845*	*618*	*556*	*689*	*761*
CFM-Norte	156	215	237	250	270	232	351	362
National	*60*	*74*	*101*	*112*	*117*	*64*	*123*	*89*
International	*96*	*141*	*136*	*139*	*153*	*167*	*228*	*273*
CFM-Zambezia	9	6	7	24	3	6	8	1
National	*9*	*6*	*7*	*24*	*3*	*6*	*8*	*1*
International	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

Source: INE, 2001

Remarkable is the rapidly declining number of passengers by train from 5,475,000 in 1995 to 2,774,000 in 2001 despite the growing mobility of the Mozambican population. Deteriorating services are the main cause for this decrease. This is further confirmed by an article in the Mozambican newspaper 'Notícias' from 28th of July 2004 which mentions the fact the passenger transport service between Maputo and Ressano Garcia has been inoperational for several months because of lack of rolling stock.

Table 24 *Mozambique: Railway Passenger Transport in 1000 passengers, 1994-2001*

	1995	1996	1997	1998	1999	2000	2001
Total Passengers	**5475**	**5677**	**6820**	**4573**	**4043**	**2895**	**2774**
National	*5447*	*5643*	*6784*	*4539*	*4007*	*2875*	*2738*
International	*28*	*35*	*36*	*34*	*36*	*21*	*35*
CFM-Sul	3004	2974	4092	3212	2596	1469	931
National	*2977*	*2940*	*4056*	*3178*	*2560*	*1448*	*896*
International	*28*	*35*	*36*	*34*	*36*	*21*	*35*
CFM-Centro	1416	1796	1472	537	471	540	870
National	*1416*	*1796*	*1472*	*537*	*471*	*540*	*870*
CFM-Norte	1049	903	1252	824	976	886	973
National	*1049*	*903*	*1252*	*824*	*976*	*886*	*973*
CFM-Zambezia	5	4	4	0	0	0	0
National	*5*	*4*	*4*	*0*	*0*	*0*	*0*

Source: INE, 2001

In the study SADC Regional Freight Transport Corridors an estimation is made based on a survey on the volume and directions of commodity flows in the SADC region. For Mozambique the following interesting results were found:

Table 25 *Mozambique: Rail and Road Freight Transport (in tons)*

	Destination	Tons	Origin	Tons	Total
Railway Transport					
Ressano Garcia Line	To Maputo	1482771	From Maputo	34746	1517517
Goba Line	To Maputo	257839	From Maputo	3456	261295
Limpopo Line	To Maputo	38289	From Maputo	19783	58072
Machipanda Line	To Beira	541100	From Beira	203200	744300
Nacala Line	To Nacala	55800	From Nacala	115200	171000
Total railway transport		**2375799**		**376385**	**2752184**
Road Transport					
Ressano Garcia	To Maputo	760760	From Maputo	80808	841568
Lomahasha	To Maputo	151242	From Maputo	27300	178542
Machipanda	To Beira	239904	From Beira	125440	365344
Nyamapanda	To Harare	254016	From Harare	56448	310464

	Destination	Tons	Origin	Tons	Total
Zobuè	To Beira/Harare	66640	From Beira/Harare	159936	226376
Nyachi	To Nacala	131712	From Nacala	75264	206976
Milange-Quelimane	To Quelimane	75264	From Quelimane	112896	188160
Total road transport		**1679538**		**638092**	**2317630**
Grand Total		**4055337**		**1014477**	**5069814**

Source: Compiled table from SADC Regional Freight Transport Corridors; 2001.

Although the figures in absolute sense are not very reliable, the direction of the flow indicates clearly the imbalance that exists between cargo coming from the neighboring countries and cargo that is going to those countries. In-coming cargo is almost four times more than out-going. This imbalance is, obviously, one of the reasons for the high transport costs in Mozambique. The figure of 2,317,630 tons along the main transit routes in 2000 is clearly much closer to the reality than the 272,215 tons from the official statistics.

As it is important for policy development to dispose over reliable data – think for instance at granting a concession for a toll road based on actual traffic flows and traffic forecasts - , it is recommended that the Ministry of Transport and Communications together with the National Institute of Statistics (INE) will carry out on regular basis a road haulage survey. Another way of collecting data, at least for the operators registered in Mozambique, is to directly link the issuance of the road service license with the obligation to provide statistics on a regular basis to the issuing agency and create a legal basis for this obligation.

7 COSTS AND DELAYS OF TRANSPORT AND LOGISTICS

Railway Transport

In the several studies like the "SADC Freight Transport Corridors" from 2001 the following rates for railway transport were found:

Table 26 ***Rates for railway transport for selected port corridors*** *(in US dollars)*

Line	Distance	14 tons/6 m	22 tons/12m	36 tons/B/Bulk
Maputo - Johannesburg	616	393	620	600
Maputo – Harare	1228	960	1686	N/A
Maputo – Blantyre	1780	N/A	N/A	N/A
Maputo – Lusaka	1996	N/A	N/A	N/A
Maputo - Lubumbashi	2588	N/A	N/A	N/A
Beira – Harare	593	500	1000	N/A
Beira – Lusaka	2027	1033	2021	N/A
Nacala – Lilongwe	995	896	1408	
Nacala - Blantyre	806	840	1320	

Source: SADC Freight Transport Corridors 2001 and other studies

The prices on the line Maputo – Johannesburg varied between 0.027 USD per tonkm for bulk and 0.046 USD per tonkm for other cargo. Maputo – Harare using the Chicualacuala line was more expensive with 0.056 USD per tonkm for general cargo. The Beira Corridor was very expensive with 0.06 USD per tonkm. Beira – Lusaka was much cheaper with 0.036 USD per tonkm for general cargo. Nacala – Lilongwe costs 0.064 USD per tonkm and Nacala – Blantyre 0.074 USD per tonkm.

Railway transport applies very variable prices for container transport in Mozambique. Table 27 shows the prices for railway transport in Mozambique for a full container and an empty container:

Table 27 *Mozambique: Prices for transport of containers by rail (in US dollars)*

Line	Km	Full container	Full container/km	Empty container
Maputo–Ressano Garcia	88	59.20	0.67	25.00
Maputo – Goba	74	50.70	0.69	35.00
Maputo – Chicualacuala	534	159.50	0.30	101.60
Beira – Machipanda	319	210.00	0.66	190.00
Nacala – Entre Lagos	618	745.00	1.21	225.00

Source: Official prices Mozambique Railways

The price per container through the Nacala corridor costs is four times more expensive than transport of a container from Maputo to Harare and twice as expensive as the Beira Corridor. This has certainly to do with the duration of the trip and the state of the railway infrastructure and availability of rolling stock. Rail cargo sometimes takes 14-20 days from Nacala to Blantyre due to congestion, derailments, equipment failures and administrative confusion. From the shipper's perspective, there is lack of certainty and commitment by the railways, and the general lack of port service reliability in Nacala.

The project of the rehabilitation of the Sena Line focuses on 0.025 USD per tonkm for coal transport from Moatize to Beira and 0.06-0.08 USD per tonkm for general cargo.

The average costs of railway transport in Mozambique are more than 0.05 USD per tonkm, which is about 200 percent of the 'normal' price (0.025 USD per tonkm).

Mozambique Railways is not only expensive, but the performance is also still unreliable.

Tariff discrimination

In July 2004 a terminal operator complained about tariff discrimination applied by Spoornet regarding the transport of granite by train from Rustenburg to Maputo. The rates offered were varying between R 246.60 and R 279.27 per ton, which is much higher than the rate of R 145 offered to Richards Bay, which is a longer distance than to Maputo. The ton per kilometer rate offered amounts R 0.44 which is at least 50% higher to other rates offered by Spoornet, CFM and neighboring countries. The arguments put forward by Spoornet like having to switch from electric to diesel can hardly justify this huge difference.

The manager has already been negotiating for 2 years with Spoornet and is now convinced of the fact that this prejudiced and monopolistic approach to pricing and the provision of services is being applied to other commodities as well. This obstructs the development of a key strategic growth area for Mozambique, protecting the domestic market in South Africa.

Therefore, the terminal operator and some producers are now looking intensively to shift from railway transport to road transport.

Road Transport

The "SADC Freight Transport Corridors" from 2001 found the following rates for road transport:

Table 28 *Rates for road transport for selected port corridors (in US dollars)*

Line	Distance	14 tons/6 m	22 tons/12m	30 tons/B/Bulk
Maputo - Johannesburg	599	625	625	625
Johannesburg – Maputo	599	950	950	950
Maputo – Harare	1648	672	1344	1344
Harare - Maputo	1648	504	1008	1008
Maputo – Blantyre	1675	1190	2380	2380
Blantyre - Maputo	1675	630	1260	1260
Maputo – Lusaka	1988	1050	2100	2100
Lusaka - Maputo	1988	532	1064	1064
Maputo - Lubumbashi	2474	1470	2940	2940
Lubumbashi - Maputo	2474	1260	2520	2520
Beira – Harare	565	600	1200	
Beira – Lusaka	1024	1800	3600	3800
Beira – Blantyre	830	800	1600	1750
Blantyre - Beira	830	400	800	1600

Source: SADC Freight Transport Corridors 2001

A survey among freight forwarders and transporters carried out in July 2004 gave the following results concerning prices for road transport:

Table 29 *Rates for road transport on selected corridors 2004 (in US dollars)*

Line	22-30 tons	Average price per tonkm
Maputo – Johannesburg	625-950	0.040-0.060
Maputo – Harare	1008-1344	0.023-0.031
Maputo – Blantyre	1260-2380	0.029-0.055
Maputo – Lusaka	1064-2100	0.021-0.041
Maputo – Lubumbashi	2520-2940	0.039-0.046
Beira – Harare	1200	0.082
Beira – Blantyre	1700	0.079
Beira – Lusaka	3700	0.139

Source: Survey 2004

The variations in costs for road transport are enormous. From 0.021 USD per tonkm from Maputo to Lusaka until 0.139 USD per tonkm for transport between Beira and Lusaka. Remarkable are the substantial lower cost for road transport from Maputo (average 0.045 per tonkm) in comparison with road transport from Beira (average 0.09 USD per tonkm).

Apparently, the competition in the road transport market is not outbalanced yet. The wide variations of prices are also caused by the imbalance of the commodity flows. Many forwarders and road transporters calculate the tariffs based on a return trip as well. If they succeed to obtain backload, prices may vary substantially and will, in general, be much lower than usual.

What has not been assessed, however, is the quality of service that is to be provided by the road transport company or forwarder. In discussions with forwarders and road transport companies in July 2004, it became clear that there are huge differences in quality to be delivered to the shipper. Just-in-time shipments are much more expensive than shipments which will arrive some day, as one of the traders informed.

In the present situation the road transport sector is competitive with the railway sector because of its flexibility and higher degree of reliability, although the prices in the road transport sector are higher with an average of 0.07-0.08 USD per tonkm.

Maritime Transport and Coastal Shipping

Sea cargo from Asia to one of the ports of Mozambique costs between 2,550-3,250 USD per container and from Europe between 2,650-2,950 USD. The main challenge for Mozambique is to attract more international shipping lines to its ports. Presently, the major Port of Maputo is receiving regular calls of six international shipping lines for break bulk and six for containers. The majority of the shipping lines are still using the Port of Durban in South Africa as a hub with feeder services to the ports of Mozambique.

The costs of coastal shipping are very high, as the following table shows:

Table 30 *Costs of Coastal Shipping in Mozambique (in US dollars)*

Line	Tariff in USD
Maputo – Dar-es-Salam	845
Maputo – Beira	995
Maputo – Nacala	1230
Maputo – Quelimane	1340

Source: Mainstreaming Trade; 2002

The coastal shipping market is still protected by legislation and cabotage is practically not allowed. Complete liberalization of coastal shipping would most probably reduce the tariffs for coastal shipping and mean a boost for national integration as well.

A fully operational logistics corridor concept, integrating ports, maritime and coastal shipping, railways, road transport, terminals and warehouses and distribution centers is still far from implementation in Mozambique. Integrated modal connections and multimodal transport hardly exist. The Mozambican Government and the Mozambican business community, however, have recognized this weakness and are in the process of developing the corridor concept in a public-private partnership. In chapter 9 more attention will be paid to this concept.

8 CUSTOMS AND TRADE ADMINISTRATIVE PROCEDURES

8.1 Customs administration and Customs procedures

Table 31 shows the evolution of Customs revenues from 1995 to 2001 in relation with the value of imports and GDP. The total Customs revenues doubled from 1995 to 2001 from 102.5 millions US dollars to 213.5 millions US dollars. This increase is mainly caused by the income from VAT. Customs duties remained at the same level. The share of Customs revenue in GDP increased from 3.6 percent in 1997 to 6.0 percent in 2001.

Table 31 *Fiscal performance of Customs administration, 1995-2001*

	1995	1996	1997	1998	1999	2000	2001
(In million of US dollars)							
Circulation Tax/VAT	10.2	10.7	19.6	21.5	74.1	112.3	104.9
Consumption Tax on Imports	14.4	14.2	15.5	18.2	16.9	14.3	12.2
Custom Duties	64.8	62.5	70.3	80.2	81.5	82.3	71.22
Total Customs Revenue	102.5	106.3	125.4	146.1	198.1	236.0	213.5
Taxes on Imports	89.3	87.5	105.3	119.9	172.5	208.9	188.3
Value of Imports	727	783	760	781	790	821	832
(In percent)							
Customs Duties as a Share of Imports	8.9	8.0	9.0	10.2	10.3	10.2	8.6
Total Taxes on Imports as a Share of Imports	12.3	11.2	13.9	15.4	21.9	25.4	22.6
Customs Revenue as a Share of Total Fiscal Revenue	-	-	-	-	43.9	52.7	51.1
Custom Revenue as a Share of GDP	-	-	3.6	3.8	4.9	6.1	6.0

Source: Anthony Mwangi, Final report of the survey on Customs reform and modernization in Mozambique; March 2003.

The number of Customs officials is about 1,500. The Customs Department is planning to increase this number to 1,852 justifying it by the need to enhance staff with full management capacity, to enhance operations in the areas of anti-corruption operations, legal investigations, special operations, post importation audits, and to reopen closed border stations.

One of the most important agencies which should facilitate foreign trade and transport is the Customs administration. Mozambique is implementing an ambitious Customs reform program since 1995. The main objectives of this program are: a) increase budget revenue; b) facilitate legitimate trade by combating corruption and smuggling; c) create a modern, effective, and reliable Customs administration.

To manage this reform process the Minister for Planning and Finance created in 1995 the Technical Unit for Customs Reform. Mozambique did adopt for a revolutionary and innovative approach by bringing in external expertise to manage Customs operations and Pre-Shipment Inspection (PSI) services to assist in the determination of the dutiable value of the imports. Crown Agents is directly involved in mentoring the Customs operations. In 2000 47 Crown Agents consultants were in the field to work in the Customs administration. This number has been reduced to 14. The idea is that Crown Agents will be working in the Customs administration until a new Central Revenue Authority will be created in 2005, in which Customs would be integrated.

The Pre-Shipment Services are being carried out by Intertek Testing Services. The PSI Company is checking for value, tariff coding, quantity of covered imports, and identified prohibited imports. The PSI fees are paid by the importer. Since 1999 risk management techniques are being used working within the information system that the Customs administration is using. The scope of PSI inspections has been further reduced since 2003 to commodities that have been identified as sensitive. If goods for import feature on the sensitive product list, the importer notifies the PSI company direct by lodging the supplier's pro forma invoice, and notifies his supplier of the need to submit the goods for inspection. The PSI Company carries out a physical inspection of the goods as requested by the exporter. After approval, the PSI Company issues a certified single document, which the importer will use for clearance of the goods at Customs. Importers are liable to a penalty payment of 10 percent of the value of imported goods selected for PSI that lack PSI certificates on arrival.

As the trade regime has been liberalized since 1986, the number of tariff rates and the tariff levels was reduced. There are five tariff rates: 0 percent for essential goods; 2.5 percent for raw materials; 5.0 percent for fuel and capital goods; 7.5 percent for intermediary goods; and 25 percent for consumption goods. In 1999 Mozambique introduced a 17 percent VAT. Excise duties are levied on automobiles, luxury goods, alcoholic beverages and tobacco products.

As tariff barriers to trade seem to be removed in time, there are still quite a number of non-tariff barriers, which impede the seamless flow of trade transactions: complex standards testing, labeling and certification requirements, government procurement rules, a lack of adequate intellectual property rights, corruption and smuggling.

The granting of duty exemption is limited to imports covered by the code of Fiscal Benefits, Free Trade Zones (FTZ), NGO's dealing with humanitarian aid and medicines, Diplomatic Missions, and Multi-lateral Organizations. Mozambique has only two FTZ: MOZAL/Beluzone,

about 16 kilometers from Maputo, and BELITA, which manufactures textile products and apparels in Beira. The FTZ law requires that 85 percent of the production be exported duty free.

In 2002 a new Regulation on Transit has been issued by the Minister of Planning and Finance. In the global guarantee system the amount of the needed guarantee is about 10% of the customs value. Traders comment that the implementation of this law still faces many obstacles. The duty drawback system is not in use in Mozambique.

In the Maputo Corridor in the south of Mozambique the border controls at Ressano Garcia and Namaacha, the border points with South Africa and Swaziland, respectively, are weak and lack proper infrastructure including communication facilities. Trucks importing goods to Mozambique using these border posts must proceed for Customs clearance to the Matola Cargo Terminal (FRIGO), a privately owned inland clearance terminal on the outskirts of Maputo.

The terminal is charging storage/parking fees according the following schedule:

- Less than two days: 0.28 percent of the Customs value CIF
- More than two days: 0.7 percent of the Customs value CIF

For bulk goods an extra charge of 5 percent is levied. The minimum amount that has to be paid is 560,000 meticais (24 US dollars) for packaged commodities and 590,000 meticais (26 US dollars) for bulk.

Traders are complaining about long waiting times and the fact that these tariffs are much too high, especially for valuable goods.

Competition among clearing agents is rapidly increasing. The largest one is ADENA, the state-owned national clearing agent with offices in Maputo, Beira, Nacala and Tete. The website of Mozambican Customs mentions further 7 other clearing agents in Maputo; 3 in Beira; and 1 in Tete. The total number used to be limited to about 10 clearing agents, but recently the field has been opened to competition and that number has increased to around 125.

FIAS estimated in 2000 the average clearing time in Mozambique at 18 days. According to Crown Agents average gross clearance times have since then fallen to 4-7 days (land 4 days; sea 5 days; air 6 days), based on the time lapsed between submitting the Customs declaration and collecting the delivery order, which can be done only after duties have been paid. However, importers still mention 15 days as a usual waiting time for clearance of the goods. It is, however, difficult to work with averages. It is also stated that routine and/or clean entries average within 48 hours clearance time.

From the other side it is important to take into account the fact that some traders, forwarders and transporters still do not comply with all documentary requirements and blame delays because of this to inefficient governmental officials like Customs. Some used to arrange their things ‘on their own way’ and if this does not work anymore, they got upset and blame the authorities for deliberately the dispatching process.

Traders, forwarders and transporters still complain that there is a lack of co-ordination among and between the agencies involved in border crossings and with the respective authorities of the neighboring countries.

The Trade Information Management System, as used by Customs, is not implemented to its full capacities and electronic data exchange of Customs and other border agencies hardly takes place.

The following issues related with Customs need intervention and improvement on short term:

- On July 23, 2004 the Public Relations Department of the General-Directorate of Customs informed that during the first semester of 2004, 3500 billions of meticais (151,844 US dollars) had been collected (Customs duties, specific consumer tax, VAT, etc.). This is an increase of 21 percent in relation with the revenues of the first semester of 2003. Now, to increase budget revenue is one of the targets of Mozambican Customs. And this target has been achieved. However, the other target is as well as important, and maybe even more important: the facilitation of legitimate trade. More efforts should be spent in this direction.
- Sanctioning of corrupt Customs officials is hampered by the fact that corruption must be dealt with under criminal law, where Customs Court has no jurisdiction. Delays in the Administrative Court are lengthy.
- Electronic Direct Trade Input should be made possible as soon as possible.
- Management of key border posts and terminals is lacking efficiency and effectivity.
- Some border posts lack basic infrastructure as water and electricity, not to mention telecommunication, parking space, banking facilities, etc.
- Conditions should be created to allow for opening hours of 24 hours a day at important border crossings and not being restricted to day-time.
- Harmonization with Customs procedures of neighboring countries is urgently needed
- The Trade Information Management System (TIMS) is not installed at all Customs offices and is not optimally being used in places where it has been installed.
- Electronic payment of taxes and duties should be made possible.
- Trade information should be flown between Customs and other trade stakeholders such as freight forwarders, importers, exporters, port operators and transport companies.
- Activities of Customs, (border)police, immigration, transport authorities, phyto-sanitary inspection institutions and local administration should be coordinated to facilitate border crossings.

8.2 Trade regulations and trade procedures

Mozambique is still in the process to liberalizing its trade and simplifying export and import procedures.

Exchange controls have gradually been relaxed and the exchange market has been opened to market forces. Several legal instruments have been put in place to improve fiscal policy. Corporate tax is 32 percent; VAT 17 percent; import duties vary from 0 to 25 percent; exports are exempt from duties. The Technical Unit for Customs Reform (UTRA) has the responsibility to supervise, control and register fiscal revenues in Customs areas.

A Single Document (DU, Documento Único) was created in 1998 to support all foreign trade operations in Mozambique. It revokes legislation on the licensing system for foreign trade operations, model Customs dispatch form, guides and other documents concerning Customs clearance that were previously used by the Customs service. This document is used for import, export, pre-shipment inspection.

Foreign trade in Mozambique is regulated by Decree number 56/98, of November 11th and Ministerial Diplomas numbers 202 and 203/98, both of November 12th. All importers and exporters are required to register. After registration a foreign trade operator card is attributed. Certificates of origin for exporters are issued through the Mozambique Chamber of Commerce or the Provincial Departments of Industry and Trade (in North and Central Mozambique) upon submission of a copy of the commercial invoice or the Single Document.

The following issues need urgent intervention and improvement in order to facilitate trade in Mozambique:

- Company registration is too time-consuming and too costly.

Nature of Procedure (2003)	Procedure	Duration (days)	Duration (days) through CPI[4]	US$ Cost (minim)	US$ Cost (minim) through CPI
Obtain certification of unique name	1	2	1	3.2	3
Open a provisional bank account	2	1	1	0	0
Incorporate the company through a public deed executed at a local Notary	3	5	1	100	0.3% share capital
Register provisionally	4	19	n/a	n/a	n/a
Publish articles in the official gazette	5	30	15	50	50
Final registration (Certificate of Incorporation)	6	30	15	100	0.5% share capital
Apply for an operational license	7	40	30	112.5	115
Receive inspection from Ministry of Health	8	0	15*	0	0

[4] CPI is the official Investment Promotion Centre in Mozambique.

Nature of Procedure (2003)	Procedure	Duration (days)	Duration (days) through CPI[4]	US$ Cost (minim)	US$ Cost (minim) through CPI
Receive inspection from the Fire Department	9	0	15*	0	0
Declaration of beginning of activity at the tax department	10	15	n/a	0	n/a
Register for VAT	11	7	7	0	0
Declare the beginning of activity at the provincial Employment Center	12	1	n/a	2.1	n/a
Prepare a job description chart	13	1	n/a	0	n/a
Register workers with the social security system	14	1	1	0	0
Subscribe a workmen's compensation insurance coverage	15	1	1	0	0
Totals:	**15**	**153**	**87**	**367.8**	**Varies**

Source: Austral Consultória e Projectos

- Company inspections are not always been carried out in a proper way; procedures are unclear and fines can not always be justified.
- Costs of administrative procedures are high and time-consuming: sanitary and phyto-sanitary certification; certification of origin; export documentation; certification of quality and standards testing; labeling; government procurement regulations; etc.
- Administer and enforce the rules of origin properly and more efficient.
- Import exemption authorization is too time-consuming. In the first semester of 2004 Customs administration received 1096 requests for exemptions for payment of import duties; 555 requests have been authorized and 25 rejected; 516 are still being analyzed.
- Reimbursement of VAT takes a very long time.
- Customs clearance is too time-consuming. In particular, the process of the clearance of perishable goods should be accelerated. During the first semester of 2004, the Inspection Unit of Customs visited 7 Customs Houses where commodities were found which had been there for too long time and whose expiry rate had already passed.
- The labor legislation is not flexible for promoting production and trade. It is difficult to hire foreign managers; to work overtime and in shifts; retrenchment of labor is costly.

And finally, it is not only improvement of legislation, which is important. Applying existing laws and regulations properly would also contribute to improve the conditions for trade to operate. The following example comes from a trader who communicated the following on July 27, 2004:

"As always I could list a million screw-ups with exports but to illustrate what a basket case this place is, see the two examples listed below that have happened to TCT. I use my own company examples as I am allowed to do so but every exporter faces the same crap as I do.

Exporting a container of Parquet to Italy, the same customer I have been exporting to for the last 10 years. Customs decides that I have to have a L/C prior to export despite the fact that I have a "boldaro" (proof of bank transfer) showing that my customer has paid for the export in advance, as he has been doing for the last 10 years. Customs insists rejecting the process twice, takes 2 personal interventions to explain that payment PRIOR to shipment is sufficient guarantee. Total time process going back and forth – 4 days.

Exporting a container of furniture to SA. The customer (one of the contractors on the Gorongosa – Caia road) pays me in US$ cash which I deposit in the bank. Customs refuses cash foreign currency for exports, must be transferred from outside the country. 7 personal interventions, including phoning the Regional Director 3 times to get the problem solved. Time to get the process through customs – 5 days.

None of the customs refusals were based on law, we live at the continual whim of individuals whose power is absolute and most companies live in fear of victimization if they demand their rights.

Customs, like the whole of the finance department, are regressing to the point of absolute lawlessness.

I repeat, the above is in the last 10 days.

A luta continua."

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9 TRANSPORT AND DEVELOPMENT CORRIDORS

9.1 The concept of development corridors in Mozambique

In the past Mozambique used to be a transit country for import and export of South Africa, Swaziland, Zimbabwe, Zambia and Malawi, using the ports of Maputo, Beira and Nacala. The main rail and road connections in Mozambique are, therefore, in east-west direction linking the ports with the hinterland in the neighboring countries. In the eighties the Beira Corridor Authority was established to lead the process of socio-economic development of the Beira Corridor: rehabilitation of the port of Beira; investments in railways and roads; promoting industrial and agricultural development along the corridor; provision of social infrastructure. However, the civil war and lack of experience with this development concept, made a failure of this adventure. Nevertheless, lessons were learned for the future, be it at high costs.

The concept of development corridors in Mozambique experienced a revival in the mid-1990s when the Spatial Development Initiative (SDI) was introduced by the South African government. The idea behind SDI was to attract export-driven investments and stimulate public-private partnerships to areas with under- or unutilized potential. South Africa was broken free of its apartheid era and engaged to integrate with the world economy and Mozambique had emerged from a devastating 16 years of civil war. South Africa was looking for export-led growth and Mozambique facing the challenge to rebuild its economy. The result was the formulation of a plan to develop the Maputo Corridor in order to restore trade and investment ties that had been destroyed during the apartheid in South Africa and the civil war era in Mozambique.

As the SADC region is facing serious economic and development challenges with growth rates less than 2 percent over the last three years and deepening poverty, the success of the Maputo Development Corridor stimulated the emergence of a wide range of SDI's being implemented through co-operation among Southern African governments who wanted to unlock their country's potential by creating more favorable conditions for export-driven private investment and their integration in the world economy. The SDI methodology is becoming an integral part of SADC's programs and the Development Bank of Southern Africa (DBSA) has established a dedicated African Partnerships unit (NEPAD – New Partnership for Africa's Development) to strengthen inter-government and public-private sector relationships.

Mozambique is paying much attention to the corridor concept in its development policy by concentrating efforts on the Maputo Corridor, the Beira Corridor - including the development of the Sena Railway line and the Zambezi valley - and the Nacala Corridor. The important challenge is to link import, export and transit traffic from and to neighboring countries making use of the Mozambican corridors with national socio-economic development and integration.

DEVELOPMENT CORRIDORS AND SPATIAL DEVELOPMENT INITIATIVES IN THE SOUTHERN AFRICAN REGION
Central Development Corridor SDI
DEMOCRATIC REPUBLIC OF CONGO
TANZANIA
Malange Corridor
Tazara Development Corridor
MALAWI
Mtwara Development Corridor SDI
Lobito Development Corridor
ANGOLA
ZAMBIA
MOZAMBIQUE
Nacala Development Corridor SDI
Namibe Corridor
Zambezi Valley SDI
ZIMBABWE
BOTSWANA
Beira Development Corridor SDI
INDIAN OCEAN
ATLANTIC OCEAN
Walvis Bay SDI
NAMIBIA
Limpopo Valley SDI
Count2Count Corridor
Maputo Development Corridor
Berlep SDI
LESOTHO
SOUTH AFRICA

9.2 The Maputo Corridor

The concept behind the Maputo Development Corridor is an integrated approach towards the development of the geographical area covering the Maputo Corridor.

The integrated approach comprises of the following components:

- Toll Road N4 linking South Africa and Maputo
- Commercialization of the Port of Maputo
- Commercialization of railway connections Maputo–South Africa and Maputo–Swaziland
- Attraction major industries and establishment Free Industrial Zones
- Improvement Customs facilities
- Upgrading telecommunications and electricity networks
- Improvement of business climate by facilitating customs procedures and reducing red tap, bureaucracy, excessive administrative procedures

<u>Toll Road N4 Maputo-Witbank</u>

The 503 km N4 Highway between Maputo and Witbank was opened as a toll road in 2000 and is operating successfully. It has been given in concession to Trans African Concessions (Pty) Ltd. The main problem the concession holder is facing is damage to the road because of overloading, but measures have been put in place to overcome this problem. The toll road has five toll plazas and average daily traffic passing through these plazas is about 60,000 vehicles.

Commercialization of the Port of Maputo

The Port of Maputo has an installed capacity of handling more than 10 million tons per year: general cargo 2,500,000 tons; coal 2,500,000 tons; fuel 2,000,000; steel 900,000 tons; aluminum more than 1,000,000 tons; citrus 750,000 tons; sugar 600,000 tons; cabotage 500,000 tons; grain 400,000 tons; containers 35,000 TEU. In the past up to 12 million tons had been handled. Presently, it is using about 40 percent of its capacity.

The Mozambican deepwater ports of Maputo and Matola have been conceded to the Maputo Port Development Company (MPDC), a consortium in which foreign investors have a majority share. The concession, which commenced on 14 April 2003, has duration of 15 years, with a 10 year extension option. MPDC has been granted the rights to finance, rehabilitate, operate, manage, maintain, develop and optimize the port concession area. The company is vested with the powers of port authority and is responsible for marine operations, towage, stevedoring, terminal and warehousing operations as well as port planning and development. A three year rehabilitation program with a total investment of 70 millions US dollars is being implemented. Important elements of this program are the deepening of the access channel up to 12 m for panamax size vessels of 50,000 TDWT; the procurement of mobile harbor cranes; construction of new port entrance linking directly onto the N4; upgrading of roads and rail lines in the port; and berth repairs.

The main challenge for the Port of Maputo is to attract international shipping lines and increase the frequency of the calls. Presently, most of the shipping lines are still using the port of Durban as a hub. The Port of Maputo was in January 2004 served by the following shipping lines:

Table 32 *Shipping lines serving the Port of Maputo (January 2004)*

Name	Geographical area served	Frequency
Break-Bulk Services		
Gearbulk	North West Europe	
MACS Line	North West Europe	
Messina Line	East Africa, Red Sea & Mediterranean	
MUR	Mediterranean, India, South Asia	
Southern Chartering	Far East	
IVS Lauritzen	Far East, North Europe	
Container Lines		
Unifeeder	Southern Africa Coastal	Weekly
MSC	East Africa, Indian Ocean, South Asia	10 days
Global (GCL)	East Africa, Gulf, South Asia	10 days
MACS	North West Europe	Monthly

Name	Geographical area served	Frequency
Messina Line	East Africa , Red Sea, Mediterranean	14 days
P&O Nedlloyd	East Africa, Gulf, South Asia	14 days

Source: MPDC 2004

Commercialization of railway connections

The Government of Mozambique has granted an international consortium with South Africa's rail utility Spoornet the right to operate the line from Maputo to Ressano Garcia on the border with South Africa. Important component of the concession agreement is the commitment to invest 10 millions US dollars to rehabilitate the Mozambique section of the rail line bringing it up to the same standards as the South African line. The Spoornet consortium plans to start its operations in 2004. Table 31 shows the main characteristics of rail transport on the Ressano Garcia line.

Table 33 *International Traffic Maputo-South Africa 2000 (Ressano Garcia Line)*

Export					**Import**				
Commodity	**m/tons**	**%**	**Origin**	**Dest.**	**Commodity**	**m/tons**	**%**	**Origin**	**Dest.**
Coal	1078180	72.7	S. Africa	Maputo	Scrap Metal	360	1.0	Maputo	S. Africa
Steel	3720	0.3	S. Africa	Maputo	Bran	9900	28.5	Maputo	S. Africa
Citrus	84218	5.7	S. Africa	Maputo	Bentonite	11280	32.5	Maputo	S. Africa
Gypsum	3400	0.2	S. Africa	Maputo	Wheat	4200	12.1	Maputo	S. Africa
Containers	5208	0.4	S. Africa	Maputo	Steel	160	0.5	Maputo	S. Africa
Maize	47386	3.2	S. Africa	Maputo	Containers	3528	10.2	Maputo	S. Africa
Cement	104247	7.0	S. Africa	Maputo	General	5318	15.3	Maputo	S. Africa
Gas	6720	0.5	S. Africa	Maputo					
Molasses	16600	1.1	S. Africa	Maputo					
Sugar	126042	8.5	S. Africa	Maputo					
General	7050	0.5	S. Africa	Maputo					
Total	**1482771**	100.0			**Total**	**34746**	100.0		

Source: CFM 2000

The major commodity in 2000 was coal transported from South Africa to Maputo with more than 71 percent of the total volume. The imbalance between east-west and west-east volumes is striking: 97.7 percent of the volume goes from South Africa to Maputo and only 2.3 percent

from Maputo to South Africa. The amount of coal to be exported through the Port of Maputo is like to increase substantially if the railway operations would work with higher capacity and more efficiently. Many South African industrial producers like Xstrata/Lydenburg and Lion are using road transport on the corridor as railway transport is too unreliable and lacks capacity. Xstrata/Lydenburg, in the first semester of 2004 transporting 64,166 tons by road along the Maputo Corridor, already went into negotiations with Spoornet for rail shipments starting in 2005.

The Goba Line is mainly used to export sugar from Swaziland through the Port of Maputo counting for 98 percent of all cargo transport. The huge imbalance between east-west volumes (98.7 percent) and west-east volumes (1.3 percent) makes transport costs high.

Table 34 *International Traffic Maputo-Swaziland 2000 (Goba Line)*

Export					**Import**				
Commodity	**m/tons**	**%**	**Origin**	**Dest.**	**Commodity**	**m/tons**	**%**	**Origin**	**Dest.**
Sugar	256116	99.3	Swaziland	Maputo	Cement	3432	99.3	Maputo	Swaziland
General	918	0.4	Swaziland	Maputo	Containers	18	0.5	Maputo	Swaziland
Citrus	374	0.1	Swaziland	Maputo	General	6	0.2	Maputo	Swaziland
Containers	231	0.1	Swaziland	Maputo					
Gas	200	0.1	Swaziland	Maputo					
Total	**257839**	100.0			**Total**	**3456**	100.0		

Source: CFM 2000

The Limpopo Line has recently also been given into concession to international consortium and will boost transport to and from Zimbabwe. The capacity of the line has been hardly used.

Table 35 *International Traffic Maputo-Zimbabwe 2000 (Limpopo Line)*

Export					**Import**				
Commodity	**m/tons**	**%**	**Origin**	**Dest.**	**Commodity**	**m/tons**	**%**	**Origin**	**Dest.**
Coal	5624	14.7	Maputo	Zimbabwe	Wheat	11000	55.6	Zimbabwe	Maputo
Ferro Chrome	18240	47.6	Maputo	Zimbabwe	Maize	7942	40.1	Zimbabwe	Maputo
Steel	2880	7.5	Maputo	Zimbabwe	Containers	444	2.2	Zimbabwe	Maputo
Sugar	10920	28.5	Maputo	Zimbabwe	General	277	1.4	Zimbabwe	Maputo
Livestock	550	1.4	Maputo	Zimbabwe	Bentonite	120	0.6	Zimbabwe	Maputo

Export					Import				
Containers	21	0.1	Maputo	Zimbabwe					
General	54	0.1	Maputo	Zimbabwe					
Total	**38289**	100.0			**Total**	**19783**	100.0		

Source: CFM 2000

Attract major industries and establish Free Industrial/Trade Zones

Mozambique has set a major socio-economic move in the second half of the nineties by attracting an aluminum plant to establish in Mozambique. In May 1998 MOZAL – an international consortium consisting of BHP Biliton (47% of the shares), Mitsubishi Corporation Japan (25% of the shares), the South African Industrial Development Corporation (24% of the shares) and the Government of Mozambique (4% of the shares) – started its construction works 16 kilometers west of Maputo to establish a major aluminum plant with a capacity of 253,000 tons of aluminum per year. The investment was 1.34 billion US dollars. In December 2000 the production could start. In June 2001 an expansion was approved and project MOZAL 2 could be implemented to double its output capacity to 506,000 tons aluminum per year. MOZAL 2 was finalized in August 2003, seven months ahead of schedule.

MOZAL Logistics

MOZAL has a dedicated terminal in Matola for importing raw materials – 600,000 tons of alumina coming from Western Australia for the production of 250,000 tons of aluminum – and exporting aluminum. This terminal is managed by SRMC Strang Rennies Moçambique Consortium Ltd.

The terminal has two silos with a capacity of 45,000 tons of alumina each. Every month two shipments of 40,000 tons of alumina are delivering the raw materials for the plant. Transport to the plant takes place in dedicated 30 ton tanker trucks designed and built in Australia.

MOZAL uses two grades of coke for the production of anodes. The coke is stored in two 11,000 tons silos. The coke comes from two different sources in the US About 1 11,000 tons shipment is required every three weeks. A new ship unloader is installed with a capacity to transfer 300 tons of coke per hour onto the conveyor belt system. The same ship unloader is also designed to unload alumina at the nominal rate of 500 tons per hour.

The first shipment of liquid pitch was delivered onto the 12,000 tons storage facility in April 2003. BHP Biliton has chartered a ship to bring 6,000 ton parcel loads from Chiba, Japan,

which calls in at Maputo every two months. A dedicated tanker trailer with a capacity of 30 tons has to transport pitch five times per day to the plant to feed the production of aluminum.

Aluminum ingots are stacked into one-ton bundles at the Cast house before they are loaded and transported to the Matola export yard. Each 24-ton load received at the harbor facility is strapped and stored in secure super packs ready for loading. Most of the metal is exported on specially designed ships fitted with overhead gantry cranes to minimize loading times. Two 22,000 ton shipments will be required every month to manage the smelter output once the plant is in full operation.

The establishment of MOZAL resulted in the coming of different suppliers in the nearby Beluluane Industrial Park contributing to the creation of an export-led industrial base in Maputo. One of these Mozambique-owned suppliers has developed to the point where it has become an exporter to MOZAL's sister company in South Africa. It has secured a contract of 2 million US dollars to supply engineered assemblies for the expansion of the Hillside aluminum smelter in Richards Bay. The Beluluane Industrial Park, known as Beluzone, is a 660 ha park in which 80 percent of the land is designated as a free trade zone. The area is being developed by the Mozambique Investment Promotion Centre and Chiefton, an Australian facilities management company.

Improvement business climate

To facilitate trade and transport it is not sufficient to improve infrastructure. It is also necessary to reduce red tape, bureaucracy and corruption. The many interventions that are taking place simultaneously in the Maputo Development Corridor definitely have a positive impact on trade and transport facilitation in this specific geographical region. The situation is gradually changing to the better, but it is important to disseminate the positive developments in order to attract new investments, which will in turn put even more pressure to reduce still existing red tape, bureaucracy and corruption further.

MCLI – Maputo Corridor Logistics Initiative

This was one of the reasons why MCLI – Maputo Corridor Logistics Initiative - was founded in March 2004. MCLI is a group of infrastructure investors, service providers and users, focused on the promotion and further development of the Maputo Corridor. It is incorporated in South Africa as a membership. Members are drawn from South Africa and Mozambique and co-operate closely with organized business, engage with relevant authorities, and represent the combined views of all users of the Corridor and all parties involved in the provision of services in the Corridor.

The following have been identified as areas where much work is still needed:

- Continuous improvement of border procedures and operational hours.

- Scope and competitiveness of transport services must be increased: additional capacity, higher service levels and competitive rates for road, rail, port, terminals and shipping lines.
- Information services must be put in place and enhanced continually.
- The promotion of investment zones must be coordinated and accelerated.

The initial strategic focus of MCLI is to engage both South African and Mozambican Governments to reinforce the public-private partnerships in the area of logistics, to ensure that the Maputo Corridor is the first choice for regional importers and exporters alike.

Although MCLI is an organization with very few permanent staff (3), its impact seems to be enormous. In the short period of time it has achieved to present and provide a platform for discussion among the main stakeholders of the Maputo Corridor. MCLI is considered a serious partner by large South African exporters, South African authorities, Spoornet, port authorities, Mozambican Government, Mozambican companies, etc and fulfills a bridge function between various stakeholders in the logistic chain.

Its activities merit support to increase its activities and develop two new areas:

- Set-up and manage a system of real-time information services for trade, customs and transport in the Maputo Corridor.
- To monitor performance of trade, customs and transport and publicly disseminate results.

9.3 The Beira Corridor and the Sena Line

The Port of Beira is the natural freight port for Zimbabwe, but can also play an important socio-economic role for Malawi, Zambia, Botswana and Congo. Nowadays the land connection with Malawi exists only by road; the railway connection is waiting for rehabilitation. Since 1998 the Port of Beira is managed by Cornelder Mozambique with 70 percent of the shares in the hands of Cornelder Holding and 30 percent in the hands of Mozambique Railways. The Multi Purpose Container Terminal has a capacity of 100,000 TEU per year, but used in 2001 only 30 percent of its capacity. The terminal has a storage place of 200,000 m2 for 3,117 TEU's and a bonded transit warehouse of 8,400 m2. The General Cargo Terminal has a capacity of 2.3 million tons with five covered warehouses of 15,000 m2 and 12,000 m2 of open space.

In 1995 the Beira Corridor still transported more than 1 million tons by rail between Beira and Machipanda. In 2000 the total volume was reduced to 743,300 tons, but has recovered and will reach in 2004 approximately 900,000 – 1,000,000 tons again.

Table 36 *International Traffic Beira-Zimbabwe 2000*

Export					**Import**				
Commodity	**m/tons**	**%**	**Origin**	**Dest.**	**Commodity**	**m/tons**	**%**	**Origin**	**Dest.**
Granite	98900	18.3	Zimbabwe	Beira	Rice	15100	7.4	Beira	Zimbabwe
Containers	145300	26.9	Zimbabwe	Beira	Fertilizer	71300	35.1	Beira	Zimbabwe
Ferro Chrome	12000	2.2	Zimbabwe	Beira	Maize			Beira	Zimbabwe
Steel	93700	17.3	Zimbabwe	Beira	General	45300	22.3	Beira	Zimbabwe
Copper	2200	0.4	Zimbabwe	Beira	Containers MT	32000	15.7	Beira	Zimbabwe
Coal	600	0.1	Zimbabwe	Beira	Containers	25400	12.5	Beira	Zimbabwe
Wood	800	0.1	Zimbabwe	Beira	Wheat	14100	6.9	Beira	Zimbabwe
General	187600	34.7	Zimbabwe	Beira					
Total	**541100**	100.0			**Total**	**203200**	100.0		

Source: CFM 2000

The main cause was the instability of the Zimbabwean regime. The volume of road transport using the Beira Corridor to Zimbabwe is estimated at 400,000 tons per year.

Beira is actually still waiting for a mega project like MOZAL in Maputo for its spread effects over other sectors of the economy. The proposed iron and steel plant in Beira is still in discussion. In the meantime the hope is focused on the development of the agricultural zones of Manica (6 million ha) and Sofala (3.5 million ha).

In 2004 the Government of Mozambique has selected RITES/IRCON as the preferred bidder for the rehabilitation and operation of the Beira Railway System comprising the Sena and Machipanda lines. The concession is for 25 years and the fees comprise: an entry fee of 2 million US dollars; an annual fixed fee of 1 million US dollars from year 11 to 25; and an annual variable fee assessed as 3.0 percent of the company's gross revenue for traffic up to 300 million net-tonkm and 5 percent between 300 million and 1 billion net tonkm and 7.5 percent for traffic over 1 billion net tonkm.

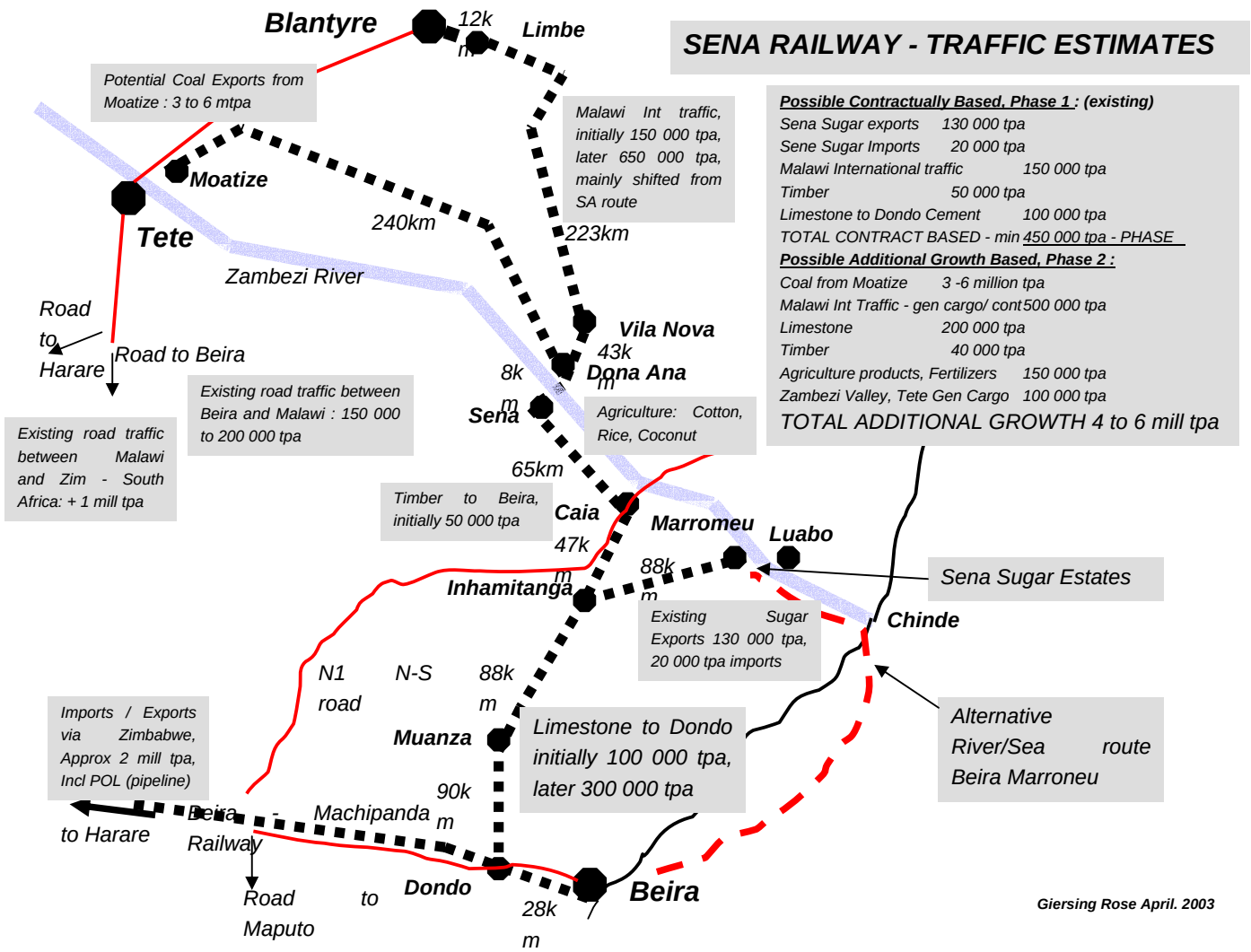
In 1981 the Sena Line recorded a volume of 1,893,000 tons:

Coal	600,000 tons
Sugar	120,000 tons
Limestone	300,000 tons
Fertilizers	75,000 tons
Malawi International Trade	500,000 tons
Other	298,000 tons

A study from Giersing Rose in December 2001 points out that the total volume of traffic which could be contractually bound to a rehabilitated Sena Line could be of the order of 450,000 tons per year without taking into account coal from Moatize and only 100,000 tons of limestone from Muanza.

Plans are underway to concession the Moatize coalmines to the private sector, at which time the traffic is expected to grow rapidly. Much interest has already been raised among the private sector for this concession.

A full operation of the Beira Corridor may attract another 4-6 million tons of freight as the forecast of Giersing Rose from 2003 shows.


SENA RAILWAY - TRAFFIC ESTIMATES
Possible Contractually Based, Phase 1 : (existing)
Sena Sugar exports 130 000 tpa
Sene Sugar Imports 20 000 tpa
Malawi International traffic 150 000 tpa
Timber 50 000 tpa
Limestone to Dondo Cement 100 000 tpa
TOTAL CONTRACT BASED - min 450 000 tpa - PHASE
Possible Additional Growth Based, Phase 2 :
Coal from Moatize 3 -6 million tpa
Malawi Int Traffic - gen cargo/ cont 500 000 tpa
Limestone 200 000 tpa
Timber 40 000 tpa
Agriculture products, Fertilizers 150 000 tpa
Zambezi Valley, Tete Gen Cargo 100 000 tpa
TOTAL ADDITIONAL GROWTH 4 to 6 mill tpa
Blantyre
12km
Limbe
Potential Coal Exports from Moatize : 3 to 6 mtpa
Malawi Int traffic, initially 150 000 tpa, later 650 000 tpa, mainly shifted from SA route
Moatize
Tete
240km
223km
Zambezi River
Road to Harare
Road to Beira
Vila Nova
43km
Dona Ana
8km
Sena
Existing road traffic between Beira and Malawi : 150 000 to 200 000 tpa
Agriculture: Cotton, Rice, Coconut
Existing road traffic between Malawi and Zim - South Africa: + 1 mill tpa
65km
Timber to Beira, initially 50 000 tpa
Caia
47km
Marromeu
Luabo
88km
Sena Sugar Estates
Inhamitanga
Existing Sugar Exports 130 000 tpa, 20 000 tpa imports
Chinde
N1 road
N-S
88km
Imports / Exports via Zimbabwe, Approx 2 mill tpa, Incl POL (pipeline)
Muanza
Limestone to Dondo initially 100 000 tpa, later 300 000 tpa
Alternative River/Sea route Beira Marroneu
90km
Beira - Machipanda Railway
to Harare
Road to Maputo
Dondo
28km
Beira
Giersing Rose April. 2003

9.4 The Nacala Corridor

The Nacala Corridor is not operating yet due to internal problems within the concession holder Corridor for the Development of the North (CDN). CDN consists of the Railroad Development Corporation from the US, Edlow resources (a Bermuda-based investment fund), a Malawian partner through CEAR - concession holder of Malawian Railways - , Manica Freight Services Mozambique, a number of smaller local investors in Mozambique and CFM. The Malawian part, however, wanted to increase its share after the completion of the concession agreement among the main partners causing delays in the ratification of the concession agreement. It is unlikely that this consortium will start its operation and the launching of a new tender seems to be inevitable.

The Port of Nacala is considered to be one the best deep sea ports on the Indian Ocean not requiring any dredging activities. Its hinterland, Malawi in particular, would benefit by a well functioning rail connection between Nacala and Malawi. Traffic volumes are very low as Table 37 shows.

Table 37 *International Traffic Nacala-Malawi 2000*

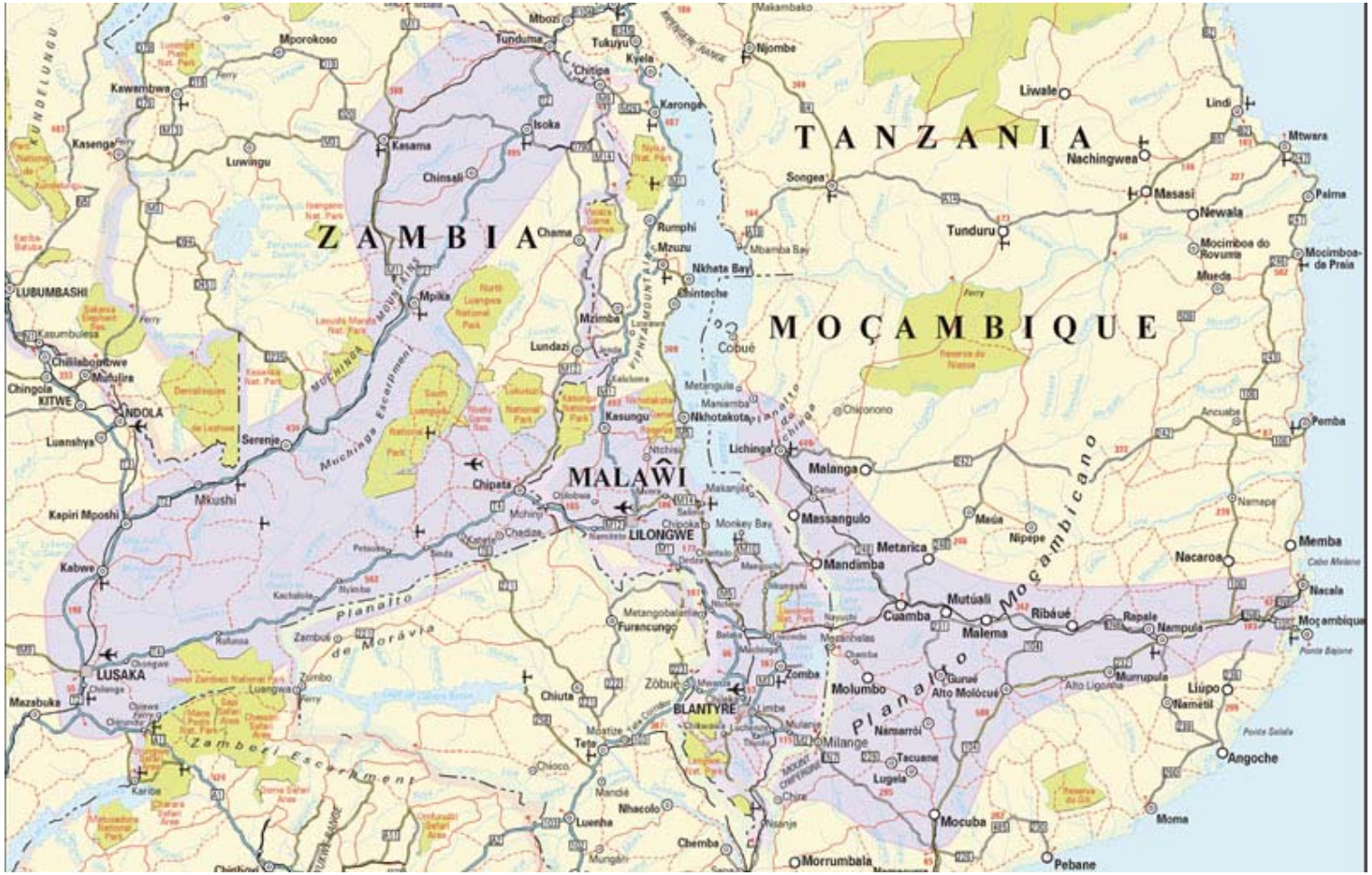
Export					**Import**				
Commodity	**m/tons**	**%**	**Origin**	**Dest.**	**Commodity**	**m/tons**	**%**	**Origin**	**Dest.**
Empty Containers	200	0.4	Malawi	Nacala	General Cargo	7000	6.1	Nacala	Malawi
Containers	1500	2.7	Malawi	Nacala	Containers	43600	37.8	Nacala	Malawi
Tobacco	21200	38.0	Malawi	Nacala	Palm Oil	8400	7.3	Nacala	Malawi
Sugar	10800	19.4	Malawi	Nacala	Maize	6900	6.0	Nacala	Malawi
Tea	1700	3.0	Malawi	Nacala	Soya Oil	2700	2.3	Nacala	Malawi
Peas	6000	10.8	Malawi	Nacala	Petrol	27000	23.4	Nacala	Malawi
Potatoes	1300	2.3	Malawi	Nacala	Tobacco	1500	1.3	Nacala	Malawi
General cargo	13100	23.5	Malawi	Nacala	Fertilizer	7600	6.6	Nacala	Malawi
					Wheat	7400	6.4	Nacala	Malawi
					Salt	3100	2.7	Nacala	Malawi
Total	**55800**	100.0			**Total**	**115200**	100.0		

Source: CFM 2000

Domestic traffic through the Port of Nacala in 2000-2001 was 204,900 tons and 158,800 tons per year, respectively according to statistics of CFM-North.

SATCC is more optimistic concerning the port statistics for Nacala and mention a total of 746,000 tons in 2001.

Operations on the this railway line are very limited due to the fact that the 77 km section from Cuamba to Entre Lagos is in poor condition. Shortage of locomotives and slack operating procedures on Mozambican side and frequent washaways on lines in Malawi have affected service delivery and created a negative customer perception of the route. Of CFM-North's 14


TANZANIA
ZAMBIA
MOÇAMBIQUE
MALAWI
LUSAKA
LILONGWE
BLANTYRE
LUBUMBASHI
NDOLA
KITWE
Tunduma
Mbozi
Tukuyu
Kyela
Chitipa
Karonga
Nijombe
Makambako
Liwale
Lindi
Mtwara
Nachingwea
Masasi
Newala
Palma
Songea
Tunduru
Mocimboa do Rovuma
Mocimboa-da Praia
Mueda
Pemba
Ancuabe
Namapa
Memba
Nacala
Nacaroa
Moçambique
Ponta Bajone
Ponta Sabala
Angoche
Moma
Pebane
Mocuba
Morrumbala
Milange
Gurué
Alto Molócué
Namarrói
Tacuane
Lugela
Murrupula
Liúpo
Namétil
Alto Ligonha
Nampula
Rapale
Ribáué
Malema
Mutúali
Cuamba
Metarica
Nipepe
Maúa
Mandimba
Massangulo
Molumbo
Zomba
Zóbue
Chiuta
Tete
Mazabuka
Kariba
Luenha
Nhacolo
Chemba
Mandié
Chioco
Mozinho
Zambezi Escarpment
Planalto de Morávia
Planalto Moçambicano
Planalto do Lichinga
Mchinga Escarpment
Mchinga Mountains
Fipa Mountains
Kundelungu
Luwingu
Kasama
Chinsali
Isoka
Mpika
Mporokoso
Kawambwa
Kasenga
Chama
Mzimba
Mzuzu
Rumphi
Nkhata Bay
Chinteche
Cobué
Lundazi
Kasungu
Nkhotakota
Lichinga
Malanga
Chipata
Mchinji
Chadiza
Kapiri Mposhi
Mkushi
Serenje
Kabwe
Chingola
Chililabombwe
Mufulira
Luanshya
Kasumbulesa
Kafue
Chongwe
Luangwa
Zumbo
Zambeze
Furancungo
Metangobalame
Mozinhelas
Chiuta
Tete
Chioco
Mandié
Nhacolo
Luenha
Chemba
Mungari
Chiromo
Nsanje
Mozinhelas
Chiuta
Mozinho
Lake Chilwa
Chikwawa
Lichenya
Mulanje
Mount Chiperone
Limbe
Chiradzulu
Zomba
Monkey Bay
Salima
Nkhotakota
Makanjila
Mwanza
Nchisi
Ntcheu
Dedza
Mangochi
Balaka
Machinga
Liwonde
Chiponono
Ancuabe
Metangula
Maniamba
Lake Malawi
Lake Chilwa
Lake Chiuta
Lake Chirwa
Lake Malombe
Lake Chiwondo

mainline diesel locomotives, only eight are operational and some not in a good condition. Of the 965 revenue-earning freight wagons, only 546 are serviceable, while at a minimum 80-85 percent should be operational.

Nacala should improve its port facilities, cargo-handling equipment and management to an international standard. Together with an efficiently operating rail connection with Malawi, Malawi, Zambia and Congo would definitely make more intensive use of the Nacala Corridor. Nacala has even the potential to develop into a mini-hub port for the Comoros Islands (Mayotte, Moroni) and the northern ports of Madagascar, which trades are currently being handled by various feeder services from Durban, Dar-es-Salaam and Mombasa.

Discussions are underway with the Ministry of Defense for full commercial exploitation of the airport of Nacala.

10 CONCLUSIONS AND ACTION PLAN

10.1 Main findings and identified problems

The main findings and identified problems in the field of trade and transport are:

High costs for trade and transport
The overall costs for trade and transport are excessively high. The road tariffs average 0.08 US dollars per tonkm; the railway tariffs 0.05 US dollars, which twice as high as the rate prevailing in efficiently-run railways. This is mainly due to widely unbalanced trade flows, inefficient operation of the service providers and still existing red tape and administrative bureaucracy.

Inadequate customs facilities, lack of harmonization of customs procedures with neighboring countries and lack of coordination among inspections at border crossings
The main cause of the delays at border crossings is the lack of border facilities, modern information and communication technology and banking facilities. The restricted opening hours of the borders do not permit and efficient flow of commodities and passengers. The Transport Information Management System is not in all offices installed and operational. Electronic payment at borders is still not possible. Customs lack modern premises and adequate equipment to facilitate controlling and clearance procedures. The lack of clearance facilities is causing unnecessary delays.

Customs procedures are often changing. Besides, customs rules are being interpreted in many different ways and there is evidence that the procedures themselves are not full comprehended by those who have to administer it.

Application of modern transit procedures are largely absent including application of the transit guarantee system.

There is lack of cooperation between Customs, other border agencies, transport authorities and law enforcement authorities still causing long waiting times at the borders causing extra costs for the transport companies and the shippers. The situation, however, at border with South Africa is improving.

Transparency of costs, timing and access to information
There is lack of transparency of costs and procedures related with transport and trade. These procedures are often changing in time as well without adequately informing the respective stakeholders.

Poor transport infrastructure and transport performance
The conditions of the rail network in Mozambique need improvement. There is a shortage in handling and storage facilities in ports. International shippers are also in need of high standard terminals and bonded warehousing facilities. Absence is Mozambique of these facilities leads to delays.

The Mozambican transport and forwarding sector services are often below standard, which makes it difficult for them to compete with foreign companies. Smaller forwarders often lack international experience and the sector has not yet grown mature. This leads to forwarding companies that do not take their responsibility and step out as soon as cargoes are lost or damaged. This is also possible due to a poor legal framework for forwarding. International standards are not yet incorporated and the sector is hardly organized.

Import duties on tires and spare parts for trucks and buses are too high.

Clearing agents need to enhance their level of professionalism.

Lack of adequate transport legislation
Transport legislation does not reflect the new socio-economic reality in Mozambique and is largely still based on old values causing problems in control and enforcement.

Excessive administrative business regulations
Mozambique applies excessive administrative regulations for establishing and operating a company: company registration is time-consuming and costly; administrative procedures are costly; application of the rules of origin is not always clear; import exemption authorization is too time-consuming; reimbursement of VAT takes too long; labor legislation is too rigid.

Lack of adoption, implementation and enforcement of international agreements
Several international agreements have been developed to facilitate transport and trade and to promote seamless transit traffic: regional cooperation agreements, multilateral conventions and bilateral arrangements. However, implementation and proper enforcement are often lacking.

10.2 Implementation strategy

Modal Integration
Modal integration is a prerequisite for an efficient and effective logistic chain reducing time and costs of transport and facilitating trade and transport.

Free market access and liberalization of transport and terminal operators are important conditions for efficient transport and terminal operations. This process is well underway in Mozambique with the concessioning of ports, railways and terminals. Investments in dry ports, terminals and basic transport infrastructure are needed to increase its quality and removing the

present constraints. Private capital should be attracted to participate in these required investments.

There is a growing market for providers of integrated logistic services (transport, warehousing, document processing, payment administration, packaging, assembling, order management, etc.). The transit traffic could be stimulated by value-added service providers. It is necessary to introduce a liberalization policy for Multimodal Transport Operators, which also should obtain a legal status.

Trade, transport and transit charges and tariffs must be optimized and should be based on actual costs and no surcharge should be allowed. Administration should be done in an efficient and effective way. Charges and tariffs should be made transparent and public.

Information Flow Integration

Integration of the information flows accompanying flows of transport and trade may contribute to increasing the efficiency of movements of goods, services and persons. As such it constitutes an important component of a trade and transport facilitation strategy.

The information flow integration strategy consists of the following elements:

a) Simplifying and standardizing border-related documentation requirements with neighboring countries (no duplication of international/national documentation) for all controlling government entities.

b) Documentation must be unified maximally.

c) Mutual recognition of neighboring countries documents.
On the basis of bilateral or multilateral agreements governmental bodies of the countries have to recognize the documents, issued by a second country. As an example can be considered the recognizing of the phyto-sanitary and veterinarian certificates when the goods supplied by the certificates issued in neighbor country don't undertake additional phyto and veterinarian inspecting on the border.

d) Acceptance of pre-arrival declaration/data for processing purposes.
A system of the pre-arrival declaration should be introduced, which allows to organize and systemize the process in the better way by electronically connecting customs with trades and transport operators. In this case attention will be given to the introduction of risk management and selectivity methods for the controlling by the customs.

e) Data exchange among customs and other government agencies.
Data exchange between customs and other governmental bodies must be organized in such a way, that the exchanged information is sufficient to comply with the legal and regulatory.

f) Advance data exchange between controlling government entities and transport operators.
There is also need for advance data exchange between controlling government entities and transport operators (web sites, border crossing manuals, shields on the check

points) with full information on tariffs, procedures and necessary documents for border crossing.

g) Timely and transparent publication of controlling agency requirements.

h) Selected information sharing with neighboring countries.
All necessary information and demands of the controlling entities must be attainable, and when it is based on IT technologies, it will be attainable also for neighbor countries. Besides on the basis of bilateral agreements between the customs of countries volumes and form of the data exchange, also updating of such data must be regulated.

Integrated Border Management and Corridor Management

The process of modernization, simplification, further promotion of international harmonization of border crossing procedures and increasing transparency of rules and regulations is an important component of a strategy, which focuses on trade and transport facilitation.

The simplification of border crossings implies both a revision of the individual legal and administrative requirements for traded commodities and transported goods, services and persons from the perspective of increasing effectivity and efficiency as well as a more intense cooperation among customs and other government agencies interacting with trade and transport. The simplification of border crossings may lead in last instance to one-stop processing at borders and clearance through delegation of responsibilities among border agencies. Investments will be needed to upgrade the infrastructure at the border crossings.

Other measures as pre-arrival processing and advance clearance; controls on the basis of risk management and selectivity, balancing security and facilitation requirements, at border and in transit; removal of internal checkpoints; and promotion of inland clearance facilities also lead to more effective and efficient management of border crossings.

Also the international harmonization of border crossing procedures with neighboring countries, which implies structural cooperation with border agencies of neighboring countries, such as the initiatives put forward by SADC constitutes an important element in the strategy. Results of this harmonization process may be officialized in bilateral or multilateral trade and transport agreements between countries. The final result could be the establishment of joint border facilities for which already plans exist for the border with South Africa at Ressano-Garcia/Nkomatipoort. Mozambique is no longer member of COMESA, just like South Africa, but all its other neighboring countries are. COMESA is striving for further harmonization of border crossing and customs procedures and Mozambique is considering becoming member of COMESA again.

Increasing transparency of border crossing procedures and fast and efficient dissemination of changes in these procedures are necessary for the operation of an efficient border management system. Monitoring through measuring of performance (cost, time, reliability, security, flexibility) is an important tool to achieve this objective. Therefore, it is important to involve the shippers, forwarders and transport operators in this monitoring process. For the Maputo

Corridor, MCLI - the Maputo Development Logistics Initiative- could play an important role in this respect.

10.3 Action Plan

Legal framework

- International agreements like the SADC Protocol on Transport, Communications and Meteorology and the SADC Trade Protocol should be transposed into national legislation to obtain legal enforcement authority.

- New transport legislation should be developed. New road transport legislation should regulate road freight transport and road passenger transport in different acts. Quantitative restrictions to the access to market for road transport operators should be eliminated. New qualitative criteria for road transport operators as financial standing and professional competence should be introduced. Transport tariffs and prices should be liberalized. A new Railway Code should be elaborated as well as new legislation on maritime transport and coastal shipping and aviation.

- A legal base for co-ordination and streamlining of border regulations should be created and the mandates of the different border agencies and controlling authorities should be clearly defined and implemented.

- A legal base for combating corruption should be adjusted bypassing the necessity to apply criminal law.

- Labor legislation should be made more flexible and business-friendly by facilitating the hiring of foreign managers; allowing working overtime and in shifts; and making retrenchment of labor less costly.

Institutional/administrative capacity

- Clearly define the regulatory role and function of governmental transport institutions and increase the capacity of its staff.

- Coordinate and streamline the application of all border regulations among controlling agencies to minimize negative impacts on traders and transporters, while implementing their responsibilities and duties; and monitor actual border and clearance performance on a regular basis.

- Create capacity for electronic data exchange of customs and other border agencies and implement the Trade Information Management System properly.

- Agencies involved in border crossings should co-ordinate among themselves and with the respective authorities of the neighboring countries aiming at facilitating border clearance procedures. The format of trade and transport documents should be further harmonized with international standards (UN, SADC, COMESA).

- Promote the dialogue between the private sector and the public sector on trade and transport facilitation issues and establish a National Working Group on Trade Facilitation with all important stakeholders involved.

- Set-up and manage a system to monitor the performance of the trade and transport corridors, with tracking and performance indicators involving all stakeholders in the process, including the private sector.

- The transit guarantee system should be made operational.

Procedures

- Customs procedures should be modernized, simplified and harmonized with those from other agencies in Mozambique and neighboring countries. The concepts of integrated border management and one stop processing are aimed at.

- Adapt opening hours at borders to customers needs and harmonize with neighboring countries.

- Facilitate Direct Trade Input and advance clearance.

- Reduce import duties on tires and spare parts of commercial vehicles and buses.

- Facilitate electronic payment of tariffs, taxes and duties.

- All inspection procedures should be carried out more efficiently and be based on risk assessment and selectivity.

- Rules and regulations should be enforcement properly.

- Changes in Customs rules and procedures (including valuation methods) should timely be made transparent and public.

- Export inspections should be better targeted the number of inspections reduced.

- Organize (re)training of Customs officials on continuous basis.

- Facilitate establishing and operating businesses by simplifying registration and other administrative procedures; reducing inspections; making import exemption authorization less time-consuming; shorten reimbursement period for VAT; etc.

Infrastructure

- Banking and financing facilities at borders should be created to facilitate trade and transport and shorten waiting times.

- Facilitate investments in intermodal infrastructure and (bonded) warehouses.

- Improved border facilities should be created to accommodate efficient trade and transport of goods, passengers and services.

Industry competitiveness

- Training in transport and logistics management, financial management, marketing and legislation and regulations should be organized for providers of logistics services, road transport operators, forwarders and clearing agents.

Project Proposals for Implementing the Trade and Transport Facilitation Strategy

Reference	Description activity	Implementing agency	Due date	Objective and expected outcome	Resources requires
1	Transport Reform Program	Ministry of Communications	2005-2008	• Elaborate new transport legislation: road freight transport act; road passenger transport act; Railway Code; Act on Maritime and Coastal Shipping; Aviation Act; etc. • Further develop regulatory framework for transport conducive for the development of trade. • Strengthen implementation and control and information capacity of the Ministry of Transport and Communications. • Set-up transport information system to monitor developments of the sector. • Further develop technical capacity of staff of transport institutions.	

Reference	Description activity	Implementing agency	Due date	Objective and expected outcome	Resources requires
2	Border Agencies Reform Program	Border agencies	2005-2008	• Simplify procedures for consolidated shipment. • Further develop selective control rules at all locations. • Establish bilateral and multilateral committees to harmonize control mechanisms with neighboring countries. • Contribute to development of inter-border agency co-operation. • Co-operate in developing single processing and payment window for all agencies. • Align border agency opening hours to customer needs. • Improve human resources management in border agencies. • Further develop performance monitoring. • Strengthen transparency and disseminate rules and regulations on a permanent basis.	

Reference	Description activity	Implementing agency	Due date	Objective and expected outcome	Resources requires
3	Strengthen the Public-Private Dialogue in Transport and Trade Facilitation, Transit and Border Crossings		2005-2008	• Monitor performance transport, transit and border crossings • Define an Ombudsman (appeal) mechanism for complaints and infringements of rules and regulations. • Conduct regular independent audits.	
4	Upgrading of transport, intermodal and cross border infrastructure		2005-2008	• Define comprehensive transport infrastructure needs assessment and development strategy. • Further develop public-private partnerships for financing infrastructure investments. • Promote and facilitate the building and operation of (dry) ports and intermodal terminals. • Improve border crossing infrastructure.	
5	Training of transport operators, providers of logistics services, forwarders and terminal operators		2005-2006	• Training Certificate of Professional Competence for Transport Operators. • Training of Logistic Managers in Supply Chain Management. • Training FIATA of Freight Forwarders. • Training of Terminal Operators.	

ANNEX 1 REFERENCES AND INFORMATION SOURCES

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