DRAFT

VOLUME 2

Chapter 3
Transport Sector

MALAWI

Diagnostic Trade Integration Study

December 20, 2002

ACRONYMS

ADL	Airport Development Limited
AIDS	Acquired Immunodeficiency Virus
CEARC	Central East African Railways Company Ltd.
COMESA	Common Market for Eastern and Southern Africa
DFID	Department for International Development
DRIMP	District Roads Improvement and Maintenance Project
EIA	Environmental Impact Assessment
EU	European Union
GDP	Gross Domestic Product
GoM	Government of Malawi
HIPC	Highly Indebted Poor Country
HIV	Human Immunodeficiency Virus
IMF	International Monetary Fund
Kw	Kwacha
MalTIS	Malawi Traffic Information System
MPRS	Malawi Poverty Reduction Strategy
MR	Malawi Railways
MRTTP	Malawi Rural Travel and Transport Program
MTEF	Medium Term Expenditure Framework
NRA	National Road Authority
PIL	Petroleum Importers Limited
PRSP	Poverty Reduction Strategy Paper
ROMARP	Road Maintenance and Rehabilitation Project
RTTP	Rural Travel and Transport Policy
SADC	South African Development Community
SATCC	Southern African Transport Coordinating Committee

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TRANSPORT SECTOR

3.1 INTRODUCTION

3.1.1 Purpose and Objectives this Study

The primary purpose of this study was to analyze the strengths and weaknesses of the transport sector in Malawi. This information is to be used in the Integrated Framework for Technical Assistance for Trade Development in Least Developed Countries with the prime objective of integrating Malawi into the World Trading System.

3.1.2 Methodology

As part of the Integrated Framework mission team, the consultant conducted interviews with several public and private sector organizations and drew on work carried out in previous studies undertaken by the consultant and his associates in other consulting initiatives. This task was carried out in conjunction with other members of the team when appropriate especially in the areas of revenue mobilization. This involved interviewing a large cross section of personnel in the transport sector and other related industries. This work represents a first draft. The consultant wishes to acknowledge all those who assisted in the presentation of the draft and to those whose work contributed to the contents of this report.

3.1.3 Purpose and Objectives of this Review

Poverty alleviation has become the prime focus of the Malawian Government and the donors. A poverty reduction strategy paper (PRSP) was finalized in February 2002. This PRSP is seen as a dynamic process subject to annual change in accordance with the development of the poverty reduction processes and their relative merits and demerits. The government budgetary expenditure programs are being redesigned to feed into the PRSP. The MTEF (Medium Term Expenditure Framework) is designed to align Government expenditure with the PRSP.

The transport sector is important to this PRSP process and is key to mainstreaming Malawi's trade regime into the global economy.

This study aims to provide a review of the current position in all modes in the sector and assist in developing ideas for how the IF can assist in mainstreaming trade into the Malawian PRSP and its broader international economic agenda.

3.2 MACROECONOMIC CONTEXT

3.2.1 Main Geographical Characteristics

Malawi is a land locked country with an area of 118,484 square kilometers. It is bordered by Tanzania to the north and east, Mozambique to the east, south and west, and Zambia to the west. The country lies on a plateau, generally between 750-1500 meters above sea level, and is cut through by numerous rivers. Geographically it is dominated by Lake Malawi which measures 570 km north to south and, with a surface area of 28,760 square kilometers, is the world's twelfth and Africa's third largest lake. The maximum habitable area is only 46,265 square kilometers.

Being landlocked, Malawi relies on its neighbors to maintain land based transport links with the outside world. The nearest port is Nacala in Mozambique, located approximately 610km away from the country's eastern boundary. The vast majority of Malawi's exports and imports are transported by rail to and from Nacala or by road to and from Beira in Mozambique, Dar-es-Salaam in Tanzania or Durban in South Africa. Transport costs to and from Malawi are high and whilst the rail and road links serving Malawi are adequate, there is room for improvement to reduce these high costs.

The country is land-locked. Infrastructure is poor, and the economy is dependent on its neighbors, especially Tanzania and Mozambique, as well as South Africa, for transport links to the sea. Instability in neighboring countries, like the civil war in Mozambique (especially from 1983 to 1987) and political intimidation in Zimbabwe (especially during 2000-01), therefore has direct economic consequences for Malawi. Access to telephones is poor: 3.5 telephones per thousand people, and Internet access is still limited.

3.2.2 Economic and Social Policy

Basic facts and figures

Malawi is the sixth poorest country in the world, the second poorest in Southern Africa (after Mozambique). Its Human Development Index ranking is very low: 161 out of 174 countries.

In the last population census of 1998, Malawi had a population of 9.934 million. The population is currently estimated at 10.8 million with a rural/urban split of 86 percent/14 percent. The population is unevenly distributed, reflecting the topography and history of the country as well as regional variations in economic development. The national density in 1998 was 105 persons per square kilometer. The population growth rate between the censuses of 1987 and 1998 averaged 2 percent per annum, but will be

falling now because of the effects of HIV/AIDS. Average life expectancy, which was 47 years in 1997, is also decreasing in the wake of the HIV/AIDS pandemic, which is presently estimated to infect 14 percent of the population aged between 15 and 49 years. Life expectancy at birth has declined to 42 years. Only about half of the population has access to clean drinking water and sanitation, and there are only 0.03 doctors for every thousand people.

If subsistence farming is taken into account, over 85 percent of the population is directly dependent on agriculture. Commercial agriculture accounts for around 35 percent of formal GDP, 50 percent of paid employment, 90 percent of exports (mainly tobacco, tea and sugar), and a significant proportion of the raw materials for domestic manufacturing. The manufacturing sector is small: about 15 percent of GDP. There are less than 50 large firms operating in the economy, most of which are either foreign owned/controlled or government owned/controlled. Most manufacturing output, predominantly agri-processing, textiles, clothing and footwear, is destined for the domestic market (although there has been significant growth in exports of textiles and garments, especially to South Africa under the bilateral free trade agreement). The sector is dependent on imports of physical capital, raw materials and fuel.

The country is burdened by an onerous foreign debt, amounting to nearly two and a half times total output over the period 1995-99. It is heavily dependent on foreign aid, which averaged about one quarter of GNP during the 1990s. At the end of 2000, Malawi qualified for some debt relief under the HIPC initiative.

In summary, the economy is vulnerable to severe external shocks to agriculture - world-price shocks and supply shocks (droughts or floods) - because what happens in the economy as a whole is closely linked with what happens in agriculture. The economy is also vulnerable to disruptions to its transport links with the rest of the world. It is heavily burdened with external debt, and it is struggling with a severe AIDS epidemic. The effect of most of these factors is evident when past performance is reviewed briefly.

Brief Economic History

In order to assess future prospects, it is necessary to have a perspective on past events. After independence in 1964, the economy grew rapidly, averaging real annual growth of 6 percent from 1964 to 1979. The main sources of growth were a sharp increase in the production of export crops by both smallholder and large-scale farmers, a rapid expansion of manufacturing by both private and public-sector investors, and high public investment in infrastructure, of which most was financed by foreign borrowing.

In common with many other developing countries dependent on exporting primary commodities other than oil, Malawi experienced recession and then recovery in the 1980s, averaging real annual growth of 1.4 percent over the decade (compared with a

real annual average of 6 percent for the period 1964-1979). In fact, as elsewhere, growth decelerated from 1975 as a result of a series of shocks to the world economy, and performance was particularly weak after commodity prices collapsed in the early 1980s. There were circumstances unique to Malawi which exacerbated the recession of the 1980s: the war in Mozambique, which closed the shortest route to the sea, raising transport costs substantially; the imposition of tighter import restrictions, which hampered development of the import-dependent manufacturing sector; and initial contraction under a structural adjustment program undertaken in 1981 as a condition of the rescheduling of external debt repayments which had become too onerous to honor.

During the 1990s, growth performance was very strong following liberalization under structural adjustment, although there were two severe droughts, which reduced output in 1992 and in 1994. Real annual average growth during the 1990s was about 5.5 percent. However, severe pressure on resources was caused by the inflow of refugees from Mozambique and a mounting health crisis caused by HIV / AIDS.

In summary, past growth has been driven by developments in commercial agriculture, which has fluctuated in response to international demand, domestic supply conditions and links with markets. Access to foreign capital was necessary for infrastructural and industrial development, but excessive borrowing pushed the economy towards an unsustainably high level of indebtedness. Economic policy is important, especially as it affects the rate of investment and external trade.

Economic Policy and Current Trends

Since 1995 Malawi has attempted to implement a cash budget, after running fiscal deficits which were, on average, more than twelve percent of GDP for at least two decades. The improvement seen in 1996 (where the deficit fell to 5.5 percent) follows deficit ratios of more than 25 percent in 1994 and 15 percent in 1995. It was not surprising that the rate of inflation was high, as the deficit had been accommodated by a rapid growth in the money supply. The large current-account deficit was only sustainable, because nearly 80 percent of imports were financed by aid during the 1990s. Even so, the (controlled) currency had been depreciating against the US dollar at an average annual rate of nearly 20 percent. The external debt-to-GDP ratio has continued to grow, and foreign exchange reserves have been consistently low. Part of the problem was that the economy has been subject to a range of shocks, including not only drought and floods but also the periodic withdrawal of aid flows in order to apply pressure for political liberalization. This was patently unsustainable.

A tightening of fiscal policy was necessary. Since 1997, there has been considerable progress in reducing the budget deficit-to-GDP ratio, which averaged 2.3 percent in 1997-99. Unfortunately, this has had no corresponding impact on bringing down the rate of inflation, as tighter fiscal policy coincided with allowing a free float of the

exchange rate. The 168 percent depreciation of 1997-99 fueled inflationary pressures. Domestic money growth accelerated, and a shift to positive real lending rates was unable to dampen down the excess demand for money. In spite of evidence of continuing macroeconomic disequilibrium, the economy has been growing faster than the rate of growth of the population, allowing an increase in *per capita* income. It is possible that the growth rate of an average of 3.5 percent a year in the early 1990s and twice that in 1995-99 (masking large swings year-on-year) was largely aid-financed government spending, which can only be maintained for as long as donors are willing to tolerate slippage in attaining macroeconomic or 'good governance' targets.

TABLE 3.1 KEY INDICATORS – MALAWI

	1980-89	1990-94	1995-99	2000[c]
Real GDP growth (%)	1.4	3.5	7.1[a]	2.5
GNP per capita (current US$)	171	203	238	n.a.
Budget deficit (% GDP)	-12.3	-11.1	-5.7	-2.4
Inflation (%)	16.8	23.2	27.4	29.6
Money supply growth (%)	18.3	31.1	39.5	34.0
Real lending rates	2.5	0.0	3.1	30.0
Depreciation against US$ (nominal)	-11.2	-18.6	-168.2[b]	-34.7
Exports plus imports (% GDP)	54.6	62.0	64.0	75.0
Current account (% GDP)	-9.0	-14.7	n.a.	-12.9
Aid (% imports)	55.9	79.2	38.3	n.a.
External debt (% GNP)	89.8	113.2	235.0	n.a.
Reserves (months of imports)	1.6	1.5	3.0	5.0

Notes: (a) The 1996-99 average was 5.1 percent; in 1995 real growth was 15.5 percent because of the recovery after the drought of 1994

(b) 1997-99; (c) estimates

Source: World Bank, International Monetary Fund

Other reforms in the last five years include the rejuvenation of the privatization program, and deeper liberalization of agriculture, of trade and of the financial sector, following which two new private banks and a stock exchange have been established. Lending rates are now positive, and Malawi has accepted IMF Article VIII, which means that all current-account transactions are free of exchange controls, although some capital controls remain. (Note that businesspeople still complain of delays in accessing foreign exchange for current transactions.)

The effects of the reforms on business has been mixed. The manufacturing sector has actually contracted, from 20 percent of GDP in 1990 to 15 percent currently. Large spreads between positive real lending rates and highly negative deposit rates place a significant interest burden on business. (Interest rates are expected to rise to 50 percent

in 2001-02 before they fall again.) Although the sharp depreciation of the Kwacha has been good for export earnings, on balance its effect has been to stifle private domestic investment, especially in industry, which depends on imports of capital equipment and intermediate inputs (which comprise 60 percent of total imports). In spite of some liberalization of foreign trade, the ratio of total trade to GDP has increased very little, indicating that the currency depreciation is offsetting the effect of tariff reduction.

The inability of the reforms to stimulate private investment is disappointing. Domestic resources for investment remain pitiful: the ratio of domestic savings to GDP averaged less than 5 percent during the 1990s and savings rates of less than 20 percent are generally felt to be too low for development. It is unlikely that an increase in borrowing rates will attract significantly more savings into the banks.

As a result, the economy remains critically dependent on foreign savings. However, these do not come in the form of direct investment, which is negligible, but in the form of aid, most of which is used to service Malawi's onerous foreign debt. During the second half of the 1990s, the external debt to GDP ratio averaged 235 percent. The government's external debt alone is 116 percent of GDP. Servicing this debt absorbs a quarter of export earnings. It is possible that even this worrying statistic paints a more optimistic picture than it should, as it applies to debt service actually paid, and may therefore conceal unpaid debt service and the building up of debt service arrears. It should also be pointed out that a debt service ratio of 20 percent plus is a tremendous burden. Few countries can actually pay 20 percent over an extended period, unless aid is provided specifically for this purpose. Even if foreign aid is available to pay foreign debt service - as it is in Malawi - using it for this purpose means that it is not available for other uses. An external debt service ratio above 10 percent can be argued to be a major constraint on development.

At the end of 2000 Malawi was declared eligible for external debt relief under the Highly Indebted Poor Country (HIPC) initiative of the IMF and the World Bank. Eligible countries qualify for debt relief in two stages. First a country has to establish a 'satisfactory track record', normally of three years, under IMF and World Bank programs. Thereafter, it must implement a 'full-fledged poverty reduction strategy'. During the second stage, the IMF and the World Bank provide interim relief provided that the economy continues to meet conditionality. At the end of this second stage, a 'floating completion point' is reached, and the remainder of the committed debt relief is granted. It appears, therefore, that the announced debt relief is some years in the future, and highly conditional. Moreover, the assumptions of debt sustainability by the IMF/World Bank may be too optimistic, and, even if they are, Malawi does not meet the threshold for sustainability because of the volatility of its export growth rate. This means that, even with the debt relief announced at the end of December, Malawi's debt is likely to continue to rise. This is even more likely, if the country continues to experience natural disasters and AIDS-related costs. Periodic suspension of aid flows in

response to corruption and other indications of 'bad governance' in Malawi act as a further source of negative external shocks.

The main factors contributing to high poverty levels in the country are:

- Low levels of education and limited education opportunities for large segments of the population. Illiteracy rates are very high.
- Ill health, worsened by the effects of the AIDS pandemic and insufficient access to health services.
- Lack of infrastructure, including limited access to markets.
- Lack of transport.
- Limited employment opportunities.
- Lack of access to credit.
- Infertility of soils caused by crop monoculture.
- High population density and resultant pressure on land.
- Unequal access to productive resources.

3.2.3 Public Finance

In 2000, the Government budget was US$529.4 million composed of US$316.9 million (17.3 percent of GDP) from the Government's own revenue and US$190.3 million from grants. The recurrent budget constituted about 63.8 percent of the total budget. The budget deficit excluding and including grants stood at 11.6 percent and 1.2 percent of GDP, respectively. The large deficit was due to structural weaknesses in the economy and poor macroeconomic and fiscal policies.

Coupled with weak macroeconomic and fiscal policies, Malawi has been reeling from a huge debt burden of up to a debt stock of over US$2 billion. In the year 2000 Malawi qualified for debt relief under the Highly Indebted Poor Countries (HIPC) program. As part of the fulfillment of the HIPC requirements, work on formulation of a Poverty Reduction Strategy began and is now in final stages. This poverty strategy would ensure that savings from debt payments should be earmarked for poverty-focused interventions. Key economic and social indicators are shown in Section 3.7.

TABLE 3.2 FINANCIAL INDICATORS

Item	1996	1997	1998	1999	2000
GDP (constant 1978 prices) (Kw million)	11,443.8	12,240.8	12,509.2	13,012.9	13,316.2
GDP real growth (%)	10.5	7.0	2.2	4.0	2.3
GDP (current market prices) (Kw million)	36,454.0	42,310.4	57,319.0	78,544.4	93,292.0
GDP per capita (current market prices) (KW)	3,837.3	4,407.3	5,848.9	7,854.4	8,987.9
Consumer price inflation (%)	37.6	9.2	29.8	44.9	29.6
Prime lending rate (%)	26.0	22.0	43.0	47.0	50.0
Manufacturing production index (1984=100)	120.2	116.3	104.3	98.0	93.1
Merchandise exports fob (US$ million)	483	539	539	447	n / a
Merchandise imports fob (US$ million)	624	783	579	673	n / a
Current account balance (US$ million)	-176	-263	-43	-151	n / a
Gross official reserves (US$ million)	218	155	258	244	224
Total external debt (US$ million)	2,156	2,259	2,479	2,589	2,706
External debt-service ratio	16.8	15.3	18.2	17.7	20.6
Exchange rate (av. Kw:US$)	15.3	16.5	31.1	44.2	59.1

Source: Reserve Bank of Malawi, Financial and Economic Review, 33(1), 2001
IMF, Malawi: Selected Issues and Statistical Appendix, 2001

3.3 MALAWI POVERTY REDUCTION STRATEGY

3.3.1 The Malawi Poverty Reduction Policies and Strategies

The overall goal of the Malawi Poverty Reduction Strategy is to achieve "sustainable poverty reduction through socio-economic and political empowerment of the poor". The general policy and strategy moves away from seeing the poor as helpless victims in need of handouts and passive recipients of trickle down growth. Instead, the poor are seen as masters of their own destinies. The Government and partners' role is to create the conditions whereby the poor can reduce their own poverty. In addition, the policy and strategy is based on:

- Action rather than words, where emphasis is on implementation;
- Participation of all stakeholders in the design, implementation and monitoring of programs;

- Comprehensiveness in the treatment of poverty where poverty reduction is not a side issue on part of the Government but is tackled by the whole Government and the budget; and
- Social, economic and political empowerment of the decentralized structures where local authorities will play a sustainable part in the implementation of the strategy.

3.3.2 Major Intervention Areas

The Poverty Reduction Strategy is particularly based on four major interventions also called pillars of the strategy. The four pillars are as follows:

i) Sustainable Pro-poor Growth
ii) Human Capital Development
iii) Improving the Lives of the Vulnerable
iv) Governance

3.3.3 MPRS Recommendations for the Transport Sector

The MPRS accords great importance to the transport sector especially the rural transport sub-sector. It has been recognized that rural infrastructure is highly deficient. Modernization of agriculture and the increase and improvement in micro, small-scale and medium enterprises depend on good passable roads. Rural roads also enable the rural poor to access goods and services outside their vicinities, especially markets. In the same vein, the MPRS recommends the following:

- Construction of new rural feeder roads and maintenance of existing rural roads as well as improvement of some main roads to ensure access between the rural areas and towns. In that regard, some equipment and institutional arrangements will be budgeted for and put in place to expedite and sustain the work. Waterways will be given serious consideration under the poverty reduction strategy.
- Promotion of rural transport where an environment conducive to the realization of increases in rural travel, both motorized and non-motorized will be created. In some situations, waterways are the only access routes to important centers of activity and feeder boats will be required.

3.4 DESCRIPTION OF TRANSPORTATION MODES

3.4.1 Road Sector

Road Network

More than 85 percent of Malawi's population lives in rural areas of varying topography and hence the majority of people and their goods travel over land by road. Road transport is thus the dominant mode of travel in the country, which has an extensive road network that reaches the most remote parts. The road network consists of around 15 450km of different types of designated roads and it is estimated that there is further ±10 000km of non-gazetted roads in Malawi (See Table 3.3).

TABLE 3.3 THE NATIONAL ROAD NETWORK IN MALAWI

Road class and type	Length (km)
Main / Secondary Roads	6 482,2
Tertiary Roads	4 120,9
District Roads	3 500,4
Urban Roads	1348,0
Total all roads	15 451,5

The road hierarchy is divided into main roads, secondary roads, tertiary roads, district roads or rural roads. The main roads, secondary roads and tertiary roads make up the primary road network that links major urban centers, towns and villages. These also include roads to neighboring countries. The district roads act as a feeder road network to the primary road network and are also community access roads.

The surfaced main roads that function as major national and international freight and passenger routes are generally in good to excellent condition with many of them having recently been upgraded or resurfaced. Most of the other main roads are unpaved gravel or earth surfaced and these roads are generally in poor condition. Some secondary and tertiary roads are also surfaced, but the vast majority of these roads are unsurfaced gravel or earth roads with conditions varying from good/excellent to impassable during the wet season. The road network inventory undertaken in September and October 2000 of a 50 percent (7 717km) sample of Malawi's road network reported that 70 percent of all surfaced roads are in good condition with only 12.5 percent of the gravel or earth roads in good condition.

TABLE 3.4 ROAD NETWORK INVENTORY AND CONDITION DATABASE

Surface type	Condition	Rural	Urban	Total	Percent
Paved	Good	1686.38	102.52	1788.90	70.1%
	Fair	561.72	48.78	610.51	23.9%
	Poor	123.05	31.05	154.10	6.0%
		2371.15	182.35	2553.51	33.1%
Unpaved	Good	632.66	13.00	645.86	12.5%
	Fair	2077.38	6.87	2084.25	40.4%
	Poor	2412.92	20.56	2433.48	47.1%
		5123.16	40.44	5163.59	66.9%
All Roads		7494.31	222.79	7717.10	100.0%

Urban/Rural	Condition	Paved	Unpaved	Total	Percent
Rural	Good	1686.38	632.86	2319.23	30.9%
	Fair	561.72	2077.38	2639.11	35.2%
	Poor	123.05	2412.92	2535.97	33.8%
		2371.15	5123.16	7494.31	97.1%
Urban	Good	102.52	13.00	115.52	51.9%
	Fair	48.78	6.87	55.66	25.0%
	Poor	31.05	20.56	51.61	23.2%
		182.35	40.44	222.79	2.9%
All Roads		2553.51	5163.59	7717.10	100.0%

Condition	All roads	Percent
Good	2434.76	31.6%
Fair	2694.76	34.9%
Poor	2587.58	33.5%
Total	7717.10	100.0%

Condition	Definition (Paved roads)	Definition (Unpaved roads)
Good	<3.0 IRI	<4.5 IRI
Fair	3.0-6.0 IRI	4-5-9.0 IRI
Poor	>6.0 IRI	>9.0 IRI

Source: NRA

A new diagnostic study on road conditions and a five-year upgrading strategy is due to commence in September 2002. It has been estimated further that 50 percent of the

designated gravel or earth surface roads are impassable during the wet season. Details of this survey are contained in Table 3.4.

All the district/rural roads are unpaved gravel or earth roads, most of which are in poor condition. They are virtually impassable during the wet season. The accessibility and mobility of the majority of Malawi's population is therefore significantly restricted during the wet season. There is 1km of road for every 424 people in Malawi compared to 1km of road for every 211 people in South Africa. Sixty percent of South Africa's population is urban compared to only 14 percent of Malawi's population, indicating the inadequacy of the rural road network in Malawi. This has a significant impact on the development of trade and commercialization.

The road network in urban centers is mostly surfaced and in average to good condition. Many of these roads have been upgraded recently. The outlying urban areas with bitumen roads are still in need of upgrading. Urban gravel roads are in need of upgrading.

The disparity which exists between the condition of the paved and unpaved networks and the urban and rural networks is attributed to past emphasis on capital investments in the paved network. With the inception of the NRA in 1998, there has been a vast improvement in the primary road, the district road and the urban road networks. Even with improvements in the rural road networks, general accessibility to the rural areas is still very poor. Mobility is essential for the growth of all forms of informal trade.

Traffic and Transportation

For the majority of the country's rural population the only means of transport is walking, head loading, bicycles and animal-drawn carts. Motorized private and public transport in the rural areas is virtually non-existent mainly due to the poor condition of the rural road network, particularly during the wet season. This hinders the movement of the cash crop economy and the informal trade sectors of Malawi.

For the majority of the urban population, walking and head loading are also one of the major forms of transport owing to the poor disposable income levels of many city dwellers. Bicycles, minibuses, taxis and buses make up the other main forms of urban transport.

Car availability in Malawi is very low at an estimated 19 vehicles per 1000 population, with the vast majority of these vehicles located in the urban areas. This is based on a registered vehicle fleet of 201 520, (of which 10 percent is owned by women), as of 30 September 2001 and an estimated 2001 population of 10 500 000 (of which 51 percent are women) based on the 1998 census results. Bicycle ownership in the rural areas is 424 bicycles per 1000 population compared to 307 bicycles per 1000 population in the urban areas of which 15 percent is owned by women. Animal drawn cart ownership of 56

carts per 1000 population in the rural areas is more than double the 25 carts per 1000 population in the urban areas. Women own less than 2 percent of these carts in both the rural and urban areas.

There is some traffic congestion along the primary road network outside of the urban areas. This congestion is usually localized and is caused by vehicles waiting to turn right, slow moving vehicles up steep grades, poor road surface conditions or pedestrians, cyclists and animal drawn carts in the roadway.

In the smaller towns, there is often congestion on the main road through the town throughout the day due to a combination of vehicles slowing down to turn, poor road surface conditions, pedestrians, cyclists and animal drawn carts in the roadway and street traders too close to the edge of the road. This is obviously exacerbated on market days.

Urban road development in Malawi is inadequate, with poor future planning which has led to:

- Congestion on the roads
- No pedestrian walkways
- No provision for cyclists
- Poor surface conditions
- Poor law enforcement
- Lack of enforcement of town planning regulations with regard to building layouts
- Lack of capacity at intersections
- No provision for the burgeoning minibus population
- Access positions and off-street parking requirements and minibuses stopping in the roadway to pick up or off load passengers
- Virtually no formal minibus and taxi ranks in the urban areas result in these public transport vehicles ranking along major roads often close to busy intersections
- Taxi and minibus ranks that have been constructed in the larger commercial centers are having a significant adverse impact on traffic flows along the major roads

With the exception of a few privately owned vehicles in the urban areas, vehicle occupancies both in the rural areas and the urban areas are generally quite high during peak periods. Minibuses, which are unsubsidized and highly profitable, tend to often carry more than their capacity on both long haul and short haul trips throughout the

country. Capacities of some subsidized rural bus services operate at below 50 percent capacity. The capacities of the international bus services are also generally quite high.

The introduction of minibuses into the transport sector over the past five years has greatly improved the accessibility of the average Malawian to travel (subject to availability of fares).

Road Safety and Law Enforcement

In 1994 the death rate on Malawian roads was reported to be 200 deaths per 10 000 vehicles which was almost 6 times the average for SADC. Accident statistics for the period 1998 through to 2001 indicate that the death rate is now between 35 and 40 deaths per 10 000 vehicles. Whilst this is a significant improvement on the 1994 rate and is closer to the average SADC rate, it is still considered to be high by world standards Table below refers.

TABLE 3.5 DEATHS PER 10,000 REGISTERED VEHICLES; 1995 – 2000

Year	Total No. of Deaths	Total Vehicles Registered	Deaths / 10 000 Registered Vehicles
2000	676	191 920	35,2
1999	479	178 755	26,8
1998	593	166 629	35,6
1997	784	154 052	50,9
1996	1 088	145 126	75,0
1995	1 142	102 944	111,0

The main reasons given for this high accident rate include the following in order of priority (1997 Transport Statistics):

- Driver behavior / negligence
- Animals, cyclists and pedestrians in roadway
- Speeding
- Roadworthiness of vehicles
- Overloading
- Condition of road surface
- Drunk walking and drunk driving

The lack of effective law enforcement is, however, the overriding factor for the above causes.

A new computerized national traffic information system known as MalTIS has recently been implemented by the Ministry of Transport and Public Works' Department of Road Traffic. The system is based on the South African NaTIS system and will include the following:

- registration of all driver licenses
- registration of all vehicles
- an accident database
- a record of road traffic fines by vehicle and driver license and the payments of fines

The registration of all driver licenses is presently being implemented. This new system will assist in the control of fake driver licenses, stolen vehicles and fine payments all of which are problematic in Malawi.

Rural Transport

Rural transport is one of the most sensitive transport issues in the country. The vast majority of the population is rural yet this sector of the population is the least accessible and the least mobile. There have been several attempts by various government departments and aid agencies to initiate motorized transport in the rural areas. Unfortunately the economics are against any sustainable motorized transport in the rural areas due to the poor condition of the rural road network that result in high operating costs, low residential densities that result in long travel distances with low patronage and a low disposable income. Even the subsidized motorized transport system is not sustainable in the long term.

There have also been attempts to improve accessibility and mobility of the rural community by constructing footpaths, cycle ways and narrow river crossings and also by using alternative non-motorized transport. Most of these initiatives have also proved to be unsustainable. Where they have succeeded, funds have not been available for any expansion. In some cases, rural communities have not supported these initiatives.

In Malawi, as in most African countries, intermediate means of transport such as wheelbarrows, oxcarts and bicycles have not been developed because of the bias towards the development of conventional motorized means of transport, which are in most areas unaffordable.

Labor Based Rural Road Maintenance

Malawi has a road network of over 15,000km, of which approximately half is low-traffic district roads. These are mainly earth roads linking rural communities to the primary and secondary road network. A large proportion of the district network is in poor condition, with many roads impassable, particularly in wet weather.

The National Road Authority is responsible for managing the rehabilitation and maintenance of roads using funds raised from road user chargers (mainly a tax on fuel sales). These funds are deposited in the national Road Fund, which is under the control of the Road Board. Annual maintenance plans produced by the NRA are subject to approval by the Road Board and by the Ministry of Transport and Public Works.

The NRA has two technical divisions within its Operations Department: Central Roads Division and Urban / District Roads Division. These two divisions are responsible for managing the maintenance of the "core road network" of 7,200km. This includes about 6,000km of primary, secondary and urban roads, and about 1,200km of the tertiary / district roads[1]. Roads that are not on the "core network" receive no funding for maintenance from the Road Fund.

Maintenance and improvements to district roads are therefore dependent on small government allocations to District Assemblies, and public works projects funded by MASAF[2] and non-governmental organizations. Public works projects are supported by donors, and are part of Malawi's social safety nets program. Though designed to alleviate poverty through providing employment, these public works programs currently have an important role in the rehabilitation of district roads. Road works provide a substantial proportion of jobs created in rural areas.

Maintenance contracts on the "core network" are let centrally by the NRA through competitive tendering. Most of the routine maintenance work is undertaken by medium-sized local contractors who use equipment-based methods. Despite the success of the District Roads Improvement and Maintenance Project (DRIMP), which was implemented nationally in the 1970s and 1980s and used labor-based methods, these techniques have not become entrenched in the road sector in Malawi. This was largely due to the centralization of government functions from the early 1980s, reduction in the responsibilities and capacity of local government, and general neglect of the district road network following DRIMP.

Following the restoration of democratic government in 1993, the government announced its intention to implement a new decentralization policy. The intention was to devolve political and administration responsibility to the district level. The National

[1] Highlights on National Road Authority. December 2001. Unpublished.

[2] Malawi Social Action Fund -World Bank, DFID (UK) and Malawi Government funding.

Decentralization Policy was approved by the government in 1998. Subsequently, Parliament passed a new Local Government Act, which enshrines the policy. The government is now progressively devolving responsibilities in accordance with district capacity.

The Local Government Act allocates responsibility for the construction, rehabilitation and maintenance of district roads "not under Central Government" to the District Assemblies. The Act envisages that District Assembly activities will be funded by locally generated revenues and central government transfers. This includes fuel levies. As capacity develops in the districts, it will be necessary for the NRA to devolve responsibility for the maintenance of district roads, and to provide funding to the districts from the Road Fund.

The devolution of responsibility to the districts, and the creation of democratic structures at area and village level, should result in more transparent and rational use of development resources, including road maintenance funds. With increased community involvement in the planning processes, it is more likely that the real needs of communities will be met. But the available resources for road maintenance will likely be inadequate for many years to come. It will therefore be important to maximize the use of local resources, including the development of local contractors and the use of more labor-based techniques. In addition to increased social and economic benefits due to improved access in rural areas, the use of labor-based techniques will bring added benefits to local communities through increased employment opportunities.

Planning

Due to its dominance as a mode of transport, there are extensive short, medium and long term plans for the improvement of Malawi's road network and other road transport infrastructure. The majority of the National Transport Policy Action Plans have been developed to address the strategies and policies for Roads, Road Transport and Road Traffic. These action plans include the following with regard to the road network, road transport infrastructure and transportation:

- Upgrading the major road network and constructing new roads where economically and environmentally justifiable.
- Vigorous enforcement of road laws and road safety measures.
- Increased involvement of the private sector in all aspects of constructing and maintaining the road network and road transport infrastructure.
- Parking control in urban areas.
- Facilitating initiatives for improved rural accessibility and mobility including upgrading the rural road network and rural transportation programs.
- Supporting the development of a sustainable Malawian trucking industry.

The NRA also has a Road Sector Investment Program for the period 2000 to 2010 that contains plans to implement some 105 road and bridge improvement projects during this period. These projects, however, concentrate on the periodic maintenance and the rehabilitation/reconstruction of the main road network, the upgrading from earth to bitumen of the main road and secondary road network, the rehabilitation of urban roads and the replacement and/or widening of bridges. These projects are expected to be donor or Bank funded.

The Road Traffic Directorate is in the process of preparing a Strategic Plan for the period July 2001 to June 2006. This plan is due to be published at the end of November 2001.

Structure plans that have been prepared for the larger cities and towns all include planning for road widening, pedestrian and cyclist facilities and bus, minibus and taxi facilities. The country plans also include recommendations for road, cyclist and pedestrian infrastructure improvements.

The Department of Road Traffic plans to include the registration of vehicles, the accident database and the record of fines and the payment thereof into the MalTIS traffic information system over the next five years.

The NRA has medium and long term plans (2006 to 2031) to upgrade 978 km of District rural roads from earth to gravel surface. It would appear that apart from a few ongoing localized rural transportation projects, there is no nationally coordinated plan for the improvement of rural mobility and accessibility in the short to medium term.

Economic Policy

The National Transport Policy formulated in 1999 sets out the government's objectives and strategies in this sector. The aim is to create a favorable environment for the provision of transport services by improving efficiency, increasing competition, and encouraging private-sector participation. The government has also produced an action plan for the implementation of policies.

Transport is an important sector in the national economy. From 1996 to 2000, its contribution to GDP at constant prices averaged 4.4 percent per annum, and in 2001/02 it received 6.6 percent of the national budget. Malawi has an open economy, foreign trade amounting to 61 percent of GDP in 2000. The transport system naturally is responsible for moving foreign trade, and therefore its efficiency is an influential factor in determining the cost of imports and the competitiveness of exports.

The government has recognized the importance of an efficient transport sector in the achievement of its economic and social objectives. Various reforms have been

introduced: the sector has been liberalized, and the policy is to encourage inter-modal coordination in order to achieve an efficient distribution of traffic among the modes. The principles have been accepted of full-cost coverage by each mode, and the limiting of subsidies to non-profitable services provided in the social interest.

Various economic statistics collected (shown below) show that goods traffic conveyed by rail has increased from 1997 onwards and that in 2000 it exceeded its 1990 level; that goods traffic by air and on lake services fell during the 1990s; and that rail and lake passenger numbers both fell during the 1990s. Lilongwe International Airport recorded a decrease, and Chileka (Blantyre) International Airport an increase, in passenger numbers during the 1990s. Cross-border tonnages conveyed by road were up in 2000 as compared with 1999. Malawi's main exports and bulk imports are related to the agricultural sector, and volumes consequently will depend on climatic conditions with variations from year to year. There are no development projects at present in the agricultural sector, which will generate any substantial increased traffic, but in the manufacturing sector exports of textiles and apparel are expected to rise as a result of Malawi's beneficiary status under the US Africa Growth and Opportunity Act. The development of the tourism industry could boost passenger traffic considerably. A private Sector Development initiative is under way in Malawi focusing on the sugar, cotton and textiles, tea and coffee, tourism and tobacco sectors. It is envisaged that these industries show the most potential for growth. The critical issue is the cost of transport. For Malawi to remain in the international markets they need to be more competitive than the other competing LDCs.

Operating Costs

High unit cost of road transport is one of the key barriers to competitive trade in Malawi, as compared to the other countries. This is mostly brought about by the country's landlocked status and the monopoly enjoyed by local transporters, which prevents market forces from operating where international haulers are concerned.

Key factors increasing Malawi's unit cost of transport are:

- Distance from Markets
- Taxes on imported trucks and spare parts
- Costs of fuel
- Inadequate backhauling arrangements
- Low levels of exports
- Too much time spent off loading
- Demand concentrated in certain months
- Monopoly on the part of local transport operators
- High interest rates
- The instability of the Malawi Kwacha
- High inflation
- Failure of CEAR to operate on maximum capacity

International haulers are precluded from operating within the Malawian borders. Malawian haulers charge US140c/ton/km. The average cost of haulage to RSA is US70c/ton/km. It is estimated that if the internal Malawian market was opened to the regional haulers, this charge per ton would be reduced to by close to 50 percent.

The local hauler market is protected to create internal local haulage capacity. The local market is however subjected to high-level political interference. Over the years, many of the decision makers have had personal interests in the trucking business. The high operating cost that Malawian haulers are subject to make it difficult for them to compete regionally. The main cross border business run by Malawian haulers is the fuel cartage where price is not always the key issue (it faces political interference). Until recently, fuel haulage was completely controlled by PCC. It is now run by Fuel Importers Limited (FIL). This has removed some of the levels of corruption but not all. Few foreign haulers are involved fuel cartage.

According to the Road Transport Operators Association (RTOA), prices were liberalized in 1996. RTOA recommends to its members what rates they should charge. However, owing to the highly competitive nature of the business, recommended rates are not often adhered to. Rates, however, still sit at levels way in excess of what the international companies charge. This demand is made worse by the under performance of the local rail company which should have increased the competitiveness of the industry.

The fundamentals of the Malawian economy, i.e. high interest rates; high inflation; unstable exchange rates, high taxation; high tariffs, high costs of spares and vehicles etc, are all higher than in the other countries in the region.

Other factors effecting cost of transport area:

- Low levels of exports
- Shortages of loads to backhaul
- Slow off loading times (demurrage charges) caused by inefficiency of the freight forwarders and Customs.
- Slow turnaround times. This decreases the number of round trips per month and therefore increases the costs to the customer.
- No bases in Mozambique, South Africa and Zimbabwe

Second-hand trucks

There are no restrictions on the importation of second hand trucks. This has led to a proliferation of second hand trucks in Malawi. These trucks are not well maintained , suffer large amounts of down time, and have increased the accident rate in Malawi. Malawi is literally becoming a dumping ground for South African second-hand trucks. These trucks, instead of providing a more competitive alternative, actually cause greater

overheads and difficulty in obtaining business, even at lower rates, because of their unreliability.

According to RTOA, fuel taxes were more or less the same as the neighboring countries with the exception of South Africa; but data was unavailable to verify this. In the case of Malawi, fuel taxes include custom and excise duties, the fuel levy used for road maintenance and the maize levy. Fuel taxes for Malawi account for 52.1 percent of the price.

Rates

Rates vary in Malawi on the local routes from Kw5.50-Kw9.00 /km/ton. The average rate charged is Kw7.50/km/ton. The South African local rate was quoted to be at Kw3.50/km/ton.

With Malawi being essentially an agriculturally based economy, there are concentrations of demand at certain times of the year, which result in higher rates being charged during these periods. This includes the importation of key inputs to farm gate, as well as the export of the commodities. This situation is often compounded by shortages of maize, as is the situation in Malawi at present.

Local haulers are considered to be as efficient as international haulers at back hauling. International transport operators have an edge logistically over their Malawian counterparts because the rates are dictated by inbound cargo, which is the basis on which rates are calculated. As mentioned previously, Malawi is a net importer. Thus, the international operator is already assured of covering their margins, and loads negotiated from Malawi are a bonus. The scenario is quite different for the local operator. The operator's outbound trip carries cargo of a lesser value, which reduces their profitability. Malawian haulers are not well placed to market themselves in South Africa to obtain return loads. The time it takes Malawian haulers to secure back loads severely reduces their turn around times. There are, therefore, few operators from Malawi who run the South African routes. Malawian operators without depots in Zimbabwe or South Africa face problems managing breakdowns, difficulties at border posts, marketing etc. Local operators concentrate on the Beira route. Of the local haulers, only three continuously haul cargo to South Africa. These are mainly haulers who have sister companies regionally. RTOA estimates that about 65 percent of Malawi's international trade by road is carried by international operators.

Managing backhauling has a major impact on rates. The cost of the inbound haulage is twice the cost of outbound haulage. The haulage is generally managed by freight forwarders and by the government where maize, fuel and fertilizer are hauled. Forwarders could balance the trend by arranging loads for Malawian haulers to pick up in other countries like RSA, upon delivery of Malawian exports.

GoM also makes arrangements inefficient by not synchronizing imports and exports so as to capitalize on back haulage and its price-lowering effects.

Comparative diesel fuel costs (US cents/liter) are RSA 32, Kenya 59, Tanzania 65, Zambia 73, and Malawi 58.

Rates for goods and passenger transport were controlled until 1994, but were then deregulated and are now set by market forces. Foreign haulers dominate goods transport. In terms of SATCC policy, Malawi has bilateral road transport agreements with its immediate neighbors as well as with South Africa. Cabotage is not allowed, but the third-party rule operates, i.e., Malawian exports to Zimbabwe via the Tete Corridor could be carried by Malawian, Zimbabwean or Mozambican haulers. Malawian operators are mainly small scale (owning a few vehicles each); but even the few large local haulers have higher operating costs than their foreign competitors, and find it difficult to match them on cross-border routes. A significant disadvantage faced by Malawian haulers on cross-border routes to Harare and Johannesburg is that they do not have a network of servicing depots. This means that they cannot compete in terms of reliability, and customers therefore prefer to use foreign carriers. The cabotage rule is adopted as a protective device for domestic haulage.

The road network is the most extensive of all modes, and government policy is to expand it in order to open isolated areas, correct interregional imbalances, and stimulate agricultural output, thereby helping to reduce poverty. Expansion in the rural areas will result in the loss and degradation of some natural resources like land and forests through road construction and the deforestation that follows the development of roads in Malawi. Efforts should be made to ensure minimum destruction. Clear methods of rehabilitating degraded areas should be laid down. Before transport was deregulated, the few large bus operators were authorized to run 60 percent of their mileage on profitable and 40 percent on unprofitable routes: prime routes were to cross-subsidize the others. However, because control was difficult, the ratio in practice was about 90:10, and rural areas were poorly served. Since deregulation, the position has not changed because of poor rural roads and low levels of patronage. Passenger transport permits now allow operators to ply any route; there is a consequent lack of order, and pressure is mounting for the government to stipulate routes.

Road transport has gained traffic from rail. There is considerable overloading, which is largely uncontrolled because of the lack of weighbridges. Overloading compromises pavement conditions, but an attempt is being made to rectify this situation with EU funding. GVM is not differentiated according to road type, and there is under-recovery of user costs. The official line is that Malawi should adhere to SADC and COMESA standards on GVM and axle loads.

Institutional

The Ministry of Transport and the Ministry of Works and Supplies were merged into the new Ministry of Transport and Public Works in 1999. Apart from meteorology and the usual administrative, financial and accounting, and human resource divisions, the departments dealing with transport per se are Transport Planning, Public Works, Road Traffic, Marine Services and Civil Aviation.

Management

Responsibility for the road transport sector is divided among three entities, namely:

- *The Department of Road Traffic*: This is responsible for administering the Road Transport Act of 1997 and for safety issues. The department is responsible for vehicle registration, testing and licensing; driver training, testing and licensing; operators' permits; and related authorizations. It implements the policies of the government, SATCC and COMESA, and is the technical and executing arm of the ministry in this respect. It is in direct contact with the road transport industry. With liberalization of the transport sector, the department's capacity has not increased commensurately and it has therefore been unable to execute its statutory mandate adequately. Systems are at last being computerized, but in the meantime, there has been a proliferation of fake licenses, vehicle registrations, certificates of roadworthiness, and so on. Controls are gradually improving with the issuing of the SADC drivers' license, the registration of number plate manufacturers, etc. However, police remain poorly trained in traffic management, and there is no dedicated traffic police staff. The department is also responsible for urban traffic, but this is to be taken over by local government. In terms of the Road Traffic Act, the vehicle inspectorate and some other functions are to be privatized, and the department will concentrate on its core functions.
- *The Directorate of Roads*: This falls under the Department of Public Works. The department is the advisory body to the minister, but the National Roads Authority (NRA) is the implementing body. The department transmits proper standards and specifications to the NRA, and fulfills a watchdog role. It also liaises with SATCC and COMESA.
- *The NRA*: This was established by an Act of Parliament in 1997. It is responsible for road maintenance and the development program. It reports to a Board, which in turn is responsible to the minister. The NRA's task is to implement policy and strategies set by the ministry. It manages new construction projects and maintenance. Although its mandate is for main, secondary and tertiary roads, it also manages maintenance for the urban and district networks, since local authorities and district assemblies do not yet have the financial and technical capacity to take over this function. All these responsibilities have not been accompanied by an increase in staff, market related remuneration packages. The management capacity of the NRA is still stretched, especially with regard to inspectors. This is exacerbated by the fact that there is a serious lack of capacity among local

contractors and consultants who are also short of inspectors. The NRA is funded from the fuel levy. It has taken over vehicle overloading control and the operation of weighbridges from the Directorate of Roads.

The NRA also maintains roads in the national parks on behalf of the Ministry of Tourism. These are not classified as public roads. The ministry receives a budgetary allocation for this purpose, but roads need to be upgraded to all-weather gravel standard if tourism is to be promoted as a year-round activity. The present position, with the NRA acting as agent for the ministry, is the preferable management option; the alternative would be for the NRA to take over the roads, but this would then involve two ministries with jurisdiction in the national parks.

Planning

The total length of designated road network increased at a rate of 2.7 percent between 1990 and 1996 to 15,999 km. Since then the length of designated road network has decreased slightly to the current length of approximately 15,450 km, which represents a decrease of 0.7 percent per annum for this period. It is assumed that one of the main reasons for this decrease is the lack of maintenance. This has resulted in some of the designated roads being de-proclaimed. With the lack of funds available for rural road maintenance and no plans for new road construction in the foreseeable future, the designated road network is forecast to continue to decrease in the short to medium term at a rate of 1 percent per annum.

The total number of vehicles registered in Malawi between 1990 and 2000 has increased at a rate of around 6 percent per annum. The annual increase in the rate of vehicle registrations is forecast to slow slightly to around 5 percent per annum for the short term and 4 percent per annum in the medium to long term. This reduction in the vehicle registration growth rate is attributed to the general economic slow down in the short term and the impact of AIDS in the medium to long term.

Whilst there is extensive recent traffic flow data available on most of the road network, there is no comparative historic traffic flow information available in order to be able to estimate a reliable national traffic growth rate. Based on the vehicle registration and road network statistics, it has been assumed that the traffic flows in the urban areas and on the main roads in the rural areas have increased at a rate of at least 5 percent per annum over the last 10 years. This is consistent with traffic growth in the semi-rural and rural areas of South Africa. An average increase in traffic volumes of around 5 percent per annum is forecast on the designated road network in Malawi in the short to medium term**.**

Congestion and delay in the urban areas are expected to continue to increase as traffic volumes increase and with no immediate plans to upgrade and improve the busier

roads and intersections. Existing congestion and delay are also forecast to increase along the main road network in the rural areas as traffic volumes continue to increase and the rural car fleet continues to get older.

Due to the poor condition of the rural road network, it is assumed that the traffic flows on the district roads have remained static or have decreased slightly over the past 10 years. Due to the continuing deterioration of the rural road network it has been assumed that the traffic flows in the rural areas will continue to decline in the foreseeable future. As there is no comparative historical traffic data on which to validate this forecast, a rate of decline is difficult to estimate. This does not bode well for private sector development and trade.

The number of passengers transported by bus in both the rural areas and the urban areas has declined over the last 5 years mainly due to the use of minibuses for public transport. On the subsidized low patronage routes where the road network is very poor, bus services have been withdrawn and patronage has remained fairly static. The number of bus trips and the patronage of bus as a mode of transport are not forecasted to increase significantly in the foreseeable future.

The introduction of the minibus as a public transport mode has seen the number of these vehicles increase significantly since 1995 as has the number of passengers transported by minibus in the rural and urban areas, for commuter trips and long haul inter-city trips. The use of this mode is forecasted to continue to increase resulting in an increase in the number of minibuses providing this service. There is no comparative historical traffic data on which to validate this assumption.

Strengths and Weaknesses

Infrastructure: The major strength with regard to road infrastructure is that the designated and non-gazette road network is very extensive and reaches the remotest parts of the country. The majority of the paved main road network is in fair to good condition; particularly the main freight and passenger routes and the road network in the major commercial centers.

The steady increase in the registration of vehicles will result in increased car availability and an increased use of motorized transport in both the urban and rural roads. A fairly high bicycle ownership indicates that the majority of the population is improving its mobility above walking and head loading.

A major weakness with regard to road transport infrastructure is that the vast majority of the gravel and earth roads are in fair to poor condition with almost half of these roads impassable during the rainy season. The rural road network is in very poor condition and there appears to be no planned improvement of this network in the short to medium term. Rural accessibility and mobility is thus seriously compromised by the

poor condition of the rural road network. Whilst there have been initiatives to improve rural transport, these initiatives have either not been successful, have not been sustainable or a lack of funding has restricted their expansion. To create private sector led growth and improve the informal and formal trading sector, this situation must be critically addressed.

There is very little cycle and pedestrian infrastructure in the rural and urban areas for these two major modes of travel in Malawi.

Congestion in the major commercial centers will affect urban accessibility and mobility and will increase transport-operating costs.

High fuel and vehicle maintenance costs result in high costs of private transport and high public transport fares, which has an adverse impact on the overall mobility of the nation.

Malawi has a poor road safety record in international terms although it is better than average for Sub-Saharan Africa. The lack of effective law enforcement is one of the major road transport weaknesses in Malawi. Engineering improvement of black spots is also virtually non-existent. Overloading of heavy vehicles is damaging the road network and the diverse traffic mix also has an overall adverse impact on road transportation.

Planning: The strengths of the future planning for road transport infrastructure and services in Malawi is that the action plans developed to address the requirements of the National Transport Policy are extensive and comprehensive. The NRA's Road Sector Investment Program for the period 2000 to 2010 is also extensive and comprehensive and based on sound technical and social factors. The investment program is also well supported by the donor agencies.

A strategic plan for the Road Traffic Directorate, together with the planned implementation of all aspects of MalTIS to address the existing poor control of vehicle and driver registrations and to assist in law enforcement, is also a significant strength.

The structure and development plans for the towns and cities include recommendations for road transport infrastructure.

The lack of accessibility and mobility of the rural poor has been identified by the government as an area that needs to be addressed.

Weaknesses in the transportation planning sector with respect to infrastructure and services include the lack of funds to implement many of the action plans to address the strategies in the National Transport Policy document.

Whilst there have been plans to provide cycle and pedestrian infrastructure in the rural areas as well as in the urban areas, a lack of funding has resulted in none of these plans being implemented.

The lack of funding available for the city, town and district assemblies to implement the recommendations contained in their structure and development plans, as well as the country plans, is also a major weakness.

The NRA does not have any short-term plans for the upgrading and improvement of the rural road network.

Economic Policy: Road transport offers a number of economic advantages over other forms of transport, namely door-to-door delivery, thereby obviating transshipment costs, reducing transit times and perhaps the cost of holding inventories; route flexibility; and easier access to remote areas. However, the social costs of road transport are greater than those of other modes – high accident rates resulting in fatalities and severe injury with consequent loss of production, external costs such as air and noise pollution, congestion costs and so on. Other potential environmental costs include land and forest degradation and increased runoff, which promote erosion when new roads are opened and the surrounding deforestation that follows all increased usages of rural roads. Malawi has high accident costs (an EU-funded study in 1995 put them at 14 percent of GDP) because of the lack of enforcement of safety standards, and other high external costs that are inflicted on small vehicles because of the mismatch between axle loads/GVM and road and bridge design standards. Many bridges have collapsed as a result. These are weaknesses.

Policy, by failing to recover full user costs, skews competitiveness in favor of road transport, thus distorting the inter-modal division of traffic although this has been exacerbated by management and infrastructural problems on rail and lake transport. Budgetary allocations for routine road maintenance fall short of requirements (Kw 1.8 billion as against Kw 2 billion), but this excludes rehabilitation and re-engineering requirements that amount to another Kw 2 billion. These should be recovered through user charges. This would be mainly in the form of the fuel levy. The current level of the levy appears too low to support an adequate self-financing Road Fund. Another option would be to commercialize the management as well as construction and maintenance of roads. This could be done by concessioning road construction, operation and maintenance to the private sector through arrangements such as build-own transfer or build-own-operate. It is inequitable for the central budget to finance the infrastructure for only one mode of transport when other modes have to finance it themselves. The exception in the case of roads would be for rural feeder roads and tracks. The above figures exclude the maintenance requirements in respect of rural tracks and the need to replace these tracks with roads in order to facilitate marketing of

agricultural produce; for the same reason bridges are required which are able to accommodate 7-ton trucks. To the east of the lake and to the north of the Nyika Plateau, rural areas cannot even be reached by 1-ton trucks because of the poor roads or tracks.

Vehicle operating costs are very high; hence transport costs are high, and this increases production costs. Because import volumes exceed export volumes, there are few backhauls, and therefore rates are higher than for South African transporters.

Institutional Management: There has been a general improvement in the institutional structure and management of the transport sector following on from the merger between the Ministry of Transport and the Ministry of Works and Supplies, and the commercialization of various activities. However, there are constraints, which remain to be removed in all sub-sectors.

A general weakness throughout the Malawi economy is that costs are high relative to much of the Southern African region. In the transport sector, costs are high because of landlockedness and the distortion in the use of transport modes and routes. The sector, which should be able to generate growth, namely tourism, also suffers from high costs. Transport is a contributory factor; but from a marketing angle, Malawi has failed to target the appropriate niche markets for its major attractions, which are the lake, game and forest reserves, national parks, and Mt. Mulanje. Between them, the transport and tourism sectors could significantly improve rural livelihoods by providing adequate infrastructure and services, as well as accommodation at regionally competitive rates. The two sectors will have to compliment each other so that developments in each do not result in negative development of the other. The tourism sector in Malawi solely depends on environmentally fragile areas, which developments in the transport sector have to consider.

The major strength of the road haulage industry is that it is in the hands of the private sector whereas its major competitor, namely rail, has until recently been wholly owned by the government and, although commercialized, has not had the same competitive cutting edge as is found in the private sector. Moreover, the road transport industry is formed into a strong association with its own secretariat, which is able to lobby and indeed advise the government. It also appears to enjoy significant political support. From an institutional point of view, the road sector has gained, particularly from the establishment of the National Roads Authority (NRA), which has provided a more focused approach to the provision of new road infrastructure and the maintenance of the existing network. Despite the institutional and managerial advances, however, there are still significant weaknesses in the management of the road sector. This stems largely from a lack of funding which in turn means that there is a shortage of capacity in the NRA and also in the Directorate of Road Traffic. It is the weakness in the latter, which has very serious consequences because of its inability to control abuses of the

system. These occur with regard to vehicle registrations, certificates of roadworthiness, drivers' licenses, driving standards, speeding, recruiting and training of traffic police, heavy-vehicle overloading, corruption and so on, and all these abuses have led to a lack of security in road transport, low safety standards and concomitant high accident rates. With accident costs being the equivalent of about 14 percent of GDP, they clearly have high opportunity costs. Improved road safety could release resources for more productive use, and this could contribute to poverty reduction. Local authorities have lacked capacity to assume responsibility for urban traffic, and there is inadequate coordination with these authorities. Thus, town-planning problems have occurred, and traffic congestion has become serious in Blantyre and Limbe.

Malawi Rural Travel & Transport Program (MRTTP)

This program was developed by the government together with the SSATP of the World Bank and the RTTP of UNECA. Its main aims were to establish a clear Rural Travel and Transport Policy as a sub-set of the National Transport Policy, to promote rural travel and transport programs, to achieve integrated planning and rational allocation of resources for the sub sector, to promote sustainable rural Travel and Transport Infrastructure, to increase the availability of means of travel and transport and to promote gender equity in Rural Travel and Transport.

The program has been on going for two years. Although it has had a focus of reducing rural poverty and sustaining rural livelihoods, its success has been very limited because of:

- Lack of clear policies to address rural transport problems
- Lack of appropriate technologies
- Lack of priorities to this sub-sector
- Lack of planning and financing for the adoption of appropriate technologies
- Lack of strong institutional framework
- Lack of coordination and wide dissemination of information on available technologies

A steering committee at principal secretary level composed of various stakeholders was established to provide policy guidance and program oversight with the following focused benefits:

- Improved access and mobility and easier access to social and economic services for rural communities
- Increased use of appropriate means of transport for the rural communities
- Creation of an enabling environment for coordination between government ministries and departments helping them to develop their capacities more efficiently

- Application by the staff at district level and that of local authorities of gained knowledge and skill from the integrated rural accessibility planning method
- Promotion of Environmental Impact Assessment (EIA) in the construction and maintenance of Rural Transport Infrastructure.

Although the MRTTP Program has had these focused policies, it continues to suffer because of lack of funding especially funds required to reach the grass roots. A Public Expenditure Review in 2000 showed that in some sectors up to half the allocated resources were spent around the sector headquarters only. This is a problem which needs to be addressed. Another problem facing the program is the shortage of personnel. The program was originally meant to have an accountant, a civil engineer and a program coordinator at headquarters. However, the program coordinator who has since left the program has not been replaced and the accountant post is yet to be filled.

TABLE 3.6 THE NATIONAL ROAD NETWORK IN MALAWI

Road class and type	Length (km)
Main / Secondary Roads	6 482,2
Tertiary Roads	4 120,9
District Roads	3 500,4
Urban Roads	1348,0
Total all roads	15 451,5

TABLE 3.7 ROAD NETWORK INVENTORY AND CONDITION DATABASE (50 PERCENT OF TOTAL ROAD NETWORK)

Surface type	Condition	Rural	Urban	Total	Percent
Paved	Good	1686.38	102.52	1788.90	70.1%
	Fair	561.72	48.78	610.51	23.9%
	Poor	123.05	31.05	154.10	6.0%
		2371.15	182.35	2553.51	33.1%
Unpaved	Good	632.66	13.00	645.86	12.5%
	Fair	2077.38	6.87	2084.25	40.4%
	Poor	2412.92	20.56	2433.48	47.1%
		5123.16	40.44	5163.59	66.9%
All Roads		7494.31	222.79	7717.10	100.0%

Urban/rural	Condition	Paved	Unpaved	Total	Percent
Rural	Good	1686.38	632.86	2319.23	30.9%
	Fair	561.72	2077.38	2639.11	35.2%
	Poor	123.05	2412.92	2535.97	33.8%
		2371.15	5123.16	7494.31	97.1%
Urban	Good	102.52	13.00	115.52	51.9%
	Fair	48.78	6.87	55.66	25.0%
	Poor	31.05	20.56	51.61	23.2%
		182.35	40.44	222.79	2.9%
All Roads		2553.51	5163.59	7717.10	100.0%

Condition	All roads	Percent
Good	2434.76	31.6%
Fair	2694.76	34.9%
Poor	2587.58	33.5%
Total	7717.10	100.0%

Condition	Definition (Paved roads)	Definition (Unpaved roads)
Good	<3.0 IRI	<4.5 IRI
Fair	3.0-6.0 IRI	4-5-9.0 IRI
Poor	>6.0 IRI	>9.0 IRI

Source: NRA

TABLE 3.8 TOTAL VEHICLE REGISTRATIONS ON 31 DECEMBER OF YEAR AND VEHICLE OWNERSHIP(1990 – 2001)

Year	Total No. of Vehicles Registered in Year	Total Vehicles Registered	Vehicle Ownership (Veh / 1000 Persons)
9 / 2001	±9,600	201,520	19.2
2000	13,165	191,920	18.6
1999	12,126	178,755	17.6
1998	12,577	166,629	16.8
1997	8,926	154,052	16.1
1996	11,411	145,126	15.5
1995	8,078	133,715	14.6
1994	4,292	125,637	14.0
1993	4,144	121,345	13.8
1992	8,091	117,201	13.6
1991	6,166	109,110	12.9
1990	4,683	102,944	12.4

Notes: (1) Above figures represent the total number of vehicles registered over this period and not the total number of live vehicles (the number of write-offs, abandoned and laid up vehicles each year are an unknown).
(2) 40 percent of all vehicles registered from 1990 – 2001 were 2nd hand.
(3)Annual increase in vehicle population from 1990 to 2000 is 5,9 percent.
Source: Department of Road Traffic

3.4.2 Railway Sector

General Background

Malawi's rail network is not very extensive with only the southern half of the country effectively served by two rail lines. Malawi has a total of 797km kilometers of single-track public railway line within the country's borders of which 717km is operational. The rail network extends in a north – south direction from near the Mozambique border in the south through Blantyre up to Salima in the north from where it changes direction to the west and continues through Lilongwe to Mchinji and the Zambian border. The Nacala Corridor line extends from the Indian Ocean port of Nacala (Mozambique) in the east through the Malawi border town of Nayuchi and links up with the north - south line at Nkaya. There is also a privately owned 25km long spur off the north – south line from Namatunu to Changalume. The operational rail line in Malawi is generally in good condition although substantial portions of the track are programmed to be re-ballasted and the track will be resurfaced where required. There is a 77 km section of the Nacala Corridor line from Cumba to Entre Lagos in Mozambique that is in poor condition and both sleepers and rail need to be upgraded.

There is a break in the north – south line just north of Bangula where the line crosses the Shire River and the Malawi rail network can therefore not connect to the Tete Corridor that has recently been rehabilitated.

The maintenance facilities and equipment, both for the rail and rolling stock, are extensive, up to date and generally in good condition. There are a total of 19 stations along the two rail lines in Malawi. The passenger, freight and control functions have been closed at six of these stations and there are plans to close these functions at a further four stations. All the rail stations in Malawi have rudimentary facilities. The existing token control system used for the rail services in Malawi is considered to be obsolete.

The Central East African Railways Company Ltd (CEAR) together with CFM-Norte in Mozambique runs the railway line commercially between Lilongwe, Blantyre and the port of Nacala. CEAR have extensive rolling stock including 14 mainline locomotives, 5 shunting locomotives, over 400 cargo wagons and 24 passenger coaches.

Fuel, oils, wheat, fertilizers, salt and other general cargo are imported via the Nacala line and tobacco, tea, sugar, pigeon peas, groundnuts and general cargo are exported via this line. Local traffic includes clinker, coal, fuel, wood, timber, charcoal, cement, tobacco, maize and general cargo. Local traffic makes up the bulk of the goods moved by rail in Malawi. The goods services on the north - south line is considered to be efficient and operates virtually at capacity. The Nacala Corridor line is operating over capacity at present although the service has a weak link due to the 77km section in Mozambique that requires to be upgraded that adds some 4 to 5 hours to the trip. None of the major shipping lines call at Nacala. This creates a requirement for trans shipping at the port. The limited numbers of ships that call in at the port of Nacala also restricts this service. The rail link between Lilongwe and Mchinji is not well used.

CEAR also operates two subsidized passenger and limited goods services to the south and north from Blantyre essentially serving the rural areas. The service to south consists of three round trips per week, which is considered to be efficient and operates at around 90 percent of capacity. The service to the north consists of two round trips per week and is also considered to be efficient, operating at around 90 percent capacity. Neither of these passenger services covers their costs even with a fixed subsidy from the Malawi Government. The passenger waiting times are not excessive for the service provided.

The rail track in Malawi has the capacity to carry five times the number of trains that presently use the system.

A rail safety maintenance plan has been formulated by CEAR together with the Railway Safety Regulator of Malawi and is presently being implemented by CEAR. Rail

transport in Malawi is considered to be safe with no major incidents reported since CEAR commenced operating the rail network in December 1999.

Planning

CEAR are investigating two possibilities of extending the existing active track in Malawi and thereby also extending the existing services provided.

The first is the repair of the wash away in the north – south line at the Shire River just north of Bangula (km77) so that the system can extend to the Mozambique border in the south and possibly linking to the old Beira rail line that was destroyed during the Mozambique civil war. The Beira line, however, has to be completely rebuilt and there is some doubt as to the efficiency of operating two rail lines between Malawi and separate Indian Ocean ports. It would appear that this project is not economically viable.

The second is the extension of the east - west link from Mchinji to Chipata in Zambia predominantly for transporting timber. The grading for 23kms of this 40km link has already been completed although this also needs to be repaired in places. Initial investigations indicate that there is insufficient demand to economically justify the extension of this line from Mchinji to Chipata in order to provide a rail link from the eastern region of Zambia to the Port of Nacala. As with the above project this project also does not seem to be economically viable.

In addition to the above CEAR is planning to replace the existing token control system for the rail with a VHF radio system.

The Malawi Government through Action Plans developed to satisfy the requirements of the National Transport Policy, plan to undertake a feasibility study into the use of rail trams for passenger transport in urban areas. The Action Plans also support the spot rehabilitation of the 77km section from Cumba to Entre Lagos, the construction of the Mchinji line, the installation of rail communications facilities and the construction of feeder tracks along the Nacala line.

Economic Policy

Rail was the main mode of transport for Malawi's foreign trade before the lines to Beira and Nacala were severely damaged in 1984-85. The Nacala line was reopened in 1989, and Malawi Railways was commercialized in 1994 but remained unprofitable, receiving a government subsidy. In 1999 Malawi Railways was concessioned to the Central East African Railways Company Limited. Road transport took over Malawi's foreign trade from 1984-85 onwards, and rail has struggled to regain traffic. Rail should be able to be the lowest-cost transporter provided all modes are treated equally in terms of policy, i.e., no subsidies and full user-cost recovery. This is not the case at present as policy is skewed in favor of road. Most of the problems confronting rail transport are external,

e.g., the inefficiency of the logistics chain because of the preference of shipping lines to serve Nacala primarily on a feeder basis, the failure of Mozambique to commence the operating concessions at the port and on the Nacala line, and poor track conditions in Mozambique which affect turnaround times. Passenger traffic is being conveyed under a five-year agreement with the government. There is a fixed subsidy, but the service is essentially for social purposes to rural areas, and is unprofitable. Passenger services are capital-intensive, and are not supported by fares that are the equivalent of third class. The agreement is subject to review after five years.

Institutional and Management Development

Malawi Railways (MR) was a government parastatal that was commercialized in 1994 with the government as sole owner. In 1999 it was taken over on a 20-year concession by the Central East African Railways Company Limited. The CEARC has two shareholders – SDCN (51%) and CFM (49%). The CFM's share should be 33 percent because 16 percent is intended to be set-aside for Malawian shareholders, but none have yet emerged to take up the offer. SDCN is 16.67 percent owned by each of four companies (the US-based Railroad Development Corporation and companies in the Bahamas, in Portugal and in Mozambique), with the remaining 33.33 percent being split among six Mozambican shareholder groups. CEARC's Mozambican company will have a separate management structure for the port but an integrated structure between the rail and port operations.

CEARC took over all assets except track, land and buildings, and is responsible for the operation and maintenance of the lines. It has to turn them back in 20 years in the same condition. The CEARC has also been awarded the concession by CFM(N) to run the railway and the Port of Nacala, but the concession has not yet come into effect. At present there are two separate fleets – CEARC and CFM – but these would be rationalized and the entire rail operation on the Nacala Corridor would benefit once the company is operating the concession in both countries. Capacity problems stem from shortages of locomotives and container-carrying wagons, but operating problems at the border have been overcome. The new management has already made significant changes on the passenger services side with Liwonde becoming the central point for these services given its location in relation to the passenger routes.

Forecast Demands and Future Planning

The net Ton Kilometers of Goods handled by rail increased at a rate of around 3 percent per annum between 1996 and 1999 with a noticeable 28 percent increase from 1999 to 2000. Table 3.9 below refers. CEAR has reported a high demand for container and good services both within Malawi and along the Nacala Corridor and have estimated that they need a further 96 container wagons and 50 covered wagons to satisfy this demand. All other rail infrastructure is available and in good condition to accommodate this forecast demand. It is therefore forecast that the net Ton Kilometers of Goods

handled by rail will increase at a rate of 10 percent per annum for the short to medium term.

TABLE 3.9 TOTAL GOODS AND PASSENGERS HANDLED BY RAIL, LAKE AND AIR TRANSPORT IN MALAWI (1995 – 2000)

Year	Rail			Lake			Air			
	Net Ton Km ('000)	Passenger Kilometers ('000)	Number of Passengers ('000)	Net Ton Km ('000)	Passenger Kilometers ('000)	Number of Passengers ('000)	Freight Handled (Tons)		Number of Passengers ('000)	
							Chileka Airport	Lilongwe Airport	Chileka Airport	Lilongwe Airport
1995	73 707	21 524	422	4 368	15 577	209	1 302	5 401	105	193
1996	56 923	26 166	465	1 426	9 644	141	1 168	5 971	117	202
1997	45 551	17 274	390	2 848	10 125	132	1 068	5 167	125	211
1998	54 985	20 749	425	4 601	8 601	110	477	2 433	74	102
1999	62 442	19 106	327	3996	8 128	95	824	4 548	119	197
2000	79 747	24 789	418	745	7 054	80	678	4 670	104	202

Source: Monthly Statistics Bulletin – March 2001

There was a steady 11 percent per annum decline in the total number of passengers transported by rail in Malawi from 1995 through to 1999 although this trend seems to have been reversed after CEAR took over the passenger services in December 1999. There was a noticeable 28 percent increase in the number of passengers transported by rail in 2000 compared to 1999. This is considered to be due to the improved efficiency of the passenger services provided by CEAR and this turn in the trend is expected to continue for 2001, 2002 and 2003 although at a reduced rate of around 10 percent per annum after which demand is expected to level out and reduce in the longer term. Both the north and south passenger services are presently operating close to capacity and the increased demand for the next two years will see the services operating over capacity. These services, however, are not financially viable and there is no plan for expansion.

Strengths And Weaknesses

Infrastructure: The strength of rail transport in Malawi with regard to infrastructure and services is that the rail network is well connected to two major commercial centers in the country, to the majority of the producers of export goods in the country and to the closest Indian Ocean port, Nacala. This rail network is also in reasonably good condition and the services offered by CEAR are considered safe and relatively efficient. A further strength is that the rail network is operated on a commercial basis under concession.

The weakness of rail transport in Malawi with regard to infrastructure and services generally is that it is not extensive enough to serve the entire country although at present there is insufficient demand to justify any expansion. In addition, the Malawi Government does not have funding to implement their future planning for the mode and the topography of the lines is hindering the expansion of the existing goods services provided. A further weakness is that there are no economically viable expansion projects.

Planning: From a national, regional and international perspective, rail does not play a major role in the transportation of passengers in Malawi. The frequency of existing passenger services is once every two or three days. Whilst these services are running at or close to capacity and there is an expected short-term increase in demand, they are not financially viable even with a fixed subsidy and certainly could not justify their expansion to daily services for example. CEAR in all likelihood would thus continue to run the limited passenger services required of them in terms of their concession but will not be able to expand these services due to increased operating losses that will be incurred.

Rail does, however, play a significant role in the transportation of goods both nationally and regionally via the Nacala corridor. There is a high demand for container and other goods rail services in Malawi. However, CEAR does not have the funding to obtain the rolling stock required to accommodate this demand.

With regard to the Nacala Corridor, ships do not call regularly at Nacala and the 77km section that needs upgrading, both of which reduce the efficiency of this rail service.

The strengths of the future planning for rail infrastructure and services in Malawi is that the action plans developed to address the requirements of the National Transport Policy are extensive and comprehensive. The weakness of future planning for this mode is that the Malawi Government does not have funding to undertake some of the action plans.

CEAR are continually planning to improve their services, however, financing is difficult in this environment and there are at present no economically viable projects for expansion of the existing system.

Economic: The strengths of rail transport are that it is the mode best suited to convey bulk traffic such as sugar, maize and fertilizer, and that its rates are generally lower than by road. It also has lower social costs in terms of externalities. Against this, rail in Malawi serves only the area from Lilongwe southwards, it is inevitably tied up with inter-modal trans-shipment, and there is no direct link to South Africa. Thus, the Nacala Corridor is not necessarily the lowest-cost route for traffic between Malawi and South Africa, while Nacala is regarded by shipping lines as a feeder port with few

direct calls, thus adding to transport costs. Rail transport also suffers from the disadvantage (common in Southern Africa and other parts of the world) that transport policy favors road haulage by failing to recover user costs and to enforce legislation controlling traffic. This makes it more difficult for rail transport to reorganize itself and to recover the traffic it lost as a result of the Mozambican civil war.

Institutional structure and management capacity: Concessioning of the railway operation has strengthened the institutional structure and management capacity in this sub-sector. Already the new management has tackled passenger transport services imaginatively. The main institutional and management problems stem from the dependence of rail transport in Malawi on operational efficiency and infrastructural capacity at the port of Nacala and on the CFM line: the railway cannot operate effectively in Malawi unless its counterpart in Mozambique and the Nacala port are operating efficiently. Problems should be eased once the concessionaire is able to commence operating the concession in Mozambique. A particular weakness of rail transport is that there is no strong political lobby supporting it.

Rail Constraints: Since the end of the Mozambican civil war, the Malawi Government has revived the importance attached to the movement of freight through rail transport with the Nacala Corridor being the focus of attention. The thinking behind this has been that the corridor holds numerous advantages over other modes of freight transport currently available in the country. Though this may be the case, there are a number of bottlenecks or problems associated with the use of rail transport where Malawi is concerned.

According to the country's sole rail operator, these are both internal and external to Malawi. All in all, the constraints faced include:

- Infrastructure
- Track maintenance
- Rail administration
- Competition with road transport
- Government policy
- Concessionary issues

1. On infrastructure, the general consensus was that this is very old, worn out and inadequate. Examples cited were worn out tires that require replacement; aged locomotives whose capacity has greatly deteriorated and are surviving through cannibalizing from other worse off locomotives; maintenance workshops are operating below par with equipment being scraped off to feed other workshops deemed salvageable. All this leads to high maintenance costs and inadequacy in meeting haulage traffic due to a decrease in carrying capacity. The situation is made worse when one considers the fact that the greater part of the rail lines are in Mozambique where

these same problems are worse than in Malawi. The facilities at Nacala are not as adequate as CEAR would want them to be, leading to unnecessary delays of cargo which has a direct effect on the rest of the line even the outbound. This negates all of CEAR efforts at client satisfaction and cost savings.

2. A second constraint though greatly related to the first was said to be track maintenance. Some of the track is poor in some areas especially Mozambique. This is getting harder to replace due to the high expensive costs of the rail tracks at current market prices and also current GoM policy which is skewing the markets in favor of other modes of transport. In the past, this was not there as the Railway Company used to get aid and GoM was responsible for all transport infrastructures without bias. This poor track is subject to wash-a-ways and siltation on the lines in the rainy season. This could be easily avoided if the track was replaced; this also plays a role where derailments are concerned. The other side of the border also takes too long to effect repairs (a function of poor communication and elements of bureaucratic red tape).

3. Rail administration is poor. CFM operates the railway as well as Nacala Port and give priority to Mozambican requirements. This is highly evident when handling freight deemed urgent by their authorities and when available facilities cannot support all the cargo. Malawian cargo is sidelined causing delays and increased demurrage costs. CFM still suffers from the previous socialist government's management systems, which make communication and cooperation cumbersome and slow.

4. Tariffs charged by CFM are high and are just imposed on CEAR without reasonably considering the position of their counterpart. There is no meaningful dialogue with CEAR to this effect. This situation is compounded by the fact that most of the track lies within Mozambique:

- Nacala-Interagos 615/618 km
- Nayuchi-Blantyre 189 km
- Nayuchi-Lilongwe 389 km

According to CEAR, a higher ratio of the rate goes to the country from which the freight is moving and this favors CFM because Malawi imports more than it exports at the moment.

5. Competition with road transport impacts on the performance of CEAR and rail transport in general in Malawi. This is exacerbated by the fact that road transport is given unfair advantages which distort the market in favor of haulers. High-level officials in Government who make policy decisions concerning transport have direct interests in road haulage.

In the freight industry, road transport has an edge over rail because:

- Most of the disadvantages of rail have to do with the capacity to handle cargo and the time it takes to deliver this cargo. The freight forwarding business is very competitive and driven by time. The railway has several operators who control different segments which increase inefficiency and which leads to delays causing cargo to miss sailing times. Demurrage charges are billed on to the importing company (This was one of the minor reasons cited in the Petroleum Importers Limited [PIL] decision to cut share of oil haulage given to the rail company).

- Currently, the rail service only has one operable line at its disposal terminating at Nacala. Due to various reasons this route has limitations in handling cargo which makes the shipping lines schedule their timetable in such a way that they only call at the port when there is a sizeable amount of cargo to pick up i.e. once a week. This inconveniences freight forwarders and limits the options they would exercise if they were dealing with a port with big freight volumes and different lines calling.

6. Government Policy is a severe bottleneck. It no longer finances any kind of infrastructure, which pushes all the costs onto the rail company while at the same time GoM funds and maintains infrastructure used by their competitors (roads). GoM has not made any investments in the rail industry recently, which would have improved performance.

GoM also does not help or facilitate negotiations with CFM or the Mozambican government, which would improve the level of cooperation and would speed up some paperwork.

7. Concessionary issues. The rail operators in Mozambique have still not been concessioned-off as was the original agreement between the two governments. Decisions are therefore made on political expediency rather than for commercial reasons. The large amount of bureaucracy involved in Mozambique slows down the corridor's operation. This bureaucracy leads to delays in the maintenance of the line. On the Malawian side, the privatization was done without the necessary rehabilitation of the infrastructure, which would have given CEAR an ability to be more competitive. If the Beira line were operational, it would have provided alternative routes for CEAR to utilize.

TABLE 3.10 ROLLING STOCK OPERATED BY THE CENTRAL EAST AFRICAN RAILWAYS COMPANY LTD	
1. Mainline MLW Bombardier Locomotives	**13**
2. Shunting Locomotives	**5**
3. Commercial Wagons	**407**
Covered Wagons	23
Low Sided Wagons	86
Tank Cars	64
Container Flat Wagons	61
High Sided Wagons	62
Brake Vans	8
Cattle Trucks	3
4. Passenger Coaches	**24**
Standard Coaches	17
Sleeper Coach	1
Passenger Vans	4
Saloon	1
Executive Coach	1

TABLE 3.11 EXPORTS, IMPORTS AND LOCAL TRAFFIC IN TONS MOVED IN FEBRUARY, MARCH AND APRIL 2000 BY CEAR COMPARED TO THE SAME MONTHS IN 1999

	Feb 2000	Feb 1999	March 2000	March 1999	April 2000	April 1999
Imports	2409	2278	3706	4753	2410	2464
Exports	5429	7689	7834	5222	9582	5096
Local	17627	8991	18007	12652	19593	11707
	25465	18958	29547	22627	31585	19267

Source: Central East African Railways Co. Ltd.

3.4.3 Lake Transport

General Background

Lake Malawi is the third largest lake in Africa and is 568 km long and between 16 km and 80 km wide with a total area of around 24,000 km². The lake extends from the north of Malawi along almost two-thirds of the length of the eastern side of the country and is thus well placed to serve as a north – south transport link. There are 10 major anchorages and 4 ports along the lake in Malawi, two major anchorages in Mozambique and a port in Tanzania that are commercially operational. Monkey Bay is the headquarters for all Malawian shipping activity on Lake Malawi and Nkhata Bay is the busiest port on the lake in terms of passenger and goods movement.

The facilities at most of the ports consist of goods sheds, passenger waiting rooms, mobile cranes, forklift trucks, fitting shops and finger jetties. There is also a floating dry dock at Monkey Bay and a gantry crane at Chilumba. These facilities are generally in good condition although the finger and pontoon jetties at some of the ports are in very poor condition and need upgrading as do the passenger facilities at some of the ports.

The navigational aids along the lake are generally good although they are not being maintained and their condition is thus deteriorating rapidly due to this.

There are a total of 15 registered large commercial vessels on Lake Malawi and over 3,000 registered small-motorized vessels. Most of the commercial vessels are in good condition with only two that are not seaworthy.

The commercial activities on Lake Malawi including the provision of ship services and port management have been privatized. Glen Waterways will take over full operational control before the end of 2002 from Malawi Lake Services.

At present, there are only two passenger and goods services being offered by Malawi Lake Services. The first is a long range round trip service from Monkey Bay on the Illala in the south through to Chilumba in the north that crosses to two ports in Mozambique and one port in Tanzania. This service is considered to be cost effective, however, it is circuitous and thus time consuming and inefficient in comparison to other modes. The service runs at between 50 percent and 75 percent of capacity mainly because the incorrect vessel is being used for this type of service. The second is a shorter weekly passenger and goods service operating three routes; from Nkhata Bay to Cobue (Mozambique), from Nkhata Bay to Charo and from Nkhata Bay to Mbamba Bay in Tanzania. This service is slow but efficient and runs below capacity.

An average of 6,500 passengers and 1,200 tons of goods per month are transported commercially across the lake.

The transport of freight on Lake Malawi is still in its infancy on the lake. The main reason for this is that shipment and handling times are excessive in comparison to other modes. Multi-handling of goods also increases losses, damage and overall costs. Fuel used to be transported by lake as part of the Northern Corridor routing. This ceased because of competition from road tankers.

Malawi has a Marine Police Service, which is ill equipped and unable to be effective marine law enforcers.

Planning

Prior to the privatization of the shipping and port services on Lake Malawi, Malawi Lake Services and the Department of Marine Services had plans to:

- Upgrade seven of the existing anchorages to the ports by installing jetties and additional passenger and goods facilities; and
- To purchase two new smaller passenger and cargo vessels of around 200 passenger capacity to reduce the existing long range trip to two shorter distance trips, thus increasing frequency, reducing delays and improving efficiency.

There were also plans to develop a new port at Ngowo in Mozambique although the status of this project is unclear.

Glen Waterways have already initiated an investigation into using the Shire River / Zambezi River system for river transport including opening up the link between Beira and Blantyre using rail for the last section from Chiromo to Blantyre.

A port to cater for the transport of ethanol, sugar and molasses from Dwangwa around 100km north of Nkhotakota has been identified. This is still in drafting stage and is being reviewed both by MLS and Illovo Sugar Corporation.

There are a few private sector plans to introduce tourism services on the lake and a large catamaran tourist service has recently been launched on the lake operating from Cape Maclear.

The Malawi Government has a National Transport Policy for Marine Transport that has specific objectives and strategies with regard to inland shipping, international shipping and multi-modal transport. Action Plans have been developed to satisfy the requirements of the National Transport Policy and these action plans include the following with respect to maritime transport infrastructure and services:

- Promote the involvement of the private sector in the operation of lake transport services.
- Improve navigational aids.
- Develop appropriate port infrastructure at Likoma Island, Kambwe, Makanjila, Dwangwa, Nkhotakota, Nkhata Bay and rehabilitate Chipoka and Chilumba.
- Promote and facilitate multi-modal transport.

Economic Policy

Government policy is to allow anyone to operate on the lake. Lake transport was commercialized in 1994 with the establishment of Malawi Lake Services Ltd., wholly owned by the government. However, the company continued to run at a loss, receiving a government subsidy of approximately Kw25 million per annum. The service has now been concessioned to a private operator, Glens Waterways Limited. Ports are to be concessioned separately to the same company. Government policy is to strengthen the administration of marine services, to increase investment in infrastructure, and to

develop links across the lake with Mozambique and Tanzania. Lake services are regarded as important for remote rural areas. Some rural areas' only transport corridors are via the lake. Without an improved service, there is virtually no opportunity for these communities to develop or trade. The Nacala Development Corridor Secretariat believes that a cross-lake service from Meponda in Mozambique could be a viable alternative for northern Malawi to using the Northern Corridor or the railway in Malawi. Lake traffic has fallen since a parallel road to the north was built. The competitiveness of lake transport is compromised by the unsuitability of much of the fleet. Investment is also required in improving infrastructure, including jetties, at some of the ports. Lake transport is essentially part of a multi-modal system involving trans-shipment at either end to road or rail, and trans-shipment costs mean that it would always struggle to be competitive. Nevertheless, as in the case of rail, lake transport could be more competitive with road provided transport policy were revised to provide equal operating conditions to all modes. There is potential for growth of cross-lake links to Mozambique and Tanzania (this has tremendous potential in terms of trade), and in the passenger field to cater for up market tourists.

River transport provided a barge service all the way to Chinde on the Mozambican coast before being stopped by the Mozambican civil war. The investment required to reinstate this service would be significant, but it could divert some Beira traffic from the road.

Institutional, Management and Socio-economic Development

Lake services were under Malawi Railways until 1994 when rail and lake transport were split. Lake and inland waterway transport fall under the Department of Marine Services in the ministry. The department is in charge of the safety and regulation of shipping, training, investment, project implementation, and the ownership and operation of ports, equipment, shipyard and vessels. Glens Waterways Limited assumed control of ship and port operations from 1 December 2001, so that the department will remain as the regulator, ensuring the observation of safety regulations, etc. The concession is for 20 years with an option of another 20 years, and includes the takeover of equipment.

The Inland Waters Shipping Act covers enforcement. Unfortunately, there is a shortage of vessels for this purpose so that the Marine Police have difficulty in enforcing the rules. There is considerable illegal commercial shipping on the lake especially as boats from Tanzania call at unofficial stops. Private small operators vary from outboard motors to canoes. Only motorized boats are registered, and these number over 3,000. Reliable lake services will require the enforcement of safety standards and other regulations. There is a huge informal trade between the northern parts of Malawi and Tanzania.

Planning

The volume of freight transported over the lake decreased considerably per annum from 1995 to 1999 and from 1999 to 2000. Similarly, the number of passengers transported over the lake has decreased by more than 60 percent from 1995 to 2000 . The main reason for this continued reduction is the upgrading of the road network parallel to the lake, coupled with the development of the minibus industry and the lack of law enforcement on the roads. All of these factors have made road transport more time and cost effective for both passengers and freight compared to transport over the lake. This trend in both passenger and freight transport is unlikely to change in the foreseeable future or certainly until the impact of the privatization of the services and port management have had an impact on the existing negative aspects of lake transport.

Lake services will continue facing a decreasing market over the next two years. It is hoped that as MLS becomes more efficient this trend will reverse.

Strengths and Weaknesses

Infrastructure: The strength of lake transport in Malawi with regard to infrastructure and services is that the lake is ideally aligned in a north – south direction along almost two-thirds of the length of Malawi. The lake is a unique asset for Malawi as no other southern African country has a similar tourist attraction. Further strengths include the existing ports and anchorages and available infrastructure that is presently under-utilized. The Malawian Government has privatized lake transport and port management and has also developed extensive policies and strategies to strengthen and improve lake services, improve safety and promote multi-modal transport using lake transport as a link. The policies and strategies also promote co-operation with the lake neighbors, Mozambique and Tanzania.

The weakness of lake transport in Malawi with regard to infrastructure and services is that the lake is not located on direct regional or international transport routes. The lake is far from large commercial/consumption centers in Malawi and the majority of production areas that require bulk regional and international transport. The incorrect vessels are being used for the long and short-range passenger and goods services resulting in time consuming and circuitous trips that cannot compete with road transport (this is being addressed by the new management of MLS and a strategy to use the right vessels for the right business is being undertaken). The cargo handling times and transshipment costs further reduce the efficiency and cost effectiveness of lake transport for freight. The lack of road law enforcement in terms of minibus passenger numbers and heavy vehicle overloading results in road transport becoming even more cost effective compared to lake transport.

A further weakness in this mode is the rapid change in containerization technology that renders equipment obsolete after very short periods of time. The existing demand for

container services cannot economically justify the replacement of this equipment on a regular basis.

TABLE 3.12 REGISTER OF LARGE VESSELS ON LAKE MALAWI

Name of Vessel	Type of Vessel
MV Katundu	Container Vessel
MV Ufulu	Product Tanker
MV Mtendere	Passenger & Cargo Vessel
MV Ilala	Passenger & Cargo Vessel
MV Karonga	Bulk Cargo
MT Viphya	Tug and Pontoon
MV Nkwazi	Cargo
MV Chauncy Maples	Laid Up
ML Ncheni	Launch
MV Sunbird	Tourism
RV Timba	Research
-	Barges x 2
-	Dredgers x 2

Note: In addition to the above there are over 3000 registered small-motorized vessels that operate on the lake.
Source: Department of Marine Services

The lake is not marketed enough as a regional or international tourist destination. The use of the lake as a tourist attraction is, however, impacted by the excessive costs of getting to the lake by road or air in comparison to comparative tourist attractions in other countries.

The lack of equipment for the Marine Police Services to enforce maritime laws, particularly illegal commercial shipping to and from Tanzania is a further weakness.

The reduction in general funding from central government for lake transport maintenance and operation over the last few years coupled with the lack of funds allocated to the many urgent infrastructural projects for lake transport indicate limited political support for lake transport in Malawi.

Planning: The strengths of the future planning are that there are extensive strategies that have been investigated and if implemented could result in cost effective and efficient lake transport service in Malawi. With the privatization of the lake services and port management on Lake Malawi, all economically viable future plans are likely to be investigated, funding pursued and projects implemented.

The weakness of the future planning for lake transport is that no action plans have been developed by the Department of Transport and Public Works to implement the

strategies contained in the National Transport Policy document and no funding from the Malawian Government has been made available to undertake feasibility studies of possible economically viable expansions to the existing services and infrastructure.

There is limited political support for the future planning of lake transport. The lack of any formal planning with regard to tourism on Lake Malawi is also a weakness.

TABLE 3.13 MALAWI LAKE DISTANCES BETWEEN PORTS AND ANCHORAGES

	Monkey Bay	Chilinda	Makanjira	Chipoka	Nkhotakota	Likoma	Chizumulu	Mbamba Bay	Nkhata Bay	Mangwina	Usisya	Ruarwe	Charo	Mlowe	Chilimba
Monkey Bay	-	41	50	50	219	315	315	400	356	372	410	426	437	463	494
Chilinda	41	-	41	65	122	193	193	395	323	296	316	331	342	366	402
Makanjira	50	41	-	50	113	140	140	303	296	280	281	295	306	328	369
Chipoka	50	65	50	-	161	238	238	336	298	314	352	369	380	406	436
Nkhotakota	219	122	113	161	-	116	116	212	158	174	212	229	240	266	296
Likoma	315	193	140	238	116	-	21	117	78	115	129	135	139	220	251
Chizumulu	315	193	140	238	116	21	-	98	61	78	100	111	127	201	232
Mbamba Bay	400	395	303	336	212	117	98	-	69	53	124	130	141	50	129
Nkhata Bay	356	323	296	298	158	78	61	69	-	17	45	61	76	108	138
Mangwina	372	296	280	314	174	115	78	53	17	-	39	43	60	92	122
Usisya	410	316	281	352	212	129	100	124	45	39	-	15	32	53	87
Ruarwe	426	331	295	369	229	135	111	130	61	43	15	-	15	47	68
Charo	437	342	306	380	240	139	127	141	76	60	32	15	-	24	55
Mlowe	463	366	328	406	266	220	201	50	108	92	53	47	24	-	31
Chilumba	494	402	369	436	296	251	232	129	138	122	87	68	55	31	-

Economic Policy: Lake transport is provided by nature, and the only investments required are in port infrastructure and vessels. Lake services if properly run should relieve roads of some heavy vehicle traffic reducing road maintenance costs. Social costs are minimal as there are few external diseconomies.

The Weaknesses are:

- Inadequate investment in infrastructure
- The inappropriate vessels that have been purchased, and transshipment costs, which have to be incurred as a result of the multi-modal nature of lake transport.
- Policy bias in favor of road transport is an additional problem. River transport should be able to provide a cheap mode, but has also suffered from the Mozambican civil war with lack of maintenance and the loss of barges. However, if this mode could be re-established, it would offer cheaper transport and also lower social costs.

Note: As in the case of rail, there is no particular political lobby to support lake transport.

TABLE 3.14 PASSENGERS CARRIED BY M.V. ILALA ON SELECTED JOURNEYS DURING 2001

Date	Route	Total Number of Passengers per Trip	Peak Occupancy per Trip
08/03	Out	581	182
15/03	Back	617	185
27/04	Out	581	185
03/05	Back	773	267
04/05	Out	803	232
10/05	Back	920	319
11/05	Out	649	165
17/05	Back	652	198
18/05	Out	560	148
24/05	Back	595	157
-	Average	673	-
21/09	Out	345	93
26/09	Back	401	112
28/09	Out	578	142
03/10	Back	620	162
-	Average	486	-

Source: Malawi Lake Services

Notes : 1. Average Occupancy Out= 182 passengers
2. Average Occupancy Back= 225 passengers
3. Busiest : Monkey Bay, Likoma, Nkhata Bay

3.4.4 Airports and Air Transport

General Background

Civil aviation in Malawi is a comparatively small industry, however, air transport is both strategically important as Malawi is a landlocked country and economically sensitive due to trade globalization and the adoption of an open skies policies in COMESA.

During the past 10 to 20 years, the Malawian government has invested heavily in civil aviation infrastructure, equipment and aircraft in order to be able to provide international standard air travel over Malawian skies.

Malawi has four international airports; two major airports at Lilongwe and Chileka (Blantyre) and two minor airports at Mzuzu and Karongo. In addition to these international airports there are a further 19 registered airfields in Malawi of which 4 are privately owned. There are also at least 10 known unregistered airfields throughout Malawi.

All the international airports have customs, immigration and airport police security services and facilities. Lilongwe and Chileka airports also have health, flight catering, ground handling and aviation fuel services and facilities.

Lilongwe has the longest runway and the most modern terminal buildings of the four international airports although the communication and navigation facilities at Lilongwe need to be upgraded and the buildings need a facelift. The runway at the Lilongwe airport has developed cracks and the Department of Civil Aviation is in the process of repairing these. All of the airport facilities at Chileka airport need to be upgraded and modernized. The runway at Chileka is not able to accommodate aircraft larger than Boeing 737s. The facilities at the other two international airports are rudimentary, however, they are considered acceptable for the number of flights that are catered for at these airports.

There are no facilities of any significance at any of the smaller airfields that are predominantly maintained for tourism and national security.

There are a total of 25 registered aircraft in Malawi of which 15 are privately owned and 10 are owned by the Malawi Government or Air Malawi. Of these 25 aircraft, only 12 have valid certificates of airworthiness as of 1 July 2001. The number of registered aircraft in Malawi has reduced from 29 in 1999 to 25 in 2001.

A total of six national airlines operate 37 scheduled international flights per week from Lilongwe and Chileka international airports; Air Malawi, Air Zimbabwe, South African Airways, Ethiopian Airlines, Kenya Airways and British Airways. These airlines serve 6 regional destinations outside Malawi and one inter-continental destination.

Air Malawi also operates 60 scheduled domestic flights per week between Lilongwe, Blantyre, Mzuzu, Karongo and Makokola.

Chileka airport handled 678 tons of freight during 2000, which is down by nearly 50 percent compared to 1995. Lilongwe airport handled 4,670 tons of freight during 2000, which is a reduction of 14 percent from 1995. Recent indications are that there will be a further significant drop in airfreight to and from Malawi in 2001 at both airports. Air freight to and from Malawi is expensive in world terms and whilst the air freight services are considered to be relatively efficient, additional handling equipment on the

ground at the two international airports coupled with an improved customs procedure will significantly improve efficiency which in turn could reduce costs.

The number of passengers passing through Chileka airport has been fairly static since 1995 at between 100,000 and 120,000 with a downward trend developing since 1997. Similarly, the number of passengers passing through Lilongwe airport has been fairly static since 1995 at between 200,000 and 225,000 with a slight downward trend developing since 1997.

Regional and international air travel to, from and within Malawi is expensive in world terms. Generally, the aviation facilities in Malawi are operating well below capacity.

Planning

Malawi needs to ensure that international standards in aviation are maintained in order to be able to protect existing investment in aviation infrastructure, provide a safe air travel environment and encourage private sector involvement in civil aviation. As such, the Malawi Government has a National Transport Policy for Civil Aviation that has specific objectives and strategies with regard to aviation infrastructure, safe, efficient and cost effective air travel and compliance with international standards and policies. Action Plans have been developed to satisfy the requirements of the National Transport Policy and these action plans include the following with respect to civil aviation infrastructure and services:

- Provide and improve aviation infrastructure at Mangochi, Likoma, Mzuzu, Lilongwe and Chileka.
- Improve navigation aids and communication facilities.
- Privatize the national airline and economically feasible airports.

A feasibility study into the restructuring of the civil aviation industry in Malawi has recently been completed. Commercialization of the civil aviation sector is thus under consideration, with the privatization of Air Malawi being well underway. Privatization of Chileka airport is also presently under consideration with a study commissioned by the Malawi Development Corporation having recently been completed. No decision has been made in this regard. Should this privatization proceed and be successful, there is likely to be an improvement in the maintenance and replacement in infrastructure and equipment at this airport.

There is a need for an airport near the lake at Mangochi to serve the tourist trade. This was planned in the mid 1980's but to date no further work has been undertaken.

Air Malawi is investigating operations to Maputo in Mozambique.

Future projects of the Department of Civil Aviation include the construction of new airports at Mzuzu and the one at Mangochi and the upgrading of the existing airfield at Likoma.

Economics

Government policy is to commercialize the air transport sector. Air Malawi has been commercialized but is loss making and is negotiating with a strategic partner. Although Malawi has signed the Yamoussoukro Declaration on liberalization of the aviation industry, and has agreed to the COMESA open skies policy, government policy has been to support the national flag carrier for political reasons. Malawi has been affected by changes in the economics of the international airline industry, particularly by the tendency of international airlines to operate in regional hub airports with regional carriers then serving outlining airports. The number of airlines serving Malawi has fallen, and passenger traffic has decreased. The low levels of traffic mean that domestic services are largely on a charter basis, and that there have been no takers for the privatization of the Lilongwe and Blantyre airports. Air cargo traffic has also declined, and the weekly freighter service to and from London has ceased to operate, giving way to belly cargo with the Johannesburg route predominating.

Institutional Management

The Department of Civil Aviation regulates aviation activities and the operation of airports, and reports to the government. It also provides the infrastructure, including airport navigation equipment, and controls the licensing of private aircraft, pilots and engineers. Relevant legislation for this sector consists of the Aviation Act of 1970, the Hijacking Act of 1972, and the Carriage by Air Act. Lilongwe International Airport is jointly run by the department (responsible for the runway, navigational facilities, air traffic and technical services) and the Airport Developments Company Limited (a government-owned company) responsible for the terminal, associated buildings and the estate. The department has a revenue-collecting function, receiving landing and navigation fees as well as passenger service charges. Since 1997, the department has been allowed to retain 80 percent of its collections. A study has just been completed on an autonomous Aviation Authority to replace the present civil service setup. This would entail a merger of the department and ADL, i.e. a merger between a civil service department and a commercialized enterprise, with the former predominating. However, unless the ethos of the business enterprise could predominate, this is unlikely to be a successful step. The better model would be an Airports Authority and an independent Civil Aviation Authority as in South Africa and Kenya. In terms of such a model, the ADL should receive (or at least share) the revenue from passenger service charges. At present, its income is restricted to rental from tenants at Lilongwe International Airport. This is insufficient to maintain, let alone upgrade, the terminal building, which is now 20 years old and in need of modernization. With access to passenger service charges, ADL could run all the airports in the country.

Planning

Air transport activity in Malawi is and has been relatively low since 1990 with no real increase in any sectors of the industry Commercial aircraft movement has increased in the last few years but this is mainly due to the use of smaller aircraft. The overall aviation indicators have fallen significantly over the last 10 years and the events on 11 September 2001 are expected to have an even further adverse impact on the aviation industry in Malawi.

The Feasibility Study for the Restructuring of Civil Aviation in Malawi adopted a medium growth scenario for civil aviation traffic forecasts in Malawi. This scenario recommended average annual growth rates at the Lilongwe and Chileka airports of between 1.5 percent per annum for general aviation aircraft movements to 4.2 percent per annum in international passenger movements at Lilongwe airport.

The Airports Development Company in their forecasting also expect growth in passenger volumes of between 1 percent and 5 percent in the next five years and growth in freight volumes of between 1 percent and 4 percent over the same period.

Both the above forecasts are considered to be optimistic in the light of 2001 indicators and the events of 11 September 2001. The demand for both passenger and freight transport is thus expected to reduce by between 2 percent and 4 percent per annum for the short term before increases of between 1 percent and 3 percent are forecast.

There are no planned developments in any of the major industries that use air transport to suggest an increase in aviation activity. Existing infrastructure and services will thus easily be able to accommodate the forecast demand.

The future efficiency of air transport is critical to the development of the tourist industry and the growth of the private sector.

Strengths and Weaknesses

Infrastructure services: The strength of civil aviation in Malawi with regard to infrastructure and services is that the government has invested heavily in air transport infrastructure, equipment and aircraft in the last 20 years and has thus been able to provide international standard air travel over Malawian skies during this period.

The air services over Malawi skies are at present efficient, reliable and still of international standard. The existing air transport infrastructure in Malawi is under-utilized and will be able to accommodate any significant increase in demand over the next 10 years.

The major weakness of the civil aviation industry in Malawi is the rapid change in navigation, communication and apron technology that renders equipment obsolete on a regular basis. The reducing demand in passenger and freight air services cannot economically justify the replacement of this equipment on a regular basis.

Another weakness is the lack of maintenance of the existing infrastructure and equipment over the years, which will eventually affect the safety, efficiency and reliability of civil aviation in Malawi.

Planning: The strength of civil aviation planning in Malawi is the National Transport Policy on Civil Aviation, which has identified all the issues pertaining to infrastructure, equipment and aircraft for air transport in Malawi and has developed objectives and strategies to address these issues.

A further strength is that the Department of Civil Aviation has identified the need for an airport near Lake Malawi at Mangochi to serve the tourist trade. Tourism is probably the only industry that will increase demand for air travel in Malawi in the foreseeable future.

The weakness of the future planning for civil aviation is that no action plans have been developed by the Department of Transport and Public Works to implement the strategies contained in the National Transport Policy document.

Economic policy: Air transport is the main mode for international business and government travel. The two international airports have adequate capacity to handle demand, which in fact has been declining. Passenger and airfreight flight schedules and services have been cut as a consequence, and more use is now made of regional hub airports for international flight links. Low levels of demand and high costs ensure that air transport is not a major domestic mode, but it could become more important if smaller airfields around the lake, national parks and game reserves were upgraded in order to develop the tourist industry. The growth of the charter air service industry is constrained by high interest rates and high duties on aircraft.

Institutional management: Although there have been steps in the right direction with regard to the reform of the air transport sector, they have not gone far enough. The Directorate of Civil Aviation remains part of the civil service, but there would be efficiency gains if it were commercialized as an independent Civil Aviation Authority along the lines of the Kenyan and South African models. The present civil service procedures with regard to salaries and staffing matters make it difficult to recruit some of the skilled people required. The establishment of Airports Development Limited has improved the management of the Lilongwe International Airport, but the management of Blantyre airport remains unchanged. There may be considerable efficiency gains if ADL's mandate were to be extended to all airports, as has been the case in the South

African model. The funding procedures for ADL are inadequate for the purposes of upgrading the airports, and this is a weakness that needs to be rectified.

TABLE 3.15 REGISTRATION OF AIRCRAFTS IN MALAWI AS OF 31 JULY 2001

Aircraft Type	No. on Register	Ownership
ATR 42 – 320	1	Air Malawi
AYRES S2RT THRUSH	1	Makandi Aviation
BEECH A36 BONANZA	1	SR Nicholas Ltd
BEECH 58 BARON	1	Illovo Sugar
BEECH 300	1	Stancom Aviation
BOEING 737-33A	1	Air Malawi
BRITTEN NORMAN ISLANDER 2T	3	Malawi Police
CESSNA 150	1	Malawi Police
CESSNA 172M	1	Malawi Police
CESSNA 182F	1	Makandi Aviation
CESSNA 182R	1	Agritec Ltd
CESSNA TU 206B	1	Leopard Air
CESSNA 208 CARAVAN	1	Air Malawi
CESSNA CITATION 550	1	Limbe Leaf Tobacco
ECUREUIL AS 350 LI	1	Malawi Police
PARTENAVIA P68-TC	1	Lusitania Ltd
PIPER J3C CUB	1	AJ Rix and P Huegli
PIPER PA 18-150	1	Dept. of Wildlife
PIPER PA 28-140	2	Robin Air Limited / Luchenza Flying
PIPER PA 28-180	1	Luchenza Flying
PIPER PA 28-235	1	Vale Development
TOTAL NO. OF REGISTERED AIRCRAFTS	25	-

Source: Department of Civil Aviation

TABLE 3.16 PASSENGER AND FREIGHT HANDLED AT LILONGWE AND CHILEKA INTERNATIONAL AIRPORTS

	Lilongwe International Airport			Chileka International Airport		
Year	Pass	Freight	Mail	Pass	Freight	Mail
1990	257,287	6,750	351	76,285	1,144	334
1991	300,629	9,226	410	77,840	1,182	60
1992	265,721	8,611	374	85,759	1,303	57
1993	254,821	6,683	442	95,075	1,328	106
1994	252,000	7,788	353	118,000	1,843	89
1995	210,196	5,164	352	104,968	1,299	29
1996	204,803	5,611	271	116,282	1,168	21
1997	212,038	4,543	248	126,637	1,052	22
1998	223,038	4,139	314	120,730	1,825	25
1999	199,364	4,953	287	119,355	654	74
2000	208,248	4,703	270	103,064	679	40

Source: Department of Civil Aviation

TABLE 3.17 TRAFFIC AT OTHER AIRPORTS AND MINOR AERODROMES, 1999

Aerodrome	Aircraft Movement				Passengers		
	Com	Pvt	Military	Total	On	Off	Total
Karonga	330	54	36	420	1,098	1,027	2,125
Mzuzu	1384	58	176	1,618	3,951	3,964	7,915
Lilongwe Old	-	-	318	318	912	1,007	1,919
Zomba	2	2	201	205	715	594	1,309
Kasungu	1	2	1	4	19	19	38
Mtakataka	-	-	5	5	15	15	30
Mangochi	-	-	2	2	-	-	-
Monkey Bay	1	-	-	1	-	4	4
Dwangwa	29	61	-	90	209	203	412
Sucoma	26	17	-	43	112	120	232
Salima	14	2	23	39	98	111	209
Makhanga	17	1	-	18	39	29	68
Likoma	13	-	17	30	157	176	333
Chitipa	2	-	2	4	12	17	29
Nkhotakota	-	-	1	1	-	3	3
Nsanje	-	-	3	3	12	14	26
Makande	-	-	-	-	-	-	-
Chelinda	69	4	-	73	230	242	472
Lifupa	1	-	-	1	-	-	-
Satemwa	-	-	-	-	-	-	-
Conforzi	17	3	-	20	3	14	17
Club Makokola	174	53	2	229	786	658	1,444
Liwonde	-	-	-	-	-	-	-
Ntchisi	-	-	4	4	10	14	24
Bangula	2	-	-	2	5	-	5
Thunga	1	-	-	1	3	3	6
Mzimba	-	-	1	1	6	6	12
TOTAL	**369**	**145**	**580**	**1,094**	**3,343**	**3,343**	**6,592**

Source: Department of Civil Aviation, Annual Report of Statistics 1999

TABLE 3.18 FORECAST AIR TRAFFIC AT LILONGWE AIRPORT

	2000	2001	2002	2003	2004	2005	2006
AIRCRAFT MOVEMENTS							
Scheduled							
International	2480	2505	2555	2606	2684	2765	2876
Domestic	3507	3542	3612	3684	3795	3909	4065
Other							
International	1810	1828	1865	1902	1959	2018	2099
Domestic	2375	2398	2446	2495	2570	2647	2753
PASSENGER VOLUMES							
Scheduled							
International Arriving	56253	56815	58519	60275	62686	65820	69111
International Departing	60651	61258	63096	64989	67589	70968	74516
Domestic Arriving	28115	28396	29248	30125	31330	32896	31541
Domestic Departing	23244	23476	24180	24905	25901	21196	28556
Other							
International Arriving	2064	2085	2148	2212	2300	2415	2536
International Departing	2167	2189	2255	2323	2416	2537	2664
Domestic Arriving	1508	1523	1569	1616	1681	1765	1853
Domestic Departing	1429	1443	1486	1531	1592	1672	1756
Transit	27187	27459	28283	29131	30296	31811	33401
FREIGHT VOLUMES							
International Inwards	3058.7	3089.3	3151	3214	3310	3442	3580
Outwards	707.0	714.1	728.4	742.9	765.2	795.8	827.6
Domestic Freight							
Inwards	109.8	110.9	113.1	115.3	119.9	124.7	129.7
Outwards	252.0	254.5	259.6	264.8	275.4	286.4	297.8
MAIL							
International							
Inwards	218.9	221.1	225.5	230	236.9	246.4	256.3
Outwards	32.5	32.8	33.5	34.2	35.2	36.6	38.1
Domestic							
Inwards	8.3	8.4	8.6	8.8	9.1	9.5	9.9
Outwards	1.0	2	2.1	2.2	2.3	2.4	2.5
CAPACITY LEVELS							
Passenger Terminal (pass / hour)	65	66	68	70.4	72.8	77	81
Freight Terminal (tones / day)	9	10	11.5	12.5	14	15	16

Source: Airports Development Company

TABLE 3.19 MEDIUM GROWTH SCENARIO OF AIRPORT ACTIVITY FROM THE FEASIBILITY STUDY FOR THE RESTRUCTURING OF CIVIL AVIATION IN MALAWI

Airport	Activity	2000	2010	Average Annual Growth
Lilongwe	International passengers	133,200	201,100	4.2%
	Domestic passengers	55,100	74,700	2.9%
	International freight (t)	3,320	4,580	3.3%
	Domestic freight (t)	410	530	2.6%
	International aircraft movements	2,720	4,370	4.8%
	Domestic aircraft movements	4,850	6,790	3.4%
	General aviation aircraft movement	1,700	1,970	1.5%
Blantyre	International passengers	55,300	79,500	3.7%
	Domestic passengers	47,200	63,100	2.9%
	International freight (t)	360	510	3.5%
	Domestic freight (t)	420	540	2.5%
	International aircraft movements	860	1,270	3.6%
	Domestic aircraft movements	4,080	5,730	3.5%
	General aviation aircraft movement	3,500	4,060	1.5%
Mzuzu	Domestic passengers	7,100	9,030	2.4%
	Domestic freight (t)	45	56	2.2%
	Domestic aircraft movements	1,190	1,440	1.9%
	General aviation aircraft movements	250	290	1.5%
Karonga	Domestic passengers	2,200	2,880	2.7%
G14		2	2	0.0%
	Domestic aircraft movements	370	460	2.2%
	General aviation aircraft movements	100	120	1.8%
Overflights	-	3,840	5,410	3.5%

Source: Report on the Restructuring of the Civil Aviation Industry in Malawi.

TABLE 3.20 STRENGTH AND WEAKNESSES OF THE TRANSPORT SECTOR SUMMARIZED

Sub-Sector	Strengths	Weaknesses
Road	Widest coverage of all sub-sectors Provides only access to many remote areas Provides operational flexibility for users Road Haulage is in hands of private sector Strong Institutions (NRA)	Poor condition of unsurfaced roads High social costs and accident rates Shortage of means of transport Funding shortfalls for adequate maintenance High vehicle operating costs Uncertainty regarding adequacy of policy Strategies are neither adequate nor sufficiently comprehensive to ensure implementation of policy in the focal areas Capacity and capability for enforcement not adequate
Rail	Connects major centers with Nacala port Best suited for bulk haulage Management strengthened by concessioning	Limited spatial coverage No strong political lobby Uncertainty regarding adequacy of policy Strategies are neither adequate nor sufficiently comprehensive to ensure implementation of policy in the focal areas Service of rail is infrequent Absence of legal / regulatory framework for rail Capacity and capability for enforcement not adequate
Lake	Natural north-south transport corridor Minimal social costs Management strengthened by concessioning	Limited spatial coverage Inadequate infrastructure Necessity for trans-shipment Uncertainty regarding adequacy of policy Strategies are neither adequate nor sufficiently comprehensive to ensure implementation of policy in the focal areas Capacity and capability for enforcement not adequate
Air	Major mode for international business and government travel Capacity is adequate	Institutional weaknesses yet to be addressed Inadequate funding leading to lack of maintenance Uncertainty regarding adequacy of policy Strategies are neither adequate nor sufficiently comprehensive to ensure implementation of policy in the focal areas Capacity and capability for enforcement not adequate

3.5 DONOR SUPPORT, ON-GOING AND PROPOSED PROJECTS

Road Maintenance and Rehabilitation project (ROMARP)

This Program, which started in 1999, is funded by the World Bank (US$30 million) and Nordic development (US$7 million) and aims at supporting on-going reform as well as the improvement of the road network through backlog maintenance and rehabilitation.

TABLE 3.21 BREAKDOWN OF ROMARP BUDGET

Component	Cost (US$ million)
Strengthening of Road Sector Institutional Framework	6.1
Development of construction and consulting industries through NCIC	4.9
Support to sustainable periodic maintenance	10.1
Support to selective rehabilitation and upgrading	16.9
Project Preparation Facility (PPF) refinancing	1.5
Total	39.5

EU 6th and 8th EDF

These two road management support programs had an allocation of about US$15.7 million in 1998. The programs provide technical assistance training, local services, equipment to NRA, road safety and axle load control and backlog maintenance. The program has allocated US$96 million for a total of 7 projects with a total of 440 km. Another EU program under 9th EDF is planned for 2002.

ADB Funded road projects

- ADB is currently funding three upgrading projects totaling 200km at a cost of US$51million. One project has started and two are yet to start.

KfW

- This program is funding backlog maintenance of 331 km of roads at a total cost of US$9million.

TABLE 3.22 SUMMARY OF ONGOING DONOR FUNDED PROJECTS

Rehabilitation	Length (km)	Cost (US$ million)
Main roads	867	156.3
Urban roads	29	4.4
Back-log maintenance		
Paved main roads	1,183	28.9
Feeder roads (central and district)	1,262	2.0
Total	3,341	191.6

Funding

A list of the sources of funding for projects by mode in Malawi is not currently available. There is no break down on where funds are derived from (i.e. internal government, multilateral and bilateral sources, as well as the split between loans and grants). Below is a list of major projects under the NRA.

Donor agencies apparently do try to coordinate their efforts in order to facilitate an efficient flow of funds to the sector; but the emphasis, not unexpectedly, has been on the road sub-sector. This is the mode with the greatest geographic coverage and which carries the majority of traffic, both goods and passenger. Road surfaces deteriorated in the 1990s and required a considerable outlay for rehabilitation and upgrading. However, it is important that donors not lose sight of the needs of the other modes and of the requirements of an economically efficient transport system. This is one which would treat all modes alike in terms of operating conditions, i.e. full cost recovery with subsidies not only for loss-making but also for socially desirable services. Whether Malawi could pursue such a policy in isolation is an issue, though, given its commitment to implementing regional transport policies (under SADC and COMESA), which themselves do not go far enough in terms of creating equitable competition among the modes. For example, strong views were expressed by ministry officials to the effect that the road network was not designed and built for the current axle-load and GVM standards, which have been adopted largely at the behest of regional organizations. Aggravating the situation is that enforcement of overloading control is weak, which skews the inter-modal distribution of traffic even more.

TABLE 3.23 MAJOR DEVELOPMENT PROJECTS UNDER NRA

Donor Agency	Project	Expected date of completion	Works contract (Kw)	Supervision contract (Kw)	Total contract sum (Kw)
EU	Karonga-Chilumba-Chiweta Road (M1-S102)	15/8/02	1,185,989,053.77		1,250,949,053.77
	Balaka-Lirangwe-Mwanza Road (M1,M6)	12/01	203,930,230.91		203,930,230.91
	Blantyre-Chikwawa Road (M1)	2/10/01	159,916,739.50		159,916,739.50
	Lirangwe-Blantyre Road (M1)	20/6/01	66,318,796.60		66,318,796.60
NRA Fuel Levy	Chileka Roundabout-Blantyre (Magalasi Section)(M1)	12/8/01			59,228,287.21
	Balaka-Liramgwe-Mwanza	12/01	59,228,287.21		14,193,100.00
	Lirangwe-Blantyre	20/6/01	14,193,100.00		6,231,935.00
	Blantyre-Chikwawa	2/10/01	6,231,935.00		8,645,271.00
EU Food Security	Chikwina-Usisya Road (S108)		27,500,000.00	6,086,259.98	33,586,259.98
ADB	Msulira-Nkhotakota Road (M18)	14/5/02	716,992,715.58		716,992,715.58
Kuwait/ OPEC/ BADEA	Nselema-Naminga-Mangochi (S131)	19/11/01	2,800,000,000.00		2,800,000,000.00
World Bank	Lilongwe-Mchinji Road (M12)	12/01	123,194,455.70		123,194,455.70
	Lumbadzi River-Chitsime (M1), Lilongwe Airport Road (M30), Chitsime to Bunda Road (S125)	10/01	123,008,397.44		123,008,397.44
	Lilongwe-Salima-Senga Bay Road (M14-S122)	11/01	136,420,369.30		136,420,369.30
	Salima-Nkhotakota Road (M5)	02/02	126,210,528.00		126,210,528.00
	Limbe-Chiradzulu (S146), Zomba Air Wing Road (S143), Mangochi-Mbalula Road (M3), Liwonde-Naminga Road (S131)	4/03/02	225,699,697.50		225,699,697.50

Donor Agency	Project	Expected date of completion	Works contract (Kw)	Supervision contract (Kw)	Total contract sum (Kw)
	Design of Selected Main Roads (Jenda-Chikangawa, Mzuzu-Nkhata Bay, Dwangwa-Nkhotakota, Blantyre-Zomba) (Sum in £)	12/01	679,123.00		679,123.00
	Design of Selected Urban Roads in Lilongwe and Blantyre (Sum in $)	10/01	212,050.00		212,050.00
	Supervision of Works Contracts 25/98, 27/98 and 30/98 (Sum in £)			615,785.00	
	Supervision of Works Contracts 26/98, 28/98 (Sum in CA$)			1,023,713.00	
KfW	Lilongwe International Airport Junction-Bua Bridge Road (M1)		85,950,084.00		85,950,084.00
	Bua Bridge-Nkhamenya Road (M1)		80,978,709.24		80,978,709.24

Notes: US$=70Kw

A coherent study on how to best fund the transport infrastructures in such a way as to best fit the PRSP, the private sector development process, the international trading agreements and the general process of globalization. This would assist in mainstreaming transport infrastructure development into the national economic agenda in an economically efficient way.

The road sector derives its funding from a number of sources. Road maintenance is funded by the fuel levy, COMESA/SADC transit charges (which are distance-related at US$10/100 km for the largest vehicle combinations) are intended to cover damage to road surfaces, and capital projects are funded by donors.

The NRA believes that, while it is receiving almost sufficient income for routine maintenance, it would need an additional Kw2 billion per annum for rehabilitation. The priority for donor funding should be for roads into tourist and agricultural areas as well as areas of heavy population. This is would cover approximately 2 700km of the network.

There are two points to bear in mind with regard to funding in the road sub-sector. First, a careful balance needs to be maintained in order to ensure that donor funding does not place a burden on the NRA for maintenance once the construction programs have been concluded. Donors such as the EU for example, will not fund maintenance,

which they believe ought to be self-financed out of the fuel levy. Although significant amounts of donor funding might be required in the short term, there could be long-term implications for maintenance funding. If there is pressure on revenue for maintenance, there will be no alternative but to increase the fuel levy as a proportion of the pump price. There is already a view in government that the levy is too low: at the time of fieldwork it stood at Kw4.75/l for diesel and Kw6.75/l for petrol.

Secondly, the tendency of donors to use foreign (mainly South African) contractors rather than local contractors pushes up project costs. Although there are some joint ventures between South African and local contractors, the fact is that the foreign contractors are more expensive than local ones.

Rail, lake and air transport have been commercialized to varying degrees, but there remains a need for donor assistance in infrastructure funding for the modes.

TABLE 3.24 TRANSPORT SECTOR'S SHARE OF DONORS' SUPPORT

Source	Year	%
Bilateral	1998	5.6
Bilateral	1999	3.8
Bilateral	2000	3.3
Bilateral	1998-2000	4.0
IDA	1999-2001	15.3
ADB	1996-98	8.8

The interventions listed in these sections are all gaps in present sector programs, and donor funding in plugging these gaps would be essential in the improvement of the sector and in enhancing its ability to assist in meeting the government's poverty alleviation goals.

The existing transport sector policies are not engendered. This needs to be addressed.

Malawi is the only country in Southern Africa that has a large lake as a national tourism asset. The review showed that the marketing of this lake together with the national parks could significantly increase tourism to Malawi, which will have a major spin for local communities and boost the poverty alleviation programs. Transport related tourism projects therefore need to be identified and supported.

3.6 SUMMARY OF PUBLIC EXPENDITURE IN THE TRANSPORT SECTOR

The budget for the financial year 2001/2002 amounted to Kw 45,875 million of which Kw3,041 million (or 6.6%) was allocated to two votes directly concerned with transport. These were Vote 400 (Ministry of Transport and Public Works) and Vote 420 (National Roads Authority). The details are set out in the table below.

TABLE 3.25 TRANSPORT IN THE BUDGET, 2001/02

	Recurrent	Capital	Total
MTPW (Kw)	481,938,139	762,631,800	1,244,569,939
NRA (Kw)	-	1,796,000,000	1,796,000,000
Transport (Kw)	481,938,139	2,558,631,800	3,040,569,939
Total budget (Kw)	32,199,136,373	13,675,835,244	45,874,971,617
Transport as % total	1.5	18.7	6.6

Source: Approved Estimates of Expenditure on Recurrent Capital Accounts for the Financial Year 2001/2002 (Output Based). Zomba: Government Printer.

Two other ministries also usually receive funds for transport-related activities. These are:

1. Ministry of District and Local Government Administration – this ministry has activities such as developing local capacity to construct and maintain feeder roads, access roads, trucks, paths and bridges, and ensuring all-year access to schools, clinics and other facilities. However, no capital funds were voted for this purpose in 2001/02.

2. Ministry of Tourism, Parks and Wildlife – although there was an allocation of Kw6,500,000 in 2000/01 for the development of road infrastructure in national parks, no capital budget figure appeared in the 2001/02 estimates.

3.7 KEY ECONOMIC AND SOCIAL INDICATORS

TABLE 3.26 FINANCIAL INDICATORS

Item	1996	1997	1998	1999	2000
GDP (constant 1978 prices) (Kw million)	11,443.8	12,240.8	12,509.2	13,012.9	13,316.2
GDP real growth (%)	10.5	7.0	2.2	4.0	2.3
GDP (current market prices) (Kw million)	36,454.0	42,310.4	57,319.0	78,544.4	93,292.0
GDP per capita (current market prices) (Kw million)	3,837.3	4,407.3	5,848.9	7,854.4	8,987.9
Consumer price inflation (%)	37.6	9.2	29.8	44.9	29.6
Prime lending rate (%)	26.0	22.0	43.0	47.0	50.0
Manufacturing production index (1984=100)	120.2	116.3	104.3	98.0	93.1
Merchandise exports fob (US$ million)	483	539	539	447	n / a
Merchandise imports fob (US$ million)	624	783	579	673	n / a
Current account balance (US$ million)	-176	-263	-43	-151	n / a
Gross official reserves (US$ million)	218	155	258	244	224
Total external debt (US$ million)	2,156	2,259	2,479	2,589	2,706
External debt-service ratio	16.8	15.3	18.2	17.7	20.6
Exchange rate (av. Kw:US$)	15.3	16.5	31.1	44.2	59.1

Source: Reserve Bank of Malawi, Financial and Economic Review, 33(1), 2001

IMF, Malawi: Selected Issues and Statistical Appendix, 2001

TABLE 3.27 TRANSPORT COSTS

Commodity	Mode	Route	Rate (US $)
Fertilizer	Road	Hre-Bl	55 / ton
	Road	SA-Bl	85-110 / ton
	Road	Beira-Bl	55 / ton
	Road	Bl-Lil	7 / ton (foreign haulier)
	Road	Bl-Lil	22 / ton (local haulier)
Beverages	Road	Bl-Hre	55-64 / ton
	Road	Bl-Jhb	71 / ton
	Road	Bl-Beira	62 / ton
	Road	Bl-Dar	118 / ton
Garments	Rail	Nac-Bl	1450 / 20 ft. container
	Rail	Bl-Nac	810 / 20 ft. container
	Road	Bl-Beira	900 / 20 ft. container
	Road	Bl-Dbn	1,220 / 20 ft. container
	Rail	Lil-Nac	830 / 20 ft. container
	Road	Lil-Beira	920 / 20 ft. container
Foodstuffs	Road	Jhb-Bl	50 / ton
Sugar	Rail	Bl-Nac	60 / ton
	Road	Bl-Beira	100-110 / ton ($60 if backloads)
Tea	Road	Bl-Jhb	130 / ton
	Road	Bl-Dbn	1,085 / 20 ft. container
	Road	Bl-Dbn	2,065 / 40 ft. container
	Sea	Dbn-Tilbury	775 / 20 ft. container
	Sea	Dbn-Tilbury	1,550 / 40 ft. container
General	Road	Jhb-Lil	70-77 / ton
	Road	Jhb-Bl	65-72 / ton
	Rail	Bl-Nac	2,050 / 20 ft. container
	Road	Bl-Dbn	2,450 / 20 ft. container
	Rail	Lil-Nac	1,000 / 40 ft. container
	Road	Jhb-Bl	2,000 / 40 ft. container
	Road	Beira-Bl	1,600 / 40 ft. container
	Road	Jhb-Bl	100 / ton
	Rail	Nac-Bl	50 / ton
	Road	Lil-Beira	1,100 / truck
		Bl-Beira	900 / truck
		Lil-Dbn	2,400 / truck
		Bl-Dbn	2,200 / truck
	Rail	Lil-Nac	1,000 / 40 ft. container
		Bl-Nac	850 / 40 ft. container

TABLE 3.28 FUEL RATES (KW/L)

From	Mode	Lilongwe	Blantyre
Dar-es-Salaam	Road	6.04	6.99
Dar-es-Salaam	Rail to Mbeya / road	5.51	6.54
Dar-es-Salaam	Rail to Mbeya / road / lake / road	6.26	6.41
Beira	Road	4.37	3.80
Nacala	Rail	5.07	3.94

TABLE 3.29 DEMOGRAPHICS

Item	Unit	Year	Value
Population	Million	1999	11
Population growth rate	% pa	1990-99	2.6
Urban / total population	%	1980 1998	9 24
Population density	Per km^2	1999	115
Child malnutrition	% children <5 yrs	1992-98	30
Mortality rate	under 5 yrs. / 1000	1990 1998	265 229
Life expectancy at birth	years	1998	42
Adult illiteracy rate – male – female	%>15 yrs %>15 yrs	1998 1998	27 56
Population below poverty line	%	1990-91	54
Education / GNP	%	1980 1997	3.4 5.4
Health / GNP	%	1990-98	2.8
Access to safe water	% pop	1982-85 1990-96	32 45
Access to sanitation	% pop	1982-85 1990-96	60 53
Infant mortality rate	Per 1000 live births	1980 1998	169 134
Arable land	Ha per capita	1979-81 1995-97	0.20 0.16
Agric: value added	1995$ / agric worker	1979-81 1996-98	102 138
Food production index (1989-91=100)		1979-81 1996-98	91.1 109.7

Source: World Bank, World Development Report 2000 / 2001

TABLE 3.30 VOLUME OF CROPS MARKETED (TONS)

Crop	1996	1997	1998	1999	2000
Sugar	212,005	197,623	209,704	197,314	207,344
Tobacco	141,662	153,900	134,300	134,386	158,993
Tea	37,232	43,930	40,363	38,469	42,388
Maize	62,928	13,800	53,515	198,048	8,639

Source: Reserve Bank of Malawi, Financial and Economic Review, 33(1), 2001

TABLE 3.31 VOLUMES OF CROPS EXPORTED (TONS)

Crop	1996	1997	1998	1999	2000
Sugar	44,800	58,600	40,100	86,100	46,700
Tobacco	99,500	106,700	116,700	128,900	120,300
Tea	32,600	36,700	39,800	40,500	47,000
Coffee	5,400	5,100	4,200	3,600	4,400
Cotton	2,200	10,600	20,600	4,300	5,000
Pulses	28,600	41,800	26,000	14,000	19,600

Source: IMF, Malawi: Selected Issues and Statistical Appendix, 2001

TABLE 3.32 TOTAL POPULATION OF MALAWI, 1901–1998 CENSUSES

Year	Total Population	Average Annual Inter-censal Growth Rate (%)
1901	737,153	-
1911	970,430	2.8
1921	1,201,983	2.2
1926	1,263,291	1.5
1931	1,573,454	4.4
1945	2,049,914	2.2
1966	4,039,583	3.3
1977	5,547,460	2.9
1987	7,988,507	3.7
1998	9,933,868	2.0

Source: 1998 Malawi Population and Housing Census: Report of Final Results

TABLE 3.33 TOTAL GOODS AND PASSENGERS HANDLED BY RAIL, LAKE AND AIR TRANSPORT IN MALAWI (1995 – 2000)

Year	RAIL			LAKE			AIR			
	Net Km-Km ('000)	Passenger Kms ('000)	No. of Passengers ('000)	Net Km-Km ('000)	Passenger Kms ('000)	No. of Passengers ('000)	Freight Handled (Tons)		No of Passengers ('000)	
							Chileka Airport	Lilongwe Airport	Chileka Airport	Lilongwe Airport
1995	73,707	21,524	422	4,368	15,577	209	1,302	5,401	105	193
1996	56,923	26,166	465	1,426	9,644	141	1,168	5,971	117	202
1997	45,551	17,274	390	2,848	10,125	132	1,068	5,167	125	211
1998	54,985	20,749	425	4,601	8,601	110	477	2,433	74	102
1999	62,442	19,106	327	3,996	8,128	95	824	4,548	119	197
2000	79,747	24,789	418	745	7,054	80	678	4,670	104	202

Source: Monthly Statistics Bulletin – March 2001

TABLE 3.34 TOTAL MALAWI TRAFFIC HANDLED THROUGH THE PORT OF DAR-ES-SALAAM IN TONS (1990 – 2000)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Imports	116,804	132,513	128,118	127,617	98,088	110,269	105,352	76,474	65,442	77,581	52,567
Exports	23,856	35,627	6,379	7,782	7,750	2,205	0	2,491	144	0	60
Others	0	0	0	0	0	0	6,722	63,645	16,481	25,561	15,303
Total	140,660	166,040	134,497	135,379	105,838	112,474	112,074	132,610	82,067	103,142	67,930

Source: Malawi Cargo Centers Limited

TABLE 3.35 MOVEMENT OF IMPORTS AND EXPORTS, 1998-2000 ('000 TONS)

Border Post	1998			1999			2000		
	Export	Import	Total	Export	Import	Total	Import	Export	Total
Mchinji	34.3	80.9	115.2	27.5	58.1	85.6	30.9	69.5	100.4
Mwanza	100.7	504.9	605.6	94.2	323.6	417.8	97.4	414.3	511.7
Kaporo	20.0	144.2	164.2	11.4	93.6	105.0	15.7	118.9	134.6
Nacala	27.8	115.7	143.5	27.9	111.7	139.6	94.7	133.2	222.9
Total	182.7	845.7	1,028.5	161.1	587.0	748.0	238.7	735.9	969.6

TABLE 3.36 FUNDING OF ROAD DEVELOPMENT 2002 TO 2005 AS PER PRSP

Objective	Strategy	Activity	Indicators	Indicator type	Current Situation 2001	Targets			Costing item	Estimated cost (Kw million)						Estimated Cost (Kw million)				Lead (funding) institution	Other Responsible Institutions	Costing assumptions
2002-3	(in order of priority)	(in order of priority)				2002/3	2003/4	2004/5			2002-3		2002-3	2003-4	2003-4	2003-4	2004-5	2004-5	2004-5			
										Rec	Inv		Total	Rec	Inv	Total	Rec	Inv	Total			
Improve rural transport infrastructure	Rehabilitate and maintain rural feeder roads	Grading of rural feeder roads	Kms roads graded			4,050	4,050	4,050			303.75	303.75		303.75	303.75		303.75	303.75	NRA		75000	150kms per district
		Rehabilitation of rural feeder roads	Kms roads rehabilitated			600	700	800			545.45	545.45		636.36	636.36		727.27	727.27	NRA		909090.9091	
		Construction of other road infrastructure	Metres bridges etc. built			8,000	8,000	8,000			208.00	208.00		208.00	208.00		208.00	208.00	NRA		26000	per m
Strengthen core road network	Rehabilitate and maintain core road network	Periodic maintenance - Pothole patching and slurry sealing	Kms maintained			400	400	400		1,059.09		1,059.09	1,059.09		1,059.09	1,059.09		1,059.09	NRA		2647727.273	
		Rehabilitation of core roads	Kms rehabilitated			60	60	60			600.38	600.38		600.38	600.38		600.38	600.38	NRA		10006325.11	
	Ensure adequate road networks (see infrastructure)		Incremental exports																NRA			
	National Roads Authority Total											2,716.67	1,059.09	1,748.49	2,807.58	1,059.09	1,839.40	2,898.49				

Source: Implementation plan PRSP - NEC

ANNEXES

Air costs

Malawi is considered to be one of the highest cost countries in the World to fly into.
All private and cargo flights are considered by the aviation authorities to be commercial flights.

Landing fees range from $6.00 to 25 for light aircraft.
(the highest charges are USD 140.00 for Boeing 747's)

Parking fees	$ 3.00 - $45.00 for a Boeing 747
International Navigation Fees	$ 30.00 In ward Bound
International Navigation Fees	$30.00 Outward Bound
Local Navigation Fees	$ 12.00 In ward Bound
Local Navigation Fees	$ 12.00 Outward Bound
Temporary Service Permit	$ 15.00 to operate as a charter (NB – Not charged if a private plane)
Overtime operating fees	$ 150 per hour after 19h00 and 14h00 in Mzuzu
Ancillary charges (to pump up planes tyres)	$30.00 per tyre (average light aircraft 3 tyres = $90.00)
Use of power unit to charge batteries	$135.00
Passenger fee per passenger	$20.00
Fuel	$0.75 per liter Other regional Costs RSA - $0.51 / lr Zambia - $0.62 Mozambique - $0.68 Botswana - $0.51

Average charges for one small aircraft to travel in and out of Malawi $370.00.
Mozambique charges have now been lowered to an average of $85 for light aircraft.

Other barriers to air flight

- Minimum 48 hours notice for landing rights
- Air cargo companies pay a royalty of 4 percent to Air Malawi
- Costs 30 percent less to fly from Johannesburg to Lusaka than from Johannesburg to Blantyre (same flying time and distance)

National transport policy action plans (Available by request)

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