

ANNEX 3.1: KENYAN TRANSPORT SECTOR DETAILS

1.1 Overall Sector Summary

The transport sector contributes between 5 to 15 % of the GDP in the countries in the Great Lakes Region. However, the impact of transport goes well beyond its share of the economy as it serves as an intermediary service to all sectors and is therefore critical to economic growth and poverty alleviation. It is thus of paramount importance that the sector provides the society with adequate, effective, and efficient services, and that the sector provides these services at the least costs to society including collateral negative impact on environment and society.

By identifying the transport sector as one of the main pillars of the economic recovery effort in the “Economic Recovery Strategy for Wealth and Employment Creation 2003-2007” (ERS), the Government of Kenya (GoK) has shown recognition of the transport sector contribution towards facilitation of rapid economic growth and reconstruction, poverty eradication and in wealth creation. The focus being on improving, promoting and sustaining efficient, affordable and effective transportation systems that provides a conducive environment for stimulation of productive activities and facilitation of economic growth and development not only in Kenya but in the whole East Africa Region and in particular the Great Lakes Region that is served by the Port of Mombasa.

In comparison with other countries in the region, the transport sector in Kenya is relatively well developed in terms of both infrastructure and services. The transport sector in Kenya combines international quality operators and services, a somewhat run down infrastructure and some inefficient and ineffective institutions.

Transport policies have similar dichotomies: Kenya, on paper at least, is almost a star of 'road' reform. The Government has established an executive Road's Board to act as the custodian of the sector and allocate funds to the road implementing agencies. The Fuel Levy generates significantly more than the equivalent of US\$ 100 million a year, funds which flow without interruption to the road' sector. Attempts are being made to control axle-loads on the major corridors, with some success in eliminating the gross axle-loads prevalent in the past.

But, despite this policy and funding framework, parts of the road sector remain in poor condition, with some allegations of corruption, inefficiency and waste. The situation since 2003 has improved in many ways, although some of the underlying problems still remain.

1.2 Roads and Road Transport sub-sector

In particular, Kenya road sub-sector accounts for over 80% of the country's total passenger traffic and 76% of the freight leaving a small proportion to water, rail and transport.

The sector is relatively large and provides a dense network of roads in the more densely populated parts of the country and some level of access throughout the country. Unlike Ethiopia, for instance, there are very few people requiring more than half a day's walk from the nearest road. Unlike Tanzania, for example, a map of the all-weather road network shows no major areas without any provision. The problem for Kenya is not the network but its standard and maintenance; it is primarily a quality rather than a quantity issue.

The road network consists of paved, gravel and earth roads. Currently, the network is divided into classified roads and unclassified roads. The length of the classified road network is 63,292 kilometres. The unclassified road network length could not be established with certainty but it is estimated to range between 80,000 to 130,000 kilometres bringing the total estimated length to between 140,000 and 190,000 kilometres. The network is used by approximately 740,000 vehicles with an annual traffic growth rate of around 6%.

The road transport industry is large and well-equipped. There is a wide spectrum of enterprises from large companies through to the individual owner-operators. It is highly competitive and responds to changes in demand, road conditions and regulations. Rates are set by market competition rather than government regulation or syndicates. Traffic is distributed between enterprises by the market on the basis of freight rates, availability, and service rather than queuing or administrative allocation.

1.3 Main Stakeholders

Very brief details of the main stakeholders are provided below. The governance of the sector was fundamentally changed by the Kenya Roads Board Act, 2000, and this is being reflected in implementation arrangements. Capacity building for both institutions and staff is required urgently if the roads sub-sector is to perform optimally.

1.3.1 The Ministry of Roads, Public Works (MoRPW)

The Ministry of Roads and Public Works (MoRPW) is responsible for matters pertaining to roads on the provision (specifications, design standards and classification) as well as the maintenance of roads. The Ministry of Transport (MoT) is responsible for matters pertaining to the use of the roads.

Under the Ministry of Roads and Public Works, the Kenya Roads Board (KRB) has a mandate to oversee the road network and thereby co-ordinate its development rehabilitation and maintenance. The Kenya Roads Board (KRB) Act vests authority of undertaking the actual development, rehabilitation and maintenance of roads to Road Agencies which include Local Authorities, Kenya Wildlife Service and the Ministry of Roads and Public Works (MoRPW). The former road agencies are not well linked to the MoRPW.

1.3.2 The Kenya Roads Board (KRB)

The Kenya Roads Board (KRB) was established by the KRB Act of 1999, with the overall mandate to coordinate development, rehabilitation and maintenance of Roads in Kenya and manage the Kenya Roads Board Fund Account which included the proceeds of the Road Maintenance Levy Fund and other funds that accrue into it.

As per the KRB Act, KRB was entrusted with the mandate to advise the Minister responsible for matters pertaining to roads, on the specifications, design standards and classification of roads. The Ministry of Roads and Public Works (MoRPW) is ultimately responsible for the formulation of road policy.

The KRB has overall supervision of the sector. It is mandated to:

- (a.) Distribute funds from the Fuel Levy to road agencies for the implementation of approved work programs; and
- (b.) Audit both the financial and technical compliance with these work programs.

At present, only three implementing agencies are recognized -

- The Roads Department, (MoRPW);
- The Kenya Wildlife Services (KWS); and
- The District Road Committees (DRC).

Subsequent to the Act, it was established that the DRC's could not function as implementing agencies and their role has been restricted to the development and monitoring of district work plans which are then implemented by the District Road Engineer (DRE) of the Roads Department.

1.3.3 Roads Department

The Roads Department is responsible for the main roads including important international links such as the Northern Corridor from Mombasa through Nairobi to Uganda. Increasingly important links include Namanga (Tanzania) – Nairobi – Moyale (Ethiopia) as well as the road links to Southern Sudan through Turkana (Lokichoggio).

The Roads Department in the Ministry of Roads, Public Works is responsible for the 63,000 km of classified roads: the A, B and C roads. It has clear responsibilities and clear funding arrangements.

1.3.4 Kenya Wildlife Services

The Kenya Wildlife Service is in charge of 8,900 km of roads in the National Parks and Game Reserves. It is responsible for unclassified roads within the national parks, but with no funding from the Fuel Levy. It has clear responsibilities but without clear funding.

1.3.5 District Roads Committees

These are responsible for other roads (class D, E and Special Purpose, as well as unclassified roads). But in practice, DRC's do not seem to have responsibility for either paved roads (even when classified as D or E) or roads within the urban areas.

1.3.6 The Ministry of Local Government (MOLG)

The Ministry of Local Government (MOLG) was not included in the KRB Act but is in other legislation responsible for the unclassified urban roads. MOLG was therefore later appointed as a sub agent of Roads Department responsible for unclassified urban roads utilising part of the 40 % RMLF allocation. The Ministry of Local Government, through various Local Authorities, has responsibilities on 10,000 km of urban roads and 124,000 km of rural roads.

1.3.7 City Municipalities

Urbanisation in Kenya has been growing rapidly since independence. The rates of growth of urban population have increased from 8 % in 1980s to over 34% in 2003 and are projected to reach over 50% by 2020. However, the high rate of urbanisation has not been met with commensurate urban infrastructure and services, most notably urban transport. In the major cities and municipalities such as Nairobi, Mombasa, Kisumu and Nakuru availability and efficiency of urban transport is a critical factor in development activities. After a long period of inadequate funding, substantial support for the urban road sector was provided during the 1990s through the Kenya Urban Transport Improvement Project (KUTIP) and the Fuel Levy. The project and associated GOK funding was expected to rehabilitate 400 kms, provide periodic maintenance on 400 kms, improve 75 kms and maintain about 2000 kms in Nairobi, Mombasa, Eldoret, Kisumu and a further 22 municipalities.

1.4 Road Transport

Road freight transport embraces domestic and international conveyance of goods by road. Its basic requirements include high quality service to the satisfaction of customers and users (with regard to cost, reliability and timeliness of delivery); seamless inter-modal operations; optimised use of capacity and management of operations, protection of infrastructure and minimized impact on the environment and natural resources. , Kenya is also an important transit country in the Northern Corridor for hinterland neighbouring countries, namely, Uganda, Rwanda, and Burundi, eastern parts of the Democratic Republic of Congo (DRC), southern Sudan, southern Ethiopia, and Northern Tanzania

Overloaded Heavy Goods Vehicles (HGVs) contribute to road destruction. Conversely, the damaged roads adversely affect the operating conditions for both HGVs and other vehicles. Due to corruption and management weaknesses, current axle load control measures have not been as effective in minimising damage to the roads.

There are five weighbridges operated by the government between Mombasa and Malaba, and this has been blamed for costly traffic delays.

There is a fragmented and uncoordinated legal and institutional framework for regulation, coordination, development and management of road passenger transport services. The functions of the industry regulator, Transport Licensing Board (TLB), do not include road passenger transport services demand regulation in accordance with transport plans. The current licensing framework is based on applications, while the supervision of the licensed operators is left to the traffic police whose core function does not include this area of operational priority. Even though the TLB license fees are derived from the TLB license, the resources are remitted to the exchequer, which is not obliged to pass over the same to the board. As such, the board is not financially autonomous and relies on central government financing.

A Metropolitan Transport Authority (MTA) is earmarked for Nairobi City followed by other cities as appropriate to manage urban transport issues in Kenya. There are inadequate laws and poor law enforcement which has aggravated the disorganization in the public passenger transport service operations especially matatus. There is excessive flouting of traffic regulations while illegal gangs charge unauthorized fees and this inhibits the operations on certain routes by interested industry investors. In general, there is indiscipline in the urban transport passenger operations (including noise pollution from shouting touts and honking taxis) lack of standardization of vehicles and services regulated competition for public transport modes.

Regulated competition will mean that the Matatu industry will be formalised and measures introduced to enhance its economic viability, standards, ethics, behaviour and attitudes. Matatu operation licenses may be granted by the Transport Licensing Board or its equivalent at the local and national levels on the basis of a route or network determined by need (demand) estimated in terms of the Private Public Partnership (PPP).

1.4.1 Road Traffic

Since 2002 earnings from road traffic maintained a steady growth up to 2006, partly driven by increased tourism activities coupled with improved cargo clearance at the port of Mombasa. During the year in review, a total of Kshs. 173,857 million was realized up from Kshs. 154,984 million earned in 2005. This was largely attributed to increased passenger traffic that grew by 10.9% in 2006 with a share of 64.0% of the total road traffic earnings.

1.4.1.1 *New Registration of Motor Vehicles*

Newly registered road vehicles posted a remarkable 15.7% increase from 45,653 in 2005 to 52,817 recorded in 2006. Significant growths of 24.3 percent and 26.3 percent were observed in the new registration of station wagons and trailers, respectively, reflecting growth in the transportation of goods. Other notable improvements were in the registration of motor and auto cycles which nearly double while three wheelers (Tuk) increased tremendously by 46.3%, indicating the newly registered vehicles is also attributed to the reduction of duty on unassembled kits for motorcycles imported, from 25.0% to 10.0% in the current financial year. Although, new registration of saloon cars increased by 4.3% in 2006 compared to 12.6% recorded in 2005, they accounted for the biggest share of 28.1% of all the new registrations during the review period. The expansion in the registration of new motor vehicles is consistent with the prevailing credit accessibility to the private sector.

1.4.1.2 *Road Licenses*

Issuance of Road Transport Licenses continued to register increased activity for the fourth year running in 2006. Total licenses issued by Road Transport Licensing Board (TLB) increased by 12.9% from 63,326 recorded in 2005 to 71,505 over the review period. The increase, though recorded in all categories of TLB licenses issued, was largely contributed by the 45.4% share in growth of licenses for PSV matatus. The demand for TLB licenses for passenger Service Vehicles (PSV) matatus, buses and tourist vehicles was up by 11.1% and 12.8% respectively over the review period.

The issuance of driving licenses rose up substantially by 15.9% in 2006 compared to 9.5% recorded in 2005. The increase was a result of improved issuance of original licenses to newly trained drivers which rose from 106,060 in 2005 to 126,555 in 2006, representing 19.3% growth. This scenario can be explained by the increased registration of saloon and station wagon vehicles along with the search for employment opportunities in the sector.

1.4.1.3 *Road Traffic Accidents*

The number of reported traffic accidents decreased by 1.6% from 12,399 in 2005 to 12,201 during the review period. This was a result of continued implementation of the Legal Notice No. 161 of 3rd October 2003 which sought to introduce sanity and order in the transport industry. However, in the recent past, there has been disappointing signs of loss of some of the achievements. This has been occasioned by attempts by dishonest operators to defeat the law and laxity of local authorities in allocating routes and their terminals to PSV operators. The situation has further been complicated by the re-emergence of touts and cartels in controlling routes as well as soliciting bribes. This unfortunate development is however being addressed by use of a combined team of officers from Transport Licensing Board, Vehicle Inspection Unit and Kenya Revenue Authority through mounting crackdowns and impounding vehicles found to be operating without complying with the law.

The number of victims killed or injured in 2006 went up by 2.2% from 22,771 persons in 2005. This is explained by a 10.4% and 7.2% increase on the number of victims who were seriously injured and killed respectively during the review period. Recent efforts aimed at reducing traffic accidents include the use of seat belts, introduction of speed limiting devices and introduction of alcohol blow breathalyzers.

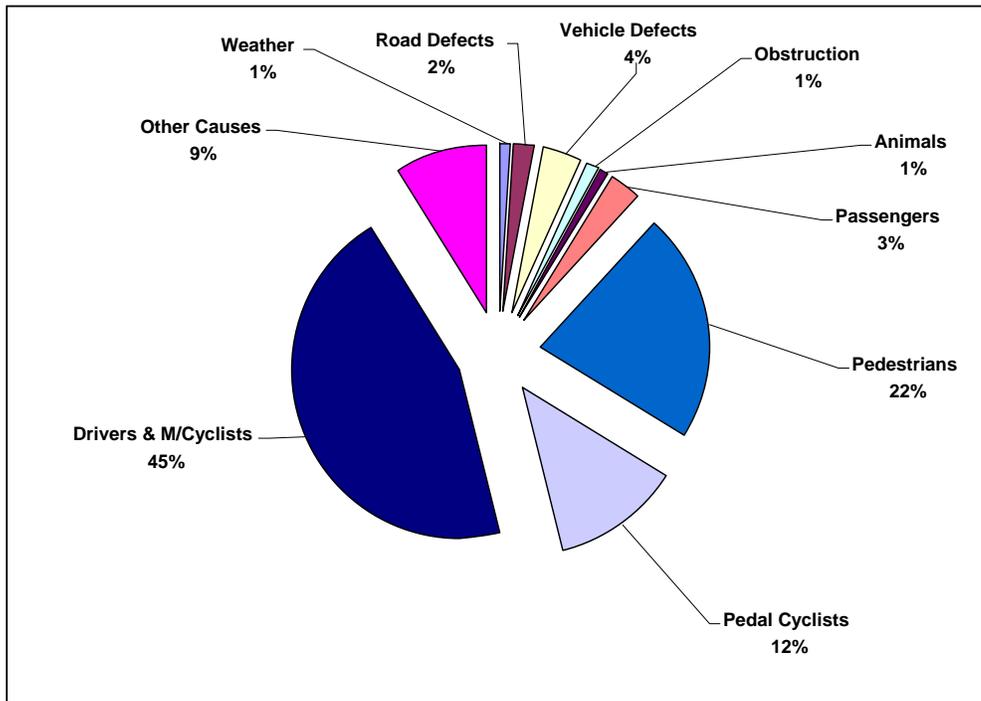


Figure 1.0: Main causes of road Traffic Accidents 2006
Source: Economic Survey 2007

1.5 Rail sub-sector

Kenya's rail system is skeletal linking the major population and production centres. It provides access to the port of Mombasa for both Kenya and much of East Africa. The mainline (Mombasa-Nairobi-Malaba) has relatively heavy track, allowing the use of standard locomotives with 18 tonne axle-loads. Kenya has a 3,360 km single track railway system which passes through the major industrial and agricultural areas of the country. The principal lines connect Mombasa with Malaba and Nakuru to Kisumu. In total, the railway has to 163 crossing stations throughout the country, and 3 Inland Container Depots (ICD's) are located in Embakasi, Kisumu and Eldoret.

Some thirty years ago, the overwhelming proportion of the long distance freight traffic along the Northern Corridor (linking Mombasa, Nairobi and the Ugandan Border) was transported by rail. From being a major transport player in the period up to the 1970's, the railways became a severe financial liability to the Government and the sectors contribution to the economy declined substantially. The problem of railways in Kenya is not the size or scale of the infrastructure (there is not the traffic configuration for a denser network) but its maintenance condition and management.

Until recently, the railway networks in Kenya was operated by a government parastatal, the Kenya Railways Corporation, KRC, that was established in 1977 after the dissolution of the then East Africa Railways and Harbours (EARH). It has remained a vital transit link for the landlocked countries in the Great Lakes Region connecting through Uganda. Until recently also the Ugandan Railways Corporation (URC) was responsible for both rail networks in Uganda and marine services on Lake Victoria. The URC route network is approximately 1,250 km in length, but only the link between Kampala and Malaba and the link from Kampala to its lake port (Port-Bell) is fully used.

The Governments of Kenya and Uganda decided to concession their two railways jointly. A Memorandum of Understanding which confirmed this decision contained a general blueprint for the design of the Joint Concession and was signed July 8, 2004. The joint concession was awarded through a competitive bidding process governed by the laws of Kenya and Uganda in 2005. The two governments have selected the consortium Rift Valley Railways (RVR) led by Sheltam of South Africa on October 14, 2005.

Before the concession, the railways operational problems included low availability of motive power and wagons, mainly arising from lack of investments hence use of antiquated equipment, inadequate track maintenance hence high accident rates, problems of spare parts supplies for the locomotives and rolling stock, obsolete communications systems, a bloated workforce and crippling debts. KRC operations were also affected by the lack of coordination between itself and other players in the transportation chain, including the Kenya Ports Authority, KPA, and customs department, which led to delays in cargo movement at the port and border points. As a result of this, KRC was often criticized for contributing to congestion at the port of Mombasa.

KRC's failure to deliver adequate services led Magadi Soda to take back responsibility for its branch line (an exception to public ownership of infrastructure) and operate its own rail services to Mombasa. The line between Konza and Magadi (150 km) is operated and maintained by Magadi Soda Company, which leases locomotives, for transportation of Soda Ash.

Rift Valley Railways (RVR), the privately owned company that took over operations of passenger and freight management on the Kenya- Uganda railway line is slowly getting into the profit brackets amid negative speculation by the public. Since the South African consortium took over management of the railway, there has been discontent in the public domain about its dismal performance in turning round the railways sector. However its first remittance of US\$1.75million (Ksh119 million) to the government from the first quarter (November 2006 to January 2007) has allayed public fear that RVR had failed to perform towards its expectation. The firm, under the concession arrangement is supposed to remit 11% of its gross income to the KRC after every three months of operations. Despite the impressive financial performance, officials at KRC maintain that the figure is only slightly above what the state corporation used to realise before the concession. However unlike its predecessor, RVR is not burdened by debts and poor prioritisation of investments that bedevilled the KRC.

The concession lease for passenger and freight is 5 and 25 years respectively. An efficient and effective rail transportation services is expected to support the 10% Gross Domestic Product growth rate targeted in Kenya's Vision 2030. Under the concession terms, the government is supposed to evaluate the performance of the firm after every two years to gauge its profitability. Currently, transportation costs are estimated to account for 30% of production which is extremely high compared to other growing economies where the average cost is between 11 to 15 %. RVR has spent the year repairing worn out locomotives and wagons inherited from the moribund state corporation and it will be interesting to see the investment program that it will roll out for the railways if it is to increase the freight cargo tonnage performance and increase its share of the container business from the Port of Mombasa.

1.6 Maritime sub-sector

Mombasa, the largest port in East Africa, is well endowed with equipment and facilities, and has a natural port whose berths do not require constant dredging with adequate dock infrastructure. It is Kenya's only international seaport and handles cargo not only for Kenya but also for Uganda, southern Sudan, Rwanda, Burundi and DRC.

Kenya has only one major seaport, Mombasa, handling about 13 million tonnes/ year. The port should have adequate capacity for the foreseeable future. In addition to conventional and bulk liquid berths, it has a dedicated container terminal with 600 meter berth length. Mombasa may never become a 'world hub for global shipping services', but it should provide international quality services for East Africa and rapid transfers to/from the global shipping services.

The port of Mombasa has been seen as the single largest infrastructure constraint to economic progress in Kenya. While there have been some improvement, the legacy of poor management and poor investments, combined with time-consuming, cumbersome and redundant procedures have produced unnecessary congestion, high charges and slow services.

The Port now handles close to 13 million tons a year with imports exceeding exports by 4:1. However, the annual growth rate in the 1980-2001 period has only averaged about 1.4% per annum. Nearly 25% of the traffic is transit traffic, largely bound for Uganda (about 80%). The Mombasa port is managed by the KPA, a GoK parastatal. In 2004, the port registered marked strong growth with throughput handled reaching 12.92 million tons compared to 11.93 million tons in 2003, giving it a growth rate of 8.3%. Container cargo traffic grew to 438,597 Twenty Foot Equivalent Units (TEU's) handled in 2004 compared to 380,353 TEU's in 2003, a 15.3% increase. Transit cargo traffic went up by 438,006 tons or 17.9% from 2.45 million tons in 2003 to 2.89 million tons in 2004. The port's most urgent challenge is to improve the capacity, equipment and productivity of its container terminal, which has been very congested over the last two years and it is understood that this investment is being prepared.

Inland water transport infrastructure on Lake Victoria comprises port facilities at Kisumu and in the other ancillary ports. The GOK has a fleet of about 5 vessels for the

transportation of both passengers and cargo on Lake Victoria. The largest vessel is the MV Uhuru, a wagon ferry with a cargo capacity of 1,200 tonnes (equivalent to 22 wagons), which is usually employed on international trading routes. It carries export/import and transit cargo in rail wagons between Kisumu and Port Bell in Uganda and between Kisumu and Mwanza in Tanzania.

1.7 Aviation sub-sector

Air transport has becoming increasingly important to the economy of Kenya. It provides Kenya's only first class, connection to the global economy. Air transport sustains the tourist industry and has been instrumental in facilitating Kenya's entry into the fresh flower and horticulture markets. Kenya, with its fresh produce exports, has shown that it can develop world-class logistic chains, the delivery of produce from field to European market in 24 hours, if given the opportunity and incentives. Kenya Airways has become a market leader in Africa, and Air Kenya is developing a domestic scheduled network and has launched a regional schedule. However, the civil aviation infrastructure has not kept pace with the quality of the air transport services. It is again not a problem of quantity, Kenya has three international airports, but of service quality and the financial structure of the sector. However, passenger terminals at Nairobi will probably require major investment to meet forecast demand and post-September 11 security requirements.

There are about 570 aerodromes in Kenya, of which 156 are public. Of the public aerodromes, nine (9) are currently managed directly by the Kenya Airports Authority (KAA). Jomo Kenyatta International Airport is currently playing the role of a regional hub within Eastern, Central and parts of Southern and Northern Africa. Moi International Airport Mombasa is playing a major role as a tourist reception facility for the country and specifically at the Coastal zone as an entry and exit point.

Eldoret International Airport that was built in early 1990s at a cost of Kshs. 2.0 Billion is providing an alternative entry and exit point into and out of the country through Western Kenya region. At the domestic scene, Kisumu Airport is rapidly gaining popularity due to increasing demand for air transport as a mode of travel linking Western Kenya with other parts of the country and the region. There is great potential in expanding this domestic market while exploring the potential of Kisumu hosting regional flights within Eastern Africa.

1.8 Pipeline sub-sector

Pipeline transport infrastructure is operated by Kenya Pipeline Corporation (KPC) which pumps "white oil" from the Kenya Petroleum Refineries Ltd. and the Kipevu oil jetty in Mombasa through Nairobi and Nakuru to Kisumu and Eldoret terminals via Sinendet. The pipeline system currently covers a total of 896 km. the main line from Mombasa to Nairobi has a capacity flow rate of 440m³/hour, while the Western Kenya extension which runs from Nairobi through Nakuru-Sinendet-Kisumu/Eldoret operates at a flow rate of 160m³/hour. KPC's total storage capacity is about 5,000,000m³.

Besides the above, KPC's other assets include pumping stations, fuel storage tanks and an information technology system. The company also provides truck-loading services at Nakuru, Kisumu and Eldoret depots. Operations of the entire pipeline and storage systems are centrally controlled through the Supervisory Control and Data Acquisition (SCADA) system driven by information and communication technology (ICT).

Kenya Pipeline Company Ltd (KPC) is the institution responsible for the management and operation of the only oil pipeline transport system in Kenya. It is a limited company and was incorporated under the Companies Act, Cap 486 the Laws of Kenya. KPC also functions as a parastatal within the context of the State Corporations Act that governs the operations of all parastatals.

Although it is basically a transport and storage facility, the company has always been under the purview of the Ministry of Energy. The operation of the company under the Ministry of Energy has apparently overshadowed the critical importance of its transport responsibilities and functions while its establishment under the Companies Act creates an ambiguity as to whether it should operate under the State Corporations Act.

There is no Act of Parliament that regulates the development and operation of the pipeline system. The operation of KPC as a monopolistic parastatal in a vital area which affects all transport modes calls for the critical need for a regulator to ensure enforcement with minimum development and operating standards.

There has been a significant increase in the number of road tankers conveying petroleum from Mombasa. This is despite the extension of the pipeline to Kisumu and Eldoret, which was intended to reduce the number of vehicles transporting petroleum fuels from Mombasa to the hinterland. The mandatory requirement by KPC to new oil companies to maintain minimum stock levels equivalent to 2,400 m³ has limited the pipeline's access to most small oil companies. Many of these small companies have resulted to transporting their fuels by road from Mombasa.

Real benefits of pipeline transport hinge on its ability to offer least-cost transportation of fuel and its ability to attract traffic (tankers) away from roads. This is because pipeline transportation is faster and a more economical mode for transportation of petroleum fuels than road or rail. To achieve this, efforts must be made to ensure the efficient operation of the pipeline. It must therefore operate on a cost-effective and efficient basis. The fact that companies still find it cheaper to transport petroleum fuels from Mombasa by road reflects a pricing discrepancy that needs to be resolved, given that the cost of pipeline transport ought to be lower than that of road transport.

There is also need to extend pipeline services to areas that still depend on road transport for transportation of petroleum products within and outside the country. Plans are at an advanced stage to extend the pipeline to Uganda and beyond. The types of products transported by pipeline should also be increased to cover a wider range of products. Currently, pipeline transportation does not cover Liquid Petroleum Gases (LPG), fuel oils (FO) and industrial diesel oil (IDO).

The establishment of oil terminal facilities at Kisumu and Eldoret have provided opportunity for heavy goods vehicles (HGVs) which previously collected fuel from Mombasa or Nairobi, to operate in the local area. Petroleum transporting trucks are now covering a much shorter distance between these towns and Kampala, Kigali or Bujumbura and towns in the eastern DRC (such as Buni). For instance, because of the fuel intake at the Kenya Pipeline Co. Ltd.'s depot in Kisumu, fuel tankers have now been saved from travelling 831 km between Mombasa and Kisumu and, instead, cover only the 315 km between Kisumu and Kampala.

1.9 Environment and safety

1.9.1 Road Safety

Traffic safety is a serious problem in Kenya, with over 13,000 traffic accidents annually (involving approximately 26,000 vehicles) causing 2600 fatalities and over 11,000 serious injury cases. This translates to over 36 accidents and 8 fatalities daily. The number of casualties per crash has also gone up from 1.3 in 1965, 1.8 in 1990 to 2.0 in 2002, while fatalities per 10,000 population during 1985 to 2002 has risen from 7.8 to 10 respectively. In comparison to other countries, deaths per 10,000 vehicles in Kenya 55, Tanzania 136.7, Ethiopia 197, Botswana 41, South Africa 22 and United kingdom 1.6. Further, road km per 1000 population: Kenya 2.3, Tanzania 33 and Ethiopia 0.5. Accidents statistics in Kenya are 30 - 40 times greater than those of highly industrialized countries. Statistic show that road accidents in Kenya is the third cause of death after malaria and HIV/AIDS and present a challenge to overall health status, morbidity, disability and associated health care costs.

1.9.2 Environmental Pollution

Sustainable environmental policies have not been adequately incorporated in Kenyan road transport infrastructure management policies resulting in pollution and environmental degradation. Factors such as soil erosion, management of gravel pits and road run-off, noise pollution and gaseous emissions by road motor vehicles have not been adequately addressed.