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PRE-FEASIBILITY STUDY OF THE REGIONAL TRANSPORT SECTOR IN THE BERBERA CORRIDOR

FINAL PRE-FEASIBILITY REPORT

EXECUTIVE SUMMARY

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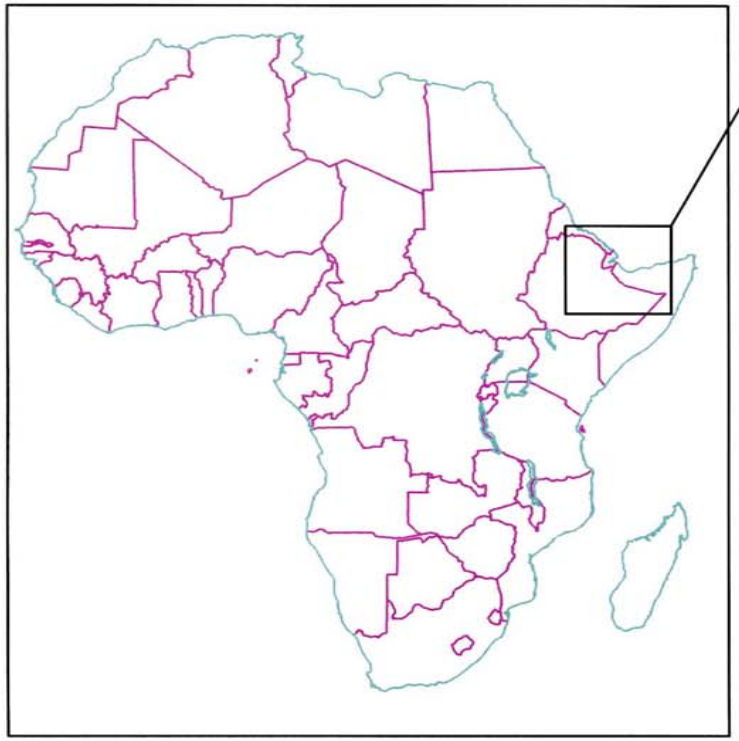
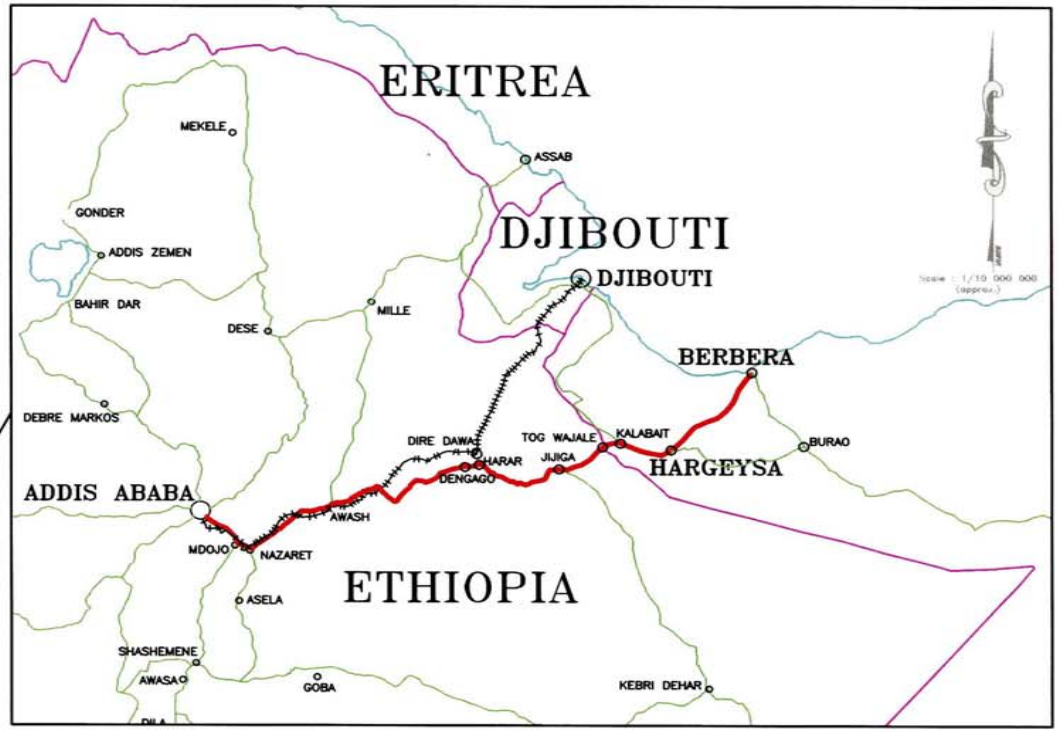
BERBERA CORRIDOR LOCATION MAP





EXECUTIVE SUMMARY

Louis Berger S.A. was commissioned by the Delegation of the European Commission in Kenya to carry out the pre-feasibility study of the regional transport sector in the Berbera corridor, Afro-Consult P.l.c. from Ethiopia is a sub-contractor to Louis Berger S.A. for this study. This assignment is financed under the 8th European Development Fund.

The Pre-feasibility study of the transport sector of the Berbera corridor (here-after called "the Study") compares it with the other routes from Ethiopia to regional seaports (Djibouti, Assab, Massawa, Mombasa and Port Sudan) in order to determine the potential viability of investments to upgrade its main components :

- The port of Berbera
- The unimproved sections of the road between Berbera and Addis Ababa
- The Hargeisa and Berbera airports.

The improvement of the Ethiopia and Somaliland border crossing and customs procedures to facilitate transit traffic on the corridor, which is also a condition to enhance the attractiveness of this corridor, is also to be considered. Lastly, the development of the institutions in charge of the operation of the Corridor transport systems which condition their sustainability is an essential component of the Study.

1. DESCRIPTION OF THE BERBERA CORRIDOR INFRASTRUCTURES

1.1 The road

The road linking Berbera and Addis Ababa has a total length of 937 kilometres. 241 kms are within Somaliland and 696 kms are within Ethiopia.

1.1.1 In Ethiopia

The road section between Addis Ababa and Harar (533 km) is being rehabilitated under the Ethiopia Ten Year Road Sector Programme with financing provided by the International Development Association (IDA, World Bank Group) the European Commission and the Government of Ethiopia. The standards of this section will be :

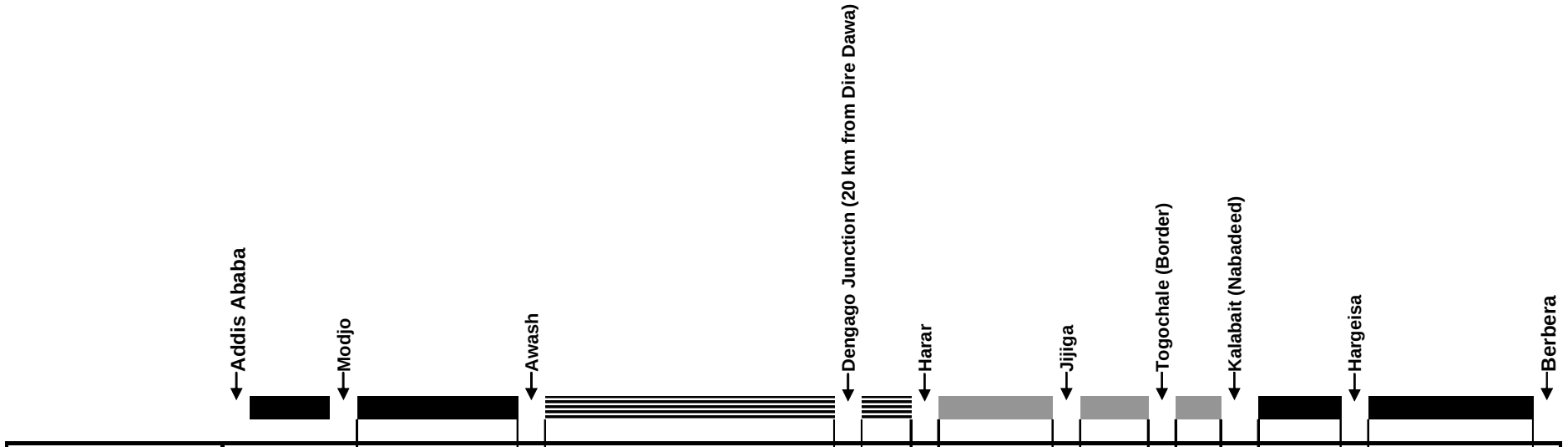
- Pavement width : 7 m with two 1.5 m unpaved shoulders
- Asphalt-concrete surface

The works are completed on 73 km to Modjo (EC financing). They are scheduled to be completed to Awash (Addis-Awash: 228 km) by the end of 2003 and to Harar by mid 2004 (IDA financing).

The feasibility study and detailed engineering design of the paving of the road section between Harar and Jijiga were carried out in 2000 with financing provided by the Government of Ethiopia. The European Commission expressed an interest for the financing of this project and provided initial funding for the review of the detailed engineering design and of the tender documents as well as for the preparation of the Financing Proposal. It is expected that the financing agreement could be signed in June 2004 and that the works could take place between 2005 and 2007. The project is presently estimated to cost € 35 million.

Exhibit 1

ADDIS ABABA - BERBERA ROAD : SUMMARY OF PRESENT ROAD CONDITION



Section length	73	155	272	33	103	60	19	64	158	
Total Km	**73**	**228**	**500**	**533**	**636**	**696**	**715**	**779**	**937**	
Surface	Asphalt-Concrete		Asphalt - Concrete		Gravel	Gravel		Paved	Paved	
Present Condition	New	Being rehabilitated	Being upgraded		Good	Fair to Poor		Fair	Fair to Poor	
Standards	7 m + 2x1.5 m unpaved shoulders		7 m + 2x1.5 m unpaved shoulders			4.5 to 6.0 m			6.5m+2x1m	
Scheduled Improvement	to be completed in 2003		to be completed in 2004		Paving by 2007	Under rehabilitation				
Financing	IDA + GoE		IDA + GoE		EU		EU			
2002 Traffic in Veh/day	7510-5645	3397 - 1221	387 - 863	1 666	693	70	n.a.	959	946	

The section between Jijiga and Togochale (border with Somaliland) is a 60 km length gravel road in fair condition maintained by the Ethiopian Roads Authority (ERA). Upon instructions from the Government, the maintenance works were extended an additional 19 km into Somaliland territory to Kalabait in 2001. The Government of Ethiopia submitted a request to the European Commission to extend the project for the paving of the Harar - Jijiga road to the border. No decision on this request has been made to date. This project is estimated to cost € 20 million.

The 2002 traffic volumes on the road are:

- Addis Ababa – Debre Zeit : about 7 500 vehicles per day including 47 % being trucks
- Debre Zeit – Nazareth : about 3 000 vehicles per day including 53 % being trucks
- Nazareth – Awash : about 1 200 vehicles per day including 73 % being trucks
- Awash – Dengago Junction : about 400 vehicles per day including 61 % being trucks
- Dengago Junction – Harar : about 1 700 vehicles per day including 37 % being trucks
- Harar – Jijiga : about 700 vehicles per day including 56 % being trucks

No traffic figure is available on the section between Jijiga and the border, but the volume is low, most probably below 100 vehicles per day, as the border is presently officially closed.

1.1.2 In Somaliland

The 241 kilometres of road constituting the “Berbera corridor“ in Somaliland are part of the country core road network. The Tog Wajale[(1)] (border) - Kalabaydh gravel road (19 km) traverses a very flat area on a perfectly straight alignment. The width of the surfacing is 7.3m. Rehabilitation works, resurfacing the existing embankment with a 15 cm thick layer of compacted gravel, are presently carried out under THW supervision and funded by the EC.

The Kalabaydh - Hargeisa section was paved in the late 1970’s early 80’s. The road between Hargeisa and Berbera was paved in the early 1970’s. Periodic maintenance works have been carried out since 2000, mainly patching, resealing, reconstruction of ditches and repairs on drainage structures. The carriageway width is generally 6.5 m with 0.5 to 1m wide shoulders on each side. The original double seal is 20 to 30 years old and has lost all flexibility and waterproofing ability. This results in the rapid development of potholes in the pavement under the weight of truck axles. The rapid deterioration of the road surface is therefore a main concern.

There are no bridge structures on the road, but numerous 7.5 m wide fords (“Irish crossings”) were built. Several box culverts, Armco steel pipes and concrete pipe culverts exist in the smaller wadis. Regular overtopping of the road is recorded at several locations. Many culverts and a few other structures (fords, retaining walls, gabions) destroyed during the war, or threatened by erosion, were rebuilt in 2000.

For 7 km the road traverses the urban area of Hargeisa. The transit traffic presently follows the city main artery where congestion frequently occurs due to the interaction of the traffic with pedestrians, donkey drawn carts, street markets, parked vehicles… A parallel road (also called “Hargeisa Through Road”) is presently under rehabilitation to divert the transit traffic, especially the trucks, from the main street toward a parallel street a few hundred meters North. Two main alternatives are being considered by the Municipality to divert the transit traffic from the city centre, but no detailed project design exists. The first alternative is to implement the “ring road” project as planned before the civil war. This project was initially designed as a by-pass of the city enabling the traffic to avoid the urban area. Two 50 m wide East-West strips of land are theoretically reserved in the South and in the North for the right

[(1)] This report adopted the spelling of town names as used in the two countries respectively. They may therefore be different in different sections of the Report.

of way of this ring road. While some illegal settlements and construction has taken place, this right of way is generally preserved. The estimated length of this new road is 11 km. The second alternative is to build a real by-pass, either at the foot of the surrounding plateau North of the city or on the Southern plateau.

The traffic counts carried out in March 2003 gave the following results :

- Hargeisa – Kalabayad : about 950 vehicles per day including 20% being trucks
- Hargeisa – Berbera : about 950 vehicles per day including 50% being trucks

A recent axle load survey showed that the medium and heavy trucks are generally overloaded and that the bigger they are, the more overloaded they tend to be. The impact on the road pavement structure is consequently higher.

1.2 Institutions in charge of road management and maintenance

1.2.1 In Ethiopia

The Ethiopia Roads Authority (ERA) is responsible for the management of the country trunk and main access roads. It was created as an autonomous agency in 1951. Its present organisation was adopted in 1997.

ERA operations are directed by a General Manager under the control of a Board chaired by the Minister of Trade and Industry. ERA includes three departments, each under the authority of a Deputy General Manager. These departments are :

- The **Operations Department** which is responsible for all construction and maintenance works still carried out on force account by ERA. At the present time, 50% of periodic maintenance (often called “heavy maintenance” in Ethiopia) and 100% of routine maintenance, are done by ERA on direct labour and equipment. This department manages 10 Road Maintenance Districts and 67 road maintenance sections which are in charge of carrying out the maintenance works on force account.

- The **Engineering & Regulatory Department** is responsible for the planning, design and implementation of the major rehabilitation or construction works as well as the maintenance works contracted to the private sector. This department is presently responsible for the implementation of the Ten Year Road Sector Programme, a multi donor funded investment and sector reform programme which aims to upgrade the Ethiopia road network to eliminate the constraints it represented to the country’s socio-economic development. This Programme is entering into its second five year Phase (2002 – 2007) for which approximately US $ 1.5 billion of road investments are budgeted.

- The **Human Resource & Finance Department** which is responsible for all ERA administrative management, accounting and personnel development.

ERA is relayed in each region by a Regional Rural Roads Authority under the Regional Government. These Authorities are responsible for the maintenance of the regional roads.

The Ethiopian Road Fund was created in 1997 concurrent with ERA’s adoption of its present organisation. Its Board is composed of four appointed representatives of the Federal Government, six appointed representatives of the regions and municipalities and four elected representatives of private passenger and transport companies.

The Road Fund resources in 2002 were : a fuel levy of US cent 1.12 per litre, a sales tax of US cent 4.24 per litre, a Municipality tax of US cent 0.24 per litre and a Cross-border charge applied to foreign freight vehicles, mainly those of the Republic of Djibouti, at the standard COMESA rate of US $ 8.00 per 100 km travelled inside Ethiopian territory.

In 2001/2002 the total Road Fund resources were ETB 346 million a year (US $ 40.7 million). However the disbursements reached only ETB 288 million (US $ 33.9 million) or 83% of total resources. The balance is maintained in the Road Fund reserves or invested in Treasury bonds. The principal reason for partial use of the Road Fund resources to finance road maintenance is the lack of capacity of ERA and of the Regional Roads Authorities maintenance crews to utilise all funds available for maintenance.

1.2.2 In Somaliland

The official overall governing body for the road sector in Somaliland is the Parliament/Council of Ministers. Under this are several ministries including the Ministry of Public Works, Housing and Transport (MPWHT). Three institutions are specifically in charge of the management of the core road network under the supervision of the Minister of Public Works, Housing and Transport: The Road Sector Administration Board (RoSAB), the Somaliland Roads Authority (SRA) and the Road Fund Administration (RFA). All three bodies were institutionalised in March 2000 by the “Road Sector Administration Decree”.

In practice, the operation of the RoSAB has been difficult from the outset, due to frequent changes in the membership, difficulties to obtaining a sufficient involvement from the members, a general lack of awareness of the importance of the role of the board and, above all, a lack of financial resources to be allocated to road maintenance. Also, few representatives of the private sector have accepted a seat on the Board.

The SRA main responsibilities as defined in the Road Sector Administration Decree are :

- To develop maintenance approaches and maintenance plans. Particularly to prepare Annual Road Programmes, subject to the approval of the RoSAB and MPWHT;
- To manage maintenance contracts;
- To advise on the definition and management of the classified road network;
- To advise on design standards;
- To contribute in the development and implementation of all relevant tariff collection systems.

SRA is headed by a Managing Director appointed by the RoSAB with the approval of the MPWHT. The Managing Director is assisted by two engineers: the Director of Maintenance Services and the Director of Development Services. Some SRA personnel are presently paid by THW in the framework of a technical assistance contract. This includes 1 road engineer, 5 site inspectors and one laboratory technician. This technical assistance is scheduled to continue until 2005. The SRA capacity is clearly not sufficient and the possibility for improvement is limited by the low availability of trained personnel with the required education and experience.

Financing road maintenance and the operation costs of the RoSBA, SRA and RFA is provided by the Road Fund managed by the Road Fund Administration (RFA) under the responsibility of the RoSAB. The Road Fund is currently funded solely by a fuel levy introduced in 1999. The fuel levy is presently equal to 13% of the value of oil products imports and is collected by Customs at the Berbera port. Since June 2003, the money collected is deposited directly in US dollars, into the RFA account in Berbera, bypassing the Treasury.

Since June 2003 the Road Funds collects about US$ 52,000 a month (US $ 624,000 a year) which would represent only half of the total maintenance works carried out in 2002 on the core road network (US $ 1,250,000). Most of the balance is financed by the EU.

1.3 The port of Berbera

The Berbera Sea Port is located on the south coast of the Gulf of Aden, approximately 250 km east of Djibouti. The harbour, a natural feature protected from the sea by a Sand Spit, offers good shelter to vessels and port operations.

Entry into the harbour, with an entrance channel about 14 m deep and extensive inner waters, is straightforward, except during the strong windy conditions that occur frequently during both the NE and SW monsoon periods. These winds tend to blow beam-on to vessels in the approach channel and at the commercial quays and, with the lack of tug power available to assist in manoeuvring, ship safety is not optimal. In addition, the lack of effective aids to navigation prevents 24-hour operations and renders approaches in daylight hours potentially problematical to the unfamiliar visitor. The situation is aggravated on occasions by the dust storm generated by strong winds which seriously impair visibility.

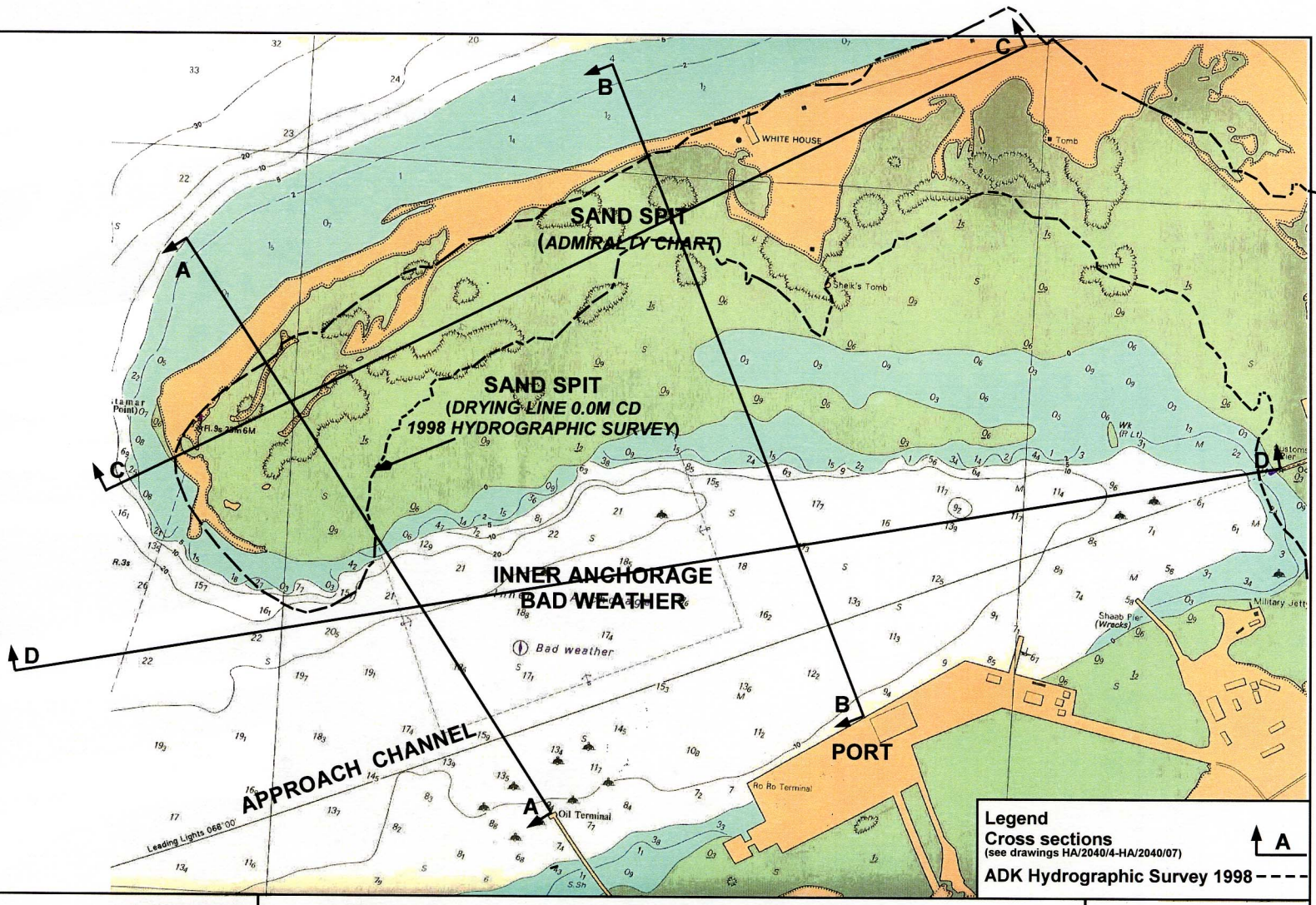
The port infrastructure consists mainly in a 650 m long linear wharf with five commercial berths (about 120m long each) and one Ro-Ro vessel berth. The depth of the water along the berths ranges from 9 m to 12 m. An old port jetty may also accommodate 6 dhows, but it requires major rehabilitation works. There is no available data on the original construction of the port facilities and the condition of the quay is unknown. Apart from the question about the condition of the quay walls themselves, the rest of the infrastructure is judged to be in satisfactory and serviceable condition, requiring no particular attention other than routine preventive maintenance and repairs when circumstances demand.

The access causeways to the island pier accommodating the port are in generally serviceable condition. The West Causeway is currently the object of a rehabilitation and upgrade contract to replace tidal drainage culverts and add a bituminous surfacing. It is an extension of the new port access road and it offers the scope for becoming a principal access, relieving traffic in the town. In connection with this item and more generally, it is suggested that forward planning should be guided by a Physical Port Master Plan, which does not exist at present.

A separate jetty, not under the jurisdiction of the Port Authority, handles fuel imports from tanker ships of a maximum draft of 10m. Berthing then uses two anchors forward and six ropes to the mooring buoys. This facility is in a state of advanced degradation, such that TOTAL, the operator of the facility, has concluded that they can no longer operate safely from the structure. TOTAL has plans for the replacement of this structure with undersea pipelines and this work is scheduled to commence within the next year, subject to Port Authority approval.

The Consultant analysed the stability of the northern Sand Spit, which provides the harbour with its protection. It is concluded that, in the short term, this is unlikely to pose a threat to port operations. However, it is felt that natural changes are taking place, as would be expected with such a natural feature, and these could lead over time to siltation of the harbour, through occasional overtopping, and encroachment into the approach areas to the harbour.

The main port equipment and facilities include the Mayara and Tamara lighthouses at the entry of the port. Cargo handling equipment (Two 15 ton Mobile cranes and one 32 tons Mobile crane) is in poor condition. Storage warehouses (total area 5,760 sq.m. with storage capacity up to 120,000 metric tons) and open storage (64,000 sq.m.) are available, plus a container storage area.



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BERBERA CORRIDOR PROJECT

The Harbour and Sand Spit

(From Admiralty Chart 3530)

Drawing No 2-2
DO NOT SCALE

The port traffic dropped from 595 ship calls in 2000 to 233 in 2001 because of the ban imposed by Saudi Arabia to the livestock exports. 40% of the ships calling the port are above 10,000 M/T and the port can handle ships up to a maximum of 25,000 M/T.

There is however a positive development in the Berbera port traffic. The increasing use of containers contributed to improve the port efficiency in vessel turnaround and handling. Despite the reduction in the total number of vessels calling the port, there is a consistent positive trend in the number of containers handled: in 2002 the port handled 5,532 containers (+ 64 % over 2001) and 483,000 tons of cargo (+ 21 % over 2001).

The port of Berbera is owned and operated by the Somaliland Administration through an autonomous body called the Berbera Port Authority (BPA). The last available accounts report (2000) shows that the port is highly profitable and is a major contributor to the Government budget. The 2000 contribution made to the Government budget represented 15 % of the port income in Somaliland Shillings (SSh 989,895,250 or US$ 280,000) and 33% of its income in US dollars, or US$ 760,000. In addition 28% of the BPA generated income (more than US$ 600,000) is used for its own development.

1.4 The Hargeisa and Berbera Airports

1.4.1 The Hargeisa Airport

The Hargeisa International Airport is located 1,480 m (4,442 feet) above sea level and about 6 km from the city centre. It is ideally suited to serve as a port of entry into Somaliland for both passengers and freight.

The present airport was first established as a British military airport with a gravel runway in 1954. In 1958 a taxiway, a parking area and terminal buildings were added to the original airfield. After independence in 1964, the movement area was extended and paved with a thin asphalt concrete layer (less than 50 mm) and the runway length was established at its actual 2,440 meters. Since then, no overlay has been undertaken and only some minor maintenance repairs have been carried out over the years. The traffic history of the runway shows that it has received heavy aircraft such as C130 and Boeing 707, but these operations had to be terminated due to major damage caused to the pavement.

The airport infrastructure includes : the runway (06/24) 2,440 m long, 45 m wide, with an asphalt-concrete surface in mean to poor condition; two taxiways: one at the mid-point of the runway, 245 m long, 23 m wide, an asphalt concrete surface in mean condition; a second taxiway on threshold 06 is no longer in use; a main apron (190 m x 85 m) with an asphalt concrete surface in average to poor condition. Due to the small size of the apron, most of the aircraft park outside the asphalt area in a gravel area. A second apron at the former military airport is no longer in use. Drainage is poor on the runway, taxiways and apron which causes serious problems.

There is no airfield lighting. There is no shelter for the rescue and fire fighting vehicles and equipment. Security fencing does not extend to the entire perimeter and is ineffective in preventing animals and people from crossing the runway.

The old passenger terminal building is being adapted for arrivals only. The new departure passenger terminal is not yet opened to the public because of security concerns. There is no cargo terminal, cargo is stored on the apron and transporters bring trucks inside the aircraft manoeuvring zone to collect it.

Seven commercial airline companies are presently operating regular flights to the Hargeisa airport for freight and passengers:

- Daalo airlines, which is operating with Iliushyn 18 and Antonov 8/12/24/26/28.
- Galad, operating Iliushyn 18 and Antonov 12
- Star airlines, operating Iliushyn 18 and Antonov 12/24/26/28.
- Damal airlines, operating Iliushyn 18.
- Ethiopian airlines, operating a Fokker 50
- Air Djibouti, operating Antonov 24/26/28.
- Afican Express Airways, operating DC-9

With an average of 2 to 3 landings per day, Daalo is by far the busiest passenger airline at the Hargeisa airport. However, it carries less cargo than Star, Damal or Galad. In addition to commercial flights the Hargeisa airport is also extensively used by the UNDP and ECHO humanitarian relief flights, with an average of 3 to 4 landings a day.

The 2002 total traffic includes 1,750 landings, 56,000 passengers and 2,300 tons of cargo. According to the ICAO's team operating the control tower, the airport present maximum capacity for aircraft and passenger traffic would be 8,000 landings and 200,000 passengers a year.

1.4.2 The Berbera Airport

The Berbera International Airport is located close to the seaport and, with its 4,140 m long runway, was for a long time a major gateway for import and export of goods into Somaliland and neighbouring countries.

The history of the airport dates back to the mid-sixties when it was developed as a major military base by the Soviet Union. In the early eighties, the US Air Force also utilised the airport as a base, as well as an alternate landing facility for the space shuttle. During the latter period, various individual facilities were constructed, including a massive fuel farm, a water treatment plant, a control tower, airfield lighting and several other facilities. The civil war and subsequent unrest in the country left most facilities looted and the airport in a poor state of repair without essential facilities to meet minimum acceptable safety standards for aircraft operations. Safety of aircraft operations is currently also impaired by animals and the local population's uncontrolled access to aircraft operation areas, the breaking up of the runway, taxiway and holding areas caused by water damage during heavy rains, a lack of adequate power and water supplies and insufficient facilities for rescue and fire fighting services.

The airport infrastructure presently include : a runway (05/23) 4,140 m long and 50 m wide, with an asphalt concrete surface in mean condition ; a turning area at threshold 05 (80m x 40m) ; two taxiways : one at the mid-point, 230 m long, 22 m wide, with an asphalt concrete surface in fair condition and a second one on threshold 23, 230 m long and 22 m wide, with an asphalt concrete surface in fair condition ; a main apron 120 m x 43 m, with an asphalt concrete surface in fair condition; a refuelling apron 202 m long and 110 m wide, with an asphalt concrete surface in fair condition. Drainage is poor on the runway, taxiways and apron; there are serious problems caused by lack of proper drainage during heavy rains when stones are carried by water onto the runway.

There are only few remains of an airfield lighting system. Shelters for the rescue and fire fighting vehicles and equipment are in poor condition. There is no security fence and people and animals walk freely on the runway and taxiways.

The new passenger terminal is not open to the public yet because of lack of furniture. There is a small cargo terminal and hangar for sheltering the airport handling equipment, a management building and a control tower.

Although it has the longest runway in the country, the Berbera airport is losing its former importance and is presently one of the less active airports in Somaliland. Dallo airlines used the airport during the past years as a hub for incoming passengers from the Gulf countries, but it recently stopped that operation. The January 2003 statistics show that, except for two landings per week for refuelling of the African Express Airways' DC-9, only one other plane landed during the entire month.

1.4.3 Institution in charge

The Ministry of Civil Aviation and Air Transport through the Director of Civil Aviation is in charge of the management of all airports in Somaliland. Each airport has its own Manager assisted by an Operations Officer. The air traffic control and operation of the control towers in both Hargeisa and Berbera airports is commissioned to ICAO, which functions as the Civil Aviation Caretaker Authority for Somalia (CACAS), from a Nairobi based office.

CACAS currently operates and maintains field stations in cooperation with local authorities in Berbera and Hargeisa airports (among 4 others in Somalia), providing aerodrome information, rescue and fire fighting services, as well as meteorological information to the airlines and other aircraft operators.

Being 100% owned by the state, the revenue generated from the collection of airport fees is wholly remitted to the Ministry of Finance. The airports operation budget is therefore consolidated into the Government budget. Although the Consultant did not have the possibility of checking the actual numbers, it seems that the revenue generated at the Hargeisa airport covers the airport operation costs. Maintenance and investment costs are however entirely borne by the Government budget.

2. SOMALILAND TRANSPORT DEMAND ON THE BERBERA CORRIDOR

2.1 Somaliland economy

Somaliland is located in the eastern part of the Horn of Africa. It shares international borders with the Republic of Djibouti to the west, and the Federal Republic of Ethiopia to the south. Somaliland has a coastline to the north of the country which extends over 850 km along the Gulf of Aden.

Although no population census has ever been carried out in Somaliland, it is generally estimated that the population density ranges from 20 to 25 inhabitants per square kilometre over a total surface area of 137,600 km^2, which gives an estimated total population of 2,750,000 to 3,400,000. The fact that more than 50% of these people still have a nomadic way of life, most of them living on both sides of the Ethiopian border, which they cross regularly with their herds, complicates any reliable population estimate. It is also generally estimated that the population's annual growth rate is 3.1%. The life expectancy at birth is between 45 and 50.

The Somaliland economy is based on livestock, which is the principal contributor to the Gross Domestic Product, both directly and indirectly. More than two-third of the population are engaged in stock breeding. The country has an estimated total herd of approximately 10 million goats, 5 million sheep, 5 million camels and 2.5 million heads of cattle according to a 1998 census. Export of live animals to the Gulf states, specially to Saudi Arabia, represents

by far the largest share of Somaliland export earnings. The ban imposed on the livestock imports by several Arab countries led by Saudi Arabia since October 2000 resulted in a severe drop in the country income, which also extended to the other sectors of the economy causing a significant decrease in GDP.

Other traditional Somaliland exports, including hides and skins, frankincense, myrrh and gum aramic are growing following the introduction of policies stimulating private economic activities.

Somaliland imports cover a wide range of products consisting mainly of food, petroleum products, building materials, machinery and equipment, consumer goods, pharmaceuticals and tobacco products. Major trading partners on the import side are Ethiopia, Kenya, United Arab Emirates, Saudi Arabia, Italy, Thailand, Brazil, the Netherlands, United Kingdom, Japan, South Korea and France.

It is estimated that only 3% of the total area of Somaliland is under cultivation, while another 7% has potential for agricultural development in the future. Maize and sorghum are widely grown in the country, both crops in predominantly rain-fed farming conditions and by scattered small holders. Fluctuations in production and yield are extreme, due to the variability of rainfall. However, Somaliland is generally self-sufficient in sorghum and maize in normal rainfall years. The irrigation-farming component is limited to vegetables and citrus fruit, especially oranges.

Somaliland's 850 km long shore is rich in fish resources. These vast resources are however not properly exploited at present. Investments to establish the necessary coastal infrastructure and an overall campaign to raise public awareness in the coastal communities about the wealth within their reach are priorities for the development of the sector.

Somaliland is endowed with several mineral deposits that could be exploited on a commercial basis. Gemstones, coal deposits, and copper and gypsum are the main deposits. Although not officially recognised in any document on the Somaliland economy, there are several identified oil fields on-shore and off-shore along the north-west coast of Somaliland.

As both sides of the Somaliland-Ethiopian border area are within the boundaries of the Somali nomadic nation, trade is traditionally going on without any limitation. This situation, very convenient for the Somaliland businessmen, was abruptly changed by the Ethiopian authorities in September 2002 when custom officials assisted by the army surrounded the border town of Hartisheik and seized all the goods in the stores and about 500 Somaliland vehicles. The Somaliland business community is now learning to deal with this new situation and, though smuggled goods are still crossing the border, there is a growing understanding that a fair foreign trade environment needs to be created to benefit from the Somaliland port and road facilities to trade with Ethiopia.

2.2 The transport demand on the Berbera Corridor

Since direct trade between Somaliland and Ethiopia is now very limited, the present traffic on the Berbera Corridor may be considered to be fully related to the Somaliland domestic transport demand. Given the geography of the country and the distribution of its population, Hargeisa is the destination of most of the goods transported on the corridor and the origin/destination of most passenger flows.

The traffic growth observed since 2001 is mainly due to the reconstruction of a region which was in ruins 10 years ago, and to the recovery which followed the dramatic recession caused by the 1998 ban on livestock exports. These driving forces are likely to dry up within a few years and traffic growth is likely to stabilise at much lower levels.

The transport demand related to production as well as the future overall growth of the Somaliland economy is highly dependant on the resumption of livestock trade with the Arab countries. It may be estimated that if the level of exports reaches the level of 1998 (approximately 2.5 million head, or 2 million more than now), an additional 150 light freight vehicles per day could travel on the Kalabaid-Hargeisa road, as one half of the animals is transported to Berbera via Hargeisa and the other half via Burao.

Other sources of potential domestic transport demand on the Berbera corridor are related to mid to long term economic development related to new activities in the region, including the further development of agriculture and fishing, the creation of a free trade zone in Berbera and the exploitation of mineral resources, including the potential oil fields.

3. ETHIOPIA TRANSPORT DEMAND ON THE BERBERA CORRIDOR

3.1 General description of the Ethiopia economy

Ethiopia is the largest country in the Horn of Africa with a surface area of about sq-km 1.14 million. Since the independence of Eritrea in 1994, it became a land-locked country.

The 2002 Ethiopian population is estimated to reach 67.2 million. The average population density is 59 person per sq-km. Ethiopia is the second most populated sub-Saharan African country after Nigeria. 15 % of the Ethiopian population is urban, the capital city Addis Ababa has a population of 3 million. 50% of the population is under the age of 14 and life expectancy is 43.9 years. The population's present annual growth rate is 2.8% and is projected to decrease to 2.5% after 2005. On this basis, the total population is projected to reach 73 million in 2005 and 106 million by the year 2020.

The 2001 GDP was US $ 6.4 billion[(2)] or US $ 97 per capita. The GDP growth rate was about 7% between 1992 and 1997. The border conflict with Eritrea sharply hit this growth in 1998 which only resumed in 2000 to reach 5.5 % to date.

Ethiopian economic growth is very much influenced by the agriculture sector (45% of total GDP) and therefore very sensitive to climatic conditions and to the world market price of export commodities, mainly coffee. It is largely based on peasant farming, commercial farming being insignificant. The food production is insufficient to feed the population and food aid is provided by donors in quantities which vary from a low 581,000 tons in 1997 to a high 1.5 million tons in 2000. The industrial and mining sector is underdeveloped. Manufacturing contributes only to 6% of GDP; it mainly consists of agro-industries, textile and leather products.

Ethiopian total foreign trade increased from US $ 648.1 million in 1991 to US $ 2,318 million in 2001, at an average annual growth rate of 13.6%. Exports sharply grew between 1991 and 1997, but have been slightly declining since to reach US $ 446.2 million in 2001. Imports grew faster than both GDP and exports since 1991, to reach US $ 1,871.6 in 2001. Ethiopian foreign trade is extremely unbalanced, in 2001 the value of total exports represented only 24% of the total imports.

Recent studies indicate that the total international traffic to and from Ethiopia, could increase from the present (2002) 3.6 millions tons to about 5 millions tons by 2010.

[(2)] An exchange rate of ETB 8.5 = US $ 1.0 is used in the present report

3.2 Corridors to a deep sea port

Since the independence of Eritrea, Ethiopia is a landlocked country and access to a deep sea port became a major constraint for its foreign trade and for the provision of food aid. The Government of Ethiopia is therefore anxious to secure as many routes to access sea ports as possible.

The Djibouti port is traditionally used for the Ethiopia import/export trade. The current transport corridor between Djibouti and Addis Ababa includes:

- Either a 781 km long railroad, operated by a bi-national company, the "Chemin de Fer Djibouto – Ethiopien" or CDE.
- Or a 909 km long road

The Ethiopian foreign trade flows also use other routes through other neighbouring countries, particularly Sudan (to access Khartoum and/or Port Sudan), Somaliland (Berbera), Kenya (Mombasa), and when relationships were normal with Eritrea (Assab and Massawa). The corresponding corridors are:

- the road to Port Sudan (distance between Addis Ababa and Port Sudan is1,900 km);
- the road to Mombasa (distance between Addis Ababa and Mombassa is 2,067 km);
- the road to Assab (distance between Addis Ababa and Assab is 882 km);
- the road to Massawa (distance between Addis Ababa and Massawa is 1163km);
- and the road to Berbera (distance between Addis Ababa and Berbera is 937 km) via Harar, Jijiga, Togochale, Kalabeit and Hargeisa,

which is the subject of the present study, and appears as one of the most attractive alternatives to the Djibouti corridor.

3.3 Present routes of Ethiopia foreign trade and food aid

The Consultant visited the main shippers which control the main Ethiopia imports and exports and the agencies in charge of food aid to determine which routes they use and for what reasons. Based on the statistics of the Ethiopia foreign trade the shipment of the following products was considered: imports : petroleum products, fertilisers and chemicals ; exports : coffee and sugar.

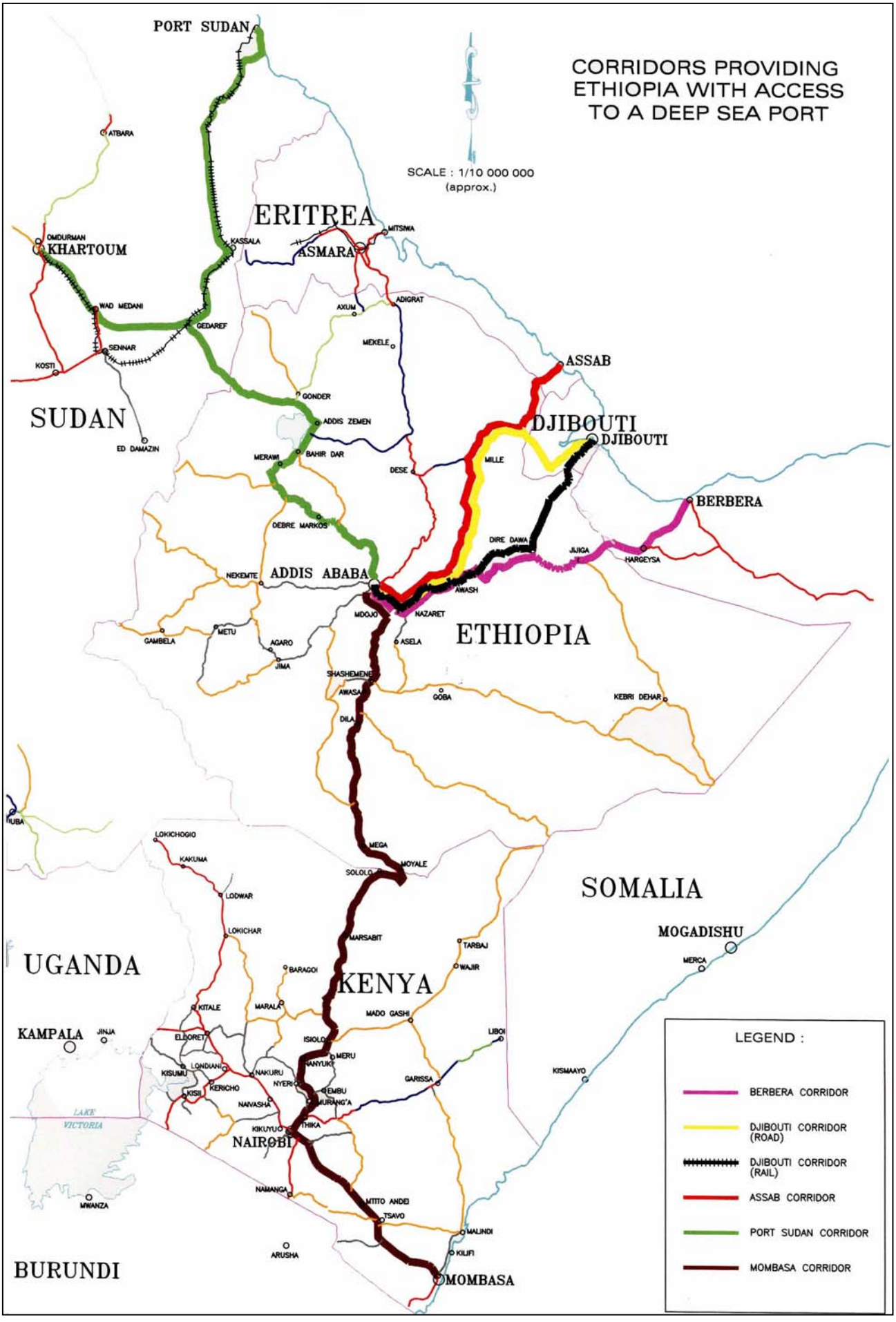
3.3.1 Petroleum products

The Ethiopian Petroleum Enterprise (EPE) invites bids every year for the provision of refined petroleum products. The bids are based on Cost, Insurance and Freight (CIF) to three entry points: Djibouti, Berbera and from the El Gelli refinery located 42 km north of Khartoum in Sudan.

The last results showed that :

- Gasoline provided by the El Gelli refinery is 65 $ per ton cheaper than when imported from Djibouti ;
- All refined products are 5 $ per ton more expensive when imported from Berbera than when imported from Djibouti.

Taking into account land transport cost, the breaking point for the provision of gasoline between El Gelli and Djibouti is about 250 km east of Addis Ababa. As a consequence Djibouti is only used to import this product to the Eastern regions which represents 20% of


CORRIDORS PROVIDING ETHIOPIA WITH ACCESS TO A DEEP SEA PORT
SCALE : 1/10 000 000 (approx.)
PORT SUDAN
ATBARA
OMDURMAN
KHARTOUM
KASSALA
ERITREA
ASMARA
MITSIWA
WAD MEDANI
GEDAREF
SENNAR
KOSTI
SUDAN
ED DAMAZIN
AXUM
ADIGRAT
MEKELE
ASSAB
GONDER
ADDIS ZEMEN
DJIBOUTI
DJIBOUTI
MERAWI
BAHIR DAR
DESE
MILLE
BERBERA
DEBRE MARKOS
DIRE DAWA
JIJIGA
HARGEYSA
NEKEMTE
ADDIS ABABA
AWASH
MOJO
NAZARET
GAMBELA
METU
AGARO
JIMA
ASELA
ETHIOPIA
SHASHEMENE
AWASA
GOBA
KEBRI DEHAR
DILA
NIMULE
LOKICHOGIO
KAKUMA
MEGA
MOYALE
SOLOLO
LODWAR
SOMALIA
LOKICHAR
MARSABIT
TARBAJ
MOGADISHU
MERCA
UGANDA
BARAGOI
WAJIR
KENYA
KITALE
MARALAL
MADO GASHI
KAMPALA
JINJA
ELDORET
ISIOLO
LIBOI
MERU
LONDIANI
NANYUKI
KISUMU
NAKURU
NYERI
GARISSA
KISMAAYO
KERICHO
EMBU
KISII
NAIVASHA
MURANG'A
LAKE VICTORIA
KIKUYU
THIKA
NAIROBI
NAMANGA
MTITO ANDEI
TSAVO
MALINDI
MWANZA
ARUSHA
KILIFI
BURUNDI
MOMBASA
LEGEND :
BERBERA CORRIDOR
DJIBOUTI CORRIDOR (ROAD)
DJIBOUTI CORRIDOR (RAIL)
ASSAB CORRIDOR
PORT SUDAN CORRIDOR
MOMBASA CORRIDOR

the total country demand or 30,000 tons a year. 80 % of the total gasoline demand or 120,000 tons are imported from Sudan.

The CIF cost to Berbera is higher mainly because the port can only receive 25,000 dwt ships while the Djibouti port can receive 40,000 dwt vessels.

There are other constraints in the utilisation of the Berbera port : impossibility to obtain an insurance coverage for the land transport to the border and lack of banking relationships between Ethiopia and Somaliland. EPE indicated however its intent to use Berbera in the future, when the improvement of the port will result in the reduction of the CIF cost. In the tenders which are floated for the provision of petroleum products during the last two years, EPE included an option for the import of 20% of the total products through Berbera.

Before the war with Eritrea in 1998, refined products were coming from the Assab refinery (capacity 800,000 tons a year) and from the port of Massawa.

3.3.2 Fertilisers and chemicals

Ethiopia needs about 400,000 tons of fertiliser a year and imported 300,000 tons in 2002. The fertiliser imports (urea, Dap) mainly come from Russia and Jordan. All fertiliser imports presently transit by the port of Djibouti, which has good and specific facilities for this traffic. From the port, all imports are transported by road. The importers are considering the use of Port Sudan in the future to supply the demand of the Ethiopia northwestern area which is about 50,000 tons a year. The demand of the Eastern Harar and Somali Ethiopian regions is only about 6,000 tons a year. It could be imported from Berbera, if the port develops suitable facilities and improves its efficiency.

Ethiopia imports about 30,000 tons of chemicals a year from Asia, mainly Singapore. All imports come through Djibouti.

3.3.3 Coffee

Ethiopia exports between 100,000 and 120,000 tons of coffee every year. Most of the coffee production gathered in Addis Ababa is exported by road through Djibouti to the Middle East, Europe and America. The 5,000 to 10,000 tons of coffee produced in the Harar region every year is presently transported to Djibouti by rail via Dire Dawa. It is estimated that a few thousand tons of coffee are illegally exported to Somaliland by small traders. The recent tighter control by the Government at the border has however drastically reduced this illegal trade.

3.3.4 Sugar

Ethiopia presently produces 260,000 tons of sugar a year, one third of which is exported. The 80,000 tons of exported sugar are sent to Europe under the “Everything but arms” trade initiative, and to Djibouti, Yemen and Dubai. All this tonnage is going through the Djibouti corridor, 95 % by road and 5 % by rail.

The Ethiopian Sugar Industry Support Centre received requests from Somaliland traders to supply up to 30,000 tons sugar a year. However the impossibility to obtain suitable insurance coverage for this shipment and to establish a letter of credit for the payment of this supply, prevented this transaction from happening. It is however estimated that about 4,000 tons of sugar are presently exported illegally to Somaliland. It is also estimated that a large share of the sugar exported to Djibouti is re-exported to Somaliland.

3.3.5 Food Aid

Assab and Massawa were the ports of entry of about 80% of the total food aid imported until 1996. This traffic has been nil since the beginning of the war between the two countries in May 1998. As for the rest of the Ethiopian food aid imports, the share of the traffic lost by Assab and Massawa was picked up by the port of Djibouti. This share varied little around 80% of the total from 1999 to date.

Only part of the food aid provided by the European Commission has used the port of Berbera. The decision to use the Berbera port was made when the total amount of food aid expected could result in congestion at the port of Djibouti.

3.4 Transit trade agreements between Ethiopia and its neighbours

Since becoming a landlocked country, Ethiopia has made efforts to strengthen its trade relationships with its neighbours, particularly with Djibouti and Sudan, in order to secure a gateway to the sea. Joining the COMESA and taking steps to also join the related Free Trade Area, are significant political moves within this objective.

The Ethiopian Parliament approved in early 2003 a specific free trade agreement with Sudan applicable to all agricultural and industrial products. It also aims to increase the role of Port Sudan as a gateway for Ethiopia and to develop trade between the two countries as shown by the Ethiopian imports of light petroleum products from Sudan mentioned above and by the Sudanese decision to import 20,000 tons of Ethiopian cement in 2003.

To date Somaliland, despite all its efforts, has not been recognised by any country, nor by the United Nations nor by the African Union which still support the unity of Somalia and the principle of intangibility of the borders between African countries. Ethiopia adopted the same position. On the other hand Ethiopia realises that Somalia and particularly Somaliland, represent an important market for the Ethiopian Somali Region and has been trying to establish formal trade relationships with its representatives in order to curtail the very large illegal trade and contraband which developed along the border. This trade is often based on barter and results in exports of Ethiopian livestock, hides and skins, fruits, vegetables, chat and forest products and in imports of consumer products (sugar, flour, pasta, oil, rice…) and a large variety of electronic and small equipment.

The Government of Ethiopia has taken strong steps to control this illegal trade and to encourage the development of market channels to other regions of the country. During the last three months in 2002 the Ethiopian army was used to support Customs to carry out stricter controls of border crossing with the seizure of numerous trucks by the Jijiga Customs office and the verification of goods sold at the Jijiga market and in Hartisheik (a former refugee camp located 72 km from Jijiga and close to the border) which resulted in the closure of numerous shops. According to the authorities, the effect of these steps is mixed: a reduction of the business in Jijiga and Hartisheick by 30 to 50 % has been recorded, but new contraband markets developed near the border away from the existing roads and villages. The withdrawal of the army support left the local customs officers with little means to prevent this illegal trade volume to come back to its previous levels.

On the other hand, the Government of Ethiopia has adopted an holistic approach to curb contraband and to promote legal trade. The main actions include:

- The recently approved licensing system for petty traders ;
- The possibility of the Government authorisation for the banks based in Jijiga to issue letters of credit and for the Ethiopian insurance companies to cover transit shipments in Somaliland is under consideration;

- The design and implementation of integrated development programmes aiming to increase the income of the border population in the Jijiga zone and to create markets for their productions within Ethiopia.

Much remains however to be done to strengthen the local customs authorities, which dramatically lacks vehicles, communication equipment and even decent offices and storage facilities in Jijiga as well as in Togwochale. The contribution of the Somaliland authorities, particularly Customs, is also required to reduce illegal trade. The Ethiopian authorities have expressed complaints about the lack of capacity of the Somaliland Customs in this respect.

3.5 Possible transport demand on the Berbera corridor

The potential transport demand on the Berbera Corridor could be divided into the regional trade between the Somali region of Ethiopia which is clearly located in the hinterland of the Berbera port, the other Ethiopia foreign trade with Somaliland, and the transit of the Ethiopia foreign trade with third countries, including food aid.

The Consultant estimated the potential demand in 2002 trade figures as follows :

Somali Region trade:	84,500 tons and 645,000 animals a year
Ethiopia – Somaliland foreign trade:	30 – 35,000 tons a year
Petroleum products:	225,000 tons a year
Food Aid:	155,000 tons a year
TOTAL	494,500 – 499,500 tons and 645,000 animals a year

With slightly above half a million tons a year of general cargo, the Berbera Corridor would then handle about 15 % of the present Djibouti Corridor traffic.

4. RECOMMENDATIONS FOR THE DEVELOPMENT OF THE CORRIDOR INFRASTRUCTURES

4.1 The Road

The road section between Addis Ababa and Harar is being rehabilitated under the Ethiopia Ten Year Road Sector Programme. The works are completed to Modjo. They are scheduled to be completed to Awash by the end of 2003 and to Harar by mid 2004.

The European Commission expressed an interest for the financing of the paving of the road section between Harar and Jijiga. It is expected that the works could take place between 2005 and 2007. The project is presently estimated to cost € 35 million.

The Government of Ethiopia submitted a request for the European Commission to extend the paving of the Harar - Jijiga road to the border. No decision on this request has been made to date. This project is estimated to cost about € 20 million.

The Somaliland side of the Berbera Corridor, which includes a paved section between Berbera and Kalabayad and the 20 km long gravel section between Kalabayad and Tog Whajale, is fast deteriorating despite the SRA efforts supported by THW, to revert the situation. The road pavement structure is generally sound and few sections need upgrading

at sub-base or base course levels. The main problems are the surface layer which is just a single-seal and the wear and tear caused by more than 30 years of traffic. There is therefore a need to rejuvenate the pavement by application of a double surface treatment.

On the other hand, the road cross section is substandard: the carriageway width ranges between 6.0 and 6.5 m with shoulders varying between 0.5 m and 1.0 m, which is less than the minimum general requirement for trunk roads, without mentioning these of a main international road. Therefore consideration must be made to the widening of the existing road to international acceptable standards, i.e. building a 6.8 m wide carriageway with shoulders ranging from 1.0m to 1.5 m on both sides.

There are several concrete fords at places where “wadis” cross the road and although the amount of rainfall is not high, the rain periods are generally very intense. After a heavy rain it often happens that traffic is stopped for periods of time up to six hours because of the strength of the flow on some of these fords. This is unacceptable on a major international trunk road, therefore the replacement of the most critical fords by bridges should be considered.

The upgrading works recommended on the Somaliland section of the Corridor road are estimated to cost € 25,430,000.

4.2 Hargeisa Crossing

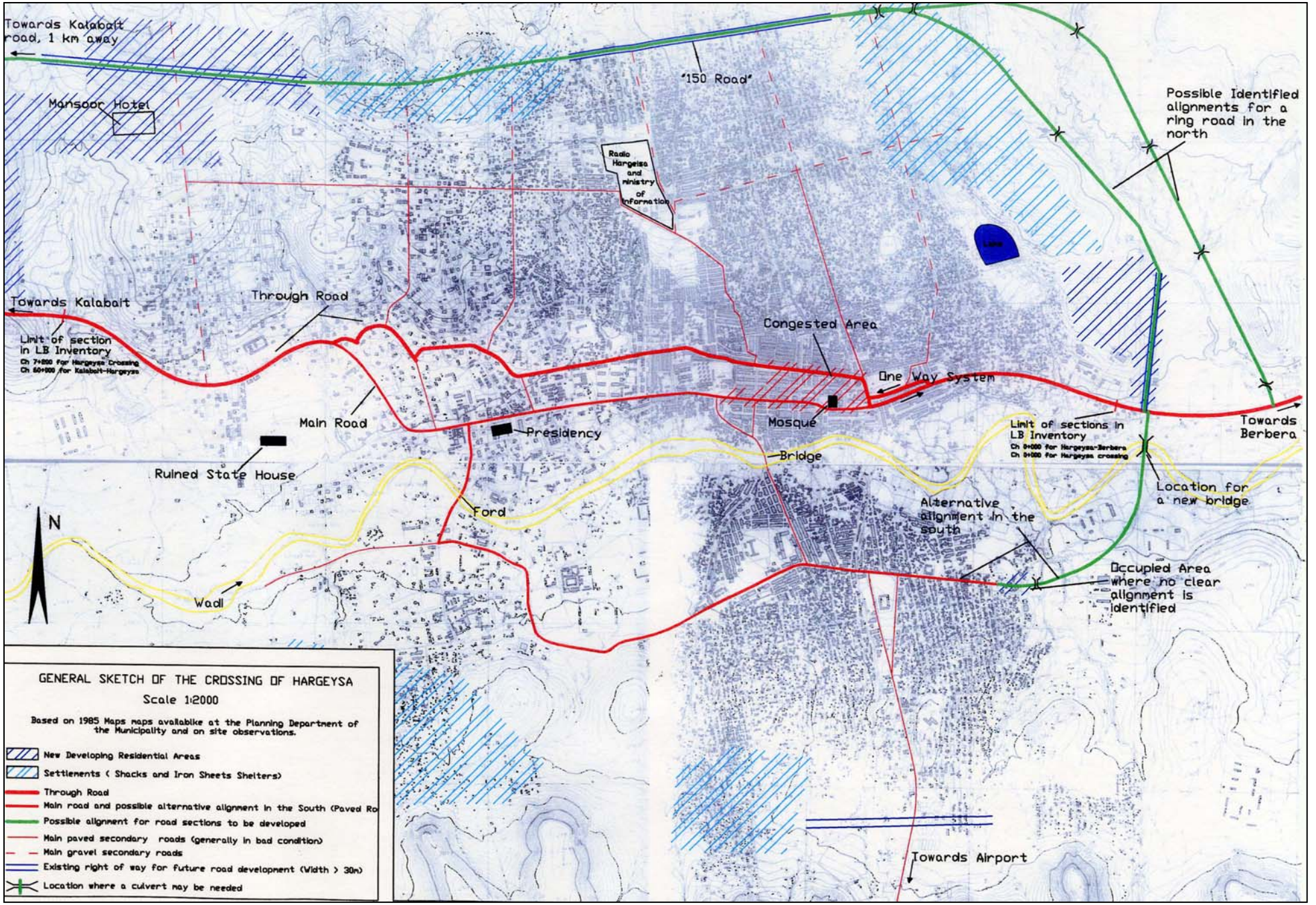
The specific problem of the transit through the city of Hargeisa by the Berbera - Ethiopian border road, which is also the main artery of the city, is linked to the general organisation of the traffic in the city. The short term City Council policy is to relieve the congested main road by diverting the trucks on a parallel itinerary, the so-called “Hargeisa Through Road” which is presently undergoing maintenance and rehabilitation works funded by the EC and carried out by TWH. This project will definitely have a significant positive impact on the transit traffic and on the internal city traffic. The pavement of both the main artery and the Through Road is however presently in extremely bad condition, when it is not completely destroyed.

The problem remains that both the main artery and the Through Road cross the very busy centre of Hargeisa which is also the starting point of all the North-South main city roads, thus concentrating a very large part of the city traffic. In the medium term, it may be expected that further congestion will develop because:

- the number of passenger vehicles in Hargeisa significantly increased in the past few years;
- the traffic on the Berbera Corridor road has significantly increased since 2001 and Hargeisa seems to be the origin and destination of the majority of traffic;
- the transit traffic will further increase both with the resumption of livestock exports and the development of trade with Ethiopia.

For these reasons, the Consultant compared possible improvements and alternative road alignments which could be considered to reduce traffic congestion in the city centre.

The construction of a true Hargeisa by-pass would be the most advantageous for the transit traffic, but it is not presently economically viable because the transit traffic currently represents only a small part of the total traffic on the corridor, which is mostly directed towards Hargeisa. The rehabilitation of the Through Road and of the main artery are therefore the only improvements which could be justified in the short term and they must be considered as a priority in the framework of the rehabilitation of the corridor. Phases 2 and 3 of the Through Road rehabilitation programme should be completed and additional pavement resealing and repairs on the main artery should also be considered. The total estimated additional cost is € 1.1 million.


Towards Kalabait road, 1 km away
"150 Road"
Mansoor Hotel
Radio Hargeisa and ministry of information
Possible Identified alignments for a ring road in the north
Lake
Towards Kalabait
Through Road
Limit of section in LB Inventory
Ch 7+200 for Hargeysa Crossing
Ch 60+100 for Kalabait-Hargeysa
Congested Area
One Way System
Main Road
Presidency
Mosque
Towards Berbera
Limit of sections in LB Inventory
Ch 0+000 for Hargeysa-Berbera
Ch 0+000 for Hargeysa crossing
Bridge
Ruined State House
Location for a new bridge
Alternative alignment in the south
Ford
N
Occupied Area where no clear alignment is identified
Wadi
GENERAL SKETCH OF THE CROSSING OF HARGEYSA
Scale 1:2000
Based on 1985 Maps maps available at the Planning Department of the Municipality and on site observations.
New Developing Residential Areas
Settlements (Shacks and Iron Sheets Shelters)
Through Road
Main road and possible alternative alignment in the South (Paved Ro
Possible alignment for road sections to be developed
Main paved secondary roads (generally in bad condition)
Main gravel secondary roads
Existing right of way for future road development (Width > 30m)
Location where a culvert may be needed
Towards Airport

4.3 The Port of Berbera

Two major infrastructure projects are presently considered by the Berbera Port Authority :

- The extension to the existing quays and yard areas on the “island pier” to increase physical port capacity ;
- The rehabilitation of the oil jetty.

In addition the procurement of new handling equipment for the loading and unloading of ships is also a condition of the increase in the efficiency of the port operations.

The Consultant considers that the Port Authority infrastructure extension proposals, and the many other proposals for improvements, should be considered within the context of an overall strategic port planning process, rather than being developed in an ad hoc, opportunistic or reactive manner. In terms of the physical infrastructure of the port and its future evolution the Consultant would strongly recommend that a Physical Port Master Plan be established as the base document against which any proposed changes in layout, facilities, operations etc, are tested. It should of course, be linked to reasonable projections of the traffic growth over future years and should be designed for implementation in a logically phased manner. It should then be subject to periodic formal review, but not to casual change.

Furthermore, there is a general lack of basic records about the way the port infrastructures were designed, constructed, repaired and maintained. This is in a large part the result of the destruction of documents during the hostilities. It is therefore important to carry out, as a preliminary step for the development of the master plan, a comprehensive survey of all the port infrastructures and facilities, including underwater investigations and testing as required, to properly assess the present condition of these infrastructures and facilities, as well as to define the way they could be integrated in the port physical development plan.

The Consultant estimates that this comprehensive facility survey and the preparation of the Physical Port Master Plan would cost € 300,000.

4.4 The extension to the existing quays and yard areas on the “island pier”

4.4.1 Extension in length

The idea is to extend the “island pier” as far as the TOTAL Oil Jetty with an increased alongside depth to accommodate vessels up to 40,000 DWT. The nominal maximum distance to the Oil Jetty is 350m, but this brings into focus the future of the Oil Jetty – clearly it would not be feasible to construct the quays right up to the Oil Jetty without compromising both the port and the oil berth operations.

The extension would bring the linear quay length to 1,000 metres and it is clearly the logical manner of developing future wharfage – as and when justified of course. From a protection point of view, such an extended berth would still be sheltered from the effects of the NE monsoon and in fact this berth line could reasonably be extended in future years for perhaps a further 500-1000 metres without encountering too much in the way of adverse conditions at berth.

The geotechnical conditions in the vicinity of the proposed extension are likely to be similar to those in the area of the “American Quay” and it is likely that the most economical form of construction in these conditions would be tied sheet piling, as before. The Consultant believes that it would be prudent for any such new wharfage to be constructed with an alongside depth of –14m CD, somewhat more than strictly necessary to accommodate most

40,000 DWT vessels, but a cost effective increment that would anticipate future trends in shipping in the region.

The Consultant estimated the cost for the proposed extension works to US$ 40 million. Clearly the present traffic level and prospects for increase do not presently justify such a large investment in the short term.

4.4.2 Conditions to allow the port to receive vessels up to 40,000 dwt

In reviewing the plans for extension of the port facilities the Consultant undertook to identify the conditions and works required to allow the port to receive vessels up to 40,000 DWT and to consider, as appropriate, possible alternatives to achieve such an increase of the capacity. Based on the dimensions of the vessels, a minimum alongside depth of -13.0m CD would be required to accommodate all types of vessels at all states of tide (allowing 0.5 metres margin for under keel clearance). The present quays have not been designed for this alongside depth and even the “American Quay” was only designed for -11.0 m CD. Should a major expansion project of the type discussed above be shown to be necessary and economically viable, it would be prudent to consider whether future traffic might demand even greater alongside depths – perhaps to -14m CD (or, indeed, whether the availability of greater depths might generate additional ship calls).

The Consultant estimates the costs of the works for deepening “American Quay” to -13m CD over a length of 280 metres to about US$ 10.9 millions. It seems unlikely that such an investment is presently economically viable.

4.5 The rehabilitation of the Oil Jetty

The position TOTAL has now reached is a decision in principle to proceed with a replacement importation facility. Their studies have concluded that the risks associated with continued use of the jetty are unacceptable and they judge the most cost effective option for them is not rehabilitation, but the construction of new undersea pipelines with an offshore manifold and floating line. TOTAL expects to expend US $ 2 million on the undersea pipeline and have in mind that this sum could be paid towards the quay expansion project and acquire them the rights to part-time usage of a berth.

5. THE HARGEISA AND BERBERA AIRPORTS

5.1 Runways and aprons

The aircraft movement areas, runway, taxiways and aprons, at the Hargeisa airport need urgent action to meet minimum safety requirements and avoid prolonged closures of this airport to large aircraft. The air transport industry in the region of North-east Africa and near-by parts of the Middle East is still in the transition from turbo-propeller type aircraft to jet aircraft. For distances longer than about 1,000 km jet aircraft are normally much more economical than turbo-prop aircraft. Airlines in the region are therefore changing their aircraft fleet rapidly as their financial resources so permit. For Somaliland the implication of this general trend is that both Hargeisa and Berbera airports will need to either meet the requirements of medium-range jet aircraft or limit themselves to feeder-services with 50-passenger turbo-prop aircraft or smaller from nearby larger airports such as Djibouti or Addis Ababa.

The rough and constantly patched surface of the runway and other aircraft moving areas makes at least a pavement levelling overlay necessary. For operation of jet aircraft there is also the serious safety risk of ingestion of loose gravel into the engines.

Preliminary investigations of the runway base and subbase courses showed they are made with good quality crushed rock material and gravel. In these conditions and with the current and forecasted levels of traffic, a 7.5 cm asphalt concrete pavement overlay seems sufficient to rehabilitate the surface of the runway. In order to be on the safe side, it is recommended to overlay with an increased thickness of 10 cm the most critical areas of the runway (about 800 m including the touch down area and the area which is poorly drained at km 0.900). At the time of the next resurfacing, in about 2013, a determination could be made of any runway lengthening required.

There is also a need for repair works on the runway, taxiway and apron at the Berbera airport. While important, and despite that the airport has been classified as a 4E airport earlier, these works could be limited to cracks sealing for the immediate future, considering the low volume of traffic at this airport.

The Consultant finally recommends that the overlaying works of the Hargeisa runway and the repair works at the Berbera airport infrastructure be undertaken under a contract which also includes similar road resurfacing works in Somaliland, in order to maximise the resulting economies of scale. Should it be the case, the cost of this overlay is estimated at € 5.3 millions.

5.2 Other recommended equipment and works

In the ICAO regional plan, approach lights are recommended for Hargeisa and PAPI or VASI for both airports. A portable airfield lighting system for emergency operations at Hargeisa has been proposed as an interim solution, and rehabilitation of an earlier lighting system for Berbera.

While of lower priority, the minimum repair works of the water and sewerage system at Berbera ought to be carried out for the social welfare of the airport employees where temperatures regularly reach 45 to 50° C.

At Hargeisa the repair of the Rescue and Fire Fighting (RFF) station ought to be done as a priority to protect much more valuable fire fighting equipment, and the vital compactor/roller for the continuous runway repair works.

There is a security problem at Hargeisa and Berbera airports with both wild and domestic animals grazing near the runway. Part of the problem is that the fence around the airport perimeter is long (7-8 km at Hargeisa and 9-10 km at Berbera) and earlier construction of just a barbed-wire fence, while clearly justified, is difficult to maintain. It is recommended that the support of RFF crew and airport security forces would be requested, with more repairs and more collaboration with the herdsmen responsible for herding cattle and development of paths around the airports, to reach an acceptable level of security.

The total cost of these other equipment and works is estimated at € 518,000.

6. RECOMMENDATIONS FOR THE DEVELOPMENT OF THE INSTITUTIONS IN CHARGE OF OPERATING THE CORRIDOR TRANSPORT SYSTEMS

6.1 Problems in dealing with a territory which has not been recognised internationally

Somaliland has still not been recognised internationally because the United Nations and the African Union support a unified Somalia and the principle of intangibility of the borders between African countries. This situation has a many consequences as far as international trade is concerned:

- The ships sailing to the Berbera port are only insurable at higher premium ;
- Somaliland cannot offer any sovereign guaranty to any international bank and insurance company which may wish to establish itself in the country.

As a consequence of the above, no shipment to the Berbera port and through Somaliland can be insured by international companies. For the same reasons, no letter of credit can be opened in Somaliland. These represent major constraints to the development of international business in Somaliland and of transit traffic to Ethiopia. It presently limits them to firms and organisations willing to accept to operate without international guarantee other than those provided by regional companies.

Ethiopia adopted a careful policy in its relationships with Somaliland. It is however eager to use the Berbera Corridor as an alternate gateway for its foreign trade to the Djibouti Corridor which is the only one presently available since the closure of the country borders with Eritrea.

6.2 Transit agreement and Corridor Authority

The relationships of a landlocked state with a state which provides it with access to a sea port and the legal conditions of the transport of goods between them is generally regulated by a transit agreement. In some cases the two states decide to set up a common « Corridor Authority » to regulate and control the traffic of goods between the two countries.

There are numerous examples in Africa of states which decided to simply sign a transit agreement : Senegal and Mali, Ivory Coast and Burkina Faso, Benin and Niger or Togo and Niger. There are also examples of states which decided to create a Corridor Authority in order to facilitate the implementation of a transit agreement. The best example of such an authority is the Transit Transport Coordinating Authority of the Northern Corridor (TTCA) which is responsible for regulating the carriage of goods by rail and/or by road from the port of Mombasa (Kenya) to Kigali (Rwanda), with an important road leg in Uganda.

The setting up of a transit agreement presupposes diplomatic relations between the two or more neighbouring states. However, in the case of the Berbera Corridor, Somaliland, which is still not recognised by the international community, cannot become party to an international agreement on transport or transit matters with states of the sub-region. It is therefore necessary to consider alternatives. One possibility could be to have an agreement between the Government of Ethiopia and a private entity in charge of managing the Berbera Corridor. This would require conceding the operation of the port of Berbera to a private operator which will also take the responsibility of the land transit through Somaliland.

A regulatory body would then need to be established to set and control the application of the rules applicable to transport within the Berbera Corridor. It may be advisable to create in a first instance this regulatory body as a simple joint consultative Berbera Corridor Commission. This low profile organisation would be replaced by a full-fledged Berbera Corridor Authority if Somaliland is recognised by the international community.

The Berbera Corridor Private Operator would need to enter into a direct agreement with the Ethiopian Customs at an early stage and a free trade area could then be created at the Berbera port on the same model as at the Djibouti port. Another agreement would be made between the Corridor Private Operator and the Somaliland Road Authority for the collection and, partial or total, repayment of a road transit fee to be used to finance the maintenance of the Berbera – Hargeisa – Ethiopian border road.

6.3 Managing and financing road maintenance in Somaliland

The core road network of Somaliland as defined in 2000, comprises 735 km of paved roads and 1,462 km of unpaved roads. The funding needs for the routine maintenance is about US $ 662,000 a year or about US $ 3 million including periodic maintenance.

For the 220 km of the paved sections of the Berbera Corridor, the funding requirements are US $ 220,000 for routine maintenance and approximately US $ 1.0 million/year for full maintenance of the total length road to the border.

The funds provided by the present fuel levy only amount to approximately US $ 624,000 a year. It is clear that additional funds must be made available either by increasing the fuel levy or by considering other sources for the Road Fund.

It is reasonable to consider charging a transit fee on the Berbera Corridor road to the trucks, either from Somaliland or from Ethiopia, carrying Ethiopian imports or exports. The rate applicable in the COMESA region for similar situations is $ 8.00 per 100 km of transit road. This would represent $ 19.20 for the transit on the total Berbera Corridor and the total collected could amount to US $ 700,000 a year, three times the cost of routine maintenance of the road and 70% of the cost of its full maintenance.

The capacity of the Somaliland Roads Authority (SRA) will clearly not be sufficient to manage such an increased maintenance budget on the Berbera Corridor road. It is therefore advisable to concede the management of this road maintenance to the Berbera Corridor Operator, the commissioning of which was suggested above.

6.4 Recommendation about the management of the port of Berbera

The Port of Berbera operates because of the high pressure put on its staff by the customers, and because the berths, warehouses and other facilities are in good condition. The limitations in the berthing, handling and storing capacity of the port and the low efficiency of its operation are mainly due to a lack of organisation and to the generally low skills of the staff working there.

The port handling productivity is very low : the average grain unloading yield was estimated by the Consultant to be between 800 and 940 tons per ship per day. As a comparison, grain cargoes at the port of Djibouti are unloaded from ships at the rate of 5,000 tons a day, including bagging.

The Berbera port needs an experienced and strong management to efficiently carry out all port operations. Given the lack of availability in Somaliland of personnel with the required skills, outsourcing of the port operation is the easiest and the most efficient way to improve the situation.

The port operating model recommended by the Consultant is the one used for the port of Djibouti which successfully conceded all management to Dubai Ports International. Similarly, the port of Aden commissioned the operation of its container terminal to the Port of Singapore under a comparable arrangement.

Provision and utilisation of modern and reliable handling equipment (forklifts, nets, pallets, trans-palettes, grab-rope, etc) is essential to boost loading and unloading operations for general and bagged cargo. This equipment would be best provided and maintained by the future port operation concessionaire.

6.5 Definition of a Civil Aviation Policy for Somaliland

Civil aviation provides important support for the future growth of the economy of Somaliland. Air passengers at Hargeisa airport for the first four months of 2003 increased by 7% compared to the same period in 2002 and air cargo by almost 20%. A well-defined Civil Aviation Policy is therefore important for a sector likely to grow at least at 5-6% per year for the next few years.

Civil Aviation Policy has many aspects. To ensure safety, ICAO, on the basis of the Convention on International Aviation, in a series of Annexes has developed international Standards and Recommended Practices (SARPS). The aviation policy for Somaliland would also need to apply a number of measures to meet such regulatory issues, with Ministry of Civil Aviation and Air Transport carrying the most important responsibilities.

Currently the tasks for the implementing the above policy actions are divided between the Ministry of Civil Aviation and Air Transport and the Civil Aviation Caretaker Authority for Somalia (CACAS). The main Ministry role is to guide the provision of air transportation services and the development of airport infrastructure and services.

Provision of air transport services is carried out by several air transport companies for which the role of the Ministry is to ensure that safety and security are met. Since there are no personnel, nor aircraft licensed by Somaliland, this responsibility is met by ensuring that personnel and aircraft are meeting the appropriate requirements of licensing authorities of other states. There is no regulatory intervention concerning passenger tariffs and freight rates.

The Ministry is also responsible for operating and maintaining the airports, except for tasks undertaken by CACAS. The Ministry has outsourced the tasks of handling services and aircraft fueling, to NASHA and to Star and TOTAL respectively.

CACAS has a mandate to provide essential services required by air transport operations within the Mogadishu Flight Information Region (FIR). CACAS is also called on to maintain coordination with aeronautical entities in neighbouring countries. These services include the infrastructure and operations for air navigation including communications systems and air navigation aids, ensuring rules of the air and air traffic control, collection and exchange of meteorological information. The costs for these services are met primarily from over-flight fees from foreign airlines, supplemented by bilateral aid. The collection of the fees is undertaken by IATA. Customs and immigration procedures are handled by the specialized government agencies in Somaliland.

There does not appear to be any strong reason for changing these general responsibilities in the near future. It should be recognised that the Ministry, as a small government ministry, has very limited financial resources and lacks adequately trained personnel in certain functions.

With a yearly air traffic of about 70,000 passengers and 3,000 tons of air freight the scope for privatization of airport services would be very limited in the immediate future.

7. SOMALILAND CUSTOMS AND BORDER CROSSING

7.1 Assessment of the present situation

The current legal basis for the operation of the Somaliland Customs Service is the “Republic of Somaliland: Acts of the Ministry of Finance: Customs Law”, which came into force on the 15th May 1996. This legislation seems to have been drafted hastily, and obviously drew a great deal on previous legislation, much of which appears to have been based on the old

British “Customs & Excise Act, 1952”. In particular, the current legislation makes no provision for transit of goods, exemptions from duty, import licences, and the establishment of free trade zones. Revision of these basic documents is necessary.

The Somaliland Customs Service operates with a total of 161 staff, less than 50% of whom are operational. Staff are based at Headquarters in Hargeisa and at nine operational outstations and two regional offices throughout the country, but significantly only four of the eleven offices are situated close to borders.

The Customs service is assisted by a significant number of Fiscal Police, many of whom appear to be duplicating the jobs of Customs watchmen and messengers.

The Customs service is lacking in all of the essentials. Salaries are very low, causing recruitment problems. There is no training programme. Accommodation is primitive and, in the case of Berbera, over-crowded. There is a lack of transport; vehicles are either broken down and unserviceable, or too old to be of practicable use. There is no radio equipment; local communications are by cell-phone. No uniforms are provided. Personal computers are almost non-existent.

The present system of assessing and collecting customs duties is both unreliable and bureaucratic, with inefficiencies at all stages of revenue collection.

Despite all of the above, there is a distinct atmosphere of willingness to do a good job, in spite of the lack of infrastructure. The Consultant detected a positive attitude from staff at all levels towards the need for change, particularly in the area of computerisation, and for improvement in all aspects of the organisations operations.

The need for training, computerisation, equipment and conditions of service were the main topics voiced by all, including top Ministry of Finance officials and, indeed, the Minister himself. There was also a willingness to co-operate with neighbouring countries’ customs services, particularly Ethiopia.

It should not be too difficult to reform, even revolutionise, such a small organisation, given the willingness to accept such dramatic changes at all levels, particularly at the top.

7.2 Recommendations

There is an urgent need for reform of the archaic and bureaucratic system of revenue assessment and collection presently in force. Computerisation is the answer, and fortunately there is in existence a system of revenue assessment control and accounting designed specifically for countries with emerging economies. ASYCUDA (**A**utomated **SY**stem for **CU**stoms **DA**ta) is in use in over eighty countries and regions world-wide, including twenty-nine countries in Africa. It is a computerised system for manifests, customs declarations, accounting procedures, bonded warehouses, inward and outward processing relief’s and transit control. ASYCUDA also generates trade data for statistical purposes.

Although ASYCUDA can be configured to suit individual custom regimes, such as a national tariffs and legislation, it is most effective when used in conjunction with the accurate and effective Harmonised System (HS) of tariffs and the Single Administrative Document (SAD), which should also be introduced in conjunction with ASYCUDA.

The outstanding benefits of the introduction of ASYCUDA are in the areas of manifest control, production of accurate, meaningful statistics, and the elimination of many manual calculations and accounting procedures.

The resulting release of operational staff from desk bound repetitive tasks will enable the Somaliland Customs to develop other areas of customs control, such as effective border patrols, search of vessels, development of intelligence, prosecution of offenders and more selective control of passengers.
It is recommended that a system of incentive payments be instituted to reward officers who make significant seizures. This has the advantage of increasing officers' take home pay without resulting in the clamour for parity by other Somaliand civil servants that would ensue if a simple pay rise were to be granted. The added advantage is that the payment of rewards would be financed by the additional revenue collected.

Modern IT equipment needs modern dust-free buildings, with air-conditioning and reliable power supply. The fact that many of the existing Customs facilities are situated some distance from borders needs to be solved by the provision of new buildings in the most effective locations.

It is estimated that the implementation of this whole programme will cost about € 1.2 million.

8. ENVIRONMENTAL ANALYSIS

Ethiopia established in 1995 an Environmental Protection Authority (EPA) which developed comprehensive guidelines for the preparation of environmental impact assessments. A Proclamation in 2002 stated that no project could be implemented in the country without a proper Environmental Impact Assessment duly approved by this authority.

Somaliland created in June 2003 the Environmental Protection and Desertification Prevention Agency (EPDPA). It is not fully staffed yet and all related procedures and guidelines about environmental impact assessment of projects remain to be developed and approved.

The section of the Berbera Corridor road to be upgraded (Harar-Berbera section, 344 km) crosses from West to East an area of cool mountains and hills (altitude up to 2,300 m), an area of arid mountains (altitude between 1,400 and 2,000 m) and a hot coastal plain, to reach the coast of the Gulf of Aden in Berbera. Temperature varies from about 20°C in the highlands (in Harar) to more than 40°C on the coast. Average rainfall varies from about 800 mm in the highlands to less than 300 mm on the coast, but it experiences huge variations from one year to another. These rainfalls often occur in violent storms which generate flash floods in the generally dry stream beds. Vegetation is characteristic of dry areas, consisting mainly of grass, shrubs and few trees. Water resources are limited and there is a very acute water supply shortage for humans and animals during the dry season. Soils are generally fine and highly sensitive to erosion. No national park, nor animal sanctuary are located close to the road.

The natural environment of the corridor road is quite sensitive with limited water resources, highly erodible soils and major flash flood hazards. The environmental risks of the upgrading of the Berbera Corridor road may however be adequately controlled because the road right of way is well established and the recommended widening works will have only very limited impacts on the natural environment and on the communities. It is however recommended :

- To carefully open, operate and reinstate the areas which will be used for extraction of construction materials;
- To impose to the contractor to develop his own water supply systems with adequate precautions for the preservation of the water resources used by the communities;

- To protect or reconstitute the natural vegetation, mainly trees, in case it needs to be removed;
- To enforce a public health information and control programme for the local population and his staff about AIDS and water borne diseases.

The only component of the project which could create serious environmental problems is the construction of the Hargeisa Through Road. This is mainly due to the lack of the Municipality capability to properly control the urban development and the construction of new houses in the city. Part of the land which was previously reserved for the right of way of this Through Road has been developed and a resettlement programme will therefore have to be designed and implemented to deal with this issue.

No major infrastructure works are recommended for the Berbera port. However, given the nature of the port traffic and of the numerous oil tankers passing offshore it is recommended to improve the port capability to deal with accidental oil spills and marine pollution by the development of suitable action programmes, the procurement of specialised equipment and the training of the concerned port staff. It is especially recommended to request Total to carry out a suitable environmental impact assessment of the new oil terminal facility it proposes to build. The possibility to request this company to procure equipment and train staff to prevent oil spills, or control them if they finally occur, should be considered.

The overlay of the Hargeisa airport runway which will strictly remain within the limits of the existing facility is not expected to have negative impacts on the natural environment.

The socio-economic impacts of the improvement of the Berbera Corridor infrastructures are extremely positive. They will include :

- the improvement of a primary road which will improve the accessibility of all local populations to markets, schools and health facilities…
- the development of the business relationships and of transit trade between Ethiopia and Somaliland
- the creation of a modern airport facility in Somaliland which ensure a safe air access to the country meeting ICAO strandards.

9. CONCLUSIONS AND RECOMMENDATIONS

9.1 Prioritisation of the recommended improvements on infrastructures and institutional arrangements

Even if it is difficult to set priorities between recommendations of a very different nature such as improvement of infrastructures and development of the institutional framework required to operate them efficiently, the Consultant believes that in the case of the Berbera Corridor, priority should be given to the institutional recommendations.

The Berbera Corridor cannot function as a transit route if the border crossing between Somaliland is not properly controlled and if its transport system does not efficiently compete with the other corridors which provide Ethiopia with access to a deep sea port. No infrastructure bottleneck presently prevents the release of these two conditions. Conversely, the strengthening of the Somaliland Customs Department and the improvement of the efficiency of the Berbera port operation are key conditions to achieve these objectives. Institutional changes are also more difficult and longer to implement, especially when they involve two countries, than infrastructure improvement projects. For these reasons, the

Consultant recommends that priority be given to the improvement of the Berbera Corridor institutional framework as described above.

As far as infrastructure improvements are concerned, the Consultant considers that the improvement of the Corridor road sections, both in Ethiopia and in Somaliland should be given the highest priority. The present and foreseeable traffic levels would definitely make them economically viable as a detailed feasibility study to be carried out as a next step would certainly show.

The overlay of the Hargeisa airport runway is also a priority investment, but it is more justified by the need to provide Somaliland with a safe airport entry point, than by the impact of this investment on the improvement of the Berbera Corridor.

9.2 Recommended and prioritised actions to improve the Berbera Corridor transport systems

Taking into account the priorities defined above about the institutional development and infrastructure improvement actions recommended for the development of the Berbera Corridor, the Consultant lists below by priority the next steps for the implementation of these actions. These lists assume that financing will be available and provided by a donor.

Priority 1 :

- Strengthening the Somaliland Customs Department : Total € 1,200,000

  - o Define and implement a training programme € 50,000
  - o Provision of vehicles, equipment and uniforms € 600,000
  - o Improve accommodation and facilities € 350,000
  - o Introduce ASYCUDA € 50,000
  - o Redeploy staff to cover most critical border crossing locations € 50,000
  - o Revise laws, procedures and organisation € 100,000

- Strengthening the Jijiga Ethiopian Customs office and equipment : Total € 80,000

  - o Refurbishment of the Jijiga Customs office and storage : € 30,000
  - o Provision of vehicles and communication equipment : € 50,000

- Recruitment of a Corridor Operator : advisory services € 250,000

- Organisation of the regulatory body : advisory services € 100,000

Priority 2 :

- Finalising the studies, securing the financing and implementing the improvement of the Corridor road :
  - o In Ethiopia
    - Paving of the Harar – Jijiga road section : € 35 million
    - Paving of the Jijiga – Togochale road section : € 20 million
  - o In Somaliland
    - DBST overlay and widening of the Berbera – Kalabayad road section : € 21.1 million
    - Improvement and paving of the Kalabayad – Tog Whajale road section : € 4.4 million

- Finalising the study and construction of Hargeisa Through Road : € 1.1 million
- Developing an Inland Container Depot (ICD) in Dire Dawa : € 100,000
- Preparing Berbera port Physical Master Plan € 300,000

Airport Rehabilitation

The rehabilitation of the Hargeisa Airport is urgent, but is not really part of the Berbera Corridor infrastructure rehabilitation programme.

- Carrying the final design and constructing the overlay of the Hargeisa airport runway : € 5.3 million
- Other improvements at Hargeisa and Berbera airports :
    - Portable runway lighting in Hargeisa : € 130,000
    - Rehabilitation of buildings and fencing in Hargeisa : € 257,000
    - Repairs to water supply, lighting and fencing in Berbera : € 131,000

If Somaliland is recognised internationally

- Transform the Corridor regulatory body into a Corridor Authority;
- Initiate the negotiation of a trade agreement between Ethiopia and Somaliland.

9.3 The EU policy on development of corridors providing access to Ethiopia

The European Development Fund is presently financing several projects on the corridors providing access to Ethiopia which compete with each other for the same foreign trade traffic. These projects concern :

- The Djibouti Corridor and include :
    - the rehabilitation and realignment of the road link between Addis Ababa and Djibouti ;
    - the emergency rehabilitation of the railroad line infrastructures ;
    - the preparation of the concessionning of the operation of this railroad to a private operator.
- The Berbera Corridor with :
    - the present project of upgrading the infrastructures and facilitating the transport services at the Berbera port, on the road between Berbera and Addis Ababa, and at the Hargeisa and Berbera airports.

Clearly the economic viability of any of these projects depends very much on the implementation of the others. A global analysis of all of these projects is therefore quite advisable. The present pre-feasibility study of the development of the Berbera Corridor does take into account the above listed improvements of the Djibouti Corridor, it is recommended to verify that the economic analysis of the later does consider the recommendations made herein about the improvement of the Berbera Corridor and the diversion of traffic which will result therefrom.