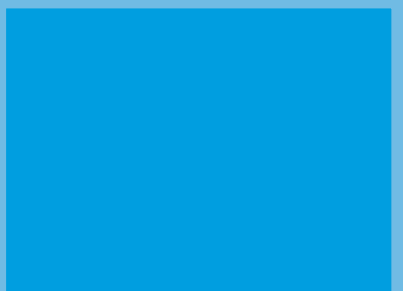
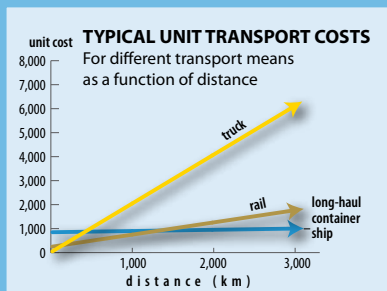
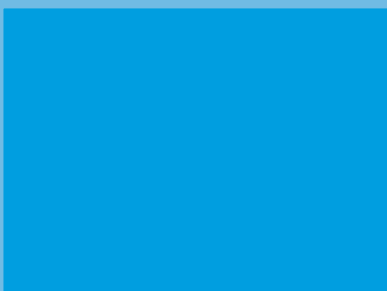
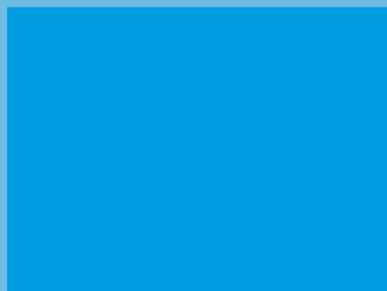


The Role of Inland Water Transport in Support of Further Regional Integration



KEY MESSAGES

- The land-locked economies of the upper Nile region are hampered by expensive road transportation and logistics that have generally reduced their economic opportunities.
- Efforts under the African Union and regional economic communities have resulted in (especially) improved road interconnections between the Nile countries. However, the transport and trade links between upstream and downstream riparians remain weak.
- The absence of a reliable and cost-effective north-south transportation link has constrained trade relations between the upstream and downstream riparians, and represents a lost opportunity for regional integration.
- Economic development in the Nile countries, combined with prospective mineral resources, fossil fuels, and agricultural potential, justify investment in bulk cargo transport infrastructure.
- Several reaches of the Nile could form elements of a comprehensive bulk cargo transportation system that could provide cost-effective access to internal and external markets.
- Developing the inland navigation potential of the river Nile – in particular the ‘southern reach’ from Kosti to Juba – may provide a low-cost transport route for bulk cargo from South Sudan and the Nile Equatorial Lakes region to The Sudan and Egypt; it could thus encourage north-south intra-basin trade and regional integration.
- Lake Victoria could provide a critical link between the Northern Corridor (Kigali-Kampala-Mombasa) and the Central Corridor (Dar es Salaam-Tabora-Mwanza), and enlarge the economic impact zone of the respective corridors; improved Lake Victoria navigation would also strengthen inter-regional transport connections and economic integration.

Trading vessel setting out from Jinja, Lake Victoria.



TRANSPORTATION: A KEY TO REGIONAL INTEGRATION

Transport is a crucial sector in the socio-economic development of nations and regions. Transport is inextricably linked to, and exerts a strong influence on, other sectors of the economy. Cheap, efficient, adequate, safe, and environmentally friendly transport services provide effective support to agricultural and industrial production, inter- and intra-country trade, regional integration, tourism, and to social and administrative services that are key to national and regional development. Thus, transportation is essential to achieving the goals of poverty reduction and sustainable development.

Most countries in the Nile region face huge costs associated with transportation in accessing foreign markets. Their transport and insurance costs are high, and compare unfavourably with the costs of developing countries in continents such as Asia and South America. Although most share the problem of high transport costs, the challenges are more severe for the landlocked riparian countries – Burundi, Ethiopia, Rwanda, South Sudan, Uganda, and the eastern part of DR Congo.

Water transport is the cheapest means of transportation for bulk goods, and enables countries to reduce transport costs for bulk imports and exports. Historically, societies have always located near water, due partly to the fact that water transport is more efficient than overland travel. The complex network of connections between coastal ports, inland ports, rail, air, and truck routes forms a foundation of material economic wealth worldwide. If properly developed, water transport could play a vital role in unlocking the economic potential, and increasing competitiveness and integration, of countries that share waterways such as the Nile.

This chapter will provide a general overview on the transport sector in the Nile region, examine the existing use of the Nile for transport of goods and people, and assess the potential of the Nile waterways to support increased regional trade and integration.



Dredgers play a vital role in keeping waterways navigable.



Breakdowns increase the cost of road transport.



OVERVIEW OF THE TRANSPORT SECTOR

The main transport systems of the Nile region comprise road, rail, air, maritime, and inland water. The transport infrastructure of the region is generally poorly maintained. The Nile countries are linked to one another mainly by road and air, and to a lesser extent by rail, inland water, and maritime services. Half of the Nile countries are landlocked. Trade with global markets is conducted through transport corridors to and from seaports via neighbouring states. The existing transport systems in the region are outward-looking, designed in colonial days to link countries with overseas markets as opposed to interlinking neighbouring states. As a consequence, there is a relatively low level of integration of the physical transport networks in the Nile region.

The countries mainly export agricultural products, most with little value addition. In some of the countries there has been discovery or ongoing exploitation of major deposits of mineral resources such as oil, natural gas, and precious stones. These are being (or will be) exported through the existing transport corridors. Pipelines conveying condensate, gas, oil, and refined petroleum products contribute over 21,900 kilometres to the bulk transportation network in the region. About 60 per cent of the existing pipelines in the basin are located in Egypt.

Improvement of the transport infrastructure, especially road, rail, and inland water transport is a prerequisite for accelerating growth in the Nile region.

Road system

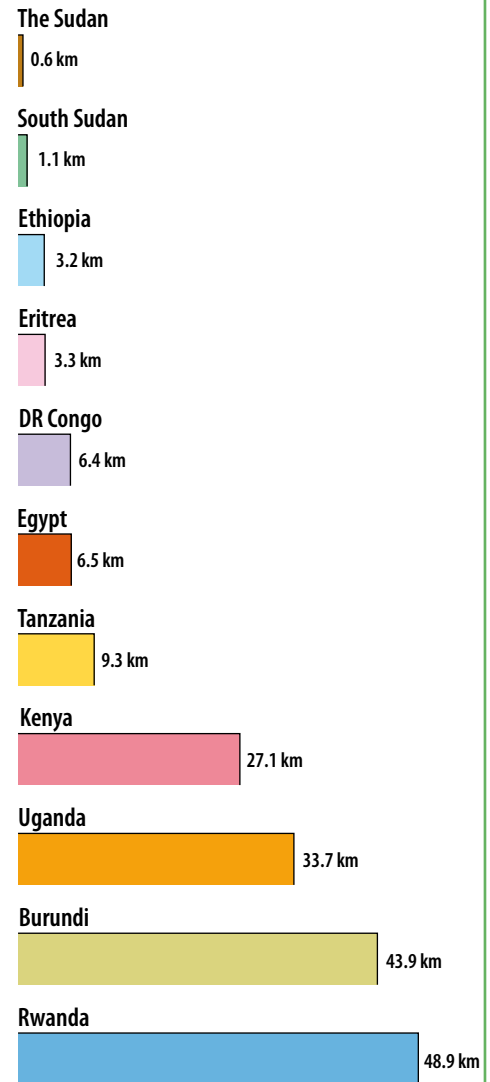
Road transport is the fastest surface mode of transport in the region, and is most suited for short- to medium-distance hauls. Roads are flexible, giving door-to-door service and providing interchange terminals for rail, water, and air transport. Decades of under-capitalization, poor management, and general neglect of the railways have propelled road transport to become the most dominant mode of motorized transport in the Nile Region. Road transport accounts for 80 per cent of the goods and 90 per cent of the passenger traffic in the region.

The commodities transported by road are mainly agricultural products and locally manufactured goods. They include maize and other cereals, flours, sugar, rice, beer, coffee, tea, tobacco, salt, gypsum, limestone, cement, petroleum oils, silicates, and rolled iron. International traffic comprises exports to global markets of commodities such as coffee, hides and skins, fish, tobacco, cotton, oil seeds, cereal flour, minerals, and vegetable products. Imports from abroad include petroleum oils, cement, wheat, palm oil, iron/steel, clothing, sugar, ceramic tiles, and motor vehicles. Haulage is mostly by trailer trucks and road tankers (fuel trucks).

The Nile region has about 631,000 kilometres of roads, resulting in a road density of 7 kilometres for every 100 square kilometres. This

ROAD DENSITY

Kilometres of road
per 100 square kilometres of land
latest available data 2000–11



(Source of data: The World Factbook)

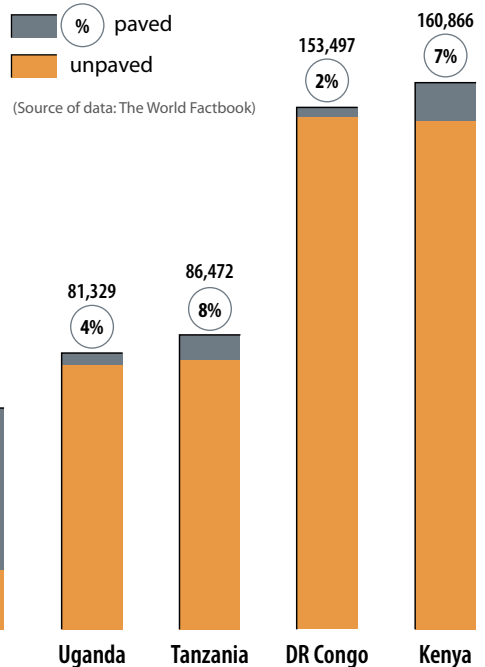
is low when compared to other developing regions, such as Latin America (12 km per 100 km²) and Asia (18 km per 100 km²).

Of the total road network in the region, only 86,600 kilometres (14%) is paved. A look at the proportion of paved roads by country shows a huge disparity, with a higher proportion of paved roads in the northern (or downstream) countries. However, the countries of the Nile Equatorial Lakes sub-region have a more dense road network than their downstream counterparts.

Overall, road network development has been inadequate in most of the Nile Basin countries. The growing volume of cargo on generally inadequate road networks has resulted in increased traffic congestion and rapid deterioration of the already poor roads. The level of maintenance of existing roads is poor, resulting in many sections that are unusable during the wet season. South Sudan, which

TOTAL LENGTH OF ROADS

Kilometres
latest available 2000–11

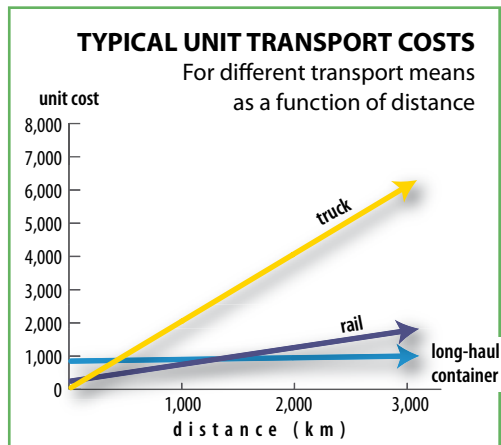


(Source of data: The World Factbook)

experiences extensive seasonal flooding each year, has the highest proportion of seasonally inaccessible roads. Road accidents in the region are generally high. Other problems affecting the road sub-sector are trucks exceeding axle-load limits, resulting in premature road failure, and delays on transit corridors, mainly at seaports, weighbridges, border crossing points, and inland terminal points, all of which increase transport costs.

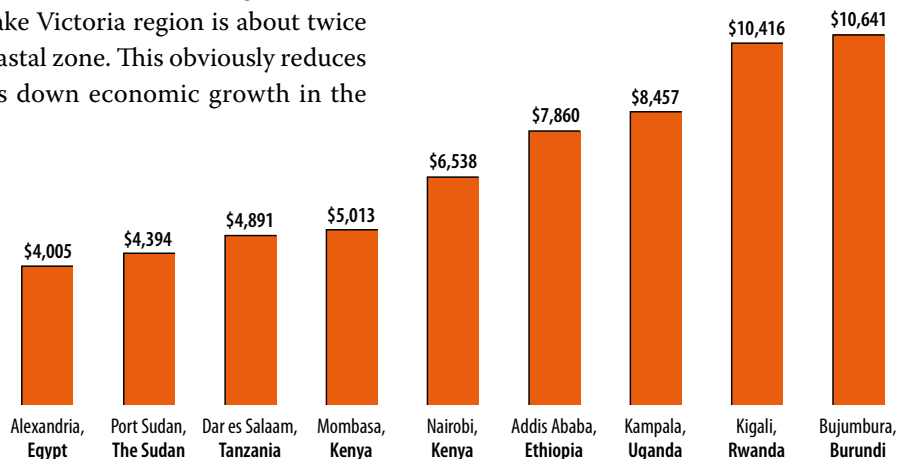
Inefficiency of road transport

Road transport of bulk cargo compares unfavourably in terms of cost to inland water or rail transport for medium and longer distances. Moreover, it has only limited potential to achieve economies of scale, and thus hinders industrialization and commercialization of agriculture. As a result, freight costs in many parts of the Nile Basin are very expensive. For instance, the cost of transporting a 40-foot container from Singapore to the Lake Victoria region is about twice as much as transporting it to the coastal zone. This obviously reduces economic opportunities and slows down economic growth in the land-locked upper Nile region.



(Source of data: Hofstra University)

TRANSPORT COSTS
Cost of 40-foot container of fertiliser from Singapore to various destinations in Nile region
June 2011
(Source of data: Maersk 2011)





Railway system

Railways are the most cost-effective mode of transport for moving bulk cargo for long distances over land, and are well suited to container traffic between ports and capitals. Rail transport costs are about 50 per cent lower than road transport costs.

The Nile Region has a total railway network of 23,059 kilometres, giving it a density of 2.6 kilometres of railroad per 1,000 square kilometres. Two countries – Burundi and Rwanda – have no railroad. The railways connectivity between riparian states is very low. Most of the network was built at the end of the 19th century and beginning of the 20th, when the most important consideration was the need to link regions producing primary commodities to seaports.

The rail system in the region is used for the transportation of bulk-heavy commodities. It mostly handles export traffic relating to coffee, cotton, tobacco, tea, and cereals; and import traffic related to machinery, electronic equipment, cement, iron and steel, and containers (containerized traffic).

Most railway systems in the region are generally inefficient, have high transit times, and operate far below their capacity. The narrow 1.067-metre gauge is the most widely used, except in Egypt, where the standard 1.435-metre gauge has been used. Railways are single track, and have stretches with sharp bends and steep climbs/descends. These characteristics limit the typical axle load to between 10 and 20 tons, and are a major hindrance to the introduction of modern trains that have higher speeds and greater load capacity.

The Nile countries have, over the past two decades, made some investments aimed at improving railway infrastructure and increasing efficiency of railway management systems. However, the limited investments have not succeeded in transforming the sub-sector. Railway corporations were (and some continue to be) characterized by bureaucracy, over-staffing and low productivity. This situation, coupled with fierce competition from road transport over the long haulage distances (where railways traditionally enjoyed a comparative advantage), has led to a declining role of railways nationally and regionally, both with respect to the transport of goods and of passengers. In Egypt, the railway sub-sector was recently restructured and given greater management autonomy resulting in improved performance. Nevertheless, the transport sector in Egypt, as in the rest of the Nile countries, continues to be dominated by the road transport mode.

Railway rolling stock in Tanzania.



Air transport system

Air transport is the fastest mode of transport. It is best suited for long-distance movement of passengers, perishable products and high-value, low-volume/low-weight products. The main cargo in the region transported by air includes fish, cut flowers, fresh fruits and vegetables, and precious metals.

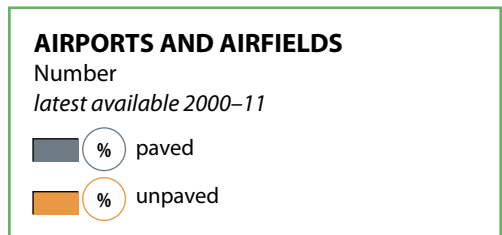
The Nile Region has about 727 airports and airfields, of which only 19 per cent have paved runways. A small number – 38 – are classified as international airports. The international airports are an important gateway for international/regional passengers and cargo, as well as an essential domestic hub for upcountry airfields. A greater number of airfields are domestic, providing access to remote locations for tourists, business persons, government officials, and emergency support services.

Some of the member states of the Nile Basin possess national carriers. Indeed, three of Africa’s top ten airlines – Egyptair, Ethiopian Airlines, and Kenya Airways – belong to the Nile region. Cairo International Airport, Bole International Airport, and Jomo Kenyatta International Airport are the region’s main air transport hubs.

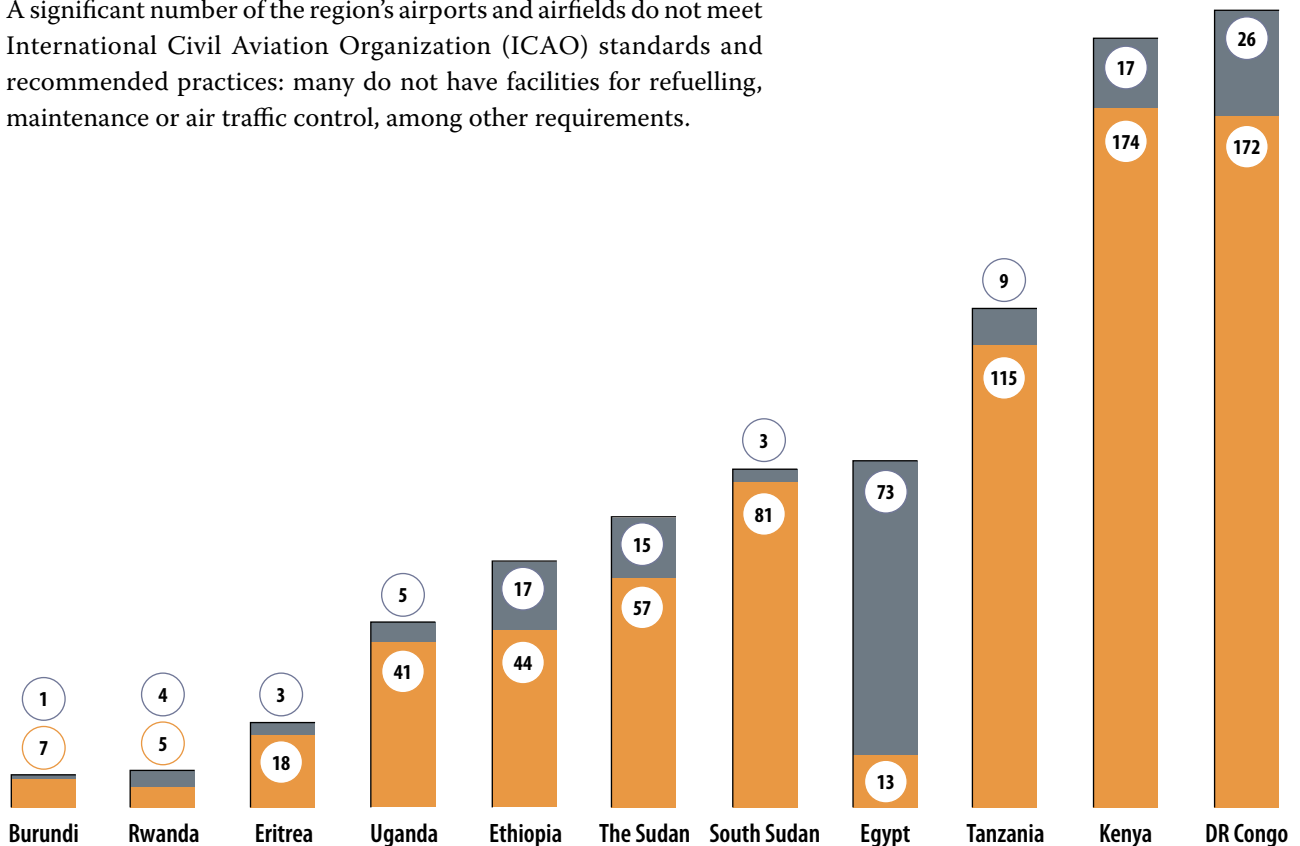
A significant number of the region’s airports and airfields do not meet International Civil Aviation Organization (ICAO) standards and recommended practices: many do not have facilities for refuelling, maintenance or air traffic control, among other requirements.



A plane owned by EgyptAir Express.



(Source of data: The World Factbook)





Maritime transport

Maritime transport is the most dominant mode of transport for moving freight between the Nile countries and the global market. Sea transport has a significant cost advantage over surface transport for dry and liquid bulk cargoes or containerized cargo. Maritime transport is important as a transit route for international trade, and accounts for 92 to 97 per cent of the region's international trade.

Six seaports serve as the chief entry and exit points for bulk goods in the Nile region: Alexandria and Port Said on the Mediterranean, Port Sudan and Djibouti on the Red Sea, and Mombasa and Dar es Salaam on the Indian Ocean. Egypt, which has about 2,450 kilometres of coastline on the Mediterranean and Red Seas, has the most developed maritime system, comprising five major seaports (Alexandria, Damietta, Port Said, Suez, and Ain Sokhna) and 35 smaller ports. The other coastal countries of the region have from one to three ports each. The port of Djibouti, although not belonging to the Nile region, is an important seaport for Ethiopia. In the early 20th century, a number of north–south and east–west railway lines were constructed to connect the region's harbours to the Nile hinterland.

Poorly maintained port infrastructure and inefficient operations remain major bottlenecks for maritime transport. The dwell time (i.e. the time container units/cargoes remain in the port between vessel discharge and leaving, or between entering and vessel loading) is generally high – over 10 days in most ports. Except for the major Egyptian ports, the ports in the region cannot accommodate deep-draught, post-Panama, vessels and therefore act as feeder ports, supporting hubs on the main east–west shipping routes.

Inland water transport

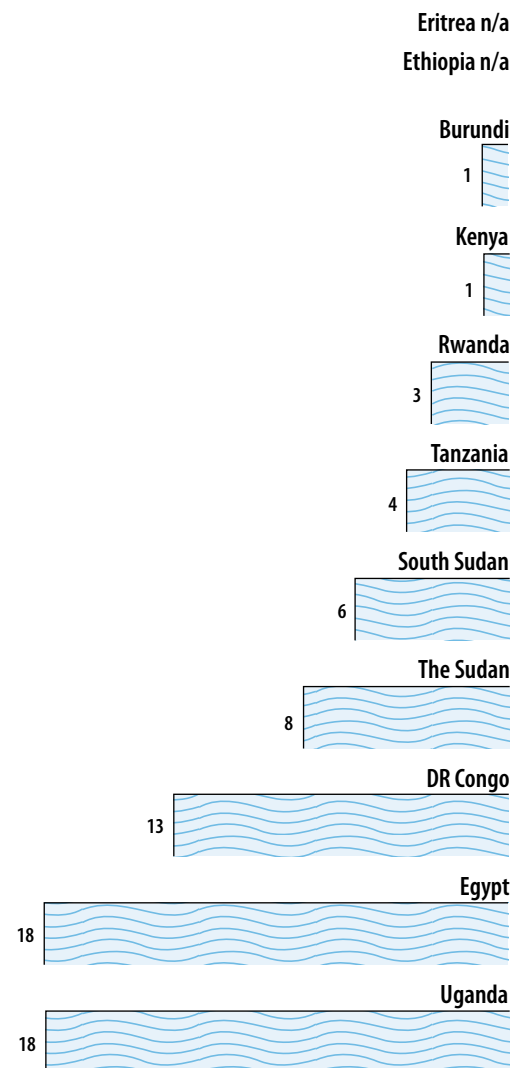
This mode of transport has the advantage of being cheap, energy efficient, relatively safe, and environmentally friendly. The Nile region is endowed with a number of rivers and lakes that have great potential to support inland water transport. Nine of the 11 Nile riparian countries have navigable water bodies, and a total of 72 inland water ports between them, with Egypt and Uganda having the highest number.

The main areas important for inland water transport are Lake Victoria, sections of the White Nile in South Sudan, and the Main Nile in The Sudan and Egypt. In the middle of the 20th century, rivers and lakes formed an important element of the transport system in Egypt, Sudan, and the Nile Equatorial Lakes region. Steamers operating on lakes Victoria, Kyoga, and Albert, and along other navigable parts of the Nile provided a reliable and low-cost connection between the upper and lower riparians. The main types of goods and services using this transport mode comprise agricultural produce, livestock, fish, general merchandise, and passengers. Inland ports, linked to other modes of transport connecting to international markets, also handle export/import traffic of agricultural products and manufactured goods.

INLAND WATER PORTS

Number in Nile region
2012

(Source of data: Wikipedia)





HISTORIC INLAND WATER TRANSPORT SYSTEM

circa 1950

- Nile Basin border
- Inland navigation route:
 - all year round
 - seasonal
- 🌊 lake with navigation route
- ▲ Lake Victoria port
- capital city
- ▼ cataract



The NBI is not an authority on international boundaries.

Today, inland water transport is little used in the Nile region, especially in the headwater areas, despite the fact that it is an excellent way of opening up remote areas. The outbreak of civil war in Sudan, and a sudden rise in water levels in the 1960s in the NEL region (that caused the submergence of piers and port facilities, and disrupted the north–south trading route), led to a refocus on road transport. This situation prevails to the present day. Inland water transport in the region is further restricted by man-made features – such as the Jebel Aulia, Sennar, and Roseires dams – that either do not have locks, or have locks that do not function. In the downstream section of the Nile, in The Sudan and Egypt, inland water transport continued to be used over the years without major disruption, but was of lower importance than road transport.

Ethiopia, although well-endowed with surface-water resources, is among the Nile countries with no significant navigable waterways. The Blue Nile (Abay) is not navigable within Ethiopia’s borders, but the Baro River (and Awash River outside the Nile Basin) is navigable in the rainy season. A ferry service is currently available on Lake Tana that links Bahir Dar with Gorgora via Dek Island and a string of lakeshore villages. Local traders use the lake for transportation of merchandise between shoreline towns, especially in the northwestern parts of the lake.



IMPROVING TRANSPORTATION

In general, the performance of the transport sector in the Nile region is low compared to that of other developing regions of the world. This is attributable to a number of challenges and constraints, key among which are low transport network connectivity; limited financial resources to improve and maintain transport infrastructure; poor transport safety and security; high transport costs; negative impact of transport on the environment; limited implementation of national, sub-regional and regional agreements; inadequate human and institutional capacity to develop, operate and maintain the transport infrastructure; and poorly developed transport information systems.

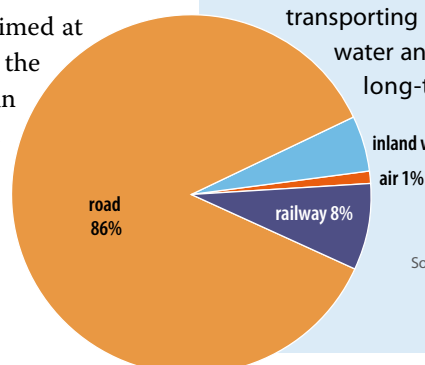
Countries have made a number of efforts in recent years to improve the transport sector. For roads, nearly all countries have prepared transport policies, master plans, and investment strategies. Countries such as DR Congo, Ethiopia, and Rwanda have incorporated transport development strategies in poverty-reduction strategy papers. Ethiopia is implementing the Universal Rural Road Access Program (URRAP) as part of its Road Sector Development Programme. This aims to free rural people from the constraints of poor access to markets and services, reducing rural poverty, improving welfare and opportunities, and stimulating agro-productivity. Human and institutional capacity-building is being undertaken in the Nile countries with the support of development partners, and includes establishing or restructuring road agencies, setting up national road funds, and enhancing the capacity of local governments to coordinate rural transport operation and maintenance.

Railway enterprises in the region have undergone some reforms aimed at bringing about competition, efficiency, and financial viability. The reforms, among other things, created an enabling environment for private-sector participation. However, frequent renegotiations of private-sector management contracts, low traffic, and costly public-service obligations have kept private investment low.

In air transport, infrastructure has been improved in some countries, and institutional reforms are ongoing, with the separation of responsibilities for the development and management of airport infrastructure and the regulatory function for civil aviation.

In the inland-water transport sub-sector, the EAC member states in 2007 passed a law on transport on Lake Victoria aimed at improving marine safety and attracting investment to the sub-sector. Egypt's Transport Sector Development Plan (2007–17) seeks to revamp the inland-water transport mode, among other interventions.

SHARE OF GOODS BY TRANSPORT MODE
Percentage of weight transported in Egypt
2007



Total: 53,689m tonnes/km

INLAND WATER TRANSPORT IN EGYPT

Egypt has the most developed inland water transport system on the Nile River. This comprises the Aswan–Cairo Waterway (960 km), the Cairo–Alexandria waterway (220 km) and the Cairo–Damietta Waterway (225 km). The Egyptian network is linked to The Sudan and other upstream countries through the Aswan–Wadi Halfa Waterway (350 km). All the waterways have been equipped with hydraulic structures and navigation facilities to allow for 24-hour, all-year traffic.

Inland water transport has several advantages over other modes of transport, including being cheaper and safer. It also consumes less energy and emits fewer greenhouse gases. Transporting bulk goods between Khartoum and Alexandria is far cheaper via the Nile waterways than through maritime transport.

Despite its clear advantages, Egypt's inland waterways are grossly under-used for transport. Instead, road transport, characterized by a low safety record, dominates the transport of goods and passengers, and about 90% of all cargo is transported by road.

To promote public passenger transport and encourage a modal shift of cargo transport from road to railways and inland waterways, the Egyptian Ministry of Transport has included measures in its Transport Sector Development Plan (2007–17) to upgrade navigation and port facilities on the Nile waterways and improve the overall efficiency and attractiveness of inland water transport. The Ministry has set a target of transporting 20% of cargo by inland water and railroad by 2015. The long-term goal is to phase out trailer trucks in Egypt.

Source: The Egyptian State Information Service, 2012.
Ghazy A. 2010: River Transport and Reshaping Africa. Available at: www.porttechnology.org

ENHANCING REGIONAL INTEGRATION

The Nile countries, as discussed above, have made efforts to improve transportation within their borders. Despite the efforts, the present bulk transportation system in the region remains inadequate in terms of coverage, capacity, and cost-effective access to national, regional, and international markets. This weakness reduces economic opportunities, by making essential imports such as fuel and fertilizer more expensive. High transportation costs also make exports of industrial products, agricultural produce, and natural resources unable to compete on global markets.

The bulk transportation system of the region was primarily designed to link agriculturally productive or mineral-rich areas in the interior of Africa to seaports. As a result, at present, interconnections between neighbouring Nile riparian countries are few and poorly developed, representing a lost opportunity for enhancing regional trade and integration. Trade based on comparative advantage of individual riparian countries is a key driver of economic integration.

Interventions to increase transport and economic integration of the countries have taken place at two levels – at the continent-wide level under the auspices of the African Union, and at sub-regional levels under stewardship of regional economic communities (RECs). The most important intervention at continent level, besides providing the broad policy and strategic direction for the activities of the RECs, has been the establishment of the Trans-African Highway system (TAH).

The concept of the TAH, conceived in the 1970s, is a system of nine main transport corridors in Africa, established with the objective of: (a) providing the best possible direct routes between the capitals of the continent; (b) contributing to the political, economic and social integration and cohesion of Africa; and (c) ensuring availability of road transport facilities between important areas of production and consumption in the continent.

The Nile region is traversed by four of the nine TAH routes (see page 201). These are the Cairo–Cape Town, Lagos–Mombasa, Dakar–Djamena–Djibouti and the Cairo–Dakar routes. These routes are important for interlinking the Nile riparian states, although a significant proportion of the routes within the Nile region have not yet been upgraded to all-weather paved roads (i.e. the missing links).

The Nile Equatorial Lakes region

At the level of the Regional Economic Communities (RECs), the focus has been on interlinking and providing trade and transport facilitation among member countries. A number of international agreements and protocols aimed at simplifying and harmonizing trade, transport, and transit between states have been signed under the auspices of RECs such as Common Market for Eastern and Southern Africa (COMESA) and EAC. In addition to these, bilateral agreements on international road, rail, and pipeline transport have been signed between riparian



states. Under COMESA and EAC, a number of east–west and south–north transport corridors have been developed in the East Africa region (see page 201). These include the Central Transport Corridor (Dar es Salaam to Rwanda, Burundi, and Eastern DR Congo), Northern Transport Corridor (Mombasa to Uganda, South Sudan, Eastern DR Congo, Rwanda, and Burundi) and the Mombasa–Nairobi–Moyale–Addis Ababa Corridor. A new corridor from Lamu to Juba is being developed, while two other initiatives, namely Tanga–Arusha–Musoma–Kampala and Songea–Mtwara, are at various stages of assessment. Corridor management mechanisms have been set up for the Northern and Central transport corridors, and their possible extension to Kisangani in DR Congo is under consideration.

With respect to rail transport, the EAC member states are considering the feasibility of converting the existing regional railroad to standard gauge as a way of improving operating speed and capacity. A more conservative approach, also under consideration, is the reinstatement of the regional rail network at the existing narrow gauge. A railway has been proposed for the Juba–Lamu Corridor, which could also be extended to Moyale (Ethiopia). Other rail projects include the Isaka–Kigali/Keza–Gitega–Musongati line. Major new petroleum pipeline developments relate to the potential export of crude oil from South Sudan, Uganda, and Ethiopia.

“I have no doubt that this will go down in history as one of the defining moments – when we made a major stride to connect our people to the many socio-economic opportunities that lie ahead.”

*President Mwai Kibaki
at the launch of LAPSSET*

Source: Wikipedia

LAPSSET – THE LAMU TRANSPORT CORRIDOR

The Lamu Port and Lamu–Southern Sudan–Ethiopia Transport Corridor (LAPSSET) (or simply Lamu Corridor) is a regional transport infrastructure project that, when complete, will give the East Africa region a third transport and transit corridor. The project comprises of seven components namely:

- 32-berth deep sea port at Manda Bay, Lamu, Kenya
- standard-gauge railway from Lamu to Juba via Isiolo; with a branch from Isiolo to Addis Ababa via Moyale
- two-lane motorway (Lamu–Isiolo–Juba; and Isiolo–Moyale–Addis Ababa)
- Oil pipelines (South Sudan–Lamu; and Ethiopia–Lamu)
- An oil refinery at Lamu
- Three airports (at Lamu, Isiolo, and Turkana)
- Three resort cities (Lamu, Isiolo, and Turkana)

The Lamu Corridor, one of the largest infrastructure projects in Africa, is estimated to cost US\$24.5 billion, and will be funded primarily by the governments of Kenya, South Sudan, and Ethiopia. Part of the financing is being sought through loans from international financial institutions such as the World Bank and African Development Bank. Work is already ongoing at different sites, such as Lamu Port, and the roads network. The entire project is expected to be completed in 2018.



Aerial view of Juba, South Sudan.

The project will offer the landlocked Republic of South Sudan an alternative to Port Sudan for export of its crude oil. Similarly, for Ethiopia, the project will offer an alternative sea port to Djibouti, and another export route if oil is discovered in the Ogaden region. For Kenya and the rest of the East Africa region, the new Lamu Port, with capacity to dock large ‘cape size’ vessels, will help to ease congestion at Mombasa and improve the flow of imports and exports.

The launch ceremony for the Lamu Corridor project took place on 2 March 2012 at Lamu and was attended by presidents Mwai Kibaki of Kenya, Salva Kiir Mayadrit of South Sudan, and Meles Zenawi (RIP) of Ethiopia.

The downstream countries

Egypt and the former Sudan have a long history of friendship and cooperation that goes back to the 19th century. Strong ties between the two countries have been encouraged by many factors, including geographical proximity, common language and religion, shared cultural heritage, and a shared watercourse (the Nile River).

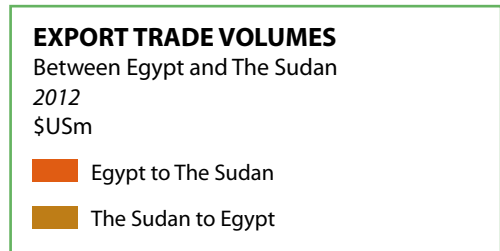
The two countries have signed a total of 115 bilateral agreements, protocols and memoranda of understanding in diverse fields such as agriculture, mining, scientific research, education, culture, and other areas of economic development. A number of these fields relate to trade and transportation, notably the Air Transport Agreement of 1962; The Trade, Customs and Transport Agreement of 1965; Agreement Establishing Regular Shipping Lines Between Aswan High Dam and Wadi Halfa of 1965; Convention for Establishment of an Egyptian–Sudanese Joint Navigation of 1977; Maritime Transport Agreement of 2002; Agreement to Avoid Double Taxation and Prevent Tax Evasion of 2002; Agreement on Transportation of Goods and Passengers by Land of 2002; Executive Program for Cooperation in the Fields of Railways of 2003; and Memorandum of Understanding in the Fields of Harbours of 2007.

These agreements have resulted in the strengthening of multi-modal transport links and growth in trade between the two countries. The Nile Valley (Nile waterway), maritime transport, and air transport are the main transport links between the two countries. The countries recently completed a new highway that connects the south Egyptian town of Qastal to the north Sudanese city of Wadi Halfa. This motorway, a critical missing link on the Cairo–Cape Town Trans-African Highway, is expected to further boost trade, movement of people, and investment between the two countries.

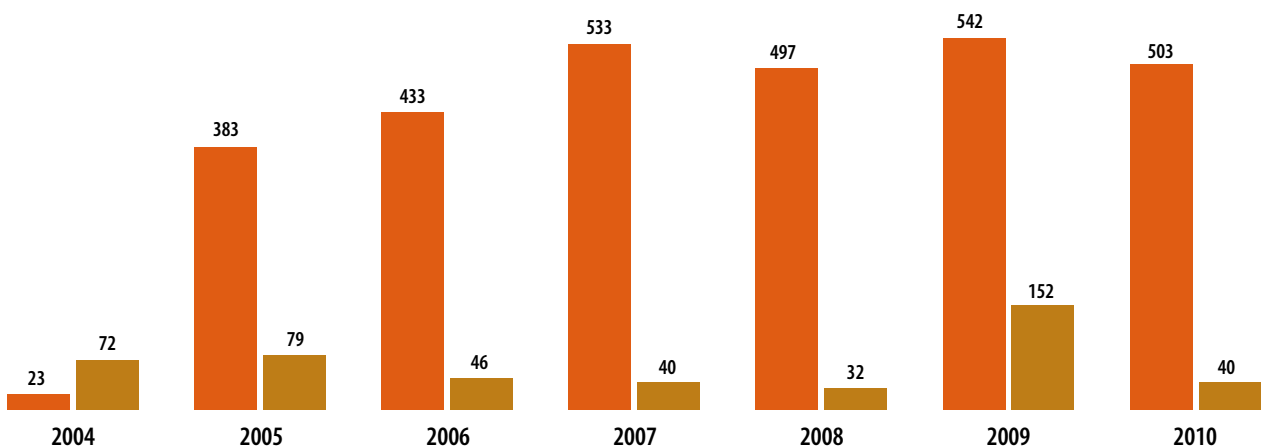
Export commodities from Egypt to The Sudan mainly comprise machinery, electrical equipment, aluminium products, plastics, glass and glassware, fertilizers, cement, petroleum products, cereals (especially rice), and pharmaceutical products, and medicines. Exports from Sudan mainly comprise crude oil, sesame seeds, sesame oil, wheat bran, mola, and live livestock.



Barge with cargo of sugar beet, Egypt.



(Source of data: Egyptian SIS, 2012)

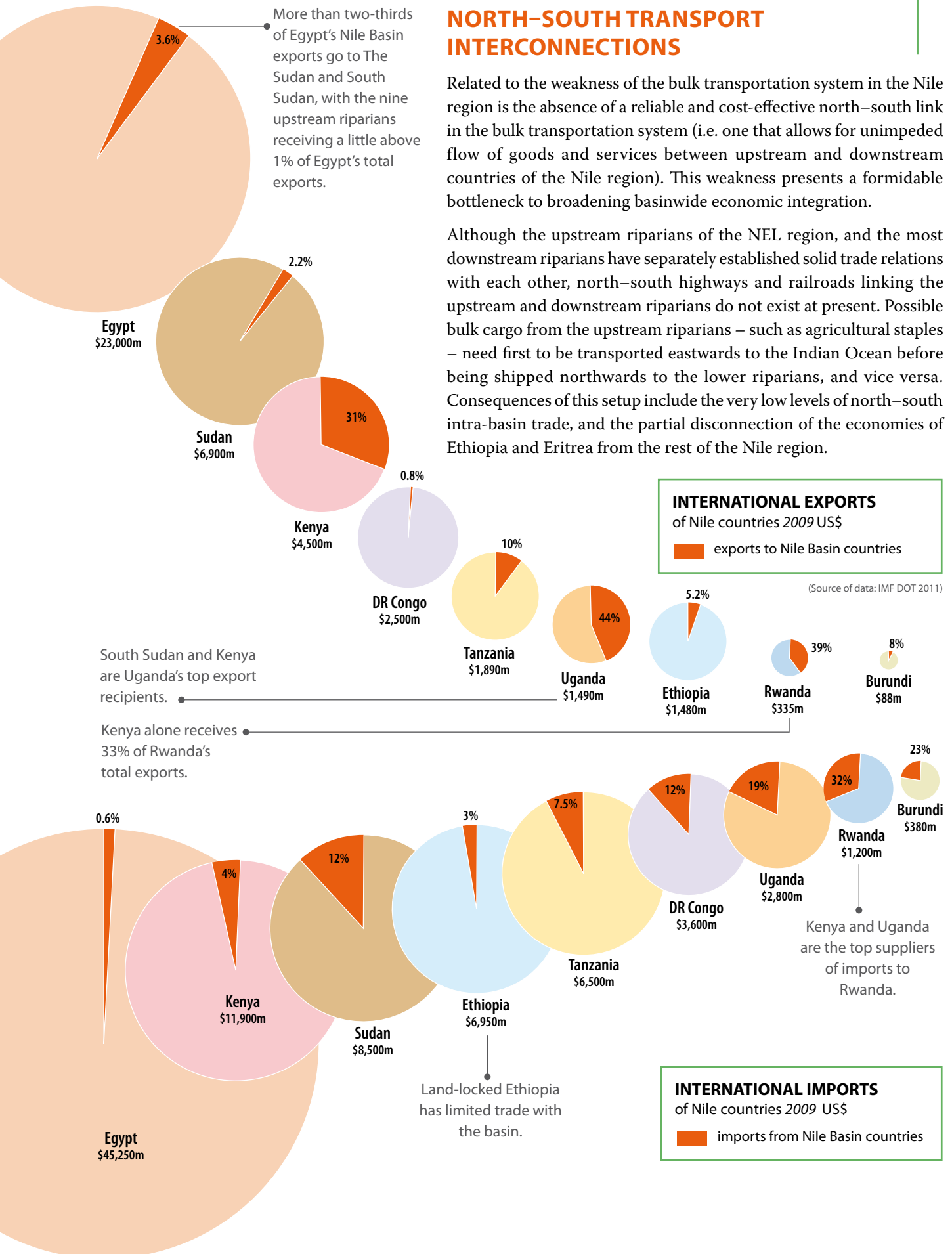




NORTH-SOUTH TRANSPORT INTERCONNECTIONS

Related to the weakness of the bulk transportation system in the Nile region is the absence of a reliable and cost-effective north-south link in the bulk transportation system (i.e. one that allows for unimpeded flow of goods and services between upstream and downstream countries of the Nile region). This weakness presents a formidable bottleneck to broadening basinwide economic integration.

Although the upstream riparians of the NEL region, and the most downstream riparians have separately established solid trade relations with each other, north-south highways and railroads linking the upstream and downstream riparians do not exist at present. Possible bulk cargo from the upstream riparians – such as agricultural staples – need first to be transported eastwards to the Indian Ocean before being shipped northwards to the lower riparians, and vice versa. Consequences of this setup include the very low levels of north-south intra-basin trade, and the partial disconnection of the economies of Ethiopia and Eritrea from the rest of the Nile region.





- 1 The Nile is navigable from Cairo to Aswan, and on Lake Nasser/Nubia.
- 2 A 1,600-km pipeline connects the oil fields in The Sudan and South Sudan with the Red Sea.
- 3 The Sudan has around 4,000 km of narrow-gauge single-track railroads; the system operates far below capacity.
- 4 The barge route from Kosti to Juba (Southern Reach) is promising.
- 5 Navigation routes to Wau and Gambella are seasonal.
- 6 A new transport corridor is envisioned between Lamu and Juba, branching to Addis Ababa.
- 7 The Pakwach-Tororo and Kasese-Kampala railway lines ceased operation in the 1990s although the Gulu-Tororo line remains partially in use.
- 8 Kenya Pipeline Company operates a 14" pipeline for refined petroleum products from Mombasa to Nairobi; an 8" extension connects Eldoret.
- 9 Achieving a good state of repair of the narrow-gauge Mombasa-Kampala railway would benefit the exploitation of hydro-carbon resources in the Albertine Graben.
- 10 Lake Victoria could provide a link between the Northern and Central transport corridor.

KEY ELEMENTS OF THE BULK CARGO TRANSPORT SYSTEM

in the Nile region

- Nile Basin
- Inland navigation route:
 - all year round
 - seasonal
- Trans-African Highways:
 - paved highway
 - non-paved highway
 - railway
 - railway (not operational)
 - proposed Lamu corridor
 - oil/fuel pipeline
- Lake Victoria port
- main deep-sea harbour
- Lamu deep-sea harbour
- inland port
- capital city
- airport



IMPROVING INLAND WATER TRANSPORT

Potential of inland water transport to complement road and rail transport

Re-developing the inland navigation potential of the Nile may add a number of useful elements to the regional transportation system. A key advantage of river transportation is that capacity can be incrementally increased – or decreased – as a function of cargo volume without having to make major upfront investments. Inland navigation also compares favourably to road transport in terms of cost for medium and longer distances, and is safer and less polluting.

Improving inland water transport in South Sudan

The White Nile could serve as a critical transport connection between the Nile Equatorial Lakes Region and the two Sudans. In particular, the barge route from Kosti to Juba is promising, and would provide a more reliable transport connection, especially during the rainy season, when roads in South Sudan – mostly unpaved – are often compromised. The Southern Reach – as this corridor is known – is currently witnessing significant expansion by private operators, which will increase total shipping capacity from the present low levels. The main points on the Southern Reach are Kosti, Renk, Malakal, Adok, Bor, Shambe, Mongalla, and Juba. Bentiu, set slightly off the main north-south route, is another key port in South Sudan.

Operational constraints that need to be overcome to improve transportation on this section of the Nile include absence of a regulatory framework in South Sudan for river cargo transportation; inadequate cargo handling and other facilities at some ports; absence of navigation aids that indicate rocks, shallow areas, or wrecks; absence of periodic maintenance – such as dredging – of the waterway; occasional blockage of waterways and ports by water weeds (especially water hyacinth); and the overall security situation in the area.

Although seasonal variations of the White Nile flows are limited, water levels in the dry season may drop below the level of 1.2 metres necessary for barges to operate. This indicates the need for regionally coordinated water resources management and operation of the Lake Victoria reservoir, to help maintain minimum water levels in the respective navigation corridors.

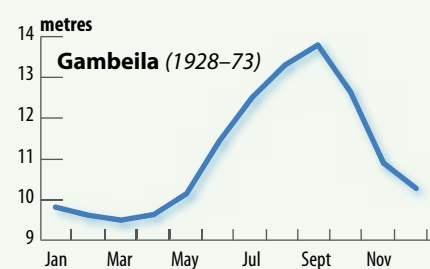
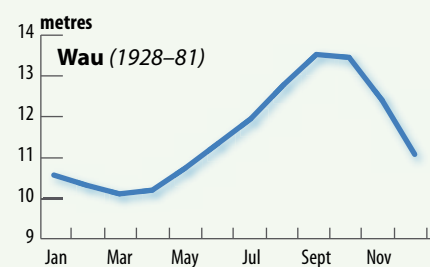
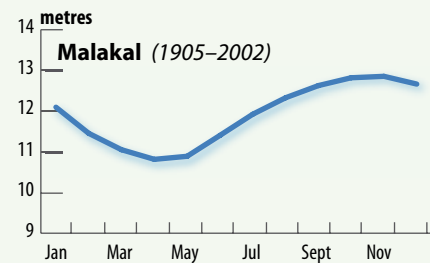
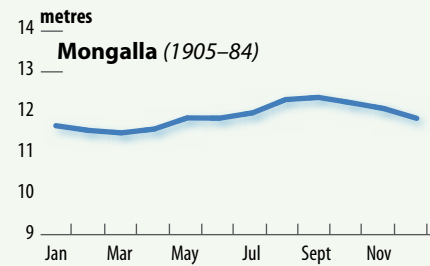
Other options in the White Nile Basin for inland navigation services would include Lake No to Wau (on the Jur river) and Sobat Mouth to Gambia (on the Baro river), but navigation on both rivers can only be seasonal. Their contribution to the regional transportation backbone is, therefore, limited.

Transport barges at Gambia, Ethiopia, waiting for river to become navigable.



SEASONAL WATER LEVELS ON POTENTIAL NAVIGATION ROUTES

Average monthly measurements over extended periods



(NBI WRMP 2011)

Improving inland water transport on Lake Victoria

Redeveloping the transportation network on Lake Victoria will provide a viable and effective link between the Northern Corridor and Central Corridor. This will increase flexibility for transporters in Burundi, DRC, Rwanda, and Uganda, who are now effectively locked into using a single transport route. It will also facilitate inter-regional transport connections and reduce the dominance of road transport around the lake.

Factors constraining the use of the Lake for navigation include poor interconnection with other modes of transport; requirement for relatively large flows of traffic to offset high fixed costs; obsolete water vessels in a state of disrepair; inadequate cargo handling and other facilities at ports; poor supply chain of marine equipment and spares; lack of navigation aids (lighthouses, lightships, beacons, buoys); outdated hydrographs and navigation charts; lack of search and rescue (SAR) and salvage equipment; weak regulating capacity of governments; occasional clogging of ports by water hyacinth; and piracy and insecurity along shipping routes.

To improve the subsector, the above constraints must be overcome. Specifically, ferry slips/docking facilities need to be constructed/rehabilitated; private sector participation needs to be nurtured especially in warehouse and dry dock services, cargo and passenger transport service operation, and spare parts supplies; a fresh hydrographic survey of the lakes needs to be undertaken; and capacity of government regulatory officers, port authority staff, and private sector operators need to be built. All these things require increased investment in the inland water transport sub-sector by the riparian governments and development partners.



LAKE VICTORIA WITHIN THE TRANSPORT SYSTEM

- +++++ railway
- railway (not operational)
- +++++ proposed Lamu corridor
- oil/fuel pipeline
- ▲ Lake Victoria port
- capital city

0 125 250 km

Ships trapped by water hyacinth at the Winam Gulf, Kisumu (March 2011).





CONCLUSIONS AND RECOMMENDATIONS

The transport system in the Nile Region consists of roads, rail, air maritime, and inland water transport modes. Road transport dominates all other transport modes and accounts for over 80 percent of both goods and passenger traffic in the region.

The existing bulk transport system was built in the colonial era and largely focuses on moving imports and exports to and from seaports. Interconnections between countries are far too few and in a poor state of maintenance, leading to low inter-state trade within the Nile Region.

While recent efforts under the auspices of regional economic communities have resulted in a considerable improvement in the level of interconnection between Nile riparian countries of the African Great Lakes region, and of the downstream riparians, north–south links between the two clusters are conspicuously missing. This presents a major hindrance to serious integration of the whole expanse of the Nile Region.

It is recommended that countries increase investments aimed at improving inland water transport on Lake Victoria and other navigable parts of the Nile, and increase the integration of inland water transport with other modes, notably road and rail, as a way of bridging the north–south transport and trade divide in the basin.

Missing
north–south links
hinder
integration