

Integrating the Nile Basin with Modern Transport

by Hussein Askary and Dean Andromidas, Part IV

This is the final part of a series of four articles on the Nile Basin and East Africa, whose purpose is to show the great potential for peace and prosperity in Africa, and also that the shovels are now in the ground, and beginning construction of great projects, for the first time in decades. Parts I-III were published in the Sept. 5, Sept. 12, and Oct. 10 issues of EIR (<http://www.larouchepub.com/eiw/index.html>).

Beyond the need for an international emergency response to the horrendous Ebola epidemic in West Africa, what is needed to prevent the reemergence of such epidemics, famine, wars, and mass-migrations, is a permanent and comprehensive development approach. In East Africa and the Nile Basin, we are seeing a new process come into being, after the long, dark night, with developments in Egypt, Ethiopia, and now, further south to the other nations of the Nile Basin (see Parts I-III).

But this process has to be sustained and backed by international action, before it is killed in the cradle, as the great dreams of African independence and development were killed and drenched in the blood of the African peoples and their best leaders in the 1960s. The civil wars, famines, epidemics, and genocide that followed were the result of the strategic denial of technologies and medicines to Africa by the trans-Atlantic system.

Simultaneously, Africa was bleeding human resources to Europe, and having raw materials exchanged for weapons, and financial resources smuggled by dictators and warlords to British and Swiss banks and financial institutions.

With the emergence of the “new, just world economic system” that Lyndon LaRouche and his international movement have been fighting for, now, through the actions of the BRICS nations (Brazil, Russia, Indian,



In East Africa and the Nile Basin, we are seeing a new process come into being among the nations along the mighty Nile River. Here, the Nile runs through the center of Cairo.

China, and South Africa), Africa no longer need be shackled to its former colonial masters and their contemporary institutions of slavery, such as the International Monetary Fund (IMF), the World Bank, and such green genocidal organizations as the World Wildlife Fund (WWF).

One Unit of Action

Regional integration has been part of Africa's strategy for economic transformation since the 1960s, and concrete agreements have been adopted, including the Lagos Plan of Action (1980) and the Abuja Treaty (1991). But that transformation has never materialized. That is about to change. The African Union (AU) is the natural entity for physical and political integration. However, the regional structures have to be integrated into the AU vision, based on physical-economic considerations, rather than ideological, religious, ethnic, political, and even monetary ones.

An economic development policy has to enhance the region's capacity to create what LaRouche has termed a rising "physical-economic unit of action." In his "The One Is the Origin of Its Parts" (*EIR*, Jan. 11, 2008), LaRouche stated, "The unit of action is a relative rise, or lowering, of the potential relative population-density of the respective, or combined systems as inter-

acting wholes. The unit of action is essentially 'Vernadskyian,' which is to say, both a cultural and physical increase, or decrease of the potential relative population-density, as per capita and per square kilometer of the relevant national, continental, or global systems as wholes. The relevant mode of action is the quality of the individual human mind which distinguishes the human mind from the beasts, and places mankind categorically as acting, primarily, in terms of the Noösphere, rather than merely the Biosphere."

Infrastructure in general, and especially transport infrastructure, plays a decisive role. This report will identify the triad of transport infrastructure projects needed, including road, rail, and maritime areas in the greater Nile Basin.

Creating a Powerful North-South Axis

The Nile Basin and the related East African region are part of a potentially powerful north-south axis of development that can serve to link the two most developed countries that lie on opposite ends of the continent: Egypt and South Africa **Figure 1**.

This axis can be divided into three sections. The northern region includes Egypt, Sudan, South Sudan, and Ethiopia. While guarding the eastern boundary of the Nile Basin, Ethiopia overlooks the Red Sea, Gulf of Aden, and the Indian Ocean, but direct access to those seas is blocked by Eritrea, Djibouti, and Somalia. Ethiopia hosts the source of the Blue Nile at Lake Tana.

The second part of this axis is East Africa, with Kenya and Tanzania on the Indian Ocean, and Uganda, Democratic Republic of Congo, and Rwanda on the interior. This region forms the so-called Eastern Rift, which hosts the African Great lakes, the largest of which is the misnamed Lake Victoria, the source of the White Nile.

The third section is the western flank of southern Africa, including Zambia, Mozambique, Zimbabwe, and South Africa itself.

The Nile Basin/East Africa region, with an abundance of water, fertile land, minerals, hydrocarbons,

FIGURE 1
The North-South Axis of Development: Egypt-South Africa



FIGURE 2
The 10 Nations of the Nile Basin Initiative



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untapped potential for hydropower, and large, young populations, is positioned to become a major economic force in the 21st Century. At the moment, however, its resources need to be reorganized, standardized, and unified, to get the maximum benefit from each of the individual resources.

For example, using a “multi-modular transport system” would increase and optimize the productivity of all these societies, as wasted time, energy, and human resources will be eliminated. A multi-modular transport system is a combination of two or more transport means—land, rail, sea, and air—creating an integrated transport chain in which the advantages of each of these are utilized.

Transshipment terminals are characteristic of this system, giving it speed and efficiency, as the cargo, for

example, a container (not bulk cargo, such as oil, wood, and grains), is loaded from a ship, onto a train or a truck, in the least time, and with the least effort. Containers can be tracked from a distance by the receiver and sender through digitalized electronic systems. This requires standardized sizes for the containers, lifts, and rail gauges, to allow trains to pass through different terminals and countries, etc. Containers carrying foodstuffs can be refrigerated, along with storage and handling terminals, a crucial factor in the transport of agricultural products in this part of the world, where many products are spoiled on the way to the markets.

None of this is available now in the Nile Basin, except to a limited extent in Egypt, where international transshipment is handled. Egypt has a special position, as it will form a land-bridge with Eurasia, as part of the

Maritime Silk Road through the Suez Canal, and a maritime connection with Europe on the Mediterranean. Egypt is also connected by land to Asia through the Sinai Peninsula.

Colonial Legacy

The existing transport systems in the region were designed in the colonial era to link countries' mineral and agricultural wealth with overseas markets, rather than interlinking these countries. Railways that were used by the British and other colonialists to loot the region have different gauges, not only between the countries, but even within the same nation in some cases. But even these limited railways have been largely abandoned for lack of maintenance and investment.

In Kenya, only half of the original 2,730 km of railways are operational. 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 cities. The ten countries of the Nile Region (**Figure 2**) combined have a total railway network of 23,059 km, compared with India at 115,000 km and China at 103,000 km of railway track, as of 2013. Burundi and Rwanda have no railroads at all.

Most railway systems in the region are inefficient, have long transit times, and operate far below their capacity. The narrow 1.067-m gauge is the most widely used, except in Egypt, where the standard 1.435-m gauge has been used. The railways are generally single track with limited axle load and low speed. None of the national rail systems are designed to cross borders.

As a consequence of all of these obstacles, shortcomings, and the colonial legacy, political integration among the nations of Africa has been prevented.

Landlocked

The fact that most nations in the Nile Basin are landlocked has hampered their economic development and integration with other regions. On top of genocidal economic and military policies, the economies of especially the Upper Nile region have been hamstrung by the fact that most of the transport within and among these nations is carried by truck, on poorly built and maintained roads. This has made transport among them the most costly in the world.

The challenges are more severe for the six Nile Basin nations that are landlocked riparian countries—Rwanda, Burundi, Uganda, DR Congo, South Sudan, and Ethiopia. For example, the cost of the transporta-

tion of a container of fertilizer from Singapore to Alexandria harbor (Egypt) is US\$4,000, Mombasa harbor (Kenya) US\$5,000, Kampala (Uganda) US\$8,400, Kigali (Rwanda) US\$10,400, and Bujumbura (Burundi) US\$10,600.¹

Even trade and transfer of goods and machinery among the neighboring nations suffer enormously due to the absence of both standardized and non-standardized transport networks. The absence of cheaper and more effective rail and river transport links between North and South, and East and West, has undermined the economic integration of the Nile Basin.

For example, while more than two-thirds of Egypt's Nile Basin exports go to Sudan and South Sudan, less than 1% goes to the eight upstream nations! As for Sudan's exports, only 2.2% go to these countries. Likewise, imports from the Nile Basin nations to Egypt comprise only 0.6% of its total imports, Sudan 12%, and Ethiopia 3%.

China's Plan for Economic Corridors

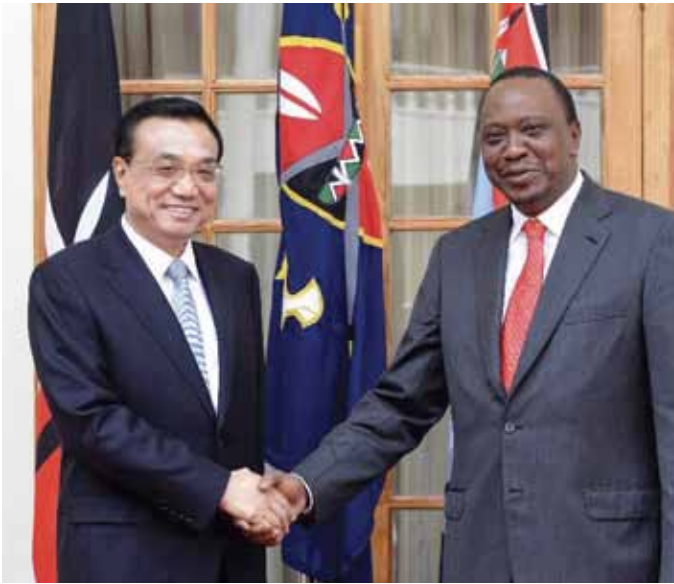
China has plans to deal with this problem.

In May 2014, while on a tour to several African nations, Chinese Premier Li Keqiang projected an optimistic vision of Chinese-aided industrial and infrastructural growth for the African continent. The tour started in Ethiopia, ended in Kenya, and included Nigeria, China's third-biggest trading partner in Africa, and Angola, its biggest. Contrary to frustrated and nervous reporting in Western media, Li was not on a shopping spree for raw materials. Rather, he advocated an increase in Chinese industrial investment in Africa, and Chinese-aided infrastructure construction, policies which will raise standards of living, and propel Africa onto a new economic platform.

Speaking at the Africa Union headquarters in Addis Ababa, Ethiopia, on May 5, Li emphasized that one of China's goals is to fulfill the dream of connecting all African capitals by high-speed rail, so as to boost pan-African communication and development. Li emphasized that China has developed world-class technologies in this area.

This is the first time that a leading nation has advocated a plan to begin the process of the rapid industrial and infrastructural development of Africa, since LaRouche initiated a study in 1979 calling for the rapid development of infrastructure, including a continent-

1. Source: Maersk 2011/Nile Basin Initiative.



Xinhua/Li Xueren

Chinese Prime Minister Li Keqiang and Kenyan President Uhuru Kenyatta signed a series of deals in May, during Li's visit to Nairobi. Li projected an optimistic vision of Chinese-backed industrial and infrastructural growth for the continent.

wide rail network, ambitious water projects, nuclear power, and industrialization.

In fact, China has already taken the lead in building transport infrastructure through the Nile Basin.

The most significant development during Li's tour was the agreement reached in Kenya on May 11, 2014 between the Chinese delegation and the leaders of the East African Community (EAC), to build a \$3.8 billion rail link between Kenya's Indian Ocean port of Mombasa, and Nairobi, the first stage of a line that will eventually link Uganda, Rwanda, Burundi, and South Sudan. Under the terms of the agreement, the Exim Bank of China will provide 90% of the cost to replace the crumbling British colonial-era line with a 609.3-km standard-gauge railway. Kenya is to provide the remaining 10%. Construction began in late October, and is expected to take three-and-a-half years to complete, with China Communications Construction Co. as the lead contractor.²

The new Mombasa-Nairobi (Kenya) lines will cut passenger travel time from the current 12 hours to around 4. Freight-train times would be cut from the current 36 hours, to just 8, which means, also, the slashing of cargo transport costs by 60%.

2. Construction has been delayed by NGOs, and a court order to halt the work, until compensation for villages in the way of the track is issued.

Once the Mombasa-Nairobi line is completed, construction would begin on linking East Africa's largest economy with Kampala, Kigali, Bujumbura, and Juba.

The signing ceremony was attended by Li and Kenya's President Uhuru Kenyatta, Uganda's President Yoweri Museveni, Rwanda's President Paul Kagame, South Sudan's President Salva Kiir, and high-level representatives of Burundi and Tanzania. "This project demonstrates that there is equal cooperation and mutual benefit between China and the East African countries, and the railway is a very important part of transport infrastructure development," Premier Li said. Kenyatta hailed the booming relationship with China, calling it one "based on mutual trust," and saying Kenya "has found an honorable partner in China." Museveni took a shot at Western powers saying, "We are happy to see that China is concentrating on the real issues of development. They don't give lectures on how to run local governments."

This agreement is just one of a series that China has signed to realize development corridors that can propel the economies of East Africa into the 21st Century: the Lamu Port Southern Sudan-Ethiopia Transport (LAPS-SET) Corridor; the Northern Corridor (referenced above); and the Central Corridor. They are part of the East African Railways Master Plan (**Figure 3**), a proposal for rejuvenating existing railways serving Tanzania, Kenya, and Uganda, and extending them initially to Rwanda and Burundi, and eventually, to South Sudan, Ethiopia, and beyond, to connect to North and West Africa through DR Congo, Sudan, and Egypt.

A 2018 Deadline

The final report of the Master Plan, which was commissioned by the EAC, was issued in 2009 by the Ottawa-based CPCS Transcom. However, it has lain dormant, like many other projects in Africa, that have been denied support and financing from the West. The cost of the projects, up to US\$40 billion or more, will be shouldered by China and other BRICS nations such as India, which has also shown interest in backing development in East Africa. The deadline set for completing all these projects is 2018! What this means is that East Africa will become one of the largest workshops in the world in the coming years, with new industries, economic zones, and trade centers shooting off the main projects.

FIGURE 3

New East African Railway

China will be building standard gauge railways simultaneously in several countries. In 2013, the state-owned China Harbor Engineering Company (CHEC) signed a US\$8 billion contract with the Ugandan government for upgrading and expanding its railway network to standard gauge railway (SGR—distance between the inside edges of the rails, 1,435 mm), from Malaba on the border with Kenya, to Kampala (east-west line), and from Malaba to Gulu, with expansion to Nimule on the border with Sudan (southeast-north). From there, the network is to expand to Juba in South Sudan.

This project is part of the Northern Corridor of the EAC. As part of the contract, the CHEC will work closely with the Ugandan Army's Engineering Brigade, and will also construct a polytechnic school in Uganda for continuous training of army officers in technical and engineering skills.

The CHEC has announced that the government of South Sudan has also selected the company to build new and upgrade existing railway lines.

Ethiopia too has been engaging Chinese companies to build its own standard-gauge railway networks. Within 3-5 years, Ethiopia is planning to have one of the most advanced rail networks in Africa. In 2011, the state-owned Ethiopian Railways Company (ERC)

signed two agreements with Chinese companies to build a 4,744-km rail network, which will link 50 urban centers, in all the states of Ethiopia, and to towns bordering Sudan, Kenya, and Djibouti. This plan is part of the Ethiopian government's five-year Growth and Transformation Plan (GTP).

In December 2011, ERC sealed a contract with China Civil Engineering Construction (CCECC) to build the 339-km Mieso-Dire Dawa-Deweile railway line, which is part of the Addis Ababa-Dire Dawa-Djibouti railway project. The actual track-laying started in May 2014, and the project is expected to be completed in 2015. The electrified railway will be 740 km long, and will provide both passenger and cargo transport from Ethiopia's capital to the Tadjoura Port in neighboring Djibouti.

It is estimated that the Addis Ababa-Djibouti railway will reduce travel time by half, to less than 10 hours, with a designated speed of 120 km/hour.

Djibouti has become Ethiopia's main outlet to international markets since it lost access to the Eritrean Port of Assab on the Red Sea, following the Eritrean-Ethiopian War that started in 1998. However, the building of the railway is not simply a trade route, but part of the development plan of the Ethiopian hinterland.

India has contributed to the Ethiopia-Djibouti project by providing a US\$300 million credit line, in June 2013, through its Export-Import Bank.

In June 2012, Ethiopian Railways and China Communication Construction Company (CCCC) had also signed a \$1.5 billion agreement to build a 268.2-km railway line in the northern part of Ethiopia. The line will run from Mekelle-Woldya to Hara Gebeya. This project links the north of the country to the Addis Ababa-Djibouti line.³

Road System

Road transport now accounts for 80% of the goods and 90% of the passenger traffic in the Nile Basin. The commodities transported by road are mainly agricultural products and locally manufactured goods. Haulage is mostly by trailer trucks and road tankers (fuel trucks).

The Nile region has about 650,000 km of roads, re-

3. For more details, see the ERC website: www.erc.gov.et.

sulting in a road density of 7 km for every 100 km². This is low when compared with other developing regions, such as Ibero-America (12 km per 100 km²), and Asia (18 km per 100 km²). What's more dramatic is the ratio of paved to unpaved roads: South Sudan has only 7,000 km of roads, but only 1% is paved; Rwanda 12,000 km with only 8% paved; Uganda, 81,000 km with 4% paved; Kenya, 160,000 km and 7% paved. Egypt has the highest ratio of paved roads with 65,000 km and 73% paved. For the region, only 86,600 km (14%) are paved.

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 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 subsector, are trucks exceeding axle-load limits, resulting in premature road failure, and delays on transit corridors, mainly at seaports, weigh-bridges, border-crossing points, and inland terminal points, all of which increase transport costs.

The cost of road transport of bulk cargo is 3-4 times, and even higher, for longer than 1,000-km distance, compared 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.

Regional and Continental Corridors

With the new positive developments reported above, this situation can be altered for all time. There are a number of significant plans for development corridors being worked on, proposed, or studied in the Nile Basin.

FIGURE 4
**Trans-African Highway
Cairo-Cape Town**



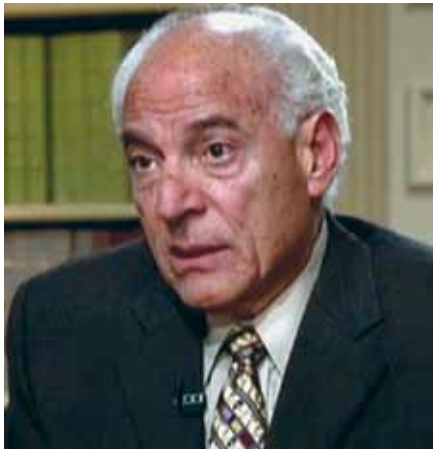
The most important vision of the AU has been to integrate the continent in north-south and east-west directions, though the Trans-African Highway system (TAH) (Figure 4). The concept of the TAH, conceived in the 1970s, is a system of nine main transport corridors, whose objectives are: (a) providing 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 among important areas of production and consumption in the continent.

The Nile region is traversed by four of the nine TAH routes: the Cairo-Cape Town, Lagos-Mombasa, Dakar-N'Djamena-Djibouti, and Cairo-Dakar routes. These routes are important for linking the Nile riparian states. However, roads are not efficient for medium- and long-distance transport, and have to be replaced or accompanied by railways.

The implemented, planned, and designed corridors of this region are:

1. North-South: Egypt's North-South Development Corridor

The Development Corridor proposed by Dr. Farouk El-Baz, an Egyptian-American space scientist who is now a scientific and economic advisor to Egypt President Abdulfattah Al-Sisi, can be considered the launching pad for the Cairo-Cape Town Corridor. It is modestly described as a "national" development project aimed at releasing the pressure from the densely populated Nile Valley, by building a multi-faceted transport network in the western desert of Egypt, parallel to the Nile Valley, but it also has regional and continental implications. It is called the New Valley, and includes:



Dr. Farouk El-Baz

a) a superhighway to be built using the highest international standards, 1,200 km in length, from west of Alexandria, to the southern border of Egypt;

b) 12 east-west branches, with a total length of approximately 800 km, to connect the highway to high-density population centers along the way;

c) a railroad for fast transport parallel to the superhighway,

d) a water pipeline from the Toshka Canal to supply freshwater; and

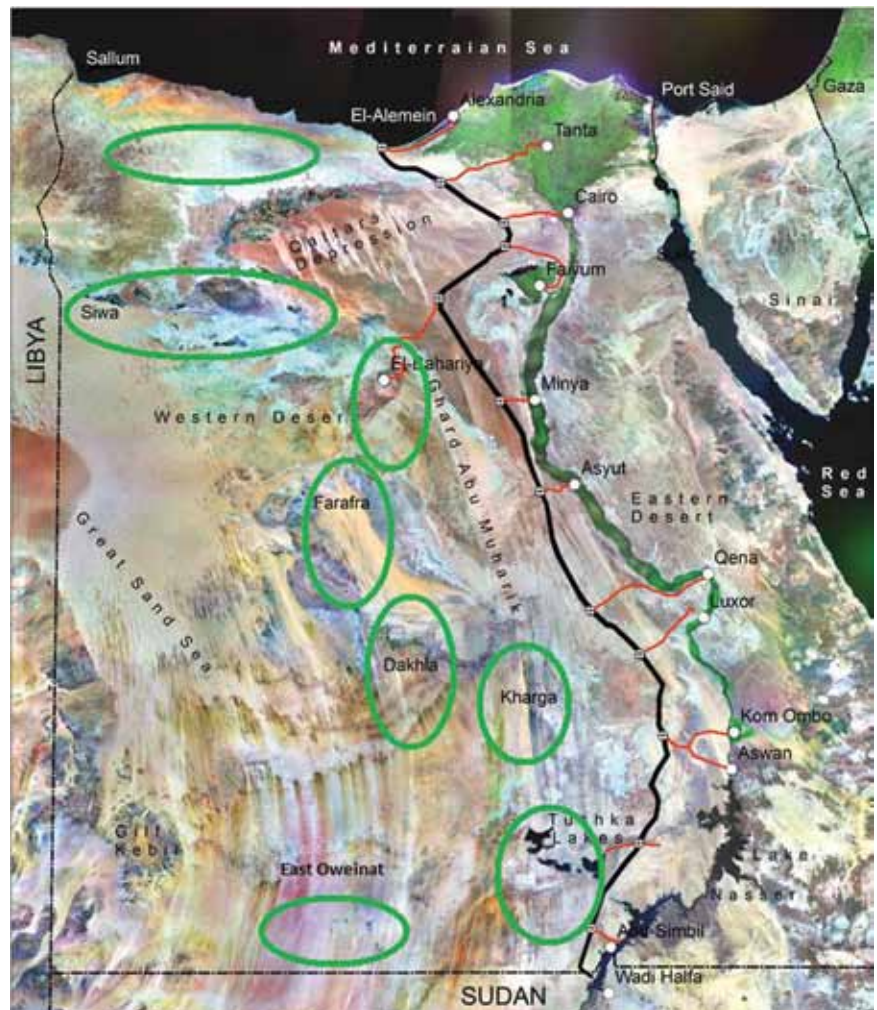
e) An electricity line to supply energy during the early phases of development.

This Egyptian corridor can easily be extended southward to Sudan, and all the way to the Equatorial Lakes. The maritime potential of the river can be maximized as part of this corridor (see section on river transport below). As in other African countries, roads are dominant in the Egyptian-Sudanese goods transport. However, political differences between the governments of these two countries had, until very recently, hampered even this expensive means of transport. It was not until August 2014, that the two countries completed the border crossing terminal at Qastal, linking Aswan in Egypt with Wadi Halfa in Sudan with a modern highway.

This road intersects the Toshka irrigation canal project which is part of El-Baz's Development Corridor,

FIGURE 5

Baz Development Corridor, plus Agriculture



The Toshka project is the keystone of the New Valley Project: The chain of oases (circled in green) stretches along the "Development Corridor" project designed by Dr. Farouk El-Baz.

which continues to Wadi Halfa (**Figure 5**). It runs parallel to the ferry transport line between Aswan and Wadi Halfa on the surface of the 550 km-long Lake Nasser behind the Aswan Dam (see river transport below). According to Egyptian estimates, this new road can increase the trade between the two countries from US\$850 million to \$2 billion, or even \$3 billion. The cost of the transport of one ton of goods by air is about US\$1,200, while by road is US\$200. However, development of the railway connections between the two countries would both lower the cost, and increase the speed of the development of these remote and under-populated regions of the two countries.

The Egyptian rail network stops in Aswan, and the Sudanese, in Wadi Halfa. The Wadi Halfa railway, which was built to facilitate the British invasion of Sudan in 1897, is a narrow-gauge railway that needs dramatic improvements, and even rebuilding to standard gauge, to match the Egyptian railway network. It extends 600 km to Atbara where it branches to the Red Sea's Port Sudan, about 350 km to the east, and to Khartoum in the south, another 330 km. It creates the backbone of the rail transport of the country. Its location along a series of dams and agricultural projects that are either completed, like Merowe; under construction, such as Atbara Dam; or planned, like the Kajbar Dam further north near the border with Egypt—will make an indispensable part of a development corridor that would upgrade the economy of the nation and the region tremendously.

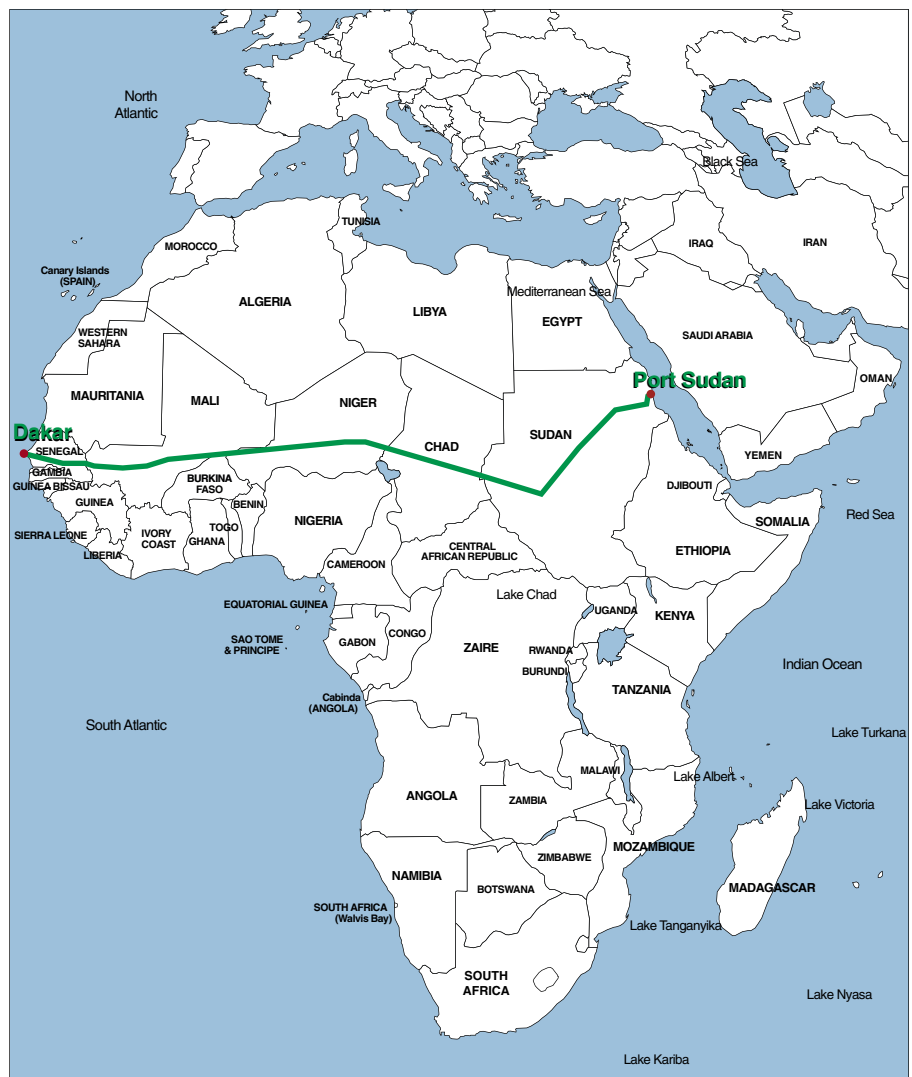
Further south from Khartoum, the state of railways is similar to that of the Wadi Halfa. The main lines from Khartoum to Babanusa and Niyala, where the Sudanese railway networks ends in the south and southwest, is badly maintained and needs complete overhaul. The only rail connection to South Sudan is from Babanusa to Wau. The transport connections to South Sudan and the rest of the Nile Basin nations will depend largely on the political relationships between the two sides, the internal situation among the different belligerent factions inside South Sudan, and dramatically so, on the new economic and political conditions that will be created through the Chinese intervention from the East Africa through the proposed Lamu Corridor.

2. Port Sudan-Dakar Corridor

Before the separation of South Sudan from the Republic of Sudan in 2011, Sudan took a leading role in reviving the project of connecting and integrating West

FIGURE 6

Proposed Dakar to Port Sudan Railroad



and East Africa by a modern railway network. The project was presented by Sudan to the 2005 Organization of the Islamic Conference (OIC) summit, and was adopted unanimously by the OIC summit held in Dakar, Senegal, in May 2008. A conference of the transport ministers of member-states of the OIC was held in Khartoum, in December 2009, to discuss construction of what is officially now known as the Dakar-Port Sudan Railway Line (Figure 6). However, lack of financing and the unstable political situation in Sudan has hampered the implementation of the project.

The rail line between Dakar and Port Sudan is a strategic, transcontinental transport and infrastructure network, linking Sudan, Chad, Niger, Mali, and Senegal,

as the countries of the main east-west line. The main line will be connected north-south through additional branches to Djibouti, Libya, Uganda, Cameroon, Nigeria, Burkina Faso, and Guinea. When the Cairo-Khartoum and Rabat-Dakar lines are completed, the Mediterranean, the Red Sea, and the Atlantic and Indian Oceans will be connected by land, forming an integrated economic-strategic unit for development of the continent.

The railway network will extend for about 14,000 km, and intersect major water and agriculture projects that have been advocated by LaRouche and *EIR* over three decades, such as the [Transaqua project](#) to transfer water from the Congo River to Lake Chad through a network of modern canal systems. The project also intersects a move to stabilize the Darfur region in western Sudan, which has suffered enormously due to its civil war, or a proxy war backed by Chad against Khartoum through Sudanese rebels supported by Western powers. Now, with normalization of relations between Chad and Sudan, and the continued peace process with the Sudanese rebels in Darfur, this region can reap the benefits of the “Development Corridor” concept.

However, Sudan’s own railways have to be rebuilt according to the new standardized gauge. The priority is to rehabilitate the Port Sudan-Khartoum line, and extend it further south to Babanusa, and westward to Niyala, the capital of South Darfur, the closest to the Chadian border. Work is under way in different part of Sudan, with Chinese participation, to modernize the existing 5,000-km railway network, one of the largest in Africa, but there are no plans to rebuild the network of narrow gauge tracks to standard gauge. Given the enormous international political and economic pressure that has been exerted on Sudan on the past three decades, Sudan itself will not be able to carry out this gargantuan mission. International assistance is a must.

In March 2011, Chad signed a US\$7 billion contract with the China Civil Engineering Construction Corporation, which is scheduled to begin work on a 1,340-km railway line connecting it to Cameroon and Sudan, with work to start in 2012. Chad started producing raw oil in 2003 with help of U.S. ExxonMobil and Chevron, in addition to Malaysian Petronas. A 1,070-km pipeline was built to export oil to international markets through Cameroon. Crude oil production in Chad was an estimated 115,000 barrels per day in 2011 and 105,000 bbl/d in 2012, most of which is

exported to earn the impoverished country badly needed income.

The China National Petroleum Corporation (CNPC) and the Chadian government jointly constructed the 20,000 bbl/d N’Djamena refinery, and it began supplying the local market with petroleum products in 2011. The extra income helped Chad launch a program of public works construction in 2009. However, the national railway program, with the connection to Cameroon and Sudan is to be financed by China. The US\$5.6 billion four-year plan covers a 1,364-km standard-gauge network, to be built to Chinese standards, and suitable for 120 km/h diesel operation using rolling stock to be supplied from China. Work is expected to take four years.

Two lines are proposed. The East line will run 836 km from N’Djamena to Adré on the border with Sudan. Last year, Sudan and China signed an agreement for a line running around 300 km through the Marra Plateau region of western Darfur, to link the Sudanese railhead at Nyala with Chad. The South line will run 528 km from the capital N’Djamena to Moundou on the border with Cameroon. An additional 250 km will have to be built to link to the Cameroon national railway network at Ngaoundéré. Cameroon has reportedly put forward a national railway master plan to build a modern standard-gauge railway network. The program was developed in partnership with the South Korea firms Korpec and Chunsuk Engineering, and is to be followed by feasibility studies. A key component of the program is to link to its neighbors Nigeria, Chad, and Congo.

3. The Lamu Corridor

The Lamu Corridor, officially known as Lamu-Southern Sudan-Ethiopia Transport Corridor (LAPSET), is a regional transport infrastructure project that will integrate landlocked South Sudan and Ethiopia into the East Africa transport network (**Figure 7**). The project includes several components such as:

- a three-berth-deep seaport at Manda Bay, Lamu, Kenya;
- standard-gauge railway from Lamu to Juba (South Sudan) via Isiolo; with a branch from Isiolo to Addis Ababa via Moyale;
- a two-lane motorway (Lamu-Isiolo-Juba; and Isiolo-Moyale-Addis Ababa);
- oil pipelines (South Sudan-Lamu; and Ethiopia-Lamu), giving South Sudan an alternative to exporting

its crude oil through northern Sudan to the Red Sea port of Port Sudan;

- an oil refinery at Lamu;
- fiber optic cable;
- 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 international loans. However, given the negative view of such developments in the West, the most likely source of financing would be China and the BRICS nations. The project is estimated to be completed in 2018.

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.

On Aug. 2, Kenya Ports Authority and China’s CCCC signed the Lamu Port construction contract. The day before, the leaders of Kenya, Uganda, South Sudan, and Ethiopia met in Nairobi to discuss joint financing of the Lamu Corridor. Construction work started in September.

The North-South Economic Axis

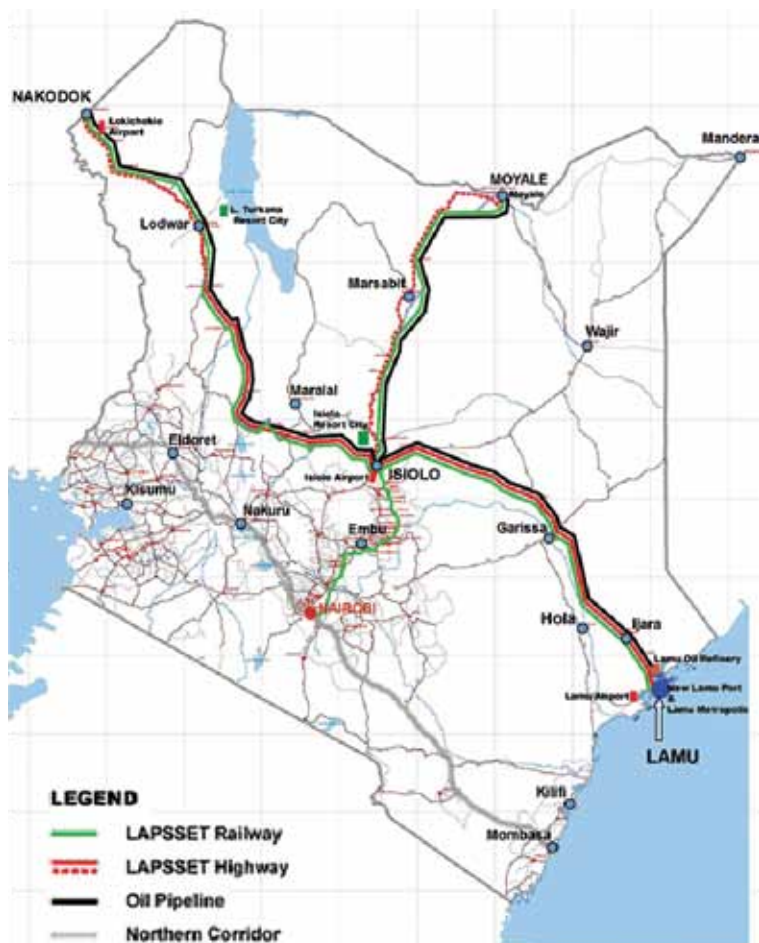
Maritime and inland waterway transportation forms the third leg of the intermodal system of transport, interfacing road and rail.

Taking developed regions of the world, such as Europe as an example, coastal and inland shipping plays a crucial role in the efficiency of an economic system. The most developed countries in Europe, benefit from their dense network of canals and rivers which connect them to one another, as well as the major ports of the continent such as Rotterdam, Antwerp, and Hamburg.

Despite the fact that it is a slower form of transport than road or rail, coastal, river, and canal shipping are extremely efficient, and cost one-tenth that of road transport, and about half that of rail. The type of ship or barge suitable for the Nile, could carry 40 truckloads or more.

FIGURE 7

Lamu-Southern Sudan-Ethiopia Transport Corridor (LAPSSET)



Because of the lack of development along the Nile Basin, river transport is grossly under-utilized and under-developed, contributing to the high cost of transportation. The development of river and canal infrastructure for shipping complements that used for regulating and distributing the Basin’s water for agriculture, as well as urban and industrial purposes. An obvious example is the 60-km-long main irrigation canal of the Toshka Project whose cross-section is twice that of the Rhine Main-Danube canal. By the same token, the barrages along the river that regulate the flow of the water to enhance irrigation, also regulate the depth of the river, all of which is necessary for shipping. Furthermore, hydroelectric facilities form an integral part of these structures.

The Maritime component begins at the Mediterra-

nean coast and entrance to the Suez Canal, traveling along the 2,200-km of the Red Sea, and the over 8,000 km of coastline from the Gulf of Aden south along the Indian Ocean coast of Africa. The numerous ports along this coast not only form routes to Asia and other continents, but also a north-south axis that further serves to integrate the economies of the region.

This coast is endowed with relatively good ports, such as Port Suez at the lower entrance of the Suez Canal and Sokhna Port on the Red Sea in Egypt, and Sudan's Port Sudan, Djibouti, at the mouth of the Red Sea. which is the principal port for land-locked Ethiopia. Kenya's Mombasa and Tanzania's Dar es Salaam are modern ports, but Eritrea and Somalia have poor ports. while the Chinese are building a new port at Lamu, Kenya, near the Somalia border.

While many of these ports have relatively modern facilities, they are becoming over-utilized, and must be expanded and upgraded. But the bigger problem is the poor infrastructure, especially rail going into the hinterland, which causes the cargo to accumulate in the harbor. preventing the speedy loading and unloading of ships.

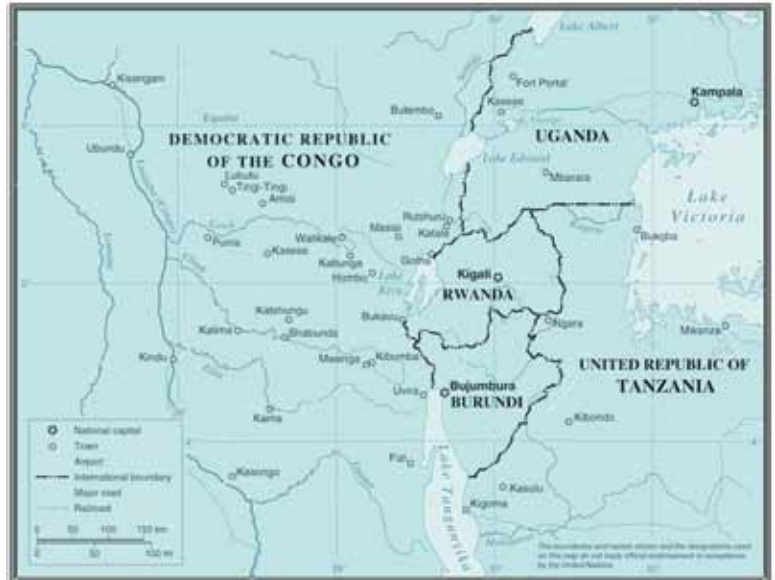
Only the Egyptian Mediterranean ports of Alexandria and Damietta on the Nile Delta are linked to navigable river systems, in this case the Nile.

The Longest River in the World

As for the Nile itself, with a length of over 6,800 km, the Nile is the longest river in the world, almost three times longer than the Rhine-Main-Danube-Black Sea river and canal system that stretches from Rotterdam to the Black Sea. The Nile River's basin interfaces in the South with the region of the African Great Lakes in East Africa.

The river itself has two sources: the Blue Nile and the White Nile which join together at Khartoum in Sudan (Figure 2). The Blue Nile has as its source Lake Tana, located at an elevation of 1,829 m in the high mountains of northeastern Ethiopia, from which the river flows through steep mountain valleys, entering eastern Sudan, and flowing to the northwest where it joins the White Nile at Khartoum, where the Nile continues north to the Mediterranean. Because of the high

FIGURE 8
The Great Lakes Region



mountains and cataracts (shallow areas or white water rapids), the Blue Nile is not navigable.

The White Nile has as its source Lake Victoria in Uganda. With an area of 68,800 km², Africa's largest lake, and the world's second-largest freshwater lake. Victoria is part of the system of the African Great Lakes which form the East African Rift (**Figure 8**).

To the west and south of Victoria lie a series of lakes, namely, from north to south, Lakes Kyoga, Albert, Edward, Kivu, and Tanganyika and further south, Lake Malawi. These lakes bring the Nile Basin in communication with Uganda, DR Congo, Rwanda, Burundi, to the east, and Kenya and Tanzania and even Malawi and Zambia.

Lake Tanganyika continues a southerly course for over 600 km where it touches the northeast corner of Zambia. Three hundred kilometers to the east of that point, traveling along the Tanzania-Zambia border, one reaches Malawi and the northern tip of Lake Malawi, which stretches south for another 600 kilometers, coming into direct contact with Mozambique, which also lies on the Indian Ocean, to form a land-bridge to Southern Africa.

Unlike the American Great Lakes, these lakes are not linked with canals. Nonetheless, they lie in some of the most fertile regions of Africa, and therefore form centers of economic development in themselves. While

already serving as regional waterways, they need to be seriously upgraded with navigation aids, modern ports, and integrated into the network of roads and railways so as to be part of the North-South and East-West transport networks.

Coming back to the White Nile's source near Jinka on the northern shore of Lake Victoria in Uganda, it flows north, where it is joined by rivers to the east and west of the basin. It then passes the South Sudan border at Nimule, continuing to flow north, where it joins with the Blue Nile at Khartoum. From here the Nile River flows through Lake Nasser, crossing into Egypt after the break caused by the Aswan High Dam, to Cairo, the broad delta region, and then to the Mediterranean. Unfortunately it is not navigable for its full length. To make it fully navigable would be more than an engineering challenge because of the nature of the topography.

Navigation only begins on the White Nile at the South Sudanese Capital of Juba to the north Sudanese capital of Khartoum, after which, a series of cataracts and the Merowe Dam prevent navigation until the southern reaches of Lake Nasser. Called the "southern reach" of the Nile, it is over 1,700 km long. For South Sudan, which is devoid of railways and good roads, the river is its most reliable transport artery. Its improvement would greatly aid in building the roads and railway that are needed along its path.

The completion of the 370-km-long Jonglei Canal, avoiding the Sudd marshes between Bor and Malakal, would dramatically improve navigation. As mentioned in Part III, the canal would drain the Sudd, and turn the region into a bread basket, where the river-canal system could serve as the key transportation artery.

Below Khartoum, to the southern tip of Lake Nasser, a series of cataracts and dams block possibilities for navigation. Lake Nasser is navigable for no less than 550 km, until the Aswan High Dam, after which navigation once again becomes possible for another 1,200 km to the Mediterranean.

In Egypt, the Nile divides into three principal navigable waterways: The first is the Aswan-Cairo Waterway, running for 960 km, beginning at the foot of the Aswan High Dam. From there, the Nile enters into the river's great delta where it divides, with one branch bearing eastward, the Cairo-Damietta Waterway, from which ships can easily reach Port Said, directly on the Suez Canal.

The second branch is the Cairo-Alexandria Waterway which includes the 118-km-long Nubaria Canal. Alexandria is Egypt's main port of entry, with two-thirds of its exports and imports passing through its harbor. Improving this waterway is high on the list of projects, not only for transportation, but for improving the irrigation of that part of the delta.

There is also the Ismailia Canal which runs from North Cairo to Ismailia directly on the Suez Canal. This is primarily a conveyor of water for irrigation, as well as bringing freshwater to the Canal Zone. While its cross-section is too small for the classes of ship that ply the Nile, studies are being done to considerably enlarge the canal. If developed for shipping, it could transform Ismailia into a major transshipment port, for cargoes destined for Cairo and points south along the Nile itself.

The New Suez Canal

In Egypt, more than 90% of the haulage of freight within the country is over the road network. The Egyptians know this has to change, and that the only way is to expand the rail network and develop the river systems. More to the point is the fact that the Egyptian government is determined to fully develop the Nile as major north-south axis, not only within Egypt, but to points further south so that it can be integrated into the great industrial and logistical complex they will be developing as part of their New Suez Canal project.

Regional coastal shipping is being developed in the Red Sea, and on the Indian Ocean coast of Africa. New shipping services will be developed to integrate the region. For instance, the Egyptian government has restored ferry services from Port Suez to Saudi Arabia just across the Red Sea.

On the Nile itself, the government has an integrated national plan to reconstruct and develop the entire length of the Nile within Egypt, to enhance irrigation, freshwater distribution, and transportation. New river ports are being developed along its full length.

Qalaa Holdings, an investment fund that is taking the lead in this, is concentrating on investment in infrastructure, and is eager to develop the entire basin down to Uganda, where it has acquired the concession to manage the Rift Valley Railway in Kenya, Uganda, and Tanzania. Built by the British, this railway fell into disrepair, but the company has now greatly improved it, and is even interested in expanding it to Juba where it can be linked with the river transport on the White Nile.



YouTube

The Egyptian government plans to fully develop the Nile as a major north-south axis, to be integrated into the great industrial and logistical complex it will be developing as part of the New Suez Canal project, shown here under construction in September.

In Egypt, Qalaa is building up a fleet of 100 motorized barges with the view of expanding greatly river and canal transportation.

In addition to developing the great complex at the Suez Canal Zone, which we described in detail in the Part I of this series, the Egyptian government has just announced that it plans to create a global grain and food logistics center at Damietta to serve the entire region, a project which Prime Minister Ibrahim Mehleb recently declared “a large national project that is no less important than the Suez Canal project.” The project would expand the port to accommodate ships carrying up to 150,000 tons of grain, as well as expand piers dedicated to smaller river and canal ships. This project will serve to quadruple the capacity of Egypt’s ports from 2.5 million tons to 10 million tons. It will be complete with food processing industries.

Conclusion

The new Egyptian government’s relaunching of long-abandoned development programs has ignited a spark of optimism in the country, which could become contagious in the rest of Africa. However, this development should not be assessed as an issue separate from the massive shift that has taken place in the past few years. China’s and the BRICS’ initiative to break ground for a new world order based on economic cooperation and respect for the sovereignty and independence of

each and every nation has paved the road to this important development.

As is evident from the facts presented above, China has already been involved in ground-breaking bilateral and multilateral economic development agreements with the nations of the Nile Basin and East Africa, over the past three years. Unfortunately, the U.S., Britain, and their allies in Europe, have been pursuing a “creative destruction” agenda in Africa. The war on Libya in 2011, with the involvement of Saudi Arabia and Qatar’s al-Qaeda jihadists fighting side-by-side with NATO, wreaked havoc in

that nation, spilling over to Mali, Algeria, and Nigeria.

The support given by the Obama Administration to the Muslim Brotherhood in Egypt almost drove that nation to a bloody civil war. Egypt is now fighting terrorists both in Sinai in the east, and fending off terrorism emerging from Libya.

The failed, decades-long policies of the West in the Horn of Africa have created a failed state in Somalia. Somalia, which is bleeding internally, has also become a security threat to Kenya, particularly, and also to the international trade routes offshore in the Arabian Sea and Gulf of Eden, through pirate groups emerging out of Somalia. The Somali al-Qaeda-linked terror group Al-Shabab has intensified its terror attacks inside Kenya, since the latter entered into agreements to build the Lamu Port and Lamu Corridor with China. Somalia is not a hopeless case. However its salvation depends completely on the shift in international relations and the real development of the region around it.

The optimism in East Africa has to spread to West Africa and the rest of the continent, not the other way around, as the Ebola epidemic could potentially spread from the west to the east. All international efforts have to be focused on containing and eliminating the Ebola threat and its root causes, and in addition, as Helga Zepp-LaRouche declared at the recent Schiller Institute conference in Germany, should be accompanied by creating a new and just world economic order.