

Developing the Road Transport Network in the EAC

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ABSTRACT

A sustainable and accessible road transport network in the East African Community (EAC) remains key to the economic growth and diversification of its member states. The current high cost of trade emanates from the poor state of regional transport infrastructure, while the development of key road transport infrastructure has been met with several project funding and delivery-related challenges. The main objective of this research report is to determine the status quo and future prospects for the road transportation network in the EAC.

The research confirms a proactive approach by governments in the region to drive project delivery through both national and regional development plans, which are supported by the active collaboration between the African Union (AU), the African Development Bank (AfDB) and the EAC. An increase in the number of roadworks projects is therefore evident. It is, however, accompanied by increased investment by the Chinese and international Development Finance Institutions (DFIs). Furthermore, a slight decrease in project financing by the AfDB is noted.

The EAC's Northern and Central Corridors, and the Lamu Port South Sudan Ethiopia Transport (LAPSSET) and Southern Corridors, and the north-south Trans Africa Highway (TAH) from the Cape to Cairo are main arteries of the EAC road transportation network, all requiring at least some degree of rehabilitation and/or upgrading works. At project level, the sector is typically associated with multiple challenges, the most prominent including the influx of foreign competitors and project financiers, and the evident inability to conduct preventive maintenance — resulting in a rehabilitation or upgrade backlog.

The EAC road transportation network offers multiple opportunities to international industry players, as do ports and rail infrastructure. However, the industry is faced with challenges on the financing front and the dominance and successful endeavours of the Chinese remain evident, with the Public Private Partnership (PPP) framework seemingly being the only alternative to gain access to the market, aside from the traditional International Competitive Bidding (ICB) process.

INTRODUCTION

The East African Community (EAC) comprise the six states of Kenya, Tanzania, Uganda, Rwanda, Burundi and South Sudan. Its vision is to become an integrated trading bloc, with a political federation and a single currency (EAC, 2017a). Trade facilitating infrastructure and the removal of trade barriers remain key to achieving this vision; it is a priority to ensure the free movement of people, goods and services to boost the sustainable economic growth of its member states (EAC Secretariat, 2011).

The World Economic Forum (WEF) is forecasting decelerating, but positive growth for the East African sub-region, with growth driven by Kenya, Tanzania, Rwanda and Ethiopia. These countries remain among the fastest growing economies in Africa. The East African sub-region is also expected to remain the fastest growing region in Africa (UNECA, 2017).

As a result, East African countries are becoming seemingly more attractive to Foreign Direct Investment (FDI), that in turn supports and enables, amongst others, increased infrastructure delivery, which has a symbiotic relationship with economic growth (UNECA, 2010). Such growth supports the industrialisation and economic diversification initiatives of these nations (EAC Secretariat, 2011), who will continue to rely on an accessible and reliable surface transportation system. This need is further emphasised by the African Union (AU), whose mission remains improving trade among African states and the world (AU Commission, 2015).

Furthermore, the East Africa sub-region continues to see a noticeable increase in capital flows, coming from major lending organisations such as The World Bank Group and the African Development Bank (AfDB), as well as a range of other organisations and smaller private entities. The EAC's road transportation network in particular has been recognised as a viable vehicle for investment, mainly due to the evident mismatch between the demand for safe and effective road transport infrastructure and the current lack of existing roads throughout the region (IQPC Middle East, 2017).

Despite the region's attractiveness, intra- and interregional trade in Africa to this point remain low, especially when compared to that of other regions on and outside the continent (Cloete, 2017). These low figures can be attributed to the high costs of trade, emanating mainly from the poor state of its infrastructure, in particular that of a lack of a sustainable and accessible road transportation network, ports with insufficient cargo handling capacity and inefficient railway services (East African Infrastructure Video Documentary, 2017).

Surface transportation costs associated with logistics in East Africa are also reportedly higher than any other region in the world, more so for the landlocked countries of Rwanda, Burundi, Uganda and Ethiopia. The AfDB attributes these high costs to administrative and customs delays at ports and national border crossings, as well as numerous checkpoints along trade routes and corridors. However, as part of its state of infrastructure assessment initiative in 2013, the AfDB concluded that the EAC trade corridors, despite some missing links and unsurfaced sections, were in a reasonably sound condition when compared to that of its peers. In addition, the implicit velocity of freight transportation on these key corridors were second only to the Southern Africa region. This despite the East African region having the second smallest trade density in Africa (AfDB, 2013).

Nonetheless, freight transportation by road remains the dominant mode in the sub-region, accounting for between 80-90% of all freight and passenger movements among key economic production areas and international markets. In the EAC's Kenya and Tanzania, transportation by road accounts for 97% of all freight cargo (Muchira, 2017b).

Rural road infrastructure in Africa will also be subject to renewed pressure as governments aim at establishing food security in the region. Agriculture is Africa's second largest contributor to GDP, with Kenya, Rwanda and Tanzania having significant agricultural exports. Across the continent, however, agricultural production involves mainly subsistence farming. In Tanzania, for example, 20% of the country is deemed suitable for farming, but only 5% is cultivated — the poor condition of rural roads and limited irrigation and power supplies are among the key factors limiting growth in this sector (PWC, 2017).

The EAC as trade bloc remains a key player in Africa's integration initiative, as the establishment of the Tripartite Free Trade Agreement (TFTA) between itself, COMESA and the SADC blocs is aimed at promoting trade on the continent. Furthermore, the ultimate vision of the AU is more ambitious as it aims at establishing continent-wide integration. In 2012, the AU adopted a decision to establish a Continental Free Trade Agreement (CFTA) by the end of 2017. At the same time, the AU summit endorsed the action plan to Boost Intra-Africa Trade (BIAT), which identified the delivery of trade facilitation infrastructure as one of seven key clusters (AfDB, 2016). The AU looking forward therefore aspires that by 2063, Africa shall have, amongst others, a world class, integrative infrastructure that spans the continent (AU Commission, 2015).

Such infrastructure includes a network of Trans African Highways (TAH), with the north-south TAH from Cape Town to Gaborone to Cairo, and the east-west TAH from Mombasa to Lagos, both traversing the heart of the EAC whilst intersecting some of its key trade corridors. Together, this aspiring network of good all-weather highways and trade corridors will link Africa's capitals and major economic production areas to promote the integration of African people and economies (UNECA, 2010).

As Africa's global trade and freighter fleet is expected to double over the next decade, this road network will be subjected to even more trade flows as the EAC boasts two of Africa's busiest ports in Mombasa (Kenya) and Dar es Salaam (Tanzania) (Koigi, 2017). In addition, global trade is set to continue to grow at an unprecedented rate. Koigi (2017) attributes this growth to mainly the growing consumption demands of the ever-increasing middle class. The AU further estimated that effective road infrastructure, and port upgrades and expansions will see intra-Africa trade growing from 12% in 2013 to 50% by 2045. Africa's share of global trade will subsequently rise from 2% to 12% over the same period (AU Commission, 2015).

Therefore, establishing key trade facilitating infrastructure and eliminating high barriers to trade along key trade corridors in the EAC, will not only connect the landlocked EAC member states of Rwanda, Burundi, South Sudan and Uganda to the ports of Dar es Salaam and Mombasa, but also the neighbouring countries of Ethiopia, Zambia, Malawi and the Democratic Republic of Congo (DRC), all key to sustained economic growth in Sub-Saharan Africa (SSA).

The notion of an integrated African continent further attracts worldwide interest, with the East African coastline presenting itself as the key entry point from the East. The Chinese One Belt One Road (OBOR) initiative subsequently identified the port of Mombasa as its envisioned port of entry that will result in significant downstream requirements for road, rail and port infrastructure, as well as trade facilitating “soft” infrastructure, particularly in the EAC (Jinchen, 2017).

The subsequent and pro-active involvement, and now to a certain degree, dominance of the Chinese business community in Africa, both as a key trade partner and aid-giver, have since been realised at project level in the open market. China’s efforts and ability to infiltrate and influence key decision makers in the infrastructure sector, and in the greater East African sub-region in particular, continue to be questioned by and frustrate traditional Western firms in their African endeavours. Such involvement is said to influence the global norm on project funding and delivery, while also threatening these firms’ ability to compete, especially in the EAC, given its significant role in Africa going forward.

The EAC’s demand for and future dependency on “hard” trade facilitating infrastructure, particularly road networks, railway systems and port facilities, therefore remain significant and will continue to offer significant opportunities to all stakeholders in especially the infrastructure financing and delivery sector. However, the funding of such capital-intensive infrastructure projects remains one of the key challenges in Africa (Cloete, 2017).

This can be attributed to the significantly higher risk premiums attached to such roadworks projects. This high perceived risk and cost of capital sets the required Internal Rate of Return (IRR) for projects in Africa at between 16% and 20%, compared to 11% and 15% in other developing countries (Cloete, 2017). Furthermore, the inability of African governments to fund essential public infrastructure such as road networks, continuously gives rise to the ‘donor-funded project’ phenomenon. Hence, project funding, not only in the EAC, but also in the rest of Africa, remains one of the biggest challenges in addressing the continent’s acute infrastructure shortages.

The aim of the research assignment is to gain an appreciation and in-depth understanding of the intricacies and underlying dynamics, as well as the future prospects for the road construction industry in the EAC. Such an understanding will enable local and international private sector firms to better understand the industry, and possibly improve their competitive position in the region.

A sustainable and accessible road transport network in the EAC, that also serves the greater East African sub-region, remains key to the economic growth and diversification of the REC and its member states. Its role in facilitating and promoting the movement of people, goods and services across national borders, remain key to enhancing intra- and interregional trade.

At the same time, the EAC and its surface transportation network will play a key role in regional, continental and later global integration. Current high trade costs emanating from poor infrastructure in the region, however, will continue to detract from these East African countries’ ability to compete.

Addressing these challenges and the development of key road transportation infrastructure along its main trade corridors, has, however been met with several project funding and delivery-related challenges. The objective of this research assignment is therefore to determine the status quo of and future prospects for the road transportation network in the EAC.

LITERATURE REVIEW

The Importance of a Road Transportation Network in Africa

According to Cervero (2009: 210), road transportation infrastructure remains critical to the competitiveness of cities and regions in the global marketplace. Omondi (2014: 29) states that an efficient road transportation

network creates new market opportunities as it facilitates the movement of goods and services from one point to another with speed and efficiency, making them available to consumers across the region.

A road transportation network therefore also contributes towards attaining regional integration goals as the development of interdependent infrastructure systems are considered a means to an end, ensuring the free movement of people, goods and services across national borders. This in turn promotes economic prosperity and growth, while also contributing to the overall quality of life (Omondi, 2014: 28).

Intra-African trade, through sustainable road infrastructure delivery, therefore remains a powerful engine for economic growth and development. Subsequently, a symbiosis exists between infrastructure delivery and economic growth since good infrastructure spurs growth, and conversely, increased growth demands more infrastructure (UNECA, 2010).

Road transport infrastructure and trade costs

The cost of doing business is a measure of the efficiency and effectiveness of trade. The poor state of infrastructure in Africa is, however, making intra-African trade very expensive (Makame, 2012: 4). Buys *et al.* (2010: 400) state that over the past decade, overland transport remained difficult and costly, to such an extent that Africa's diverse regions remain largely isolated from one another. Overland trade between the large urban centres of Western Africa and Southern Africa, for example, remains limited (Buys *et al.*, 2010: 400).

Christ and Ferrantino (2011: 1749) state that infrastructure projects in SSA did not have the expected impact on the reduction of transport cost. Buys *et al.* (2010: 400) therefore examined the economic impact of poor road conditions in SSA and concluded that the relatively low level of SSA exports can essentially be attributed to the high transport costs in the region. In addition, according to Christ and Ferrantino (2011: 1751), administrative hurdles at national border crossings substantially compound delays. These stubbornly persistent problems include complicated customs and documentation procedures, as well as official and non-official costs imposed on truckers and transport facilitators (Omondi, 2014: 27). The process of clearance across national borders in Africa is marred with challenges that result in unnecessary delays. In addition, roadside checkpoints cause further delays and attract policemen demanding unlawful compensation or pay-offs (The Economist, 2013: 2; Omondi, 2014: 27).

Buys *et al.* (2010: 400) concluded that poor physical infrastructure accounted for up to 60% of transport costs in landlocked countries, and up to 40% of transport costs in coastal countries. Furthermore, in the EAC's landlocked countries of Rwanda and Uganda, high transport costs account for up to 50-75% of the retail price of goods since these goods have to be transported through Kenya and Tanzania (The Economist, 2013: 2). The Economist (2013: 2) further states that shipping a car from China to the port of Dar es Salaam in Tanzania across the Indian ocean will cost approximately 20% less compared to moving it from the port of Dar es Salaam inland to Kampala in Uganda.

Lastly, Omondi (2014: 27) argues that the main challenges facing the region's road transport infrastructure are the inadequacy of transport facilities, inefficient transport management or "soft infrastructure" and the lack of reliable communication between the REC's ports and landlocked countries.

Road transport infrastructure and agricultural produce

Omondi (2014: 10) suggests that lengthy export processes pose a risk as developing countries are deemed less likely to enter markets for goods that are sensitive to delays, such as perishable products, for example agricultural produce.

Within many African countries, abundant fertile soil also lies fallow due to the hauling of produce to market remaining too expensive, time-consuming and, to an extent, also dangerous for truckers and transport facilitators (Buys *et al.*, 2010: 400). According to The Economist (2013: 2), the improvement of the key road infrastructure networks will nonetheless enable farmers to get produce to markets and across borders.

Furthermore, subsistence farmers selling surplus crops for example, recover considerably less than the market price for such excess produce, resulting in them only being able to cover the high transport and transaction costs. This phenomenon limits the incentive for farmers in Africa to grow more food (The Economist, 2013: 2).

The impact of poor road transport infrastructure

Buyts *et al.* (2010: 399) emphasise that poor economic integration and isolation from regional and international markets remain a key contributor towards poverty in SSA. Poor transport infrastructure, or the lack thereof, and border restrictions are considered to be some of the major deterrents to trade expansion, which is required to stimulate economic growth and reduce poverty across the region (Beuran *et al.*, 2013: 2; Buyts *et al.*, 2010: 399).

Omondi (2014: 10) further states that in the case of poor regional trade facilitating infrastructure, or where access to key trade routes and corridors are limited or restricted, economic growth cannot be achieved at its desired rates or tempos. According to *The Economist* (2013: 1), transport in general remains a perpetual problem in Africa. This can be attributed to potholed roads and missing rail links that undermine economic growth, and subsequently intra-regional trade (*The Economist* (2013: 2).

Improving cross-border trade facilitating infrastructure therefore remain important for the development of Africa (Beuran *et al.*, 2013: 2). *The Economist* (2013: 2) importantly states that key trade routes and corridors across Africa are, however, improving as new roads are being built and existing roads upgraded. In addition, Beuran *et al.* (2013: 2) note that access to road transportation networks and their actual condition along the main corridors in SSA are also improving. They also state that further measures, such as establishing One-Stop Border Posts (OSBP) that ease congestion at border crossings, are being undertaken in an attempt to reduce the high cost of transport and trade in the region.

Research by Buyts *et al.* (2010: 399-400) indicate that the upgrading of the continental road network is worth serious consideration, especially from an economic perspective, with subsequent benefits including increased overland trade, with major direct and indirect benefits to the poor. Financing requirements for such initial upgrading and post construction maintenance will, however, be significant.

Nonetheless, Omondi (2014: 45) states that the development of accessible and sustainable road transport infrastructure in any economy or region in turn encourages investment, that is attributable to the reduced cost of doing business in the region, that is a direct result of the improved ease of which goods and services can now be transported from one point to another. Subsequently, the net effects of such development are, amongst others, the increased competitiveness in the production of such goods and services, and a reduction of monopolies that again leads to the reduction of the price of such finished consumer goods (Omondi, 2014: 45).

Road transportation infrastructure is, however, not to be considered an end in itself. It is rather a means to ensuring the delivery of such goods and services, and also in promoting the health and safety and social well-being of citizens. This is in addition to improving the quality of their environments, while also reducing poverty and promoting education (Omondi, 2014: 32; Beuran *et al.*, 2013: 2).

The development of road transport infrastructure also reduces poverty by creating employment in new job opportunities (Beuran *et al.*, 2013: 2), since the construction and maintenance of road sections and accompanying infrastructure remain labour-intensive operations. The employment of individuals in the vicinity of such projects illustrate that road projects have a direct impact on the creation of relatively low-skilled jobs, and subsequently the greater and/or cheaper availability of such labour markets (Beuran *et al.*, 2013: 2).

Lastly, the improvement and provision of road transport infrastructure impact the reliability and quality of transport services, with additional benefits including enhanced accessibility, efficiency and social inclusion (Omondi, 2014: 32).

The Road Transportation Network in SSA

In SSA, road transport is and will remain by far the dominant transportation mode, carrying over 75% of passengers and freight (Beuran *et al.*, 2013: 2). Despite the realised importance of road transportation infrastructure in enhancing connectivity and access between neighbouring countries, the sad reality, however, is that the road transportation network in Africa is still not adequate to fully serve the economic endeavours of its countries. This is because these countries remain largely dependent on roads for

transporting goods and people (Omondi, 2014: 9). According to Kessides (2012: 119), Africa's road density also remains substantially lower in comparison to that of other developing regions.

Christ and Ferrantino (2011: 1749) conclude that SSA's weak transport infrastructure increases the cost and time associated with importing production inputs, as well as exporting final products. This effectively increases the economic distance between SSA and the rest of the world.

The EAC Road Transportation Network

The combined efforts of the EAC member states during the first decade of its establishment, led to the increased construction of new roads and the rehabilitation of existing roads in the region (Omondi, 2014: 42). Furthermore, Omondi (2014: 42) notes the significant effort in the expansion, rehabilitation and management of roads through government initiatives in the bloc.

However, according to Kessides (2012: 125), regional connectivity in East Africa is hampered since portions of key regional roads remain gravelled. In addition, these sections' condition continues to deteriorate due to inadequate maintenance, overloading and inefficient management (Beuran *et al.*, 2013: 2).

In the EAC, road conditions remain one of the main challenges as the transportation of goods by road remain much slower and costlier when compared to other regional blocs and elsewhere in the world (Omondi, 2014: 2). Therefore, there is a need to upgrade older and smaller or feeder road sections, while complete new sections are also required to accommodate the growing population. The need for these populations to engage economically depends on enhancing regional integration (Omondi, 2014: 2).

The East African sub-region is nonetheless seen as having the potential to attain its economic growth as part of its regional integration initiative (Omondi, 2014: 2). At the same time, however, the sub-region is also seen as one with widespread poverty and food shortages (Omondi, 2014: 9).

A sustainable and efficient road transportation network therefore remains one of the main contributing factors for the survival of economies in the region. This realisation presents the need for East African countries to take a keen interest in revamping the regional road transportation infrastructure to ensure improved regional connectivity and the realisation of these countries' desired economic growth trajectories and their developmental goals (Omondi, 2014: 9).

Road transportation infrastructure remains critical to the regional and continental integration initiatives on the African continent. Furthermore, both its positive and negative impacts on economic growth and the various countries' competitiveness remain clear. In the EAC, the importance of an efficient and accessible road transportation network and accompanying "soft infrastructure" is also emphasised as it integrates its member states as a trade bloc, and the bloc with the rest of Africa.

Road infrastructure also encourages socio-economic growth by enabling the efficient movement of people, goods and services across national borders. Such road infrastructure further remains critical in promoting economic diversification and in unlocking the region's agricultural and manufacturing sectors' potential.

APPROACHES BY KEY STAKEHOLDERS IN EAST AFRICA

The African Union (AU)

The key objective of the AU, established as a pan-African institution in 1999 and originating from the Organisation of African Unity (OAU), is to accelerate the process of integrating Africa. According to the AU's Agenda 2063, its vision is "to become an integrated, prosperous and peaceful Africa, driven by its own citizens and representing a dynamic force in the global arena" (AU Commission, 2015).

The AU therefore adopted the New Partnership for Africa's Development (NEPAD), which was integrated in 2010 into the structures and processes of the AU. This in turn led to the establishment of the NEPAD Planning and Coordinating Agency (NPCA). The NPCA serves as a technical body of the AU, that is mandated to coordinate the implementation of continental and regional priority programmes and projects (AU Commission, 2015; NEPAD, 2017). Furthermore, the NPCA is mandated to mobilise resources and partners in support of implementing such projects (NEPAD, 2017).

African countries, in collaboration with the AU, the African Development Bank (AfDB), the United Nations Economic Commission for Africa (UNECA) and the various RECs, have since the adoption of NEPAD embarked on a process of regional integration that will eventually converge towards to an African Economic Community (UNECA, 2010). As a result, the AU has reported that the African continent, over the last decade, has experienced sustainable levels of growth, greater peace and stability and positive movements on a number of human development indicators (AfDB, 2016). Integration is considered a strategy for achieving sustainable economic growth amidst the various countries' developmental challenges (UNECA, 2010).

The AU therefore aspires that by 2063, Africa shall have, amongst others, world class, integrative infrastructure that spans the continent (AU Commission, 2015), linking Africa's capitals and facilitating the free movement of people, goods and services.

Such infrastructure also remains key to establishing the TFTA and the ambitious CFTA. The CFTA will require the participation of all 54 African countries, but would only be operationalised upon the conclusion of various Free Trade Area (FTA) agreements among its RECs. One of the envisaged impacts of these FTA agreements is increased intra-African trade and an improvement in Africa's competitiveness in the global market place (Schoeman, 2015).

The CFTA is also a tool for structurally transforming African economies and urban cities, boosting value addition and driving industrial competitiveness. The AU endorsed the establishment of the CFTA, and at the same time, the action plan to BIAT, which identified the delivery of trade facilitating infrastructure as one of seven key clusters. The CFTA would therefore bring together all eight RECs and all 54 African countries, with a combined population of more than one billion people and a combined GDP of more than US\$3.4 trillion (AU, 2017).

The African Development Bank (AfDB)

The AU partner bank, the AfDB, is a multilateral development finance institution, which plays a leading role in the NEPAD initiative. The overall objective of the AfDB is to support African countries' economic development and social progress by promoting the investment of both public and private capital in projects and programmes designed to reduce poverty and improve living conditions of African citizens (AfDB, 2017a). Therefore, to accelerate Africa's economic transformation, the AfDB identified and intends focussing on an interlocking set of critical priorities within the bank's ten-year strategy. These are referred to as the "High 5" priority areas. They are:

- Light up and power Africa.
- Feed Africa.
- Industrialise Africa.
- Integrate Africa.
- Improve the quality of life of the people of Africa.

These priorities are critical for advancing Africa's development, and accelerating the structural transformation Africa so desperately seeks (Shingiro, 2017). Investment in and the delivery of key infrastructure, in particular ports, roads, rail, energy generation and supply, water and sanitation, pipelines and communications networks, therefore remain key to achieving the AU vision and attaining the AfDB's High 5 priorities. Furthermore, the development of such infrastructure remains a key driver to ensure progress across the African continent and a critical enabler for productivity and sustainable economic growth (AfDB, 2014).

The AfDB has collaborated with the EAC since the signing of a co-operation agreement in 1998 (EAC Secretariat, 2017a). This agreement has resulted in the funding of several regional projects by the AfDB, mainly in the transport and energy sectors. The AfDB's contribution towards the greater African road network entails the financing of the construction and rehabilitation activities of 8,938 km of roads between

2013 and 2015. The AfDB anticipated delivering an additional 21,261 km of roads between 2016 and 2018¹ (AfDB, 2016).

The AfDB also recognises the current fragmentation of markets and infrastructure as major impediments to sustainable growth in Africa, and therefore has a strong focus on, amongst others, regional connectivity, by contributing to improved regional integration and infrastructure delivery. Furthermore, through its regional Integration policy, the AfDB intends focussing on facilitating the free movement of people, goods and services, as well as improving the mobility of people and investments. Africa's physical landscape, however, makes connection between communities, countries and even entire regions difficult (AfDB, 2016).

In addition to all AU member states being shareholders of the AfDB, 25 non-African states are also shareholders. These countries are also active in the private sector, in particular the financing and delivery of key infrastructure projects in Africa.

The East African Community (EAC)

In November 1999, the EAC treaty was signed by the heads of state of Uganda, Tanzania and Kenya. It entered into force in July 2000 and the EAC was re-established as a REC in East Africa. In 2007, Rwanda and Burundi also became members of the EAC (Reith & Boltz, 2012: 93). In 2016, the Republic of South Sudan became the latest member state of the EAC, with full and equal rights, obligations and privileges (EAC, 2017a).

The work of the EAC, as guided by the EAC Treaty, is to widen and deepen co-operation among the member states in various key spheres for their mutual benefit, of which delivering trade facilitating infrastructure remains key (EAC, 2017a).

Integration in East Africa is guided by the EAC's Vision for 2050. Over the next three decades, the EAC's aim is to transform the EAC bloc into an upper-middle income region within a secure and politically united East Africa, based on the principles of inclusivity and accountability. Its mission is to widen and deepen economic, political, social and cultural integration in order to improve the quality of life of the people of East Africa through increased competitiveness, value added production and enhanced trade and investment (EAC Secretariat, 2011). Unlike the trade blocks of the SADC and COMESA, the EAC's vision is not purely economical, but its ultimate vision is to become a political federation with a single currency (UNECA, 2010).

The East African Development Bank (EADB) is one of the EAC's eight semi-autonomous institutions and offers structured financial products and services to organisations in the health, education, hospitality and tourism, infrastructure development, energy and utilities, and agriculture sectors. The EADB therefore supports the EAC's integration efforts through financing regional infrastructure projects. It further endeavours to set up mechanisms that support Public Private Partnerships (PPP) and allow established institutions to undertake region-wide programmes and projects on behalf of governments in the region (EADB, 2017).

According to the EAC, regional integration will offer the citizens of East African states increased trade opportunities that improve their livelihoods, better infrastructure that improve their access to markets, and a common customs tariff regime and procedures that will result in easier access to the intra-African and global markets (EAC, 2017c). According to the EADB, the drive to regional integration, however, faces a number of challenges that includes inadequate and poor regional infrastructure, especially trade facilitation infrastructure (EADB, 2017).

Such infrastructure in the regions remain inadequate and of low quality on the one hand, and inefficient and expensive on the other (UNECA, 2010). The EAC therefore envisages, as part of its Vision 2050 development strategy, upgrading, rehabilitating and expanding its regional paved road network to 65,700 km, and its rail network to 2,438 km (EAC Secretariat, 2011). At the same time, many East African countries face significant deficits and a persistent lack of capacity to allocate resources to their transport sectors, leading to the repeated shelving of important yet ambitious road network development projects (IQPC

¹ These figures exclude both public and privately funded road infrastructure delivery, and does not include a breakdown per REC

Middle East, 2017). The EAC, however, concluded that developing its corridors and road networks will amount to an estimated US\$25 billion (Nkwame, 2017).

The EAC, through its secretariat and with the financial support of the AfDB, in 2011 developed a Regional Roads Sector Development Programme (RSDP). The key objective of this RSDP was to identify regional medium-term (ten year) priorities in the development of the regional transport sector (SAICE, 2012).

The EAC since 2012 facilitated sector reforms, which include the formation of Roads Boards and Agencies and the active participation of the private sector, the harmonisation of regional policies and axle load control in road-subsectors. Each of the EAC member states has since established road fund boards and roads agencies to facilitate the financing and delivery of projects (SAICE, 2012).

As a result, these countries embarked on developing mechanisms, policies and resource allocations that have seen the upgrading of its existing road transportation network in terms of road expansion and dual carriageway road bypass construction. Furthermore, surfacing and signposting activities were initiated within the EAC, with light road maintenance prioritised and carried out by firms contracted to mainly clean certain roads in each of the respective EAC member countries (Omondi, 2014: 30). Lastly, the EAC, in collaboration with member countries, initiated development partner-coordinated assistance to mobilise funds for the development of its road corridors (EAC, 2017b).

UNDERSTANDING THE EAST AFRICAN ROAD TRANSPORTATION NETWORK

East African sub-region market overview

Up-scaled infrastructure investment and development have been identified as key requirements as the EAC and greater East Africa sub-region aim at experiencing the mutual benefits of world class infrastructure. There is, therefore, a need for private sector involvement and investment, and subsequently, to create innovative financial instruments that can enhance the private sector's contribution to the required infrastructure investment resources in the EAC (East African Infrastructure Video Documentary, 2017). Deloitte's Africa Construction Trends Reports affirm this need as they reported a decline in domestic private sector participation, in terms of project financing, from 4.7% in 2016 to 4.2% in 2017 (Deloitte, 2016; Deloitte, 2017).

Funding from outside Africa has, however, increased, with China now being the most prolific funder in 2017 — with almost 25.4% of all large-scale infrastructure projects in East Africa now being Chinese funded (Deloitte, 2017), an increase from 23.3% in 2016 (Deloitte, 2016). A conglomerate of international Development Finance Institutions (DFI), which include The World Bank, in 2017 funded 19.7% of current projects, with African DFI-funded projects providing only 16.9%. Other funders include the European Union (EU) at 8.5%, and the USA at 2.8% (Deloitte, 2017).

Furthermore, the need for such up-scaled infrastructure remain evident since the number of construction projects in East Africa has seen a substantial increase from 43 in 2016 to 71 in 2017. From a transportation perspective, the number of projects also significantly rose from 20 (47% of the total) in 2016 to 37 (52% of the total) in 2017 (Deloitte, 2016; Deloitte, 2017).

Importantly, in 2017, national governments owned 90% of ongoing projects, but only funded 15.5% of these projects (Deloitte, 2017). In 2016, governments owned only 86% of projects, and managed to fund only 11.6% of projects (Deloitte, 2016).

Therefore, the increase in (i) the number of projects, (ii) the percentage ownership by government, and (iii) the percentage funded, all support the notion that East African governments have become the most proactive of all in Africa in driving projects through both national and regional development plans. These projects are key to the EAC's Development Strategy. As a result, various major cross-border rail and energy projects are currently underway (Deloitte, 2017).

From a construction perspective, China remained the most prolific builder in East Africa, with more than half (53.5%) of all projects now being Chinese built. In 2016, China constructed only 41.9% of projects. An

important increase of 11.6% is noted in this regard. In 2017, private or domestic constructed projects accounted for only 11.3% of projects, which shows a rapid decline from 26% in 2016 (Deloitte, 2017).

The increase in number of projects, and the decline in market share among privately or domestically-owned companies, suggest even more Chinese dominance in the years to come. The agility and speed to respond to new opportunities, while maintaining profit margins of more than 20%, is considered one of China's key strengths (Yuan Sun *et al.*, 2017).

Chinese involvement

In light of its own economic slowdown, the resilience of Chinese investments in Africa are being called into question. China's economic rebalance from an investment-led to a consumption-based economy has impacted African growth, in particular that of EAC member states. The substantial reduction in Chinese demand for African commodities has further resulted in a significant drop in commodity prices, and from an East African perspective, potentially decoupling the African growth story from China's influence and economic engagement (UNECA, 2017).

The TAZARA railway line, completed in 1975, remain the signature example of China's ideology-driven aid. It is based on the principle of mutual interest as the basis for economic cooperation. In this case, the Chinese pledged its support to Tanzania in the form of improving the Tanzania-Zambia Railway Authority (TAZARA) railway line, connecting the port of Dar es Salaam and the Zambian cities of Lusaka, Ndola and Kitwe (Du Plessis, 2016).

China's involvement in Africa evolved further in October 2000 with the establishment of the Forum on China-Africa Cooperation (FOCAC) in Beijing. FOCAC is a low-level, multilateral institution that does not use formal voting procedures or legally binding documents, but rather seeks consensus through dialogue. FOCAC can therefore be considered as a mechanism to assist Africa in its economic development through "package deals" comprising mining, infrastructure and industrialisation projects (Du Plessis, 2016).

In 2015, China's involvement in African infrastructure delivery was optimised by the signing of an MoU between itself and the AU, to jointly develop the continent's capitals through road, rail, and air transport as part of the AU's Agenda 2063. This MoU is considered the most substantive project agreement the AU has ever signed with a single partner (Du Plessis, 2016).

In addition, not only is China a shareholder in the AfDB, but the country is collaborating closely with the AfDB. Du Plessis (2016) suggests African countries seek to diversify financing options for infrastructure projects through new financing institutions. Here they are looking towards mechanisms such as the New Development Bank (NDB) (NDB, 2017), as well as the AfDB and People's Bank of China (PBOC) collaborative US\$2 billion co-financing fund, known as the Africa Growing Together Fund (AGTF) (Densil, 2014).

In 2015, during the sixth FOCAC summit held in South Africa, the President of China pledged to provide a US\$60 billion package to Africa in various projects, mainly infrastructure; this in spite of the economic slowdown in China (Nsanzugwanku, 2017b). According to the Infrastructure Consortium for Africa (ICA), Chinese investment in African infrastructure is roughly US\$13.9 billion per year, indicating that China remains the largest single source financier for infrastructure in Africa. Key projects in this regard include the recently completed SGR from Mombasa to Nairobi, the Lamu Port-South Sudan-Ethiopia Transport (LAPSSET) Corridor and the transport corridor between Dar es Salaam and Bagamoyo (Du Plessis, 2016).

Du Plessis (2016) argues that China's infrastructure-based economic statecraft² in Africa will continue as these major infrastructure projects fit into China's broader goals for reshaping global norms, as part of their OBOR Initiative. It is also evident that over the past few decades, China sought to use multilateral forums such as FOCAC to accomplish its political, economic and security goals. According to Du Plessis (2016), the Chinese are increasingly able to employ various economic tools in pursuit of these goals as they remain in control of massive state-owned enterprises (SOE) and foreign reserves. One such SOE is the Export-

² Du Plessis (2016) defines economic statecraft as a set of instruments available to states to influence the behaviour of other states in their favour, usually referring to military, economic and diplomatic instruments.

Import (Exim) Bank of China, which is a state-funded and state-owned public policy bank with the status of an independent legal entity (The Export-Import Bank of China, 2017).

Since the turn of the millennium, China's engagements with Africa have increasingly taken the form of large infrastructure projects such as road, rail, air and electricity infrastructure, most noticeable being the Chinese-built AU headquarters in Addis Ababa, Ethiopia (Du Plessis, 2016).

Nsanzugwanko (2017b), however, argues that China's approach underpins empire building and neo-colonialism, that is aimed at securing Africa's resources. Furthermore, the win-win cooperation of relationships with African countries and communities invites criticism in light of the propensity of Chinese firms to bring their own labour force, failing to develop African skills (Du Plessis, 2016). In addition, China's infrastructure contracts with Africa use Chinese materials, workers, designs and financing or concession loans — just as their infrastructure projects see them extract minerals from Africa as the colonisers did in the 1800s (Poplak, 2016). However, the Chinese Director of the Department of West Asia and Africa Affairs in the Ministry of Commerce, claimed that China has to date helped develop more than 8,000 Africans in various fields, including infrastructure development and construction (Nsanzugwanko, 2017).

Du Plessis (2016) further argues that in its involvement in Africa, China has aligned itself with the continent's core geopolitical and development objectives in support of its own global aspirations. It would, however, benefit both China and African countries to also co-operate on regional integration projects to improve intra- and interregional trade in Africa. The member states of the EAC, in particular the less resource rich countries of Rwanda and Burundi, could reap the benefits of economies of scale, which in turn would make for a more compelling case for investors to relocate manufacturing in Africa.

Du Plessis (2016) concludes that the combination of commerce and aid manifests itself best in the form of public infrastructure projects, as infrastructure is both a public and commercial good. China's increasing involvement in Africa's infrastructure space can be narrowed down to three factors, namely (i) the saturated domestic construction industry in China that has prompted Chinese firms to seek opportunities elsewhere, (ii) the untapped and unsaturated infrastructure and consumer markets in Africa that allow easy access to China's private firms and SOEs, and (iii) China's perceived goal of global capitalism.

Key challenges in EAC road infrastructure delivery

Key challenges pertaining to the EAC road transportation network are discussed in each of the following subsections.

- **The maintenance backlogs**

The increased development of road transportation infrastructure in Africa and East Africa consistently creates an increased demand for preventive road maintenance. It is also a common understanding that such preventive maintenance expenditures are generally lower than the cumulative cost of rehabilitation works (World Bank, 2010). However, the visible rehabilitation backlogs across the region reflect the legacy of preventive maintenance underfunding, and according to The World Bank (2010), remain a major waste since the cost of rehabilitating roads remain several times higher than the cumulative cost of preventive maintenance.

The World Bank (2010) further states that addressing under-maintenance in the African road sector can save an estimated US\$1.9 billion annually. Unsurprisingly, Beuran *et al.* (2013: 8) indicate that the road sector in SSA is dominated by rehabilitation activity and, subsequently, higher expenditure, leaving maintenance as a secondary priority. More problematic, however, is the fact that most countries can hardly afford to perform preventive maintenance on its current road transportation network. This in turn worsens the situation as road infrastructure expenditure primarily focusses on upgrading and/or rehabilitation (Beuran *et al.*, 2013: 8), which also gives rise to these countries' dependency on development partner and donor funded projects.

- **The need for political support and stability**

It remains important to have political support for a project to go ahead successfully and uninterrupted. The key challenge therefore in transforming East Africa's economies through

infrastructure development, is the magnitude of its ambitious projects, which are all long-term projects. Changing circumstances on the political front can therefore affect any project's outcome (U.S. Chamber of Commerce, 2016).

- **Professional skills shortages**

There is a shortage of local project developers and qualified professionals (Cloete, 2017). Du Plessis (2016) therefore reiterates that it has become increasingly important for countries to not only develop their hard infrastructure, but also their capacity to maintain, service and expand their infrastructure projects in the absence of a such a dominant player like China, or in the presence of such development partner-coordinated assistance. Du Plessis (2016) further suggests that this can be achieved through more robust, demand-driven China-Africa capacity building initiatives, to be combined with China's academic exchange and scholarship pledges.

- **Higher project risk premiums**

The reported success rate of African infrastructure projects remains, however, lower in comparison to that of other developing countries. Higher risks therefore translate into fewer projects on the ground, and those that are developed, are developed at higher premiums, labelling Africa costlier than any other region for developing infrastructure projects. The high perceived risk and cost of capital set the required internal rate of return at between 16% and 20% in comparison to 11% and 15% in other developing countries (Cloete, 2017).

A noticeable risk in the road construction sector remain rising costs. In addition, for example in Ethiopia, the relationships between foreign contractors and local stakeholders and workers can often be tense, and costs high. This is evident in that a portion of road contracts built by Chinese firms are loss making (U.S. Chamber of Commerce, 2016).

- **Perceived lack of transparency during procurement**

The lack of transparency around existing tenders and procurement practices is a challenge encountered by many investors. While Requests for Proposal (RFP) are often published on government websites, they are frequently difficult to find, and once in hand, often present ambiguity in the actual scope of works (U.S. Chamber of Commerce, 2016).

Furthermore, contracts are often allocated to companies most active in the local industry and in government. The difficulty in identifying opportunities is further amplified in transnational projects where the division of responsibilities between governments and ministries remain unclear. Such projects include regional railway lines, energy generation and distribution infrastructure (U.S. Chamber of Commerce, 2016) and OSBP construction projects.

DEVELOPMENT AND FINANCING OF THE EAC TRANSPORTATION NETWORK

Introduction

The TAH Network comprises transcontinental road projects being developed by UNECA, the AfDB and the AU, in conjunction with the eight RECs. The TAH network, defined in the 1970's, is a network of good, all-weather highways, aimed at linking Africa's capitals and major economic production areas to promote the integration of the African people and economies. This highway network will amount to 57,000 km of good quality all-weather highways (UNECA, 2010), spanning the continent as illustrated in Figure 1.

The north-south TAH from Cape Town to Gaborone to Cairo passes through the heart of the EAC into Ethiopia, and crosses the EAC's Northern and Central Corridors. These corridors are the two major transit corridors that facilitate all import and export activities in the region (EAC, 2017b).

The Northern Corridor connects Kenya, Uganda, Rwanda, Burundi and the Eastern DRC, while also carrying goods bound for Ethiopia and South Sudan (Omondi, 2014: 23-24). The total length of the corridor is 1,899 km (AfDB, 2013) and the corridor is part of the TAH from Mombasa to Lagos.

The Central Corridor connects Tanzania, Burundi and the Eastern DRC. The total length of the corridor is 3,773 km (AfDB, 2013). The Central Corridor, however, does not form part of the TAH network.

Another key trade corridor in the East African sub-region is the developing 1,900 km LAPSSET Corridor (IQPC Middle East, 2017). This corridor runs from Lamu Port (north of Mombasa) on the Kenyan coast, through Kenya via Garissa and Isiolo to South Sudan and Ethiopia. By the end of 2017, only 505 km of the LAPSSET Corridor had been upgraded from gravel to surfaced road (Obulutsa, 2017). The corridor is also crossed by the north-south TAH.

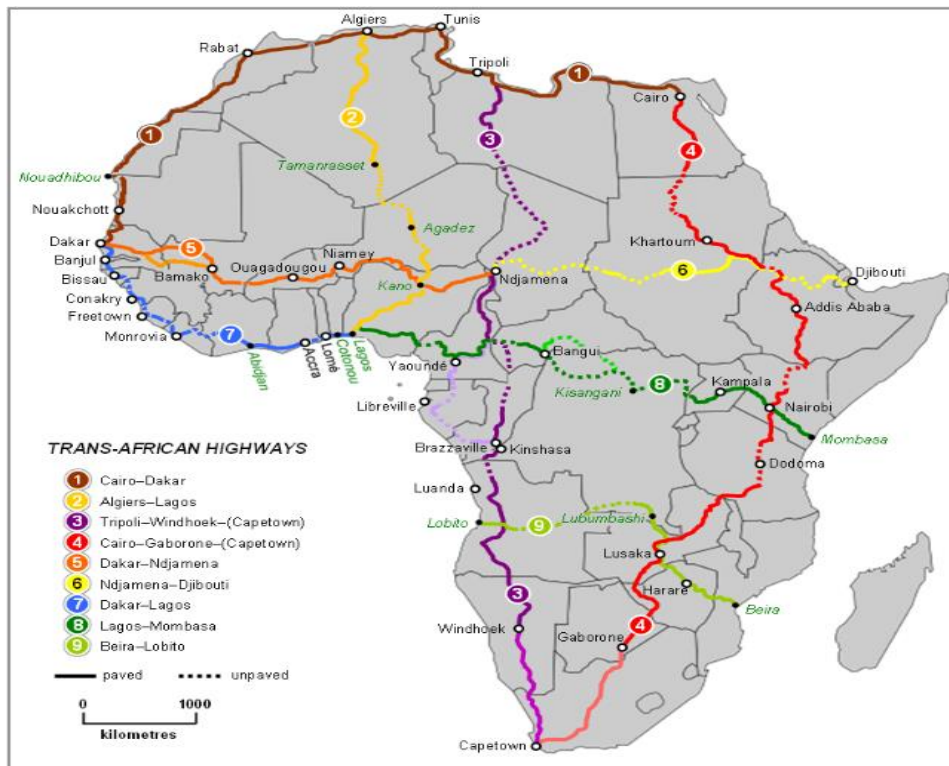


Figure 1: Trans African Highway Network
Source: UNECA, 2010

The EAC road transportation network therefore does not only connect the landlocked EAC member states of Rwanda, Burundi and Uganda to the ports of Dar es Salaam and Mombasa, but also the neighbouring countries of Ethiopia and South Sudan in the north, and Zambia, Malawi and the DRC in the south and the west.

The port of Dar es Salaam in particular is used for the transport of cargo through the southwest of Tanzania to the landlocked countries of Malawi and Zambia via the Southern Corridor, alternatively known as the TANZAM highway (Omondi, 2014: 26).

The ports of Mombasa and Dar es Salaam are further seen as the key entry points from the East. The Chinese OBOR initiative identified the port of Mombasa as its envisioned port of entry that will result in significant pressure on downstream infrastructure to alleviate congestion at the Mombasa terminal (Jinchen, 2017).

The road network of the EAC is therefore not only considered key to the EAC’s integration initiative, but also to Africa’s continental and global integration initiatives. The OBOR initiative is illustrated in

Figure 2 below.

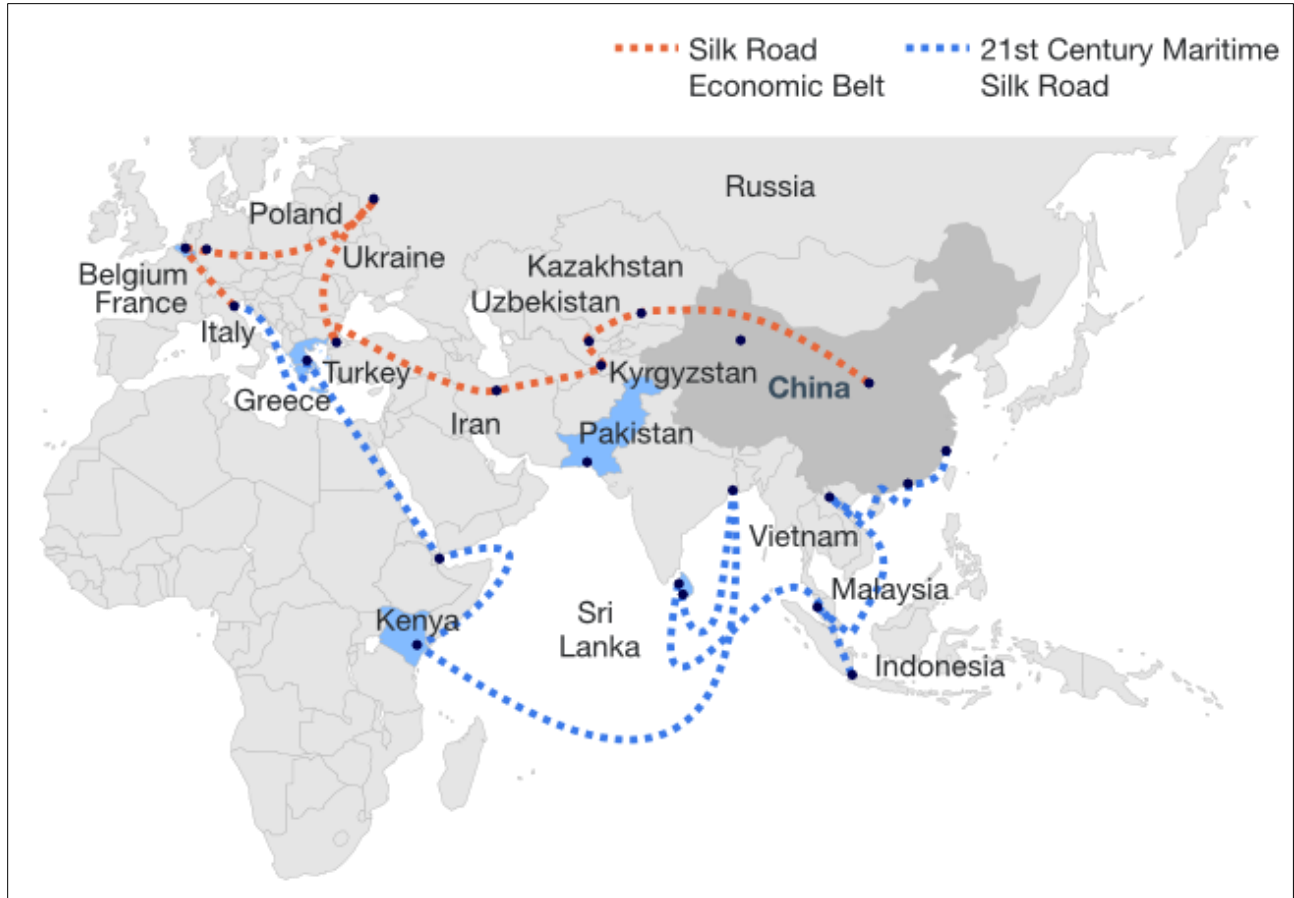


Figure 2: The One Belt One Road Initiative
Source: Jinchun, 2017

Identification of key stakeholders in road infrastructure financing and delivery

The road transportation sector in the EAC remains very active, with road sections and interchanges being constructed in, amongst others, the major cities of Kenya, Tanzania and Uganda (Olingo, 2017a). In this section, each of the two main EAC corridors are described in detail, with major completed and ongoing projects, relative to these corridors, assessed with the aim of identifying key stakeholders.

The Northern Corridor

The Northern Corridor is illustrated in Figure 3. The corridor runs from the Port of Mombasa on the Kenyan coast inwards through Malaba and Busia to Kampala.

This corridor also comprises the section along the Kampala/Kasese railway and the road network from Kampala to Mbarara and Kabale, to reach Rwanda through Kigali, and Butare to proceed to and end at the port of Bujumbura in Burundi (Omondi, 2014: 23).

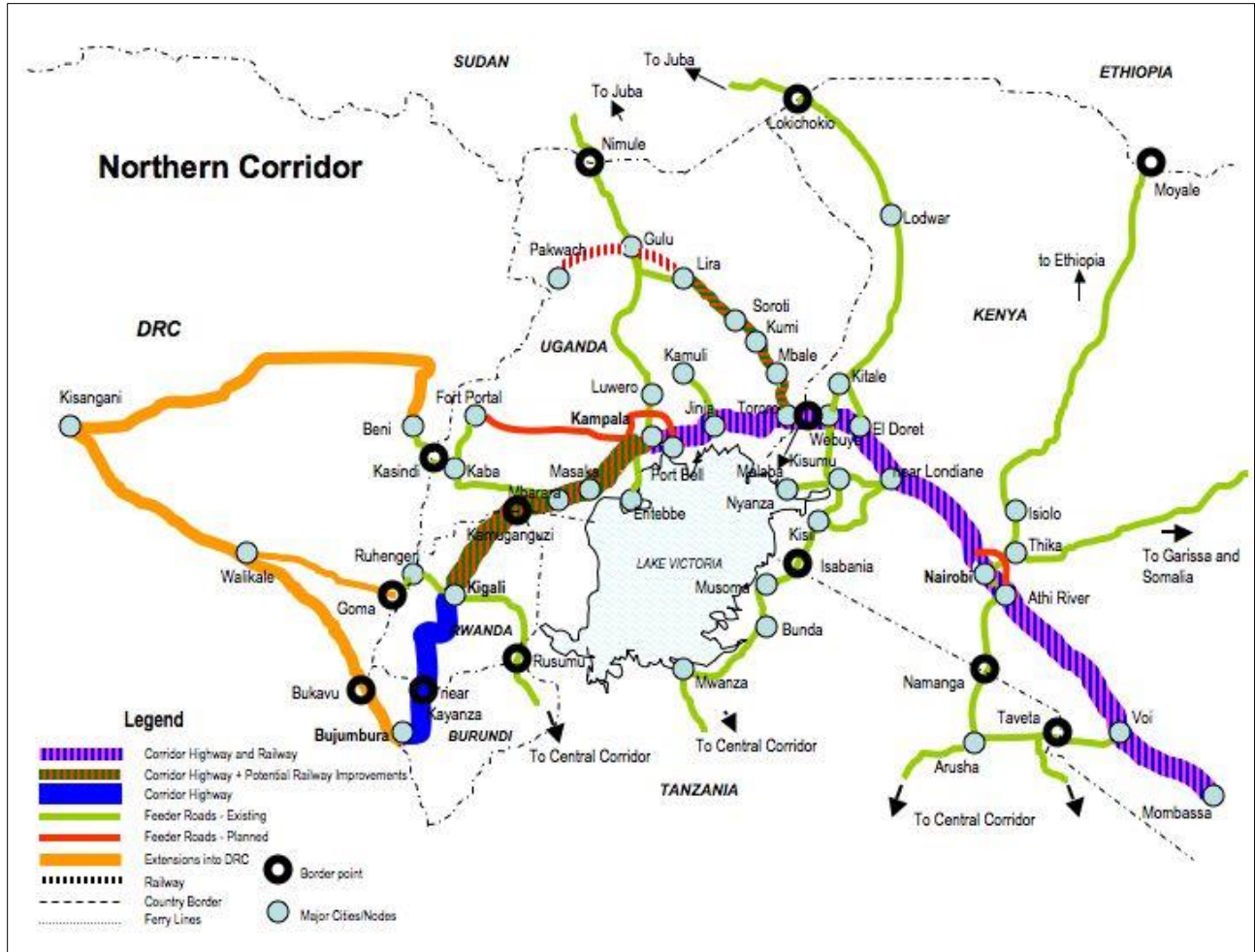


Figure 3: The Northern Corridor

Source: TMEA, 2017a

The corridor is by the far the most significant in the region in terms of freight and traffic volumes (UNECA, 2010). The major part of the corridor is a single lane carriageway, with only 8.5% being dual carriageway (AfDB, 2013). In 2008, Omondi (2014: 23) concluded that the corridor was in a reasonably sound condition. Some years later, in 2013, the AfDB reported that 831 km or 42.9% of the corridor was in a poor condition, despite only 3 km being unpaved (AfDB, 2013). This poor condition of the surfaced roadway condition is a clear indication of preventive maintenance underfunding, giving rise to the rehabilitation backlog in the region.

From a project perspective, the EU, in partnership with the German Development Bank (KfW), the European Investment Bank (EIB) and the AfDB, are funding key projects along and in the vicinity of the Northern Corridor (Olingo, 2017b). These projects include developments pertaining to the LAPSET Corridor as well.

These projects include the US\$151.7 million Mombasa-South Sudan link (along the LAPSET Corridor), and the US\$152.2 million Mombasa-Mariakani link. The EU, through the African Infrastructure Trust Fund (EU-AITF), contributed US\$22 million and the KfW and EIB US\$55.2 million respectively towards the Mombasa-Mariakani link, with the Kenyan Government contributing US\$19.8 million (Olingo, 2017b).

Similarly, the Kitale-Morpus section in Western Kenya, that will eventually link Tanzania and South Sudan in the north with the Northern Corridor through Kenya, will be constructed through a US\$27.5 million EU-AITF grant, and a US\$99.3 million KfW grant. The Kenyan Government will contribute US\$24.8 million.

The EU is also partnering with the AfDB to finance the construction of the road from Isebania further into Tanzania (Olingo, 2017b).

The 50 km Nairobi-Thika superhighway was recently completed as a 6-lane road, complete with service lanes, interchanges and flyovers. It remains a critical link in the EAC road transportation network, as it also forms part of the Cape to Cairo TAH. The US\$360 million project was jointly funded by the AfDB (50%), the Kenyan Government (22%) and the Exim Bank of China (28%) (UNECA, 2010). The now commissioned highway reduces the time taken to traverse Thika town and Nairobi, from three hours to 45 minutes (AfDB, 2013).

Similarly, the second phase of the US\$13 million Ngong road expansion/upgrade outside Nairobi commenced in concurrence with phase 1 in mid-2017. The key stakeholders are the Kenyan Urban Road Authority (KURA), and the Japanese engineering firm, World Kaihatsu Kogyo (WKK). The project will be funded by the Japanese government (IQPC Middle East, 2017). This project is part of the Nairobi roads improvement programme, which is part of Kenya's greater strategy to improve its road network (Olingo, 2017a).

The construction of such key bypass links, interchanges and expressways improve the movement in and around some of the region's most populated cities. Such projects remain an example to all member states on how roads can transform entire landscapes, to grow the local economy through decongesting a city and reduce time spent on congested roads (East African Infrastructure Video Documentary, 2017).

The AfDB agreed to fund the estimated US\$600 million Malindi-Mombasa-Tanga to Bagamoyo highway, a proposed multination highway that will link the East African coastline from Mombasa to Bagamoyo (Tanzania). The project will entail the rehabilitation of the 250 km Malindi-Lunga route, and the upgrading of the 175 km Tanga-Bagamoyo road from gravel to surfaced/bitumen standard (Davis, 2017).

Initiatives to improve road connections at the Mombasa port, to alleviate the concerns on handling growing volumes of freight, have been tabled with the financing set to be provided by a Japanese Official Development Assistance (ODA) loan. The governments of Kenya and South Sudan are consulting with numerous donor institutions to finance the US\$1.08 billion 1,000 km Juba-Eldoret development corridor, linking the north-west Kenyan town of Eldoret with the South Sudan capital of Juba. This is also an integral part of the LAPSET Corridor (PWC, 2017).

Also on the LAPSET Corridor, the key stakeholders in the US\$1.39 billion project, part of the LAPSET Corridor upgrade, include the China Roads and Bridge Company (CRBC), China Construction and Communications Company (CCCC), Sew Infrastructure (India) and Hawk (Yemen). The project is estimated for completion in early 2018 (IQPC Middle East, 2017). Still on the LAPSET Corridor, a consortium comprising a unit of South Africa's Group Five and the Development Bank of Southern Africa (DBSA) entered into a PPP agreement with the Kenya National Highways Authority (KenHA) to design, construct, finance, commission and operate a 530 km section at US\$620 million. Construction on the Lamu-Isiolo via Garissa route is set to commence in mid-2018 (Obulutsa, 2017), with the 1,566 km Isiolo-Moyale-Addis Ababa section almost complete in its entirety (IQPC Middle East, 2017).

The AfDB also approved loans of US\$147.3 million and US\$105.7 million to Kenya and Uganda respectively to construct the 118 km cross-border Kapchorwa to Kitale road sections. These loans will cover 89% and 88% of Kenya and Uganda's respective project costs, with these governments contributing the remaining 11% and 12% respectively. The road will provide all-weather access roads for citizens, farmers and traders, contributing to enhanced food security and socio-economic growth in the regions. The road will facilitate the supply of farm inputs and the transport of produce to major market centres. The project will also support the construction of an OSBP to facilitate trade (Breytenbach, 2017).

In Uganda, the Uganda National Roads Authority (UNRA) and The World Bank's private sector arm, the International Finance Corporation (IFC), are seeking investors to construct the US\$1.1 billion Entebbe expressway, through a Public Private Partnership (PPP) agreement (Uganda Business News, 2017). The IFC, as transactional advisor, is set to produce a comprehensive feasibility study for the project prior to the engagement of the private partners and contractors. The transactional advisor in this instance ensures the bankability of the project, which will make the PPP more attractive to investors. PPP's have been identified

as an appropriate method for undertaking major infrastructure projects, whereby the government would facilitate the process while investors provide the capital requirements.

Therefore, the IFC shall structure the PPP transaction for the design, construction and financing of both the 77 km Kampala-Jinja Expressway and the 18 km Kampala Southern Bypass. The EU, AfDB and the Agence Française de Développement (AFD) were expected to express interest in funding the projects (Uganda Business News, 2017).

The Kampala Southern Bypass will connect to the 51.4 km Entebbe Expressway, which is currently constructed by the CCCC at a cost of US\$476 million, and financing provided by China's Exim Bank (Uganda Business News, 2017).

Construction work on the Kampala Northern Expressway was completed by a Portuguese Company, Mota Engil, after a prolonged ICB process. On the same project, the EU provided a Euro 67 million grant to fund expansion works (Musisi, 2017). The Kampala-Jinja highway, *en route* to the Port of Mombasa, is seen as Uganda's busiest road (Uganda Business News, 2017).

Furthermore, the Northern Corridor until recently did not connect the EAC with either Ethiopia or South Sudan. Hence, as part of the TAH from Cape to Cairo, the AfDB played a critical role in implementing the 2,000 km road corridor linking the capital of Ethiopia, Addis Ababa, with the Northern Corridor and subsequently with the Kenyan capital Nairobi, as well as the Port of Mombasa. This is considered critical since the two largest economies in East Africa, being Kenya and Ethiopia, shared more than a 1,000 km of common border, but never a single all-weather road connecting the two countries. The AfDB subsequently played a pivotal role in facilitating the signing of the joint Ethiopia-Kenya corridor development commission in April 2014, with the OSBP to be constructed at the town of Moyale (AfDB, 2016).

In Ethiopia, the Melka Jebdu to Dire Dawa road is one of the most expensive road sections ever undertaken in the country. Key stakeholders of the US\$20.5 million project (only 7.4 km in length) include the Ethiopian Roads Authority, Driba Defersha, Powercon, Melcom and Yemen Girmay General Contractor (IQPC Middle East, 2017).

The cost of the 60.2 km road from Shambo to Bako is estimated at US\$44 million. The project commenced in mid-2016, with the Ethiopian Roads Authority, the CGCOC Group from China (formerly known as CGC Overseas Construction), the Arab Bank and the Organisation of Oil Exporting Countries (OPEC) being among the stakeholders (IQPC Middle East, 2017).

In recent years, the Ethiopian road network has seen an increase from 54,000 km to 113,000 km. The ERA, however, envisages doubling its road network to an ambitious 222,000 km over the next three years (IQPC Middle East, 2017).

The Central Corridor

The Central Corridor is illustrated in Figure 4 and connects Tanzania, Burundi and the Eastern DRC (Popova, 2017). The corridor runs from Tanzania's port of Dar es Salaam, through the capital Dodoma, Singida, Nzega to Lushaunga via Kigale and into Burundi, also ending at the port of Bujumbura (Omondi, 2014: 23).

The corridor is a single lane carriageway, with 19.8% being dual carriageway. In 2013, the AfDB reported that only 9 km or 0.2% of the corridor was in a poor condition. The section through Tanzania remains in a relatively sound condition, with the sections through Burundi and Rwanda, however, requiring either upgrading or rehabilitation to surfaced standard (AfDB, 2013). In addition, Omondi (2014: 27) reported the rehabilitation and paving of approximately 1,000 km of roads prior to the 2013 AfDB assessment.

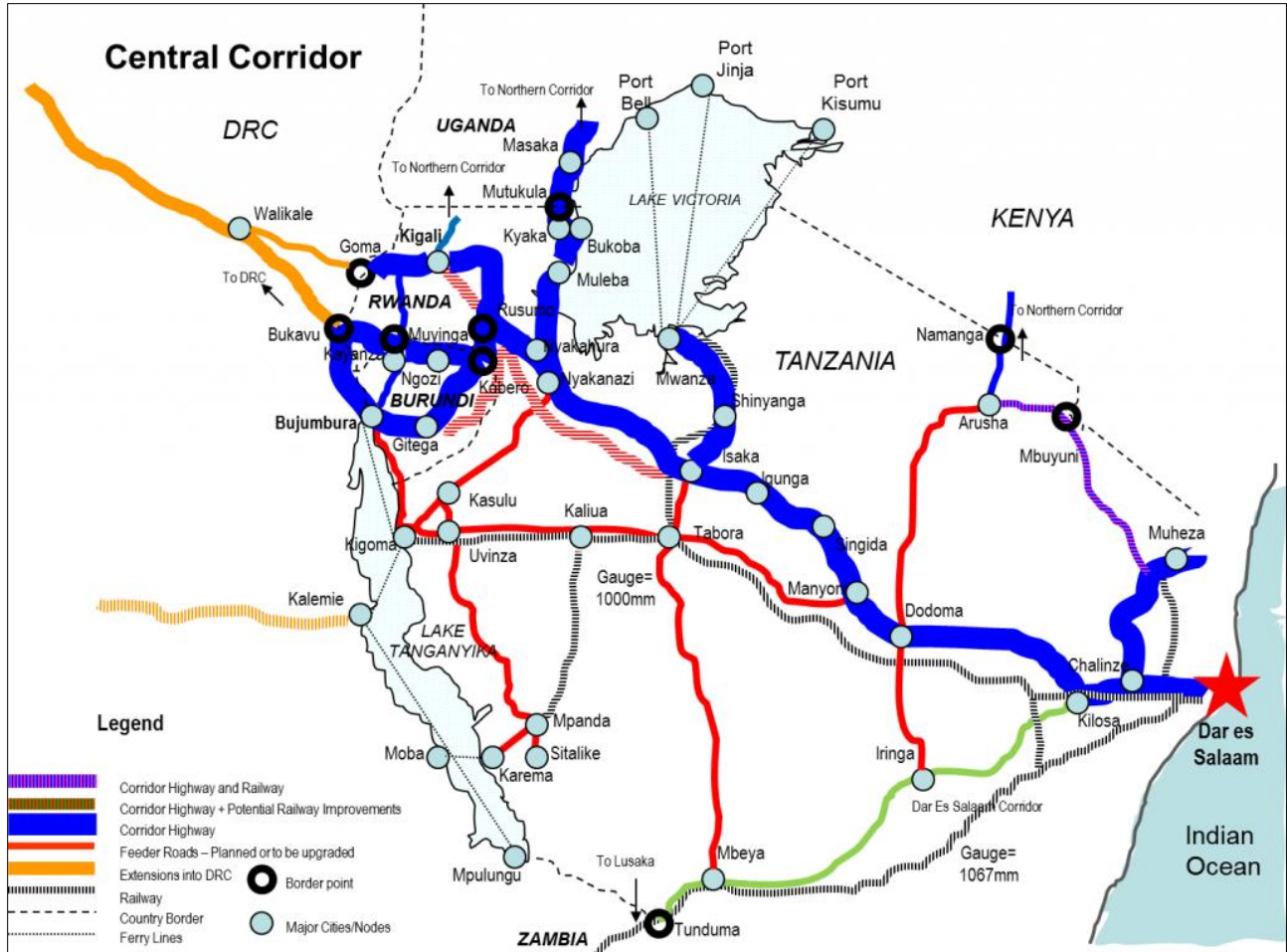


Figure 4: The Central Corridor
Source: CCTFA, 2017

From a project perspective, the Kuwait government, through the Kuwait Fund for Arabic Economic Development (KFAED), released a loan of US\$49 million to finance the 85 km section Nyahua-Chanya road project connecting Burundi and the DRC. The loan agreement consists of three parts, i.e. civil works, consultancy services and technical assistance (Mwema, 2017).

The US\$151 million Busega to Mpigi Expressway project in Uganda commenced in early 2018. Key project stakeholders include the AfDB as development partner and the CCCC. The US\$128 million, 63 km section between Uganda and Rwanda commenced in early 2016. One of the key project stakeholders is the NPD COTRACO Company, which is a local Rwandan Engineering Company (IQPC Middle East, 2017).

In Kigale, the CRBC and HYCOGEC Consultants Ltd, which is also a local Rwandan consultancy firm, are the main project stakeholders in the US\$76 million Kigale roads expansion project (IQPC Middle East, 2017).

The Dodoma-Babati section was completed at a cost of US\$225 million. Key project stakeholders included the Tanzania National Roads Authority (TANROADS) and the Japanese multinational banking and financial services company, Sumitomo Mitsui. This section is considered vital as it is located on the Dodoma-Arusha section, which connects the Southern and Northern Corridors, and forms part of the north-south TAH Cape-to-Cairo Route (IQPC Middle East, 2017).

Prior to its upgrade from gravel to surfaced, the paved TANZAM highway, via Iringa though Dar es Salaam, offered an alternative to the Cape-to-Cairo TAH (UNECA, 2010). The TANZAM highway, also illustrated in Figure 4, is an important trade route between the port of Dar es Salaam and the landlocked Zambia. It

passes through Morogoro, Iranga Mbeya and Tunduma, to link with the Great East road on the Tanzanian and Zambian border, and links Lusaka with the Dar es Salaam port (UNECA, 2010). The highway is also referred to as the Southern Corridor.

The Lake Tanganyika Integrated Transport and Environment Programme aims to improve efficiency along the corridor. Some of the key roads projects that form part of this project, include the Bujumbura-Rumonge-Nyanza Lac road in Burundi, with the other being a road section in the DRC. The World Bank, AfDB, EU, Japanese International Cooperation Agency (JICA), the Kuwait Fund and the Belgium Cooperation are among the financiers, with funds set to develop the above road section and a variety of ports, railways and OSBPs (Mtambalike, 2017).

In Tanzania, the construction of the first phase (49 km) of the Arusha-Musoma highway in the north of Tanzania commenced in December 2017, with the Chinese Contractor, China Wu Yi Company Limited, set to complete the road in 24 months. The project is valued at US\$38 million, with the owner being TANROADS (Omar, 2017).

Similar to Nairobi, Dar es Salaam is also enjoying the benefits of a decongested city after the completion and commissioning of the Dar es Salaam Rapid Transit (DART) System (East African Infrastructure Video Documentary, 2017). This project was also funded by The World Bank's International Development Association (IDA). The second phase of the DART project, as well as the construction of the first flyover and intersection at Ubongo in Dar es Salaam, is set to commence in the near future. These projects are set to be funded through the strategic partnership between The World Bank Group and Tanzanian Government (Tanzania Daily News, 2017c). The Ubongo road intersection is described as not only the busiest road intersection in Dar es Salaam, but in the whole of Tanzania, and the main gateway to Tanzania's commercial capital, which houses the port of Dar es Salaam. The project cost is estimated at US\$88 million, with funding to be provided by The World Bank's IDA (Tanzania Daily News, 2017c).

Another key flyover in Tanzania includes the TAZARA flyover, estimated at US\$45 million. Key project stakeholders include JICA, Oriental Consultants Global and Mitsu Construction Company Limited (both Japanese). This flyover will be crucial to improving the smooth flow of traffic through the centre of Dar es Salaam (IQPC Middle East, 2017).

As the East African region develops more robust economies and larger urban populations, the subsequent development of road networks with better regional coverage and safer modes of transportation is becoming more important. Regional governments are therefore continuously seeking the most appropriate sources of international and domestic funding, as well as contractors capable of delivering outstanding results, whilst utilising international best practice and advanced infrastructure development solutions (IQPC Middle East, 2017).

“Soft” road infrastructure

To ultimately realize the goal of African integration, there is a pressing need to ensure the smooth management of borders, allowing for the swift movement of goods, persons, workers and services across borders. Moving towards this, the AU, through its Border Program (AUBP), has urged its member states to embrace the smoothed management of border crossing points through the installation and commissioning of the OSBP concept (EAC Secretariat, 2017b).

In addition, the Infrastructure Consortium for Africa (ICA) works on overcoming challenges in developing Africa's infrastructure, with a key focus on developing “soft infrastructure” such as financial, regulatory and governance systems, frameworks, personnel and institutions to manage the transport systems to their full capacity (ICA, 2017). A guidebook was published that serves as a trade facilitation tool, and is expected to assist governments to improve the cross-border and intra-regional trade in Africa (TMEA, 2017b).

The OSBPs mentioned above will (i) reduce transit times at border posts, (ii) facilitate easier access to international markets through connectivity with major sea ports, (iii) contribute to maximising the operational efficiency of the trade corridor, and (iv) promote social and economic integration in the region.

There are currently 77 borders in Africa that have been earmarked for OSBP construction, with 15 of them being located in the EAC (EAC Secretariat, 2017b). Currently, a juxtaposed configuration is preferred in the

region, with one building on each side of the border, one for entering and one for exiting vehicles (ICA, 2017).

Further improvements such as weighbridges are key control measures to ensure the longevity of road infrastructure by preventing overloading, but ultimately ensuring adherence to load parameters for safe and sustainable road freight transport. Modern technology is also embraced in selected SADC states to prevent unnecessary delays in transit times (East African Infrastructure Video Documentary, 2017). Regularised truck loads would therefore prevent excessive and early pavement deterioration and premature failures of the road network, and subsequently reduce the tempo at which preventive maintenance is required, which inherently gives rise to the rehabilitation backlog in the region (World Bank, 2010).

The planned implementation of OSBPs and harmonized maximum vehicle loads are aimed at improving logistics performance and eliminating trade barriers on the sub-region's network (AfDB, 2013). This followed the introduction of the OSBP and Vehicle Load Control Bills into the East African Legislative Assembly (EALA), one of the seven main organs of the EAC (EAC, 2017b).

Railway infrastructure

Efficient railway systems have the potential to effectively enhance connectivity and linkages between the EAC's maritime ports and its landlocked countries of Uganda, Rwanda and Burundi. Rail therefore has the potential to compete with road along the major trade routes and corridors in East Africa (East African Infrastructure Video Documentary, 2017).

The railway systems in the region are currently, however, old and inefficient, dating back to colonial times, as they were primarily used to export unprocessed minerals. Continuous improvement and maintenance to the current system has been prioritised in the region to develop an alternative means to road transportation. Evidently, four of the top ten construction projects (by value) in the East African sub-region are rail related (Deloitte, 2017). The future of freight transport in the region has been identified to lie in a Standard Gauge Railway (SGR) system (East African Infrastructure Video Documentary, 2017).

In Tanzania, the construction contract for the first 202 km section of the 2,190 km SGR, from Dar es Salaam to Rwanda via Burundi, was awarded to the Turkish-Portuguese consortium of Yapi Merkezi and Mota-Engil. The works will be funded by the government of Tanzania, who also allocated US\$455 million to the project from its 2017-2018 budget (Popova, 2107). However, Tanzania recently announced that it would use a combination of its US\$700 million Eurobond and concessional loans to fund the construction of its SGR network (Olingo, 2017b).

On the Kenyan side, the US\$3.8 billion, 472 km SGR line from Mombasa to Nairobi was constructed by and commissioned in June 2017 by the CRBC. This section of SGR forms part of the broader 3,500 km railway programme. The second phase of the SGR, the 120 km section from Nairobi to Naivasha, is currently estimated at US\$1.5 billion, with project funding to be provided by the Chinese Government. In addition, Kenya signed construction agreements with the China Civil Engineering Construction Corporation (CCECC) to construct Phases 2B and 2C, from Naivasha to Kisumu and Kisumu to Malaba respectively, with the latter section ending at Malaba on the Ugandan border (Muchira, 2017b).

On the Ugandan side, the SGR section is also set to be financed by the Chinese, with financing subject to new loan conditions set by China's Exim Bank. These conditions relate mainly to Kenya's initiatives on the preceding two sections (2A and 2B), as well as pre-project compensation of "Project Affected People" (PAP), which is estimated at US\$87.7 million (Asiimwe, 2017).

SGR will undoubtedly revolutionise freight and passenger transport in the East Africa sub-region, as well as form a land-bridge across the EAC member states and neighbouring countries (East African Infrastructure Video Documentary, 2017). The implementation of such railway projects is expected to relieve the already under pressure regional road transportation network from long-distance freight hauling, and at the same time lift the economies of the member states.

Outside the EAC, Ethiopia is becoming one of the fastest growing economies in Africa and subsequently sparks renewed investor interest (U.S. Chamber of Commerce, 2016). In 2008, the country released plans to build its own 5,000 km SGR section, set for completion in 2025, which will connect the larger Horn of

Africa through the countries of Sudan, South Sudan, Kenya and Djibouti, as part of the LAPSSET Corridor. This initiative became the signature element of Ethiopia's five-year growth and transformation plan, launched in 2010 (U.S. Chamber of Commerce, 2016).

The Ethiopian Railways Corporation (ERC) has since signed construction agreements with the China Railway Group Limited and the CCCC, as well as the same Turkish (Yapi Merkezi) Construction group that was awarded the construction contract for the 202 km SGR section in Tanzania. In addition, the construction agreements include Indian and Brazilian entities (U.S. Chamber of Commerce, 2016).

Ports infrastructure

Ports remain critical nodes in the overall transport system and play an important role in facilitating intra-regional trade. The EAC partner states facilitate 90% of their international trade through the ports of Mombasa and Dar es Salaam (East African Infrastructure Video Documentary, 2017).

Port infrastructure and superstructure are therefore in need of urgent modernising to better respond to regional trade demands (Koigi, 2017). According to Omondi (2014: 27), the port of Mombasa in 2011 operated at 140% capacity, with much needed capacity improvements implemented through projects financed by China's Exim Bank. Furthermore, the second phase of the modern container terminal at the Mombasa port is set to start in January 2018. This comes after the Kenyan Ports Authority (KPA) secured a US\$333.7 million loan from JICA (Muchira, 2017a).

In addition to port upgrades, the development of new ports in Kenya (Lamu Port) and Tanzania (Mtwara Port) are necessitated by the growing economies in the region. The addition of these international ports will expand the capacity of the region in maritime transport, and offer extended maritime services to neighbouring states, amongst others South Sudan, the DRC, Zambia and Ethiopia (Luhwaga, 2017).

The recently revived Bagamoyo port will be the largest port in East Africa at US\$11 billion. The construction of the special economic zone was scheduled to kick off in January 2018, and the completion of the works is scheduled for 2022. The completed works will include a new port, supporting rail and road networks and an industrial park with the aim of establishing a special economic zone. Key stakeholders to the project include the three-way partnership members, Oman, China and Tanzania. The project is financially supported by China Merchants Holdings International (CMHI), which is a Chinese state-owned company and China's largest public port operator (Malanga, 2017).

Furthermore, strategically located inland or dry ports will further ease the clearance and shipment of cargo to neighbouring countries. Key dry ports identified for upgrading include the Mwanza, Ruvu-Vigwaza and Arusha dry ports in Tanzania, the Taveta dry port in Kenya and Port Bell in Uganda (Luhwaga, 2017). In addition, on Lake Tanganyika, the Port of Bujumbura in Burundi is earmarked for expansion, and the Kigoma Port in Tanzania will be key to linking the EAC to Uvira Port in the DRC and the Mpulungu Port in Zambia (East African Infrastructure Video Documentary, 2017).

The government of Tanzania also secured full financial support, amounting to US\$400 million, to implement various projects aimed at the modernisation and expansion of the Port of Dar es Salaam (Mbashiru, 2017). In addition, the Tanzanian government signed a US\$154 million contract with the state-run China Harbour Engineering Company (CHEC), a subsidiary of the CCECC, to expand the port of Dar es Salaam. This project is funded by The World Bank (Ng'wanakilala, 2017) and implemented under the Dar es Salaam Gateway Maritime Project (Tanzania Daily News, 2017a).

The recent expansion of and improvements to the port of Dar es Salaam enabled the Tanzania Ports Authority to persuade the Zambian business community to make use of the Dar es Salaam Port as opposed to the port of Mombasa. The Dar port naturally remains the easiest gateway to Zambia's major cities and towns of Lusaka, Kitwe, and Ndola, as well as the DRC's Lubumbashi, when making use of the Southern Corridor or TANZAM highway (Tanzania Daily News, 2017b).

KEY DRIVERS OF EAC ROAD TRANSPORT INFRASTRUCTURE

This report has emphasised the importance of an accessible and sustainable road transportation network in both Africa in general and the EAC specifically. The preceding subsections to this section included key

findings pertaining to the industry macro-environment, as well as the key trends, challenges and stakeholders at project level in the industry. This section concludes the findings with a summary of the key drivers of the EAC road transportation infrastructure.

Macroeconomic and political stability

With the need for key infrastructure in Africa clearly identified, The World Bank estimates that the African continent requires roughly US\$90 billion per annum over the next ten years to address its acute road infrastructure deficit, both in terms of rehabilitation and/or upgrading, and preventive maintenance of roads (UNECA, 2010). Such a requirement, however, suggests that African countries, including the six EAC member states, will continue to remain heavily, if not solely, dependent on international and African DFIs' concessional loans and grants in funding such infrastructure delivery.

In light hereof, The World Bank indicated that any one African country's macroeconomic and political stability will influence, amongst others, its attractiveness to such developmental partner assistance. Moreover, where macroeconomic and political stability is consistently exhibited, concessional loan agreements can be granted at lower market rates (Tirabassi, 2017).

Furthermore, according to Du Plessis (2016), public and private sector Chinese investors are increasingly likely to invest only in countries with stable political and regulatory environments, and in projects that have undergone comprehensive economic and environmental feasibility studies, and without complications pertaining to PAP, land uses or ownership issues.

Stable political and regulatory environments are therefore more attractive to public and private sector investment. For example, soon after the inauguration of the Tanzanian president in November 2015, the country has begun implementing austerity measures in an effort to reduce the widening budget deficit by rationalising ambitious capital projects and cutting state spending (Deloitte, 2016). As a result, The World Bank president identified Tanzania as one such stable country, that is not only eligible to concessional resources, but also to borrow additional resources on non-concessional terms. This was further attributed to its strong macroeconomic management policy that supports the overall growth opportunities in the country. According to The World Bank President, The World Bank will now lend Tanzania an estimated US\$2.4 billion over the next three years to finance its infrastructure projects. This loan has increased by half a billion dollars over the past three years. The additional funding resources will come from The World Bank's IDA (Tirabassi, 2017).

In contrast, recent turmoil and violence during the presidential election and re-election in Kenya, for example, created uncertainty and discomfort among investors. Nonetheless, following the recent Kenyan election, the re-elected President sworn in on 28 November 2017 campaigned on what he presented as his record of aggressive economic development drive, citing amongst others, the construction and development of new roads (Obulutsa, 2017).

Regional economic growth

Africa's growth and development are closely linked to infrastructure development on the continent, and in most instances, the lack thereof. The subsequent conclusion that there is a direct correlation between infrastructure, building or accessing markets, workforce productivity and general economic growth and social development, remains valid (Labson, 2017).

Economic growth in Africa, however, fell from a significant 3.7% in 2015 to a mere 1.7% in 2016, this amid weak global economic conditions, declining commodity prices and adverse weather conditions in the form of drought (UNECA, 2017). The World Bank (2017b) nonetheless maintains a positive outlook for the continent, which is set to achieve an increased 2.4% growth in GDP.

Economic growth in the East Africa sub-region has been, as it was for the previous three years, the highest among the African sub-regions (UNECA, 2017). Growth, however, decelerated slightly to 5.5%, with the sub-region's growth driven by mainly Kenya, Tanzania, Rwanda and Ethiopia (UNECA, 2017). Kenya remains the largest economy in the EAC, but the second fastest growing economy, at 6.2% to Tanzania, growing at 7.00%. In terms of GDP, Tanzania is the second largest economy in the EAC (PWC, 2017).

In Kenya, the sustained investment in infrastructure and the resilient household consumption continued to drive the expansion, offsetting the decline in tourism on security concerns (UNECA, 2017), as well as the immediate impact of the 2017 post-presidential election turmoil. These unprecedented political events surrounding the election re-run certainly affected business, as did similar turmoil following the 2007 elections (Aglionby, 2017). Omondi (2014: 39) indicates that vandalism and road carnage along the Northern Corridor resulted in traders in the region being adversely impacted during this time as they lost their cargo whilst in transit.

Despite the country having made significant progress in infrastructure development, its road transportation infrastructure remains inadequate to effectively meet Kenya's needs. Bridging this infrastructure gap to the level of the regions' middle-income countries require significant improvements to roads, railway and ports. In years to come, this country is set to become an important regional hub for transport, railways, ports and airports (PWC, 2017), which is affirmed when taking the OBOR initiative into account.

The main economic drivers in Tanzania include the growing services and manufacturing sectors. In Rwanda, agriculture and services continued to drive growth. However, lower commodity (coffee and tea) prices and poor infrastructure hurt the landlocked countries' growth in 2016 (UNECA, 2017). In addition, Tanzania has significant mineral wealth and improving its trade infrastructure remains critical for not only its own success, but for that of the sub-region as well.

In summary, East Africa's growth is set to continue, leading the sub-regions at 6.0% for 2017 and 6.3% for 2018. This is backed by robust performance in Kenya, Rwanda and Tanzania, as these countries benefit from low oil prices and expanding public investment (AfDB, 2016).

In addition, the West African sub-region's growth fell sharply from 4.4% as one of the fastest growing sub-regions in 2015, to 0.1% in 2016, resulting in this region becoming one of the slowest growing sub-regions in Africa. The slow-down was attributed to the economic contraction in Nigeria, resulting from depressed oil prices, reduced oil production and scarcity of foreign exchange, amongst others (UNECA, 2017). The economic outlook for the East African sub-region, which includes both the EAC and the rising nation of Ethiopia, therefore seems superior to that of West Africa, with the region set to attract more international investment, more so when considering the OBOR initiative. The shifting of economic power from West to East Africa therefore remains a driver of key trade, facilitating infrastructure in the sub-region.

Regional and continental trade

The CFTA remains the AU's ultimate vision for Africa (AU Commission 2015; AU, 2017). The CFTA is, however, not only seen as a trade liberalisation initiative, but also a tool for structurally transforming African economies and urban cities, while boosting value addition and driving industrial competitiveness.

In 2010, the EAC continued to face the prevailing unfavourable terms of trade — it imported twice the amount of exports, or in financial terms, consumed twice as much as it produced in trade values. This can be interpreted that the region mainly exported unprocessed mineral products, while importing mainly finished consumer and capital goods type products (UNECA, 2010). Nonetheless, trade between African nations still represents only 12% of the continent's total trade, which is below levels recorded in North America (40%), Asia (50%) and Western Europe (70%) — it is often cited as an impediment to Africa's economic development (Labson, 2017). The AfDB further reports that Africa's share of global manufacturing exports remains less than 1% and that this can largely be attributed to sectors like agriculture and unprocessed commodities that are exported in bulk, but are of little value (AfDB, 2016). Despite overall intra-Africa trade remaining low, intra- and interregional trade in Africa has been identified as a point of leverage amongst the region's growing economies' resurgence against global shocks, through supporting economies of scale and encouraging regional diversification.

On a global scale, East African countries are some of the most promising trading partners of the USA and the region is already the leading exporter of agricultural commodities like tea, coffee and horticultural products. Kenya, the largest and more diverse of the East African economies, remains the USA's largest trading partner, and has become a hub for US companies in the region (U.S. Chamber of Commerce, 2016).

In the East, China remains Africa's biggest trading partner as bilateral economic relations boomed in recent decades. Investment by Chinese firms in, amongst others, infrastructure, continues to bring about benefits

and development for both Africa and China (FOCAC, 2017). China remains Tanzania's biggest trade partner and by the end of 2013, had invested more than US\$2.5 billion in the country. Nearly 500 Chinese companies are doing business in the country, which makes China the second largest investor in Tanzania after the UK (Nsanzugwanko, 2017a).

Standard Gauge Railway (SGR) and ports infrastructure

Freighter fleets are expected to double over the next decade and the EAC boasts two of Africa's busiest ports in Mombasa (Kenya) and Dar es Salaam (Tanzania). Koigi (2017) estimates that global trade is set to continue to grow at an unprecedented rate. Therefore, with recent and planned ports expansion and upgrade projects, on both maritime and in-land or dry-ports, the increased trade flows will be accommodated, but road and rail is required to decongest the ports. Therefore, four of the top ten projects, measured by value, in East Africa are SGR projects (Deloitte, 2017). This does not include the recently completed and commissioned Mombasa-Nairobi SGR (Deloitte, 2016). The completion of the Ethiopian SGR will further improve freight times and decongest the region's road networks (U.S. Chamber of Commerce, 2016).

The commitment to shift freight from road to rail in an attempt to alleviate long-haul freight traffic on roads will, however, not materialise overnight. Furthermore, the argument exists that road freight possesses greater flexibility and adaptability that is better suited to rail in meeting customer demand (Van der Mescht, 2006: 485) and will therefore remain key to unlocking the economic potential in the region. The SGR versus road transportation phenomenon will further influence the magnitude of the demand for road infrastructure in the region.

The discovery of natural resources

The East Africa sub-region is endowed with great natural resources, with significant growth opportunities (East African Infrastructure Video Documentary, 2017). According to Burkhardt (2017), Tullow Oil Plc discovered what may be 1.7 billion barrels of recoverable reserves in the landlocked Uganda's Lake Albert region in 2006. In 2012, Tullow Oil Plc made another finding in Kenya's South Lokichar basin of approximately 750 million barrels. It is further estimated that together, Kenya and Uganda can produce 400,000 barrels per day once production begins.

Furthermore, recent gas finds in Tanzania and oil discoveries in Kenya and Uganda have subsequently turned East Africa into an exploration hotspot for oil firms, but transport infrastructure in these countries has suffered from decades of under-investment (Ng'wanakilala, 2017).

Kenya and Tanzania also have significant off-shore gas reserves and are considered as emerging players in the renewable energy and power generation sector (U.S. Chamber of Commerce, 2016). Tanzania therefore announced its intentions as it wants to profit from its long coastline, but first needs to upgrade its railways and roads to better serve the growing economies in the landlocked heart of Africa (East African Infrastructure Video Documentary, 2017).

Establishing food security

Agriculture remains Africa's second largest contributor to GDP at 15%, with the EAC's Kenya, Rwanda and Tanzania producing significant agricultural exports (AfDB, 2016; PWC, 2017). Across the continent, however, agricultural production includes mainly subsistence farming as more than 70% of Africans depend on agriculture for their livelihoods (AfDB, 2016). In Tanzania for example, only 5% of the country's 20% arable land is utilised for farming (PWC, 2017).

Furthermore, Africa's full agriculture potential remains unexploited, mainly due to low productivity emanating from the limited use of modern agri-inputs and mechanisation, limited access to credit and markets and a lack of gender inclusivity (AfDB, 2016). Attaining the "Feeding Africa" aim as one of the AfDB's "High 5" priorities requires unlocking the region's agriculture potential by reducing trade costs (Buys *et al.*, 2010: 400) through upgrading poor infrastructure, and ensuring a reliable and effective road transportation network and associated services.

Regional urbanisation

According to The World Bank (2017a), investment in key infrastructure will become even more important as people continue to flock from rural areas to cities in search of employment, education and services. Africa, with the fastest growing population and a rapidly rising middleclass, has already become home to large cities with more than 2 million inhabitants. Nairobi and Dar es Salaam, as well as Addis Ababa, remain among some of the fastest growing, yet most fragmented and disconnected cities when compared to other developing countries' large cities like India's Pune.

Furthermore, Africa is the world's second fastest-urbanising continent, after Asia. Rapid and uncontrolled urbanisation and population growth gives rise to several challenges, with governments unable to provide infrastructure fast enough being one of them (Deloitte, 2016)

Such urbanisation will require significant investment in key infrastructure such as roads, energy generating and distribution networks, water and sanitation and ICT infrastructure. Governments have therefore already envisioned investing in transport corridors, both within single countries as well as across borders to connect urban centres (Deloitte, 2016), anticipating the need for such infrastructure in light of the rapidly growing population.

Chinese economic growth

Chinese involvement and economic growth remains arguably the biggest driver of trade facilitating infrastructure in the EAC. Furthermore, Africa's growth has shown a positive correlation coefficient of 0.3 with that of China, confirming a direct correlation between Chinese and African growth. However, the recent slowdown or decelerating growth in the Chinese economy, and weak growth in many emerging economies contributed to the slowdown in global growth, with subsequent and noticeable knock-on effects in Africa's growth, particularly among resource rich states (UNECA, 2017).

This effect can be seen mainly in the trade and finance channels as Chinese loans to African countries surged from US\$0.13 billion in 2000 to US\$17 billion in 2013, before receding (albeit slightly) to US\$13.6 billion in 2014 (UNECA, 2017). Nonetheless, national governments' contributions to project financing in East Africa increased over the past 12 months (Deloitte, 2017). Subsequently, the ability of governments to invest in infrastructure delivery in their own countries are affected by, amongst others, their own growth. However, despite China's economic growth going down from double digits to a single digit, the aid China extends to Africa has doubled (Nsanzugwanko, 2017b).

Since the beginning of 2015, China's pledges to Africa through FOCAC have increased significantly, despite its economic slowdown — China made pledges towards African infrastructure and development projects worth US\$55 billion, of which US\$35 billion remain reserved for preferential loans, US\$5 billion for the China Africa Development Fund (CADF), which is a private equity and venture capital initiative by the China Development Bank (CDB), and lastly, US\$5 billion for the development of medium and small African enterprises (UNECA, 2017). The latter pledges their support to upskilling and developing Africa; the impact, however, remains at a lower level.

The Northern Corridor Integration Project (NCIP)

In an attempt to engage stakeholders, in addition to the Chinese, in infrastructure delivery and financing in East Africa, and to ensure participation by new firms, the Kenyan Private Sector Alliance (KEPSA) called for expressions of interest from the local private sector to participate in the Northern Corridor Integration Project (NCIP) (U.S Chamber of Commerce, 2016).

The NCIP is a regional initiative that was created in June 2013 by the presidents of Kenya, Uganda and Rwanda. It aims at developing key infrastructure projects along the EAC's Northern Corridor, which accounts for approximately 70% of the region's traffic flows. NCIP membership is growing, with South Sudan and DRC also joining the organisation in 2015, and Ethiopia announcing its intention to join. These nations, through the NCIP, aim at creating sustainable financing models to facilitate greater private sector participation in the infrastructure sector (U.S. Chamber of Commerce, 2016).

The NCIP, for example, is coordinating the construction of the SGR from Mombasa to Uganda, Rwanda, Burundi, and South Sudan. The project saw the successful completion and commissioning of the first SGR section from Nairobi to Mombasa in mid-2017. According to the U.S Chamber of Commerce (2016), the SGR will be one of Africa's longest railways, relieving the road transportation network of large volumes of freight traffic, while also reducing transit time and costs. A project of such magnitude will require private sector participation, especially when considering the estimated cost of US\$14.8 billion, which excludes land expropriation and compensation costs, as well as electrification costs.

CONCLUSION

The first theme identified is the importance of an accessible and efficient road transportation network in Africa and the EAC as it remains critical to the competitiveness of African cities and regions. Such infrastructure is repeatedly emphasized as an enabler and promoter of the movement of people, goods and services across national borders. A road transportation network is therefore repeatedly labelled as an enabler and promoter of intra- and interregional trade, that in turn connects regional and international markets, while driving integration and economic growth.

In addition, poor transport infrastructure and barriers to trade has an adverse impact on the overall cost of trade and efficiency and effectiveness of trade. This has led to the identification of the second theme, which is: improving such infrastructure will remain key to the development of Africa.

The AU's ambitious TFTA and CFTA initiatives are aimed at integrating Africa. The establishment of the NPCA as its technical body in 2010 confirms its intent to drive integration through its envisaged delivery of trade facilitating infrastructure that will eventually criss-cross the continent.

Furthermore, the NPCA remain mandated to coordinate the implementation of regional priority programmes and projects, and to mobilise resources and partners, among them the AU partner bank, the AfDB. The bank plays a leading role in the NEPAD initiative and in delivering the AU vision. The AfDB in turn identified its own "High 5" priorities, one of which includes integrating Africa, as part of its ten-year strategy. The AfDB's primary aim remains investing in and attracting investment for the delivery of key infrastructure, in particular ports, roads and rail. The EAC in turn remains committed to supporting the integration process within the EAC, which includes key infrastructure delivery.

Through the EAC's RSDP, and the formation of Roads Boards and Agencies, the EAC member states' ability to facilitate and deliver key projects have seemingly improved. These East African governments developed the ability to drive project delivery through national and regional development plans, which is confirmed by the subsequent and significant increase in the number of projects from 2016 to 2017.

There is also the Chinese involvement in Africa's infrastructure sector. This is repeatedly noticed and it can be concluded that such involvement is also increasing. The finding is supported by a reported increase in investment and financing activities, as well as construction activities. The Chinese dominance is increasing as they now fund more than 25% of all infrastructure projects, while also constructing more than half. Also, the ability of national governments to fund projects have improved, albeit slightly and only proportional to the project value, further suggesting renewed access to capital or concession loans.

Private domestic stakeholders' ability to finance infrastructure has declined slightly, while remaining insignificantly low. Also, the percentage of international DFI-funded projects, when compared to African DFI-funded projects, increased to the extent where international DFI-funded projects now exceed African DFI-funded projects.

These themes also support the assumption that Africa's infrastructure needs might increasingly be answered from outside Africa, in particular by China. China's dominance in the sector is repeatedly affirmed by their modus operandi of using multilateral forums such as FOCAC, as well as their MoU with the AU, and the infrastructure financing options offered by the NDB, the AfDB, and PBOC's AGTF. China also remains the largest single source financier of infrastructure delivery in Africa, and their involvement is set to increase.

Key project challenges in Africa remain the higher project risk premiums, rising costs, the persistent need for political stability and support for projects spanning multiple years, the professional skills shortage in the region that in turn invites foreign players and financiers, which include a myriad of International DFIs, the inability to conduct preventive maintenance — resulting in the rehabilitation or upgrade backlog, and the often perceived lack of transparency during the project procurement phase.

The key trade corridors of the EAC road transportation network include the north-south TAH from Cape to Cairo, the Northern Corridor and the Central Corridor, that connect the major cities and regions of Kenya, Tanzania, Uganda, Burundi, Rwanda and Eastern DRC. Additional key routes, connecting the landlocked countries of Malawi and Zambia, include the TANZAM highway and the currently developed LAPSET Corridor, connecting Kenya, South Sudan and Ethiopia.

The significance of the EAC road transportation network, in light of the OBOR initiative is emphasised by Jinchen (2017), with the port of Mombasa identified as the key entry point from the East.

The Northern Corridor is deemed to be in a poor condition despite the route being almost entirely surfaced. This highlights the excessive rehabilitation backlog resulting from delayed preventive maintenance. Similarly, the Central Corridor sections through Burundi and Rwanda require either upgrading or rehabilitation. On the LAPSET Corridor, approximately one quarter is paved, with the remaining sections requiring upgrading from gravel to surfaced. These corridors will require at least some degree of rehabilitation and/or upgrading works on certain sections.

These rehabilitation and/or upgrading projects are dependent on development partner-coordinated assistance through either concession loans or grants from the repeatedly mentioned international DFIs, which include the KfW, EIB, EU, The World Bank and its IFC and IDA, AFD, KFAED and the Belgium Cooperation.

Furthermore, active African DFIs include only the AfDB, who nonetheless plays a significant role in financing key infrastructure projects in the region. The EADB, as one of the EAC's eight semi-autonomous institutions established to support regional infrastructure delivery, is however not visible in the region.

Other key funders include China, through the Exim Bank of China and the Japanese government, through the Japanese ODA and JICA. In addition, a PPP agreement was entered into by the DBSA, a South African firm and the KenHA. In Uganda, UNRA also aims at seeking and funding key infrastructure through PPP agreements. In isolated incidents, the National Governments of Kenya, Uganda, and Tanzania also fund projects, albeit jointly with DFIs. It can also be concluded that the local private sector, through PPP agreements for example, remain less involved as no such stakeholders are noted.

Building contractors include mostly foreign international firms from China (repeatedly noticed CRBC, CCCC and China Wu Yi), India and Yemen, Japan and Portugal. In Rwanda, however, local engineering firms are noted as key project stakeholders.

Noteworthy is the connection between financier and the builder. In Tanzania, the TAZARA flyover is funded by JICA, with Japanese firms respectively designing and constructing the works. Also, the Japanese government is funding the Ngong road expansion/upgrade outside Nairobi, which is also constructed by the Japanese WKK, while the Kampala Southern Bypass is funded by China's Exim Bank, and constructed by CCCC. Where the EU provided a Euro 67 million grant to fund expansion works on the Kampala Northern Expressway, the contract was awarded to a Portuguese company, noteworthy after a prolonged ICB process. The financier and builder is often from the same country/region.

Outside the EAC, projects in Ethiopia are constructed by local Ethiopian and Chinese firms, with project funding provided by the Arab Bank for economic development, China and OPEC, amongst others.

The construction of SGR infrastructure in the region is subject to renewed interest as an alternative to road-freight via the EAC road transportation network. In Kenya, the Chinese are seemingly the most dominant funder through the Exim Bank of China. Construction in the region is also dominated by the Chinese (Kenya), and the Turkish and Portuguese in Tanzania and Ethiopia.

Again, the connection between financier and the builder is noted as the Tanzanian SGR will be constructed by the Turkish-Portuguese consortium, with funding also being provided through a Eurobond concessional

loan. The first phase of the Kenyan SGR was constructed and commissioned by CRBC. The second phase is set to be funded by the Chinese Government, and the CCECC will complete the construction.

From a ports perspective, China, through the Exim Bank of China, and the Japanese, through JICA, remain the most prolific funders of port-related works in Kenya, with funding by CMHI and The World Bank driving port infrastructure delivery in Tanzania, while the CHEC is a key stakeholder from a construction perspective. There vast majority of projects, irrespective of discipline, remain constructed by international entities, with very little to no African participation (with the exception of Rwandan and Ethiopian firms in the respective countries).

From a future perspective, the sustained levels of economic growth set to be experienced by the East African sub-region creates the perspective of a relatively stable and profitable investment region. This is evidenced by the increasing FDI and international DFI involvement in for example the infrastructure sector. Such investment in turn is seen as a driver of trade facilitating infrastructure and creates both a demand and opportunity in the delivery of trade facilitating infrastructure.

In addition, given that the region is developing on the industrialisation front, and given the discovery of natural resources in the region, there is a greater attraction and international interest in terms of extracting and exporting, which demands modernised infrastructure such as roads, SGR and improved port operations. Similarly, improved trade facilitating infrastructure will bring the region closer to establishing food security, while also accommodating its rapidly growing population.

It can also be concluded that both “hard” and “soft” infrastructure is required, and this scenario presents economically viable opportunities for foreign industry players, more so due to the absence of African/local entities. However, the financing and delivery of “hard” infrastructure, such as road upgrading and/or rehabilitation, as well as the construction of complete new road sections, SGR and ports, remain marred with challenges and competition.

Despite these challenges, the Chinese managed to establish themselves as the market leaders in both financing and constructing major infrastructure in the EAC, while their methodology (economic statecraft) continues to reshape the global norm.

Therefore, the inability to secure financing seems to be foreign or westernised firms’ demise as they rely on securing work through ICB, with development partner-coordinated assistance funded projects. Overcoming this challenge certainly remains key, while it also requires further investigation.

Furthermore, albeit less prominent, the PPP framework agreement therefore remains viable, with the DBSA and South African construction firm combined securing work on the LAPSSET Corridor.

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