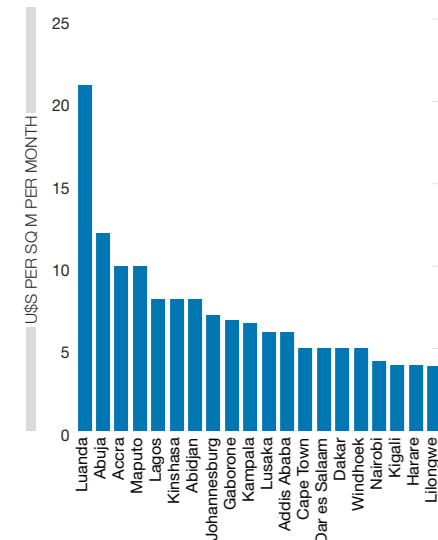




LOGISTICS AFRICA

2016

FIGURE 1
Sub-Saharan Africa prime logistics rents



Source: Knight Frank Research

LOGISTICS PROPERTY IN AFRICA

The logistics sector is an emerging focus for property development in Sub-Saharan Africa.

Modern logistics property is currently scarce across much of the Sub-Saharan region, but there is a growing need for high quality new development. Driven largely by the growth of Africa's middle classes and the associated expansion of its consumer markets, there is rising demand for high quality logistics space from retailers and consumer goods manufacturers seeking to expand their African operations and improve distribution networks and supply chains. Such occupiers demand properties built to high technical specifications that

support modern retailing, distribution and manufacturing practices.

Key property investor/developers such as Actis and RMB Westport, responsible for many of Sub-Saharan Africa's most modern property developments, have to date largely focused on retail and office projects and there has been limited activity in the logistics sector. However, logistics development activity is on the rise, and Actis is a partner in York Commercial Park, a modern development in Lusaka, Zambia, which is Actis' first major logistics project in Africa.

Other investors seeking to expand their Sub-Saharan portfolios have been recently active; for example, Mara Delta – a fund created from the merger of Delta Africa and Mara Diversified Property Holdings – has acquired the Bollore/Plexus warehousing complex in Pemba, Mozambique. Middle Eastern developers have also targeted the sector; Kuwaiti-based Agility has ambitious plans to create a network of logistics hubs across Africa, while Dubai's DP World has been granted a concession to develop and operate a new logistics centre in Kigali, Rwanda.

As with all commercial property sectors, the logistics market in South Africa is the largest and most sophisticated in the Sub-Saharan region. There are numerous modern logistics parks across South Africa, and new developments continue to add to the country's stock. Ongoing and upcoming development projects include Lords View Industrial Park and Klipriver Business Park near Johannesburg, Cornubia Industrial and Business Estate and Clairwood Logistics Park in Durban and Montague Business Park in Cape Town.

South African logistics property developers are increasingly looking to transfer their expertise to projects in the rest of Africa, and this may result in a wave of new development across the rest of the continent.

Logistics Performance Index, 2016 – Top 20 countries in Sub-Saharan Africa

The LPI is a World Bank survey of operators providing feedback on the logistics "friendliness" of countries

Sub-Saharan Africa Rank	Global Rank (out of 160)	Country	LPI Score (out of 5)
1	20	South Africa	3.78
2	42	Kenya	3.33
3	57	Botswana	3.05
4	58	Uganda	3.04
5	61	Tanzania	2.99
6	62	Rwanda	2.99
7	79	Namibia	2.74
8	81	Burkina Faso	2.73
9	84	Mozambique	2.68
10	88	Ghana	2.66
11	90	Nigeria	2.63
12	92	Togo	2.62
13	95	Côte d'Ivoire	2.60
14	98	Comoros	2.58
15	100	Niger	2.56
16	107	Burundi	2.51
17	109	Mali	2.50
18	114	Zambia	2.43
19	115	Benin	2.43
20	125	Republic of the Congo	2.38

Source: World Bank

TRANSPORT INFRASTRUCTURE CHALLENGES

Overcoming Africa's poor transport infrastructure is a major challenge to logistics operators.

Poor transport infrastructure is an inhibitor to the growth of many African logistics markets, with road and rail links between key economic hubs remaining patchy. Although there is a Trans-African Highway network, first conceived by the United Nations Economic Commission for Africa in the 1970s, large parts remain unbuilt and many sections are in poor repair and essentially unusable as trade routes. The cost of moving goods in Africa is, on average, estimated to be two or three times higher than in developed countries and transport costs can represent as much as 50-75% of the retail price of goods. The poor quality of road and rail networks forces logistics companies such as DHL Express to transport the majority of its cargo by air.

Traffic congestion within major cities can also impact logistics operators. In some cities, including Lagos, there are restrictions on lorry movements during the day, forcing deliveries to be made at night. It can therefore be in the interests of both local governments and property developers for logistics parks to be located well away from busy city centres. Congestion around seaports and competition for limited warehouse space has also led to a trend towards the development of inland dry ports.

In Lagos, logistics development has been encouraged away from the city itself, and two of the main industrial areas serving Lagos are in neighbouring Ogun State; the Agbara Estate, to the west of the city, is a well-established industrial area, while a new hub is emerging at Sagamu, to the north of Lagos, where Nestlé has established a factory. In Nigeria, power supply issues are also a major concern for logistics operators, and many companies require that they are located at industrial parks served by gas pipelines.

There are numerous large-scale transport infrastructure projects currently underway across the continent, which should help to improve transport connectivity within

Africa. Current major projects include the East African standard gauge railway which aims to connect Kenya, Uganda, Rwanda and South Sudan, and the West Africa rail loop connecting Côte d'Ivoire, Burkina Faso, Niger, Benin, Togo and Nigeria. However, infrastructure improvements will struggle to keep pace with the astonishing speed at which Africa's cities and economies are growing.

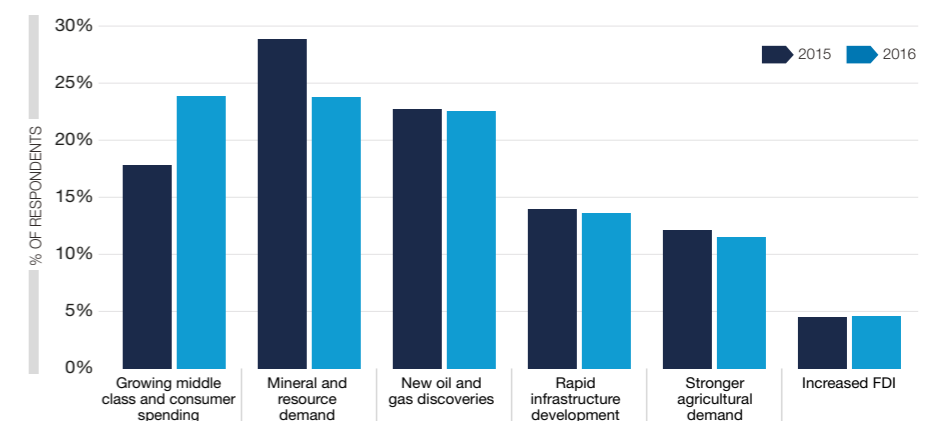
Innovative solutions have been proposed to overcome Africa's challenging transport infrastructure. There are, for

example, projects underway exploring the use of cargo drones. Foster + Partners has unveiled plans for a droneport in Rwanda, which would be used to transport medical supplies and commercial goods via unmanned flying vehicles. Drones could allow logistics operators to move goods to locations without reliable road networks and may prove to be a "leapfrog" technology for Africa, in the same way that mobile telecommunications have allowed many Africans to skip fixed-line networks and move straight to wireless technology.



FIGURE 2
Logistics market drivers in Sub-Saharan Africa

Responses from logistics industry professionals to the question: "What do you perceive to be the most significant driver of growth in the emergence of Africa's logistics market?"



Source: Transport Intelligence

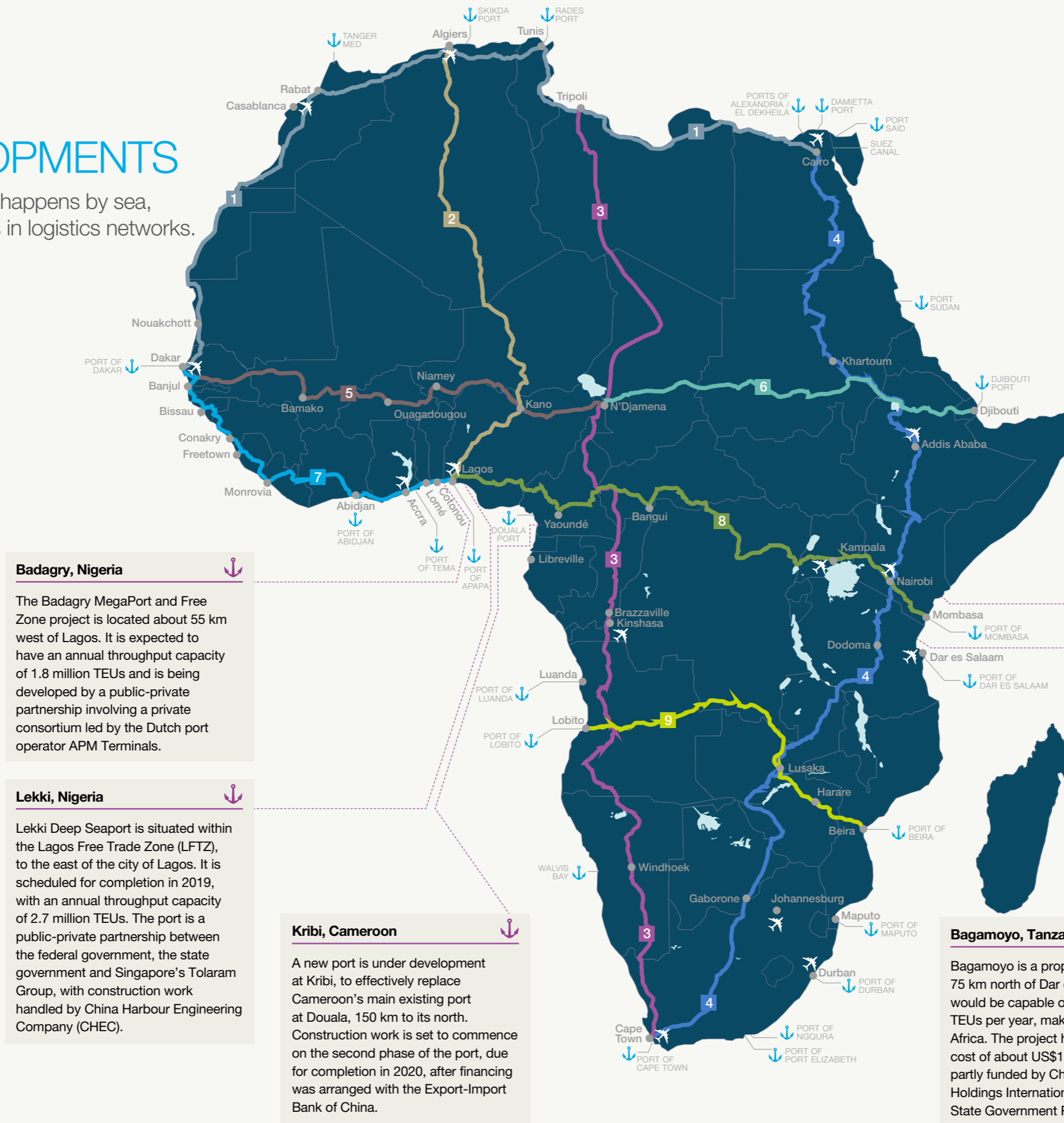
PORT DEVELOPMENTS

Around 90% of Africa's trade happens by sea, making its ports crucial points in logistics networks.

Despite its reliance on sea transport for international trade, Sub-Saharan Africa's ports are small by global standards. Durban, the region's busiest container port, handles approximately 2.7 million twenty-foot equivalent units (TEUs) per year, less than one-thirteenth of the volume handled by the world's busiest port Shanghai. Over the coming decades, the ports of Sub-Saharan Africa will require substantial expansion and modernisation in order to cope with the greater trade volumes that should accompany its population growth and economic development.

There are currently a large number of port development projects proposed or under construction across Sub-Saharan Africa, involving both the expansion of existing facilities and the creation of entirely new ports. Five of the largest new port schemes are highlighted on the map to the right. A common feature of many of these projects is the involvement of Chinese firms, whether as investors financing the projects or contractors building them. The most ambitious of the new port schemes aim to become the dominant ports within their regions; for example, the new ports at Lamu in Kenya and Bagamoyo in Tanzania are being positioned to compete with existing ports at Mombasa and Dar es Salaam to be the largest in East Africa.

Port locations are important hotspots for logistics operators and property developers in Sub-Saharan Africa. It is logical for firms building distribution networks in African countries to locate their logistics hubs near to ports, especially given the time and cost involved in transporting goods to inland commercial centres.



Badagry, Nigeria

The Badagry MegaPort and Free Zone project is located about 55 km west of Lagos. It is expected to have an annual throughput capacity of 1.8 million TEUs and is being developed by a public-private partnership involving a private consortium led by the Dutch port operator APM Terminals.

Lekki, Nigeria

Lekki Deep Seaport is situated within the Lagos Free Trade Zone (LFTZ), to the east of the city of Lagos. It is scheduled for completion in 2019, with an annual throughput capacity of 2.7 million TEUs. The port is a public-private partnership between the federal government, the state government and Singapore's Tolaram Group, with construction work handled by China Harbour Engineering Company (CHEC).

Kribi, Cameroon

A new port is under development at Kribi, to effectively replace Cameroon's main existing port at Douala, 150 km to its north. Construction work is set to commence on the second phase of the port, due for completion in 2020, after financing was arranged with the Export-Import Bank of China.

Bagamoyo, Tanzania

Bagamoyo is a proposed new port, 75 km north of Dar es Salaam, which would be capable of handling 20 million TEUs per year, making it the largest in Africa. The project has an estimated cost of about US\$11 billion and is partly funded by China Merchants Holdings International and Oman's State Government Reserve Fund.

Lamu, Kenya

Lamu Port is planned for construction about 300 km north of the existing port at Mombasa. The China Communications Construction Company (CCCC) has won a contract to build the first three berths of the port. The port is part of the wider LAPSET (Lamu Port-South Sudan-Ethiopia Transport Corridor) project, which also involves the building of transport infrastructure and oil pipelines connecting Kenya, South Sudan and Ethiopia.

TRANSPORT INFRASTRUCTURE IN AFRICA

Trans-African Highway network

- 1 Cairo - Dakar
- 2 Algiers - Lagos
- 3 Tripoli - Cape Town
- 4 Cairo - Cape Town
- 5 Dakar - N'Djamena
- 6 N'Djamena - Djibouti
- 7 Dakar - Lagos
- 8 Lagos - Mombasa
- 9 Beira - Lobito

- Major cargo airports
- Major container ports
- Major new port developments

ONLINE RETAIL AND MODERN SUPPLY CHAINS

The growth of online retail markets will influence future demand for logistics property in Africa.

“Africa’s online retail sector has started to grow at a fast pace, driven primarily by the increased penetration of smart mobile devices into the continent’s markets.”

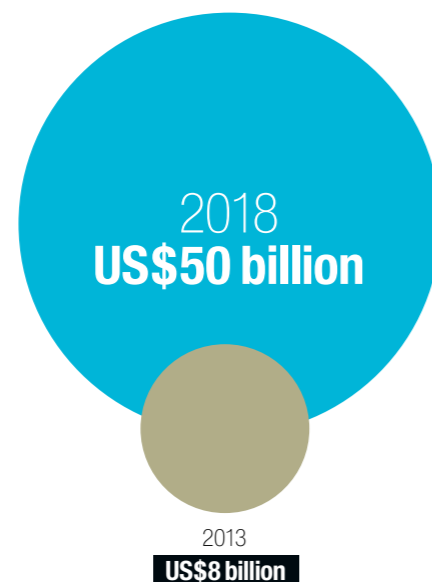
The rise of retail e-commerce, which is currently estimated by the research house eMarketer to be a US\$2 trillion global industry, has shaped logistics property markets worldwide over the last decade. International retailers have increasingly demanded properties suited to the efficient fulfilment of online orders. However, online retail is still a nascent sector in much of Africa; even in South Africa, the most sophisticated retail market in the Sub-Saharan region, online sales are only just expected to reach 1% of the overall retail market in 2016. This is a threshold which was passed more than a decade ago in many developed markets.

While small by global standards, Africa’s online retail sector has started to grow at a fast pace, driven primarily by the increased penetration of smart mobile devices into the continent’s markets. Sub-Saharan Africa is the fastest growing mobile phone market in the world, with GSMA Intelligence estimating that the

number of unique mobile subscribers reached 381 million in 2016. Mobile users in Africa are increasingly migrating to smart devices, as these become more affordable. GSMA estimates that smartphone connections represented 23% of total mobile connections in Africa in 2015, but they are forecasted to be the majority by the end of the decade.

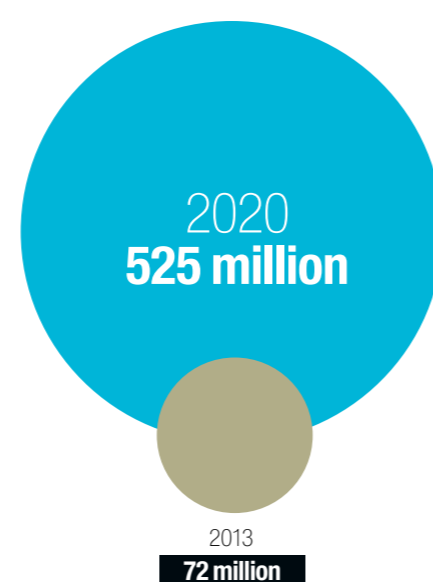
Mobile phones are the most prevalent communications technology in Africa, with consumers using them for tasks that might be more commonly performed on laptops or desktop computers elsewhere in the world. Mobile banking has been embraced by African consumers, and many online retailers receive the majority of their orders via mobile phones. The growth of smartphone usage across Africa will support the continued rise of online retail activity; Frost & Sullivan forecasts that e-commerce in Africa will be worth US\$50 billion in 2018, up from US\$8 billion in 2013.

FIGURE 3
Value of the African e-commerce industry (forecast)



Source: Frost & Sullivan

FIGURE 4
Smartphone subscriptions in Africa (forecast)



Source: GSMA Intelligence

Pioneers of online retailing in Africa include websites such as Jumia and Konga in Nigeria, Zando and Takealot in South Africa and Rupu and Mamamikes in Kenya. All of these are young companies established within the last six years.

Jumia and Konga, the Nigerian market leaders, were both founded in 2012 and have since rapidly grown their businesses. Both operate central distribution warehouses in Lagos; Jumia with a facility of over 8,000 sq m and Konga with a warehouse in excess of 11,000 sq m. Jumia has built a network of 18 delivery hubs in other major Nigerian cities and has also expanded into ten additional African markets.

Traffic congestion in Lagos makes last-mile delivery particularly challenging for these firms, and orders are generally fulfilled using small vehicles such as vans and motorcycles able to weave their way through the traffic. “Pick-up stations” are offered as locations at which customers can collect their orders. Both Jumia and Konga have their own delivery teams,

but third party companies are also used, especially in hard-to-reach locations.

These firms’ supply chain networks are relatively unsophisticated compared with those operated by major online retailers in western markets. The diagrams below show simplified models of a Nigerian online retailer’s supply chain and that of a major US online retailer. In western countries, retailers like Amazon make use of huge e-fulfilment centres that can be well in excess of 100,000 sq m. From these central facilities, orders are typically sent to sortation centres or parcel hubs at which they are sorted by zip code or postcode, before being sent to local centres responsible for last mile delivery. However, goods may take a variety of routes through the warehouse network, depending on the type of product and the urgency of an order. Goods may, for example, be sent for delivery by local postal services or third party delivery companies at different stages in the process.

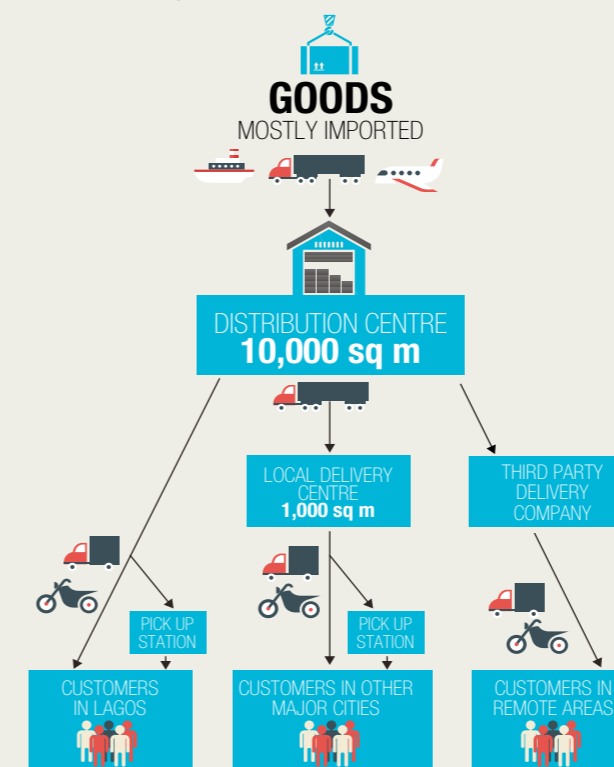
International online retailers’ supply chain practices are still evolving, and

innovations to logistics property formats continue to emerge in response to changing needs. A developing property type in western markets is the returns processing centre; a dedicated facility responsible for the handling of returned goods. Technical specifications demanded by online retailers may include cross-docking, which allows goods coming to a warehouse to be transferred from an inbound carrier to an outbound carrier without needing to actually enter the warehouse or being put away for storage. Cross-docking facilities are not generally offered by the older warehouse stock present in many African markets.

If the rise of e-commerce in Africa continues to follow the path taken by western markets, demand will be generated for an increasingly sophisticated range of logistics properties. However, when planning their logistics property networks in Africa, retailers will need to be mindful of the particular challenges posed by the regional transport infrastructure and the potential impact of disruptive technologies such as drones.

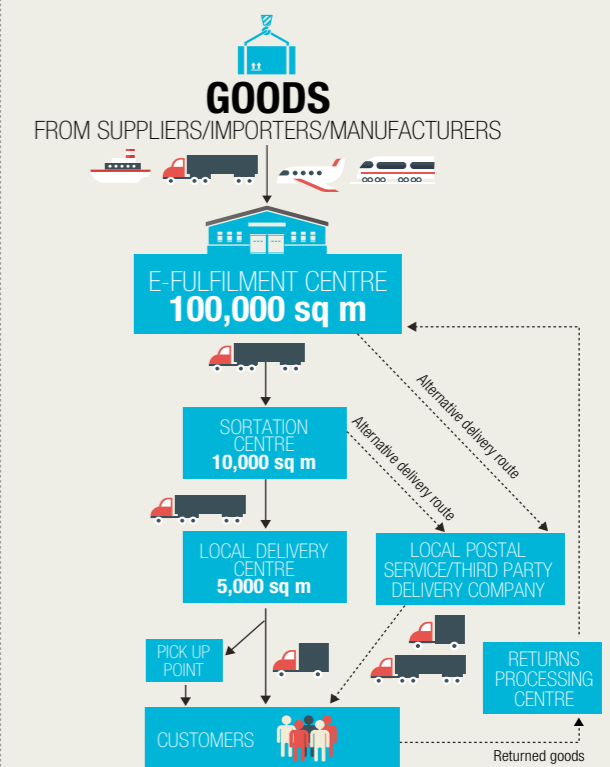
ONLINE RETAIL SUPPLY CHAINS

Nigeria online retail supply chain

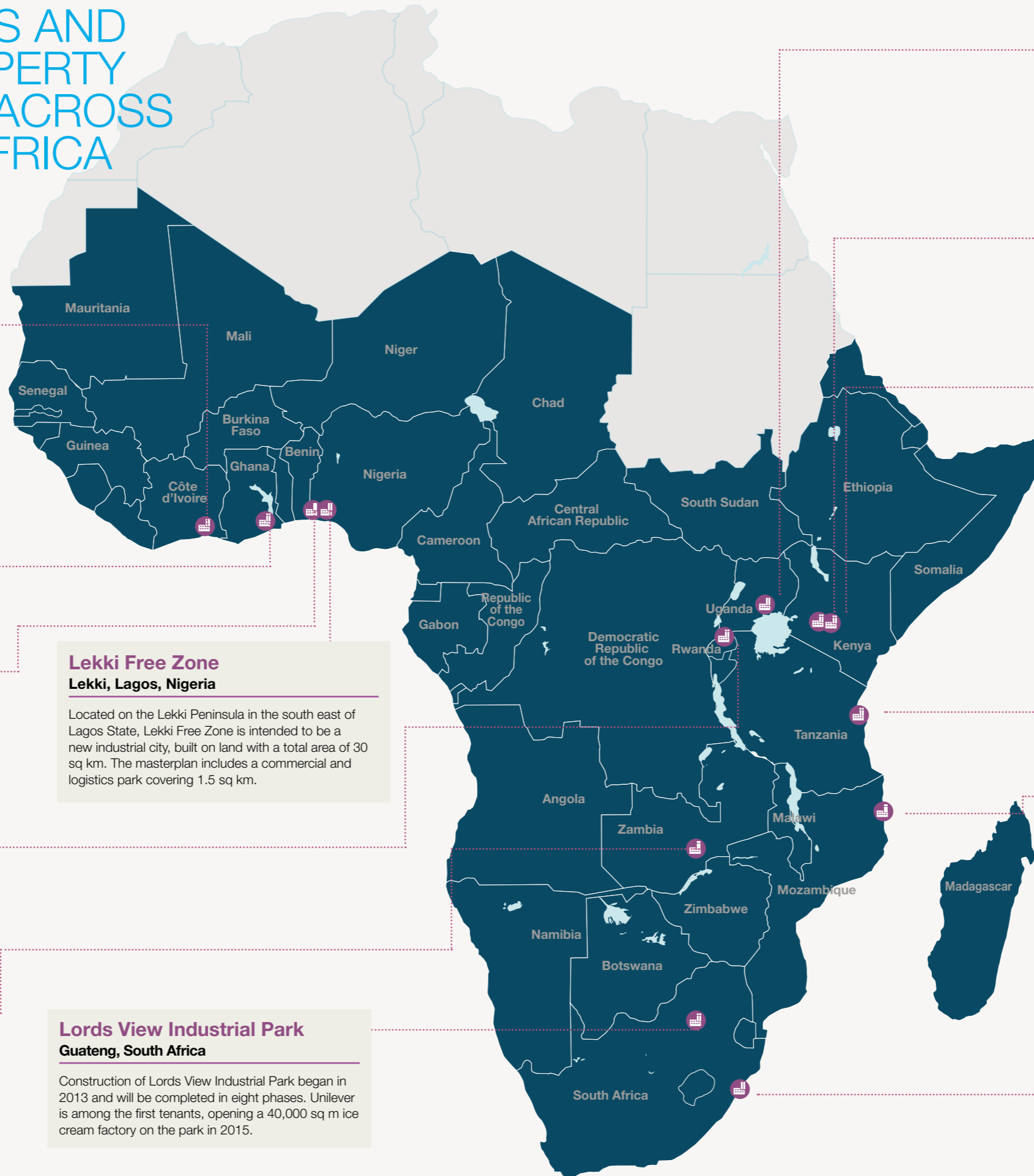


Source: Knight Frank Research

US online retail supply chain



MAJOR LOGISTICS AND INDUSTRIAL PROPERTY DEVELOPMENTS ACROSS SUB-SAHARAN AFRICA



PK24 Industrial Zone Abidjan, Côte d'Ivoire

PK24 is a new industrial zone on the northern outskirts of Abidjan, covering 940 hectares. The first phase of 200 hectares is being constructed by China Harbour Engineering Company (CHEC), and Heineken has been announced as the first occupier.

Agility Distribution Park Tema, Accra, Ghana

The Kuwaiti developer Agility is in the process of building a 100,000 sq m logistics park on a 40 acre site at Tema Free Zone, east of Accra. This is one of a series of logistics hubs which Agility plans to build across Africa.

Agbara Estate Agbara, Lagos, Nigeria

The Momentum Africa Real Estate Fund, which was launched in 2015, has announced plans to invest in the further development of the Agbara Estate, an industrial and logistics hub in Ogun State, west of Lagos, which is home to manufacturers such as Unilever, Nestlé and Procter & Gamble.

DP World Kigali Logistics Centre Kigali, Rwanda

Dubai's DP World has been granted a concession to develop and operate a new logistics centre in Kigali. The first phase will be built on 90,000 sq m of land and will comprise a 12,000 sq m container yard and a 19,600 sq m warehousing facility.

York Commercial Park Lusaka, Zambia

The South African developer Improvon, in conjunction with emerging markets specialist Actis, is developing a modern logistics park in the south of Lusaka, which is the first of its type in Zambia. The park's first phase was completed in early 2016.

Lekki Free Zone Lekki, Lagos, Nigeria

Located on the Lekki Peninsula in the south east of Lagos State, Lekki Free Zone is intended to be a new industrial city, built on land with a total area of 30 sq km. The masterplan includes a commercial and logistics park covering 1.5 sq km.

Lords View Industrial Park Gauteng, South Africa

Construction of Lords View Industrial Park began in 2013 and will be completed in eight phases. Unilever is among the first tenants, opening a 40,000 sq m ice cream factory on the park in 2015.

Kampala Industrial and Business Park (KIBP) Namanve, Kampala, Uganda

Developed by the Uganda Investment Authority, the KIBP is intended to be Uganda's flagship industrial park. It has 2,200 acres of land which has been fully allocated to a total of 260 investors.

KenGen Industrial Park Olkaria, Kenya

The Kenya Electricity Generating Company has earmarked 1,300 acres for the development of an industrial park at the site of its Olkaria Power plant.

Tatu Industrial Park Nairobi, Kenya

Part of Tatu City, Rendevour's large-scale urban development project, Tatu Industrial Park comprises 420 acres of serviced land suitable for light industrial, warehouse and logistics uses. Unilever has entered into a Memorandum of Understanding to acquire 70 acres of land at the park for the expansion of its manufacturing operations in Kenya.

CoastDryport Soga, Tanzania

The US-based Black Ivy Group has plans to build a dry port and intermodal logistics park at the village of Soga, west of Dar es Salaam. The 500 acre site will be served by two dedicated rail lines.

Pemba Industrial Park Pemba, Mozambique

Pemba Industrial Park, a 22 acre development with the involvement of South African investor Atterbury, is one of several logistics projects in Pemba, a strategically important city at the heart of Mozambique's recent oil and gas boom.

Clairwood Logistics Park Durban, South Africa

Fortress Income Fund has begun the construction of a major new logistics park on the former Clairwood Race Course in South Durban. The park is planned to have 350,000 sq m of warehousing space, with completion expected in 2020.

LOGISTICS SPOTLIGHT: LUSAKA, ZAMBIA

Zambia's geographical position, at the intersection of Southern, Eastern and Central Africa, makes it one of the most promising logistics locations in Sub-Saharan Africa.

The Zambian capital Lusaka is a key logistics hub at the crossroads of trans-African transport corridors running from north to south, and from east to west. Major routes through Lusaka include roads connecting it with ports in South Africa, Mozambique, Tanzania and Namibia.

The north-south corridor from South Africa through Zambia is currently the busiest route for freight coming in and out of the country. However, importing goods to Zambia is a lengthy process; it usually takes around a week for goods to be transported from the port of Durban to Lusaka, with freight needing to pass through two border posts before reaching Zambia.

As a landlocked nation, Zambia is reliant on its road and rail connections with other countries, but its domestic transport infrastructure is relatively good compared with some of its neighbours. Lusaka is currently undergoing major road improvements, including the construction of an Inner Ring Road, the first phase of which was completed in 2014.

Logistics and industrial market activity has historically been concentrated in the industrial area to the west of Lusaka, which mostly comprises older units lacking modern design features such as cross-docking and intermodal facilities. Traffic congestion has made access to the industrial area increasingly difficult and there is little land available for new development, pushing developers to seek sites elsewhere in the city.

The most significant current logistics development in Lusaka is York Commercial Park, located 6 km south of the CBD on Kafue Road. This project is under construction by Actis in

conjunction with Improvon, a leading South African warehouse and logistics developer.

York Commercial Park is the first modern logistics and industrial park of its type in Zambia, and offers units ranging from 500 sq m to over 20,000 sq m, with options to lease or buy buildings constructed on a built-to-suit basis. It is under development on a 40 hectare site and the first phase, comprising infrastructure and an initial 5,000 sq m speculative building, was completed in early 2016. The first tenant, taking 2,500 sq m of this building, is the South African firm Global Roofing Solutions.

Several large Zambian and multinational companies are known to be considering taking space in the park, and it is attracting particular interest from firms seeking to move from outdated premises in the existing industrial area. The take-up of space at the park will be keenly monitored and, if it is successful, South

African and international developers may be encouraged to commence similar projects in other African markets.

In addition to York Commercial Park, other major developments in Lusaka include Roma Park, a large-scale urban development project by Renaissance Partners and CPD Investments, which includes a logistics and industrial component. Roma Park is one of six areas across Zambia to have been designated by the government as a Multi Facility Economic Zone (MFEZ). These zones are intended to attract investment by offering tax incentives to companies operating from them. Within the capital, there are additional Multi Facility Economic Zones at Lusaka South and Lusaka East.

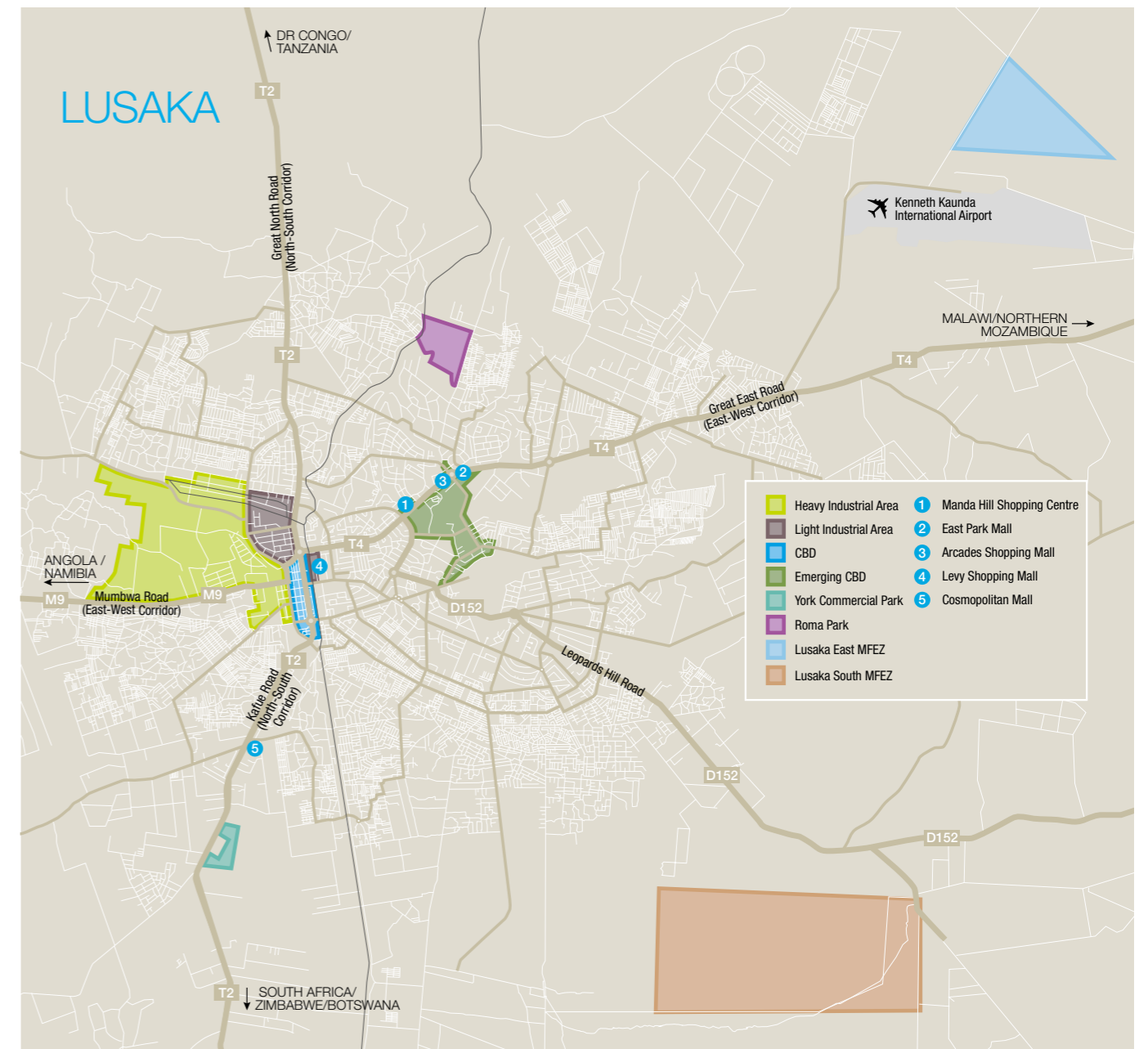
Future demand for modern logistics space in Zambia is expected to be largely driven by retailers and companies from the food and beverage sector. The formal retail sector is dominated by South African chains such as Shoprite,



Pick n Pay and Spar, all of whom have made Zambia a key part of their expansion plans in the Sub-Saharan region. At present, many retailers import goods directly from South Africa and make use of small storage facilities at their stores, but as retailers gain critical mass within Zambia, they will increasingly require large centralised warehouses.

The food and beverage sector is a major growth industry within Zambia, and multinationals such as Coca-Cola and Pepsi have established operations in the country. This sector is a key source of warehousing demand, albeit food and beverage companies generally build their own facilities, while retailers prefer to lease warehouses.

The continued expansion of South African, international and Zambian companies is expected to generate demand for increasingly sophisticated logistics properties in Lusaka. This will be accompanied by a continued shift in activity from the existing industrial area to emerging hubs such as the area around Kafue Road.





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