AFRICAN LOGISTICS

TIME FOR REVOLUTION

While the modernization of the sector has already begun, African logistics are still not competitive or sophisticated enough to support African growth, particularly in view of the creation of the Continental Free Trade Area. For the continent's decision-makers and logistics operators, what are the ways forward?

December 2019

AFRICA CEO FORUM

Okan
Conseil en stratégie • Conseil financier

Foreword


Frédéric Maury - AFRICA CEO FORUM
Amaury de Féligonde - OKAN

A platform for debate and new thinking that brings together all the major stakeholders in the African continent, the AFRICA CEO FORUM has become the largest international conference dedicated to the African private sector. Over the years, charting a straight path between the Afro-optimists and the Afro-pessimists, the Forum has highlighted, one by one, the challenges that face African businesses, and has sought solutions.
Logistics is one of the most important areas for development in Africa today. Its modernization remains a fundamental element for the continent's economic transformation, its competitiveness, its industrialization, and its economic integration. The continent's share of international trade is still small (2% of the world's exports, compared to China's 13%) and its markets remain fragmented (inter-African trade accounts for only 18% of total exports, compared to 55% in the Americas and 69% in Europe). Only a finely meshed, multimodal and cross-border logistics network will be adequate to "innervate" this great body that is Africa and carry the trade and investment essential to its emergence. The World Bank estimates that GDP per capita growth could increase by more than 1 additional point per year if this logistical gap were closed!

"Africa also has plenty of success stories, which provide ideal case studies."

Despite vast progress, particularly in the port sector, one painful observation must be made: African logistics, which are less modernized and more expensive than anywhere else in the world, do not yet measure up to the continent's ambitions.
With our visit to Kigali, Rwanda, for the seventh edition of the AFRICA CEO FORUM on 25 and 26 March 2019 still strong in our minds – a country with spectacular economic growth despite its remoteness from the coast –, the Forum has partnered with Okan, the strategic and financial consultants dedicated to Africa, to try to advance discussions and recommendations for developing a world-class African logistics sector.
The purpose of this report is not to provide a new overview of logistics ecosystems in Africa. While noting the many advances made over the past decade, the aim is to formulate recommendations that will enable public and private players to improve a sector that is still too uncompetitive on a global scale.
Africa also has plenty of success stories, which provide ideal case studies.
In Morocco, Tanger Med has grown in a decade to become a world-class logistics hub and a powerful industrial hub. Lomé has become the transshipment platform for one of the world's leading shipping giants, MSC, thanks to its capacity to accommodate 15,000 TEU vessels – unique in the sub-region.
Djibouti is now a major port of call in the Horn of Africa, and a gateway to Ethiopia. After seven years of construction work, more than $3 billion of investment and with the support of China, these two countries are now connected by a modern train line. Another major success, the new Mombasa-Nairobi train line, transported its first freight cargos in June 2017, dramatically reducing costs.
At the same time, the sector is undergoing significant technological change. Jumia, champion of African e-commerce, has set up a last-mile logistics system, the first on the continent. Start-ups such as Uber and Taxify have adapted to the African context, particularly through their motorcycle taxis, and are helping to revolutionize urban mobility. Parcel delivery by drones is being tested, particularly in Rwanda.
Through an in-depth study of these cases, and the multiple challenges that hinder change in this strategic sector, the AFRICA CEO FORUM and Okan have drawn up the following six recommendations. They are intended to be both realistic and ambitious:

1. Speed up port modernization, create essential ports of call on the continent

To consolidate the continent's position in global trade, African states, in partnership with private operators and donors, must accelerate the roll-out of port infrastructure. They must also coordinate to provide the continent with the world-class hubs it still lacks. Lee Kwan Yew's ambition in Singapore in the 1950s was echoed in Morocco: the port of Tanger Med is now competing for the title of continental hub with

Durban and Port Saïd. These developments must be accompanied by integrating ports into their hinterlands, by connecting them to logistics zones and dry ports, by developing port industrial parks, and by improving regulatory and customs processes to facilitate the flow of goods.

2. Think as a "bloc": structure the hinterlands around the continent's multimodal corridors

States must also cooperate better to structure continental arteries, such as the Djibouti-Ethiopia corridor. A special effort must be made to open up countries rich in raw materials and agriculture, whose immense export potential is still under-exploited (Niger, through the "Sahel loop" and the oil pipeline; the Zambia-Katanga Copperbelt). Like the bridge that now links China and Hong Kong, an acceleration in the building of expressways (Abidjan-Lagos, Brazzaville-Kinshasa) is also needed: a challenge that governments together with private investors and developers must rise to.

3. Strengthen states' capacities in their role as strategists, financiers and guarantors of security

African States must play a full role in the development of logistics infrastructure. They must have a clear vision in order to execute very long-term planning. The sovereign role of "policing land and sea" must also be strengthened in a context of piracy (Gulf of Guinea, Horn of Africa) and road blocking (Sahel). Governments must also contribute to the financing of infrastructure by mobilizing their fiscal resources, international donors (Asian and Western) and public-private partnerships. These PPPs should ideally stimulate local investment (financial markets, state-run and private pension funds).

4. Improve the structuring of logistics and transport infrastructure projects

Logistics infrastructure projects must undergo sound feasibility studies and be properly costed in order to reassure donors and investors, and to ensure their viability. Through implementing innovative financing solutions (annuities, bonds, PPPs), a fair balance between the use of budgetary resources and private investment must be found, as for Abidjan's third bridge. Capital is now relatively abundant in Africa, and infrastructure investment funds (Meridiam, A.P. Moller Capital, AIIM) offer privileged access to long-term, "intelligent" resources. The port, urban transport and air transport sectors are particularly well suited to the development of PPP projects.

5. Develop solutions adapted to the African megacities of the 21st century

Rapid urbanization complicates the mobility and supply of cities, which are confronted with major congestion problems due to inadequate infrastructure. These issues require the development of efficient peri-urban logistics zones and a redefinition of passenger and parcel transport methods, building on the successes observed in some megacities (rapid-transport bus lanes and a tram system in Addis, river shuttles in Abidjan, cable cars in Algiers) and using new technologies (Uber in Nairobi).

6. Place the demands of the African middle class at the heart of logistics modernization

The growth of the agri-food and consumer goods sectors is a powerful vector for the transformation and sophistication of African logistics, and it represents a business opportunity for the private sector. New operators are setting up or developing innovative practices to meet the new needs and consumption patterns emerging in Africa. The challenges now are to develop "last-mile logistics" and to speed up innovation in this sector in order to be able to offer solutions adapted to the continent's specificities.

We hope that this report will be the first in a long series, allowing for regular monitoring of key indicators in the logistics sector. We trust you will find it useful and stimulating!

Thierry Déau - Founder and CEO, Meridiam

LOGISTICS
driving african emergence

Meridiam was founded in 2005 with a strong ambition: to build and operate essential and sustainable infrastructure that improves the quality of life of populations. Since then, we have not changed direction – quite the contrary. This ambition is our mission; it has been our *raison d'être* since the beginning.
It is therefore only natural that we have decided to pursue opportunities in Africa, where the challenges of social, environmental and economic development are closely linked to the question of the infrastructure deficit. In 2015, we launched our first fund dedicated to Africa, the Meridiam Infrastructure Africa Fund (MIAF). Supported by the European Investment Bank, Proparco and private investors, MIAF has been very successful: the initial budget of €200 million has been fully invested in three years. We therefore decided to increase it to €550 million in March 2019.

This African fund is fully in line with Meridiam's vision: it aims to build resilient infrastructure, promote sustainable industrialization that benefits everyone, and encourage innovation, particularly in renewable energy. All the projects undertaken by Meridiam via the MIAF (14 projects for a total investment of more than €3 billion) contribute strongly and directly to the UN's Sustainable Development Goals (SDGs). As the founder of Meridiam, I am pleased to have won the trust of our investment partners and to have assembled an excellent, efficient and inspired team to create this Africa fund. With the MIAF, we want to demonstrate that private initiative and public infrastructure can lead to virtuous and sustainable partnerships that serve Africans.

The opportunities for growth on the continent are immense, the main bottleneck being the lack of adequate infrastructure necessary for efficient logistics that serve industry and the economy. This is why it is time for the African logistics sector to embark on its revolution(s). Its modernization stands to generate positive externalities in all sectors, from agriculture to tourism and export industries.

"Modernization starts with the development of infrastructure that meets international standards"

This modernization is primarily based on the development of infrastructure that meets international standards, drawing on global (Singapore) or continental (Durban, Port Saïd or Tanger Med) successes. However, it must not be limited to this. To transform African economies and accelerate their growth, we must take stock of all the constraints that currently hold them back.

In order to guarantee the success of large-scale projects and to support the upgrading of infrastructure and logistics services, there is a particular need for better interaction between the public and private sectors, within a better-defined legal and regulatory framework.

Public-private partnerships, provided they are well designed and financed, are thus one of the preferred solutions for involving the private sector in development projects and addressing the logistics infrastructure deficit.

The modernization of the logistics sector also calls for better cooperation between countries. Regional development strategies would prevent over-investment and harmful competition between neighboring countries. The development of free-trade areas would make African markets more attractive to companies and investors.

"The modernization of the logistics sector also calls for better cooperation between countries"

In the end, it is a question of looking at the hopes of the people, whether they are confronted with urban congestion in megacities, or the lack of transport solutions in isolated rural areas. The rise in new technologies must also find its way into the logistics sector through the use of innovative solutions, allowing real-time traffic analysis and flow optimization.

Africa's economic development will inevitably be accompanied by a growth in traffic – both passenger and freight – for which it is increasingly urgent to prepare. Freeing up investment, strengthening cooperation, building on new technologies... we are seeing a new African spirit that can inspire young people and successfully transform the logistics sector.

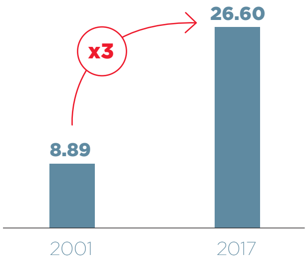
The platform offered by the AFRICA CEO FORUM is an opportunity to improve our understanding of these issues and give a new impetus to the logistics modernization effort already launched. This report takes a full measure of the problems faced by African companies for whom logistics are key. Based on an in-depth analysis of the major trends in the sector, it offers ambitious and pragmatic recommendations to launch a real revolution in African logistics, so that the continent can finally spread its wings.

1 AFRICAN LOGISTICS modernization has already begun

1 Modernization is out of the starting blocks, but it is concentrated in certain sectors and geographical areas

The equivalent of 1% of the continent's GDP is currently devoted to logistics.

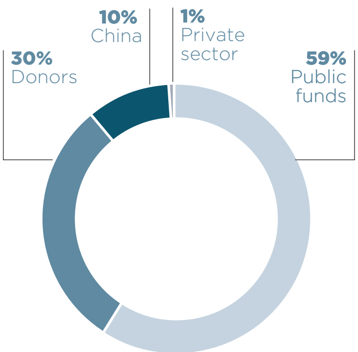
Investment in logistics, sub-Saharan Africa
$bn US



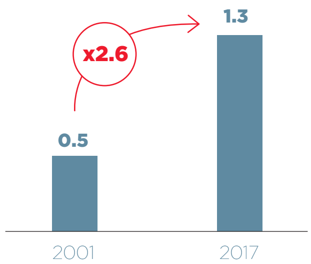
Share of Africa's investment in logistics
2017

Small though it is, the private sector's contribution is rising via public-private partnerships (PPPs), which increased by 260% between 2001 and 2017.

Investment in logistics in Africa by financing source
2017

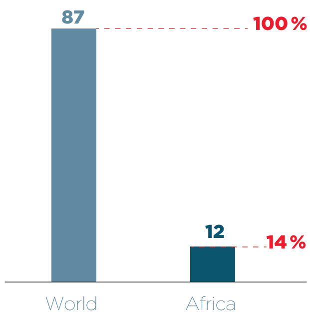


Investment in logistics via PPPs in sub-Saharan Africa
$bn US

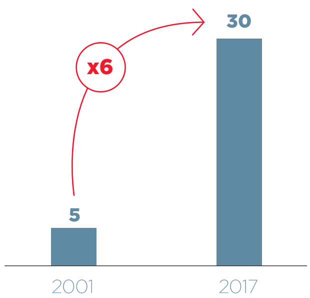


For the past 15 years investment efforts have been concentrated on ports, through which 90% of the continent's trade transits. Inter-regional trade remains poorly developed.

Africa's share of global port investment
$bn US, 1990-2018



Growth in African port traffic
Millions of TEU containers

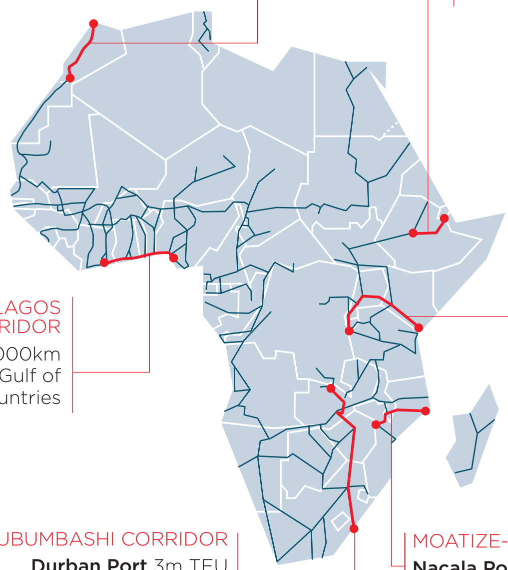


SOURCES: AFD; ICA, INFRASTRUCTURE FINANCING TRENDS IN AFRICA 2016; WORLD DEVELOPMENT INDICATORS, PPIAF, PPI DATABASE; HOLMAN FENWICK WILLAN, GLOBAL INVESTMENT IN PORTS AND TERMINALS

1

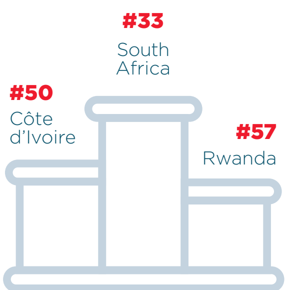
Some major continental logistics corridors are beginning to acquire a structure, linking coastal countries to the hinterlands (Sahel, Great Lakes, Katanga). The new Nairobi-Mombasa train line has made travel between the corridor's main cities four times quicker.

Key logistics corridors developed over the past few years

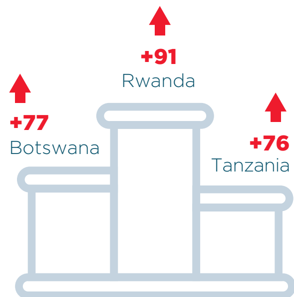


In the patchwork of the continent certain countries have shown that efficient African logistics are possible. Some are making major efforts, such as Côte d'Ivoire, which, since the end of the crisis, has invested massively in road, port and rail infrastructure (7% of its budget in road infrastructure).

Best African countries in the LPI 2018 ranking



Most notable improvements between 2017 and 2018

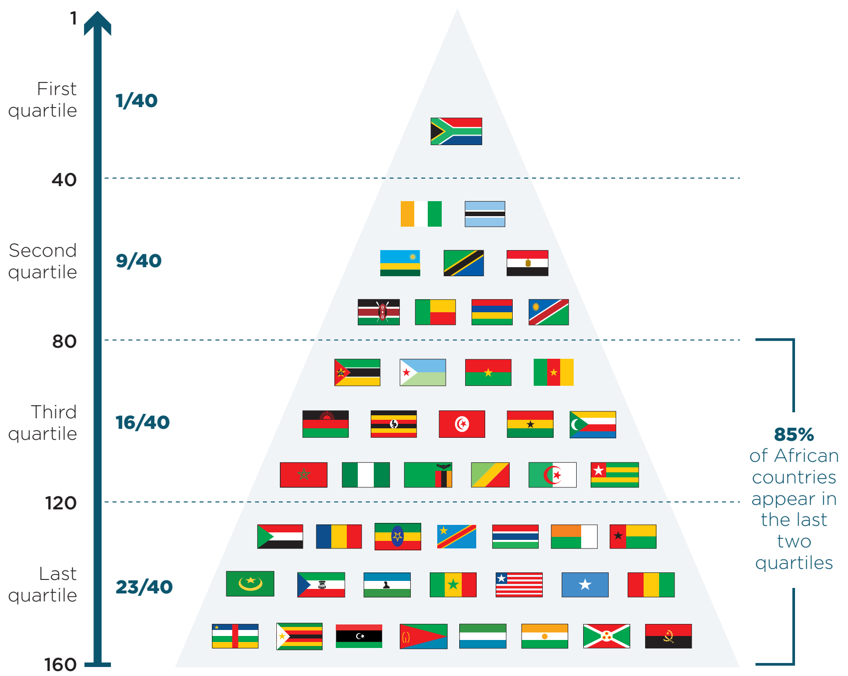


SOURCE: LOGISTICS PERFORMANCE INDEX 2018

2 Huge logistical challenges remain if the continent is to become fully integrated

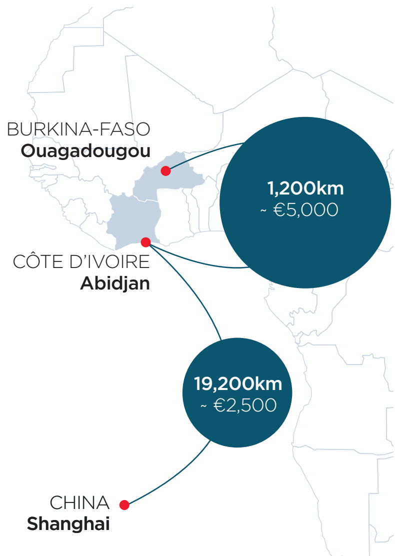
85% of African states appear in the two last quartiles of the Logistics Performance Index. Major economies like Algeria or Nigeria are in the third quartile.

Quartile position of African countries in the LPI 2018 ranking

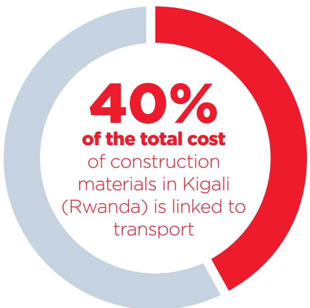


Logistics in Africa is slowly converging towards international standards in terms of cost and speed. Nevertheless, landlocked countries still suffer from poor logistics: it remains twice as expensive to transport a container from Abidjan to Ouagadougou as from Shanghai to the port of Abidjan, yet the distance is 16 times shorter. A truck still takes 11 hours to go from Lomé to Cotonou, only 150 kilometers away.

Transport costs for a TEU container



Impact of logistics on the cost structure of imports

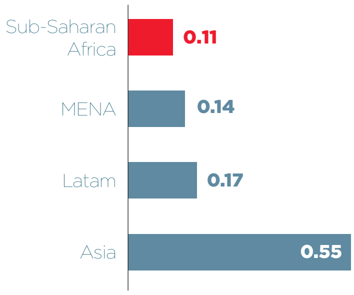


Road freight rates in Africa can be
2 to 4 times
higher
than those practiced in the United States

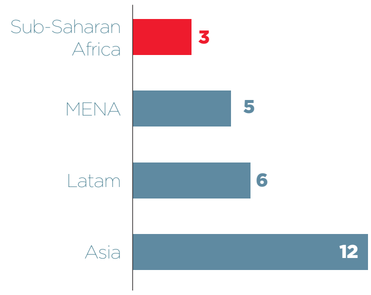
SOURCES: LOGISTICS PERFORMANCE INDEX 2018; SSATP; WORLD FREIGHT CALCULATOR; INFHOTEP, LES TRANSPORTS EN AFRIQUE; AFRICAN DEVELOPMENT BANK (AFDB), AFRICAN ECONOMIC OUTLOOK 2018

Road density in sub-Saharan Africa is about five times lower than in Asia. Railway density is eight times lower than in South Asia and three times lower than that of the MENA region.

Road density per region
Kilometers of road per km² of ground, Latest data (2000-2019)

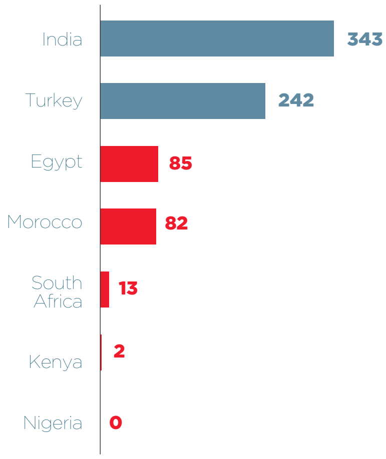


Railway density per region
Meters of railway per km² of ground, Latest data (2000-2019)

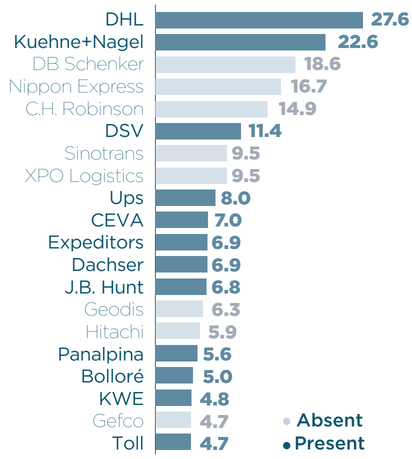


African logistics services remain unsophisticated compared to those of other emerging markets. Logistics giants able to provide world-class solutions are gradually establishing themselves in Africa. Africa's share of their activities is therefore growing (7% of DHL's turnover is from the MEA region).

Refrigerated storage capacity
Litre/citizen, 2017

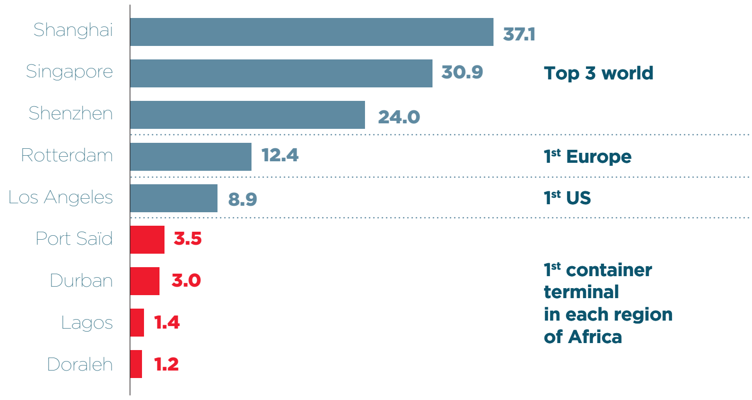


Presence of global logistics players in sub-Saharan Africa
Turnover, $bn US



While Africa is gradually acquiring world-class logistics hubs, the majority of ports remain subcritical in size. Three African ports rank in the top 100 container ports in the world: Tanger Med in Morocco, Port Saïd in Egypt, and Durban in South Africa.

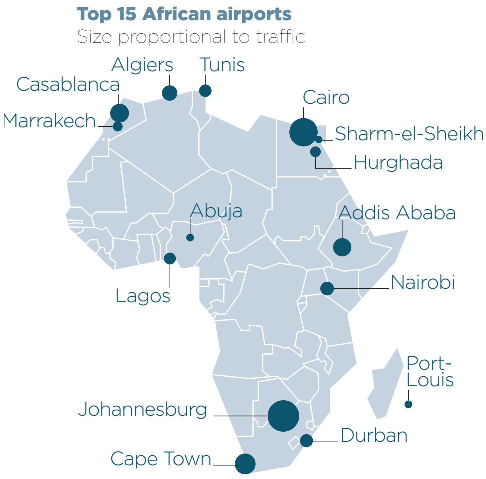
Handling capacities of major world and African ports
Millions of TEU containers, 2016

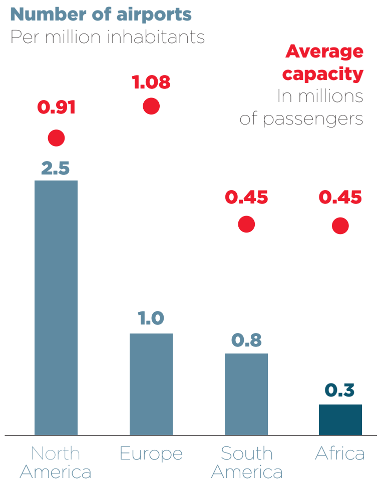


SOURCES: WORLD BANK, AFRICA'S PULSE 2017; SSATP; WORLD FREIGHT CALCULATOR; COMPANIES' ANNUAL REPORTS; ARMSTRONG ^ ASSOCIATES; LLOYD'S 100 PORTS 2017

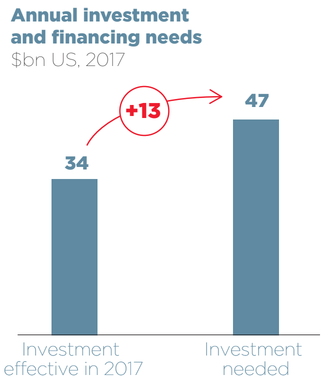
2

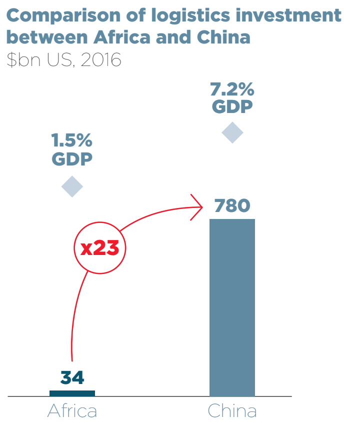
Africa still has few airports of international standards (with the notable exception of North Africa, South Africa and Ethiopia).



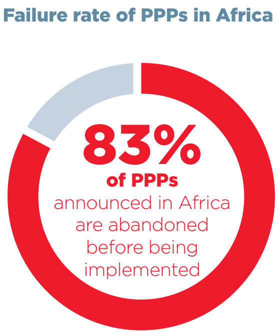


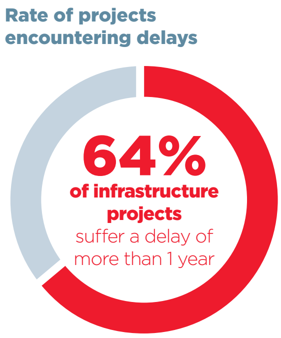
African countries need to invest more in the logistics sector in order to match the performance of their most efficient peers.





Infrastructure projects, which are complex by nature, would benefit from better structuring. Many are not "bankable" and have high rates of failure and delay. Fewer than 20% of the PPPs announced in Africa are actually implemented.





SOURCES: AIDC; ICA; CHINESE NATIONAL BUREAU OF STATISTICS, UNCTAD; IMF, SABRE MARKET INTELLIGENCE; GLOBAL INFRASTRUCTURE HUB; WORLD BANK, AFRICA'S PULSE 2017; AFRICA FINANCE CORPORATION

2 SIX RECOMMENDATIONS

Pathways for building world-class logistics in Africa

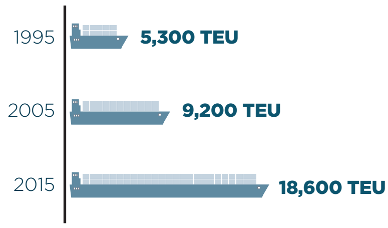
1 Speed up port modernization, create essential ports of call on the continent

Ports play a key role in Africa, with 90% of import/export cargo flows passing through them. In all, according to the development finance institution Proparco, $50 billion was invested in the sector between 2007 and 2017. This resulted in significant improvements, with the takeover of terminals – particularly those reserved for containers – by private operators such as Bolloré, APMT, DP World and ICTSI.

Since 2001, in the context of sustained growth, container flows have increased sixfold. Even with lower growth than before the 2008 financial crisis, traffic is expected to double by 2030.

To improve the performance of ports and meet the growing requirements of international shipping companies (Maersk, MSC, CMA CGM, COSCO, etc.) in search of ports of call that meet international standards and are adapted to the largest ships, modernization efforts must continue in order to increase port capacity (container, bulk and multipurpose).

Global evolution of container ships
Size of vessels

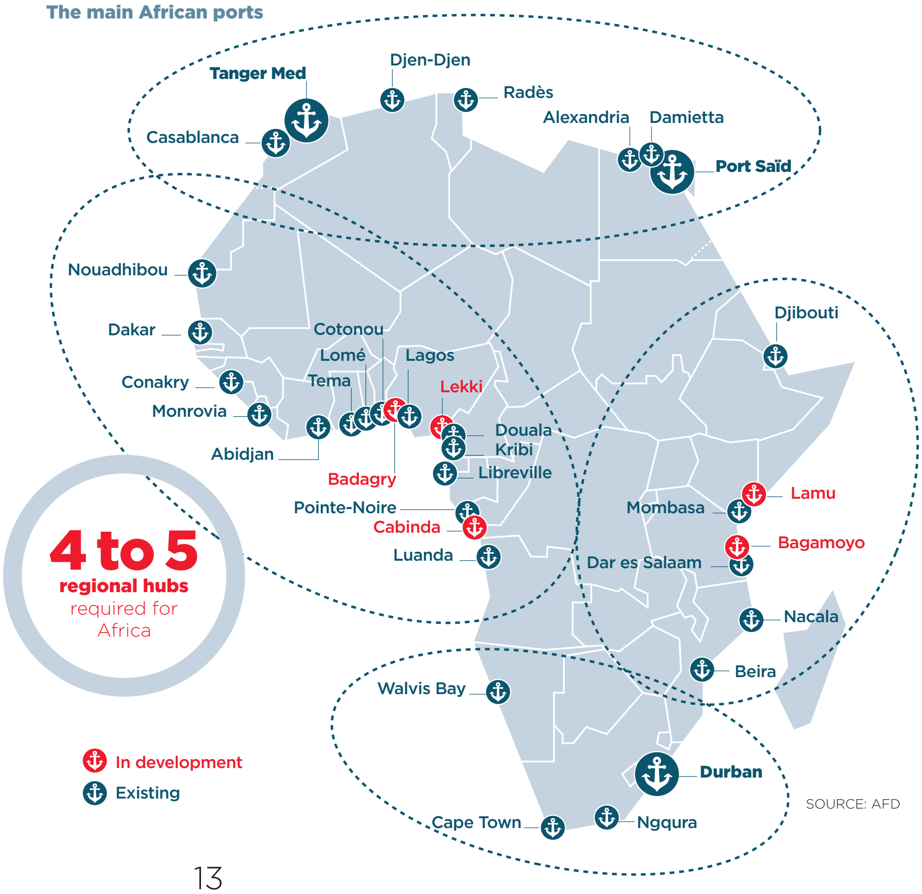


SOURCE: IHS

Each of the main regional groupings must have world-class hubs

Some of the major structural projects announced several years ago (Badagry, Lekki in Nigeria, Port du Futur in Senegal, etc.) have been slow to get off the ground. Capitalizing on recent experiences in port PPPs, states can expect to minimize their own investments, developing new projects as DBOT (Design-Build-Operate-Transfer) deals, with most of the investment being made by private companies.
In parallel with the efforts that will be made individually by national ports, the major regions of Africa will each have to develop one or two ports that can play the role of hubs, in the same way as Singapore in the Asia-Pacific region, Dubai in the Middle East, and Rotterdam in Europe.
The emergence of these hubs (accommodating at least 2 to 3 million TEU, with infrastructure allowing for

The main African ports



SOURCE: AFD

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efficient transshipment activity) is imperative to ensure a more competitive service to Africa by shipping companies. While in the North and the South of the continent Port-Saïd, Tanger Med and Durban are eligible for this status, a regional coordination effort – supported by donors – must be carried out in the other major regional groupings in order to prevent the dispersal of investment efforts and the development of too many ports with subcritical traffic, jeopardizing the financial viability of these infrastructure projects.
In West Africa, a hub must emerge in the battle raging between Dakar, Abidjan, Tema, Lomé and Lagos.

SUCCESS STORY

Lomé Container Terminal (LCT),
the new MSC transshipment hub in West Africa

KEY FIGURES

Terminal inaugurated in **2014**

17-meter draught to accommodate **third-generation vessels (15,000 TEU)**

Theoretical **capacity** of **2.2 million TEU**

€352 million of investment (the largest private investment ever made in Togo)

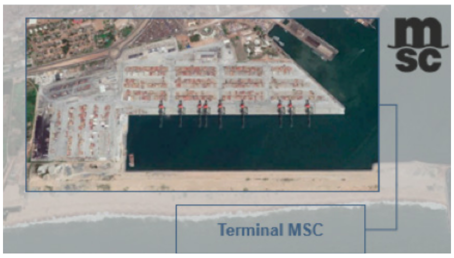
Transshipment traffic in the port multiplied by seven since 2014 (915k TEU in 2017 compared with 133k TEU in 2014)

KEY FACTORS IN ITS SUCCESS

MSC's knowledge of maritime traffic combined with the **expertise of its subsidiary TIL** in the **development and management of terminals**

A new offer developed by MSC in line with the LCT's ambitions for a regional hub: first direct liaison between Asia and West Africa

A balanced Public-Private Partnership between MSC and the Togolese state



To develop port industrial parks, think "integrated project"

African states are increasingly interested in developing industrial port areas, based on China's winning model (Shenzhen, Shanghai, etc.). There are many projects: the integrated industrial platform of Diamniadio in Senegal (in connection with the Port du Futur), the Djibouti Free Trade Zone project integrated into the port of Doraleh, the industrial zone project for Kribi in Cameroon.

These integrated developments are attractive on paper: the industrial park "feeds" the port with traffic and ensures its financial viability, while, conversely, the port provides a logistical solution for developing industries.

To make these zones a success, it is essential for states to place their projects within the framework of clear and targeted industrial development strategies. The Nkok Economic Zone in Gabon, integrated into the new Owendo terminal, is an interesting example targeting the timber sector. With a global strategy (development of log production, facilitating financing, tax incentives, training), Gabon is on the way to seeing its bet pay off (more than 60 industries in the area, now the world's third-largest exporter of veneer sheets).

States must ensure that industrial parks are entrusted to solid operators because their development and operationalization (marketing, day-to-day management) present major challenges that must be met. While Morocco has chosen to create a public management company (TMSA), others, such as Gabon and its partner Olam International (via Arise), rely on the expertise of leading groups.

For logistics and port operators, the ability to offer integrated turnkey projects to governments means they will stand out significantly from the competition.

SUCCESS STORY

How Tanger Med Zone has built a world-class industrial-port platform

TANGER MED IN FIGURES:

- Deep-water port **inaugurated in 2007**
- Capacity increased to **9 million TEU by 2019**
- Continental hub and essential port of call with **traffic of 3.3 million TEU in 2017** (45th in the world)
- **5 free-trade zones,** linked to the port by a rail line, bringing together more than **800 businesses** with a total **turnover of €6.4 billion**
- Hub that enabled the development of the **automobile** sector, which in 2014 became the **number one** export sector in Morocco, with **Renault** exporting **300,000 cars in 2017**

KEY FACTORS IN ITS SUCCESS

- **Designed as an integrated project** from the beginning
- **Clear governance** with a quality public project leader: **the Tanger Med Special Agency (TMSA)**
- Mobilization of **international expertise via PPPs** (e.g. Maersk, Hapag-Lloyd, CMA-CGM)
- A project as part of a **broader industrial development strategy** (Industrial Acceleration Plan 2014-2020 and Vision 2020)

Invest in the shedding of "non-container" port facilities

In their efforts to modernize ports, port authorities must tackle a new front, that of the non-container, the "poor relation" of African logistics. Despite the global trend towards containerization (in Côte d'Ivoire, cotton and cocoa are now exported in containers), a large part of the traffic remains non-containerized and will remain so: solid bulk with mining products, clinker, fertilizers, cereals, and liquid bulk with hydrocarbons and vegetable oils. A significant proportion of bulk and general cargo terminals remain in public hands (50% of dry bulk terminals and 20% of liquid bulk terminals compared to only 10% for containers) and are often poorly managed. Port authorities must dedicate terminals to these activities (as Senegal has done with the Senegal Bulk Terminal) and ensure that they are provided with quality handling equipment and appropriate storage infrastructure.

Several international operators are already active in this field – though not as many as for containers. They include SEA-invest and GSEZ/Arise, and Total and Trafigura in hydrocarbons.

"The new frontier for states and operators is the modernization of the non-container."

Olivier Ruth - Business Development and Terminal Manager, R-Logitech

Improving administrative, regulatory and customs procedures

At the same time as modernizing port infrastructure, states (and port authorities) must not miss this opportunity to improve processes (administrative, regulatory, customs), which can lead to significant performance gains at an extremely modest cost. Many stakeholders (customs, inspection bodies, handling operators, shipping agents and consignees, freight forwarders, importers and exporters, etc.) operate in ports with different degrees of coordination.
A particularly interesting approach for states to take is to set up a single-window structure at ports.
The Moroccan National Ports Agency deployed the PortNet solution at the port of Casablanca in 2011, then extended it to all its commercial ports in 2012. This one-stop shop has cut the average container time waiting in half, from 13 days to fewer than six days, while radically improving the efficiency and transparency of the supply chain.

INTERVIEW

Gagan Gupta
CEO, Arise

“Non-containerized flows represent a real business opportunity”

GSEZ is a joint venture between Olam (Arise), the state of Gabon, and AFC, which was created in 2010 to develop the Nkok Special Economic Zone (SEZ). In eight years the group has become Gabon’s preferred infrastructure developer, with two port terminals (multi-purpose and mineral) in its portfolio. It is beginning its pan-African expansion with the Nouakchott container terminal.

What were your reasons for developing port terminals?
We started with GSEZ via the SEZ, to support the development of the wood sector. With the take-off of the zone (it contains more than 60 businesses today) and our palm-oil plantations reaching maturity, new port capacity was becoming an urgent need. Our success with the SEZ (more than 590 ha developed in record time) and the integrated approach that we offer made us a natural candidate to take on the Ownedo extension project. With our two terminals we have created a first-class port industrial zone: the industrial park gains in attractiveness, while the SEZ “feeds” our port installations with traffic.

How important are ports for the development of the African continent?
African states – like Gabon with its Plan Stratégique Gabon Emergent 2025 (PSGE) – are determined to achieve emergence through making the most of their natural resources and supporting industrialization. This will not be possible without an efficient port infrastructure that guarantees the competitiveness of African production.
With our mineral terminal, developed in less than two years, world-class manganese mines have been brought into operation. The container and multi-purpose terminal has positioned Gabon as the world’s third-largest exporter of plywood.

Why not concentrate on container infrastructure?
“Non-container” flows are of crucial importance: mining products, clinker, cereals, hydrocarbons, etc. Large-scale modernization remains to be done and this is a real business opportunity. Our dedicated port infrastructure allows for improved processing of these flows (e.g. silos for cereals, palm oil and hydrocarbons).

What are the key factors for the success of port PPPs?
PPPs are formidable tools for states to use in their infrastructure development: they bring private-sector expertise in design, construction and management, and a significant contribution to financing. In our case, all the investments were made by GSEZ at no cost to the state.
To succeed in a PPP, take marriage as your inspiration. It needs good preparation to define the project together and arrive at a balanced concession contract. Everyone must respect their commitment – that’s essential. And the parties must communicate in a transparent manner and remain flexible to ensure a fruitful union over time.

2 Think as a “bloc”, develop intra-African logistics around multimodal corridors

Africa’s regional integration is one of the keys to building sufficiently large and attractive markets for local and international investors. It is essential for landlocked countries.

Faced with the difficulties currently encountered in getting projects off the ground, the idea is to concentrate investment and dialogue between states around the development of real arteries of regional trade.

Structure road corridors connecting the main economic centers

Road infrastructure needs are massive ($15-20 billion per year). The notable successes of recent years must serve as an example. The road between Addis Ababa and Nairobi, which has been asphalted from start to finish with the support of the African Development Bank, will reduce travel time from two weeks to less than two days and cut freight costs in half. This qualifies as a “profitable” investment since it stands to multiply trade between the two neighbors by five, i.e. an additional nearly $150 million per year.
The Trans-African Highway network – a 57,000-kilometer road network defined by the UN and African institutions in the 1970s – needs to be completed: nearly 20% of the network remains to be built and more than half of it asphalted. Essential links must be put in place without further delay, such as the Lagos-Abidjan corridor (1,022km spread over five countries). The potential impact of this link in

SOURCE: UN

terms of development is enormous as it will interconnect more than 30 million urban dwellers and 75% of the region's economic activity.

States must step up their post-construction efforts to ensure the sustainability of investments: setting up maintenance funds, as in Côte d'Ivoire; taxing users (road tax, tolls, etc.); and tightening controls – particularly on road haulers –

to limit damage to the network (weighing stations).

"Building 70,000 to 100,000km of additional roads undoubtedly constitutes the challenge of the century for Africa."

Philippe de Moerloose
- Chairman and Founder, SDA Holding

For construction companies (local and international), the development of African roads is a major business opportunity. To stand out, they must be able to offer appropriate technical solutions: sustainable (especially in relation to climatic conditions) and "low-cost". They can also contribute to the financing of certain PPP projects for high-traffic sections – such as the toll expressway successfully built by Eiffage in Senegal. The rise of local construction companies (such as PFO in Côte d'Ivoire, CSE and CDE in Senegal) is an interesting trend for the sector, which states should encourage to maximize the economic impact of investment programs.

"In Africa the roads are in a poor state, which strongly impacts the cost of logistics. Trucks are damaged more quickly and demand regular and costly repairs and maintenance."

Prof. Ndubuisi Ekekwe - Strategy Execution/ Board Member, Kobo 360

“Just as Asia and Europe have done, Africa urgently needs to simplify operations and eliminate borders in order to accelerate intra-African trade and unleash an economic boom. This starts and ends with a complete policy engagement at the regional and sub-regional level.”

Amadou Diallo - CEO Middle East and Africa, DHL Global Forwarding

Rethink the role of railways: efficient... but costly

Rail is particularly suitable for long-distance freight transport and reduces freight costs.
The new Chinese-built railway line between Mombasa and Nairobi (see box below) is revolutionizing the supply of the capital – and will transform that of the regional hinterland if the planned extension is carried out, significantly reducing costs. The railway built between Djibouti and Addis Ababa has also decisively changed the logistics situation for Ethiopia since 2016.

Interconnection between railways and ports

2

The major challenge to be met is that of financing. With construction costs far higher than those of roads, rail requires massive investment upstream: for the Ethiopian railway, this was more than $3 billion, or 4-5% of GDP. The IFC estimates that a 500km rail network at a cost of $2.5 billion must transport at least 30m MT each year to be profitable. Projects must therefore be carefully structured to ensure their financial viability. The Kenyan and Ethiopian projects are already under pressure and the governments have been forced to renegotiate the terms of their loans from Chinese financiers. In view of the strategic importance of rail assets (territorial development, socio-economic impact), private-sector partners must work in close collaboration with governments. States must be strongly involved, and must be prepared to subsidize operations until they achieve the volumes needed for financial viability. The mining sector in Africa still offers opportunities for new railway developments connected to world-class deposits. These deserve to be studied. Being backed by a major mining project gives such infrastructure a high chance of being financially sustainable.

Main African rail networks and operators

SOURCE: AFD

"There is no development or growth without logistics, and to make logistics effective we must tackle the question of railways."

Rotimi Amaechi
- Transport Minister, Nigeria

2

SUCCESS STORY

The Mombasa-Nairobi railway: first link in a rail corridor that aims to connect Kenya to Uganda

$3.8bn US – 470km – 9 stations

The Mombasa-Nairobi line, inaugurated in 2017, provides a direct link between the Kenyan capital and the country's major port. With a total cost of $3.8 billion, this project is the most ambitious since independence in 1963, involving more than 470km of railway and nine stations. Connections to the port terminals mean containers can now be loaded directly onto trains for transportation to Nairobi.

The Chinese footprint

The project was 90% financed by China (Chinese EximBank) and construction was carried out by the China Road and Bridge Corporation (CRBC), which is also the operator of the line for a period of 10 years. It is part of the Chinese "Belt & Road" initiative in Africa.

A logistical transformation for the Nairobi region

The line now runs 14 freight trains per day (750 TEU containers) and is gradually transforming the business of supplying Nairobi (c. four million inhabitants). Travel time for freight is reduced to only eight hours. This line – the first link in the corridor that will eventually link Kenya to Uganda and Rwanda – should lead to a dramatic improvement in logistics throughout the hinterland.

Financial sustainability issues

Kenya will need to keep a tight hold on the reins to ensure the project's sustainability and guarantee debt repayment: the company lost $110 million in the first year. To ensure the financial viability of the project it must find the right level of tariffs to encourage the sustainable development of volumes (intermodal competition). Debt repayment is likely to be a challenge in the coming years.

Simplify procedures, create dry ports along corridors

Transport is slowed down by the large number of checks and formalities (customs, administrative and phytosanitary verification) – both legitimate and illegitimate – along the corridors. There are up to 40 checkpoints on the Dakar-Bissau corridor for a distance of only 900km.

Traffic must be allowed to flow on corridors, and border crossing made easier. The East African Community has made some effort in this field (thought it has been hampered by political tensions between certain countries).

With the support of TradeMark East Africa,

Traffic congestion at borders

13 unified border posts have been created, reducing crossing times by half. The member states are now working on going paperless and creating tracking systems for trucks (launched in 2018 in Kenya, Uganda and Rwanda).

Private operators can also contribute to efforts to reduce congestion on corridors by investing in setting up dry ports, in partnership with governments.

This is what DP World has done in Rwanda, where it has worked with the administration to establish a dry port near the new Kigali airport. Costing $35 million, with a storage capacity of 50,000 TEU, it will considerably improve traffic flow from the ports of Mombasa and Dar es Salaam. On arrival at one of these ports, the containers are sealed with RFID tags, allowing real-time tracking of cargo en route to Kigali. Customs clearance is carried out only on arrival at the dry port by a dedicated customs team.

“We must create joint border posts in agreement with all our neighbors if we want to become a true regional hub.”

Emmerson Mnangagwa
- President, Zimbabwe

INTERVIEW

Philippe Labonne

CEO, Bolloré Ports, Deputy Managing Director, Bolloré Transport & Logistics

"Our priority is to transform logistical behavior in Africa"

With nearly €8 billion in revenue in 2017 generated in 48 African countries, Bolloré Transport & Logistics (BTL) is one of the leading logistics companies on the continent: the group operates 17 ports, 25 dry ports and three rail concessions totaling 7,200km of railways across Africa.

What rationale is behind Bolloré's strategic development beyond ports per se?
The real obstacles to the competitiveness of the sector today come from the additional costs around the port. This is why our ambition now goes far beyond the simple function of a port operator: our new frontier is intra-African flows, which we see developing as a result of the actions of major distribution groups. Our vocation is to support them by building hubs, by making logistics more streamlined so that African flows can be competitive.

What are the major logistics projects in the African hinterland?
There are many, and they concern all types of infrastructure – from ports to railways and inland waterways –, but all with a view to complementing the port interface. In Ethiopia, we are about to invest in the development of dry ports along the railway line. In Lagos, we are experimenting with barge transport services between Tin Can port and the interior to remove at least 3,000 containers from urban congestion. Finally, we are in the process of investing €400 million in modernizing the railway between Côte d'Ivoire and Burkina Faso, which will enhance the attractiveness of the port of Abidjan. Rail transport is an essential element in the intra-African network.

The obstacles are also administrative. What are your solutions to this challenge?
It's true: logistics are not limited to infrastructure: progress must also be made in the administrative and customs procedures that hinder the flow of goods. This is why we've been working in Cameroon to set up a single transit permit, which will mean you can load a container in Douala and deliver it to N'Djamena with a single form. Whether it's infrastructure in the strictest sense or administrative procedures, the continent must develop its own solutions.

3 Strengthen states' capacities as strategists, financiers, and guarantors of security

Transport and logistics infrastructure involves long-term investment that structures economic and territorial development. Given its strategic nature, it is imperative that African governments play a full role in its development.

They must continue their efforts to finance transport and logistics infrastructure (which amounted to $20.1 billion in 2017, according to the Infrastructure Consortium for Africa). Public authorities are the only stakeholders capable of integrating the positive external factors that may be linked to some projects into the equation.

The private sector, while it can bring part of the financing and its technical expertise to specific projects (ports, busy urban highways), cannot be substituted for the state.

States must define clear roadmaps, strengthening their planning capacities

States must define long-term strategies (minimum 15-20 years) in order to coordinate investments (a multimodal road-rail-ports-airports approach), ensure that transport and logistics infrastructure is in place to support other government priorities (e.g. mining development, industrialization), and to provide a sense of direction for all public and private stakeholders.

Morocco's Ministry of Equipment, Transport, Logistics and Water can be a source of inspiration, as it has shown how this can be done. Its long-term strategies (e.g. Vision 2030 for ports) make it possible to ensure the full participation of all public stakeholders (setting up program contracts with the National Ports Agency, Autoroutes du Maroc, the Office National des Chemins der Fer, etc.) and the private sector (74% private investment in logistics platforms).

In South Africa, the Presidential Infrastructure Coordination Commission defines priority projects for the country within the framework of five-year plans, with a precise timetable and budget. These plans facilitate the implementation and monitoring of projects.

It is imperative for states to strengthen their planning capacities, in particular by using the technical or legal assistance facilities offered by donors.

Mobilize local savings deposits to increase financing

The president of the African Development Bank (AfDB) has recommended that governments facilitate mobilizing national savings. The contribution of these resources can indeed be decisive. In Senegal's energy sector, the Caisse des Dépôts et Consignations was a key investor, enabling the closure of financing for the country's first solar power plant, Senergy 2.

Efforts to increase the involvement of the banking sector must be continued. Nigerian banks have financed the privatization of the electricity sector to the tune of $2 billion and are financing transport projects. To accelerate this development, the question of the duration of financing must be addressed: African banks have few long-term resources.

As Paul Derreumaux, honorary chairman of the Bank of Africa

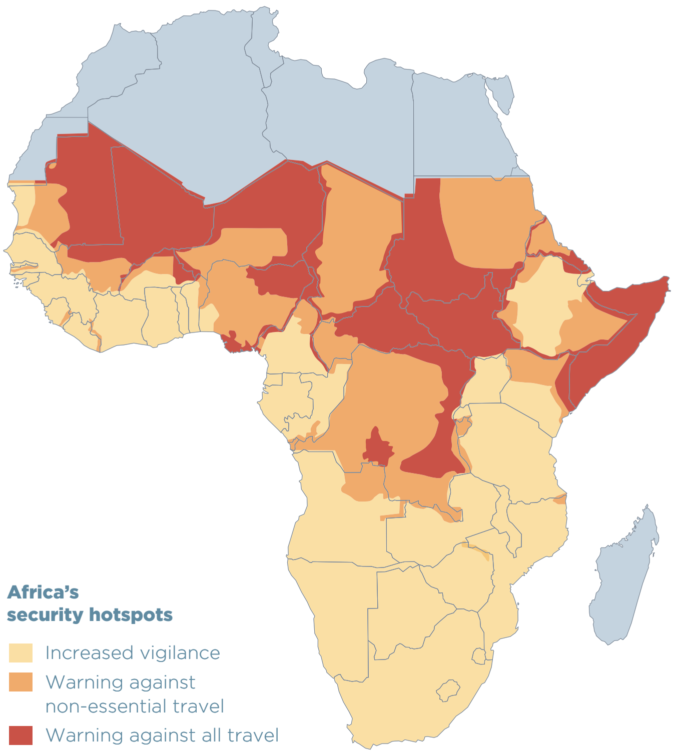
Group, explains, the other institutional players that manage large funds (private and government pension schemes, insurance companies, which had $670 billion under management in 2012, according to PWC) must also be involved, together with the stock markets. To this end, states must support the development of financial markets and adapt certain prudential standards. In Nigeria, the financing of infrastructure by pension funds is already possible.

"We must change our approach to seeking capital. The accent must be put on mobilizing domestic resources [in local currencies]. This mobilization must be massive, to match the challenges of development."

Akinwumi Adesina
- President, African Development Bank

States must fully exercise their role as guarantors of security

In Africa, many regions are confronted with a growing terrorist threat and organized crime. The difficult security situation threatens the movement of goods across the continent and the development of new transport infrastructure, particularly in the Sahel region and Central Africa.
States must tackle this security aspect and strengthen security on the continent's key logistics corridors, in collaboration with their foreign partners. The endemic spread of piracy off the Horn of Africa (176 attacks in 2011) has been contained with the cooperation of the forces of the European Union joint security operation EU NAVFOR, allowing maritime traffic to return to almost normal levels.



SOURCE: FRENCH FOREIGN MINISTRY

4 Structure projects better

Africa has seen a significant increase in financing opportunities. But not all of them are used because of the lack of "bankable" infrastructure projects: this means projects with sufficient preparation, a satisfactory institutional and regulatory framework for PPPs, and a suitable distribution of responsibilities and risks between the public and private sectors.

States must recruit high-level managers who can bring together all the necessary skills (in particular engineering, project structuring, financing, and legal), calling on external expertise when needed.

As the structuring of projects is complex and time-consuming, these committees must focus on a limited list of priority projects.

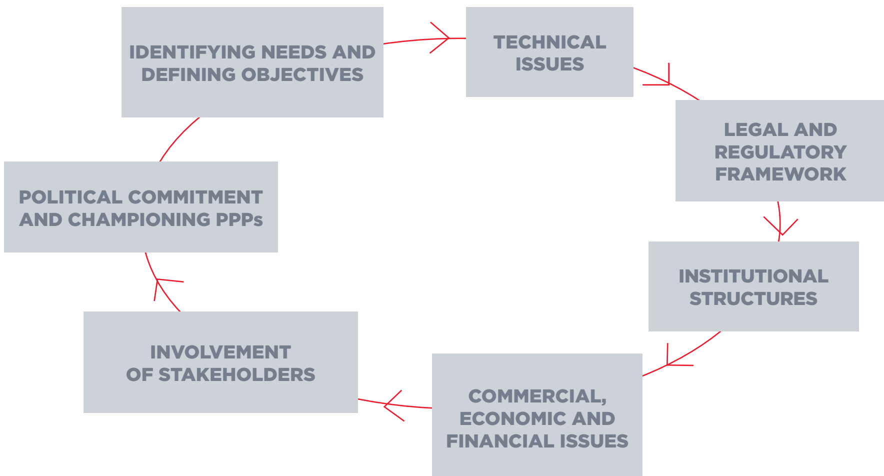
"The fundamental constraint on investment in the infrastructure sector is not the availability of capital, whether in the form of equity or debt, but the insufficient number of bankable projects structured to the best standards and likely to meet the requirements of investors."

Alain Ebobissé - CEO, Africa50

Prepare thoroughly for Public-Private Partnerships

A raft of studies is necessary to develop a PPP infrastructure project and to ensure its bankability: technical definition (master planning, costing the required investment, social and environmental impact studies, etc.) and definition of the economic model. These studies are traditionally the responsibility of governments, which must set up (or strengthen if they already exist) PPP units. These units must be adequately funded, as studies to be undertaken for

Structuring a national PPP project



an infrastructure project can represent up to 10-15% of the total cost of a project.
When it comes to project definition, states must improve their understanding of the life-cycle cost of projects. To be sustainable, a project must, of course, be able to cover its operational costs and repay the debt, but it also needs funds for maintenance and renewal. The latter are far too often neglected, compromising the long-term viability of projects.

Tunisia, with the support of the International Finance Corporation (IFC) and the European Bank for Reconstruction and Development (EBRD), has set up a "General PPP Forum" responsible for structuring and marketing PPP projects in the country. Out of 33 PPP projects proposed by the government to private investors, 12 are in the transport and logistics sectors: creation of rail or metro lines, logistics zones, port terminals.

"We're convinced that success rests in particular on the quality of public-private partnerships to allow businesses to bring their knowledge and financing to the table."

Marc Alberola - MD, Eranove

Through the PPP units, states must complete the regulatory and legal work necessary to attract international investors, clarifying the framework governing PPPs. Once the framework is clarified, it is crucial to apply it and to structure and carry out well-prepared, transparent calls for tenders.

"In Africa, to succeed it's important to come forward with strong proposals. You must try to offer turnkey solutions to resolve the problems governments face."

Patrick Lawson
- Director of Concessions, Bolloré Ports

Businesses must innovate and take risks

While the African public sector is still improving, companies that want to succeed in Africa should take their inspiration from the continent's champions. They can agree to take on a stronger developer role than they might have done elsewhere, in order to contribute to efforts to structure projects.

> *"The key to success for operators is to adopt the role of developer, to be a long-term partner for governments."*

Olivier Ruth - Business Development and Terminal Manager, R-Logitech

SUCCESS STORY

Dakar-Diamniadio: Senegal and West Africa's first toll expressway

KEY FIGURES

25km of expressway linking Dakar to Diamniadio

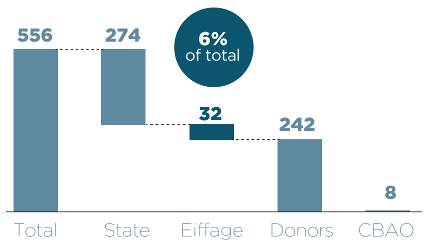
1st toll expressway in West Africa inaugurated in 2013 (phase 1), built in a **PPP with Eiffage**

Travel time from Dakar to Diamniadio **divided by four** (around 30 minutes compared to two hours before)

Daily traffic of 60,000 vehicles exceeded expectations (40,000 initially expected)

€556 million of investment

Breakdown of PPP financing for the Dakar-Diamniadio expressway
In millions of euros



KEY FACTORS IN ITS SUCCESS

Eiffage was **present on the ground** throughout the project through its subsidiary SENAC

Eiffage was **strongly involved in the project** from conception

Eiffage **participated in the project financing**, investing €32 million

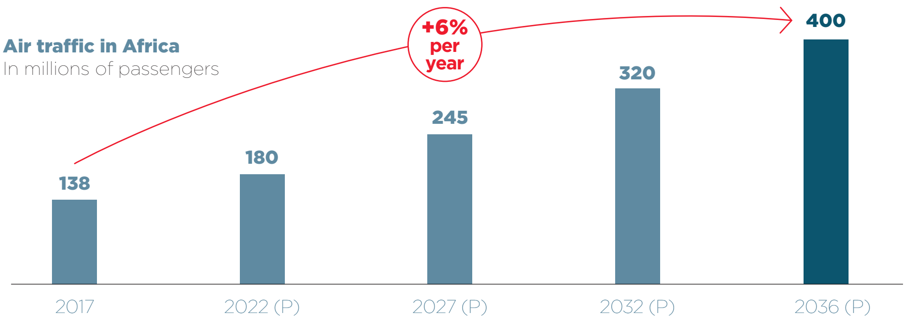
Some sectors present major market opportunities for private operators in PPPs, particularly airport projects

In addition to the efforts to be made on land and maritime transport, Africa must increase its capacity in the airport sector in a context of rapid traffic growth (6% per year on average). Some examples of successful PPPs show how beneficial these contracts can be for the development of African airports. In Rwanda, for example, a PPP was concluded in July 2017 with the private South African company Mota Engil Africa to ensure the construction of the new Bugesera International Airport near Kigali. The private company will build the airport for $700 million and operate it for 25 years, with an optional 15-year extension.

"All over Africa, air transport infrastructure is currently deficient, dilapidated, and unable to support the growth of the aviation sector."

Abdelhamid Addou
- CEO, Royal Air Maroc

Air traffic in Africa
In millions of passengers



SOURCES: IMF, SABRE MARKET INTELLIGENCE

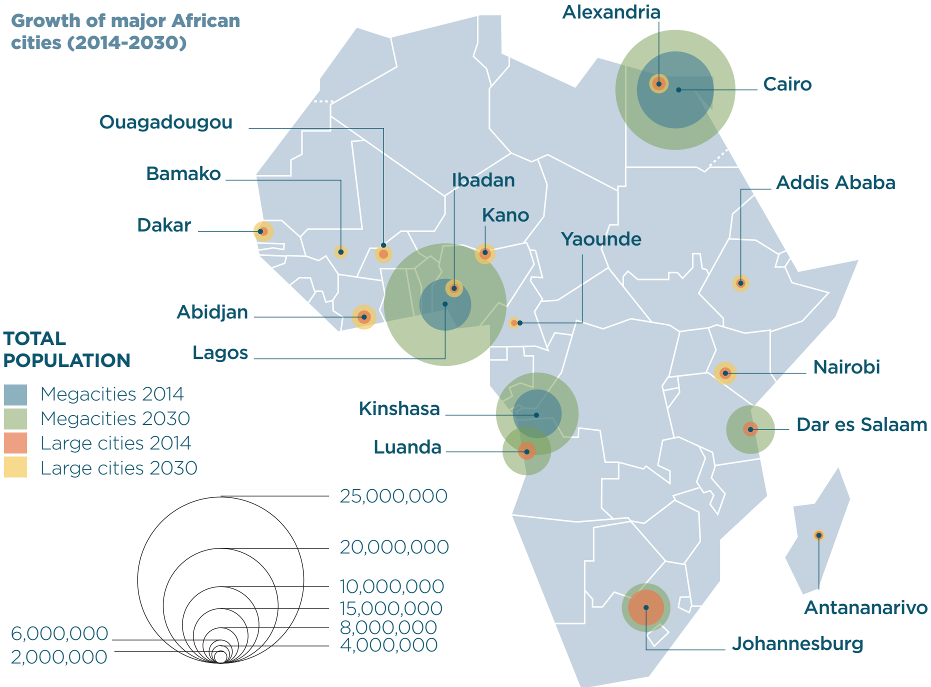
Other projects include the new airport at Libreville (Gabon), which will be built and managed by GSEZ. And in Madagascar, the consortium Ravinala Airports – made up of Groupe ADP (35% shareholder), Bouygues group (20%) and Meridiam (45%) – has signed a 28-year concession contract with the government to oversee the construction and refurbishment, as well as the operation, of the international airports at Antananarivo and Nosy Be. In some cases, the closure of airport financing by the private sector requires the use of large areas of land in the airport sector, which can be transformed into industrial, commercial or tourist facilities in order to make the project more attractive to lenders and private-equity investors.

5 Rethink the logistics of African cities

Africa's demographic growth (2.7% per year since 1990, doubling the population in this time) has been accompanied by an explosion in the size of its capital and secondary cities. Some 60 cities already have more than a million inhabitants, and by 2040 they will number nearly 150.

The agglomerations of Lagos, Cairo and Kinshasa have more than 15 million inhabitants. Their congestion problems – due to insufficient planning, investment or control of public space – make any logistics random, whether they concern goods or people.

Growth of major African cities (2014-2030)



SOURCES: ISS AFRICA, UN DESA, WORLD BANK

Establish urban master plans

The objective of improving the logistics of goods and people in the continent's cities cannot be achieved without substantial planning. Before it released its master plan in 2012, Lagos was still using a document dating back to the 1960s, when the city contained fewer than a million inhabitants. Creating new cities to relieve congestion in historic conurbations (Diamniadio in Senegal, Atlantic City in Nigeria) is useful, but cannot replace the planning exercise that public authorities must carry out, in conjunction with the private sector and civil society.

Development of Eko Atlantic City in Lagos

"It's at the entrance to the cities and ports that roads are invaded by urban activities, by overflowing markets that disrupt the functioning of supply chains. Elsewhere, they are not saturated."

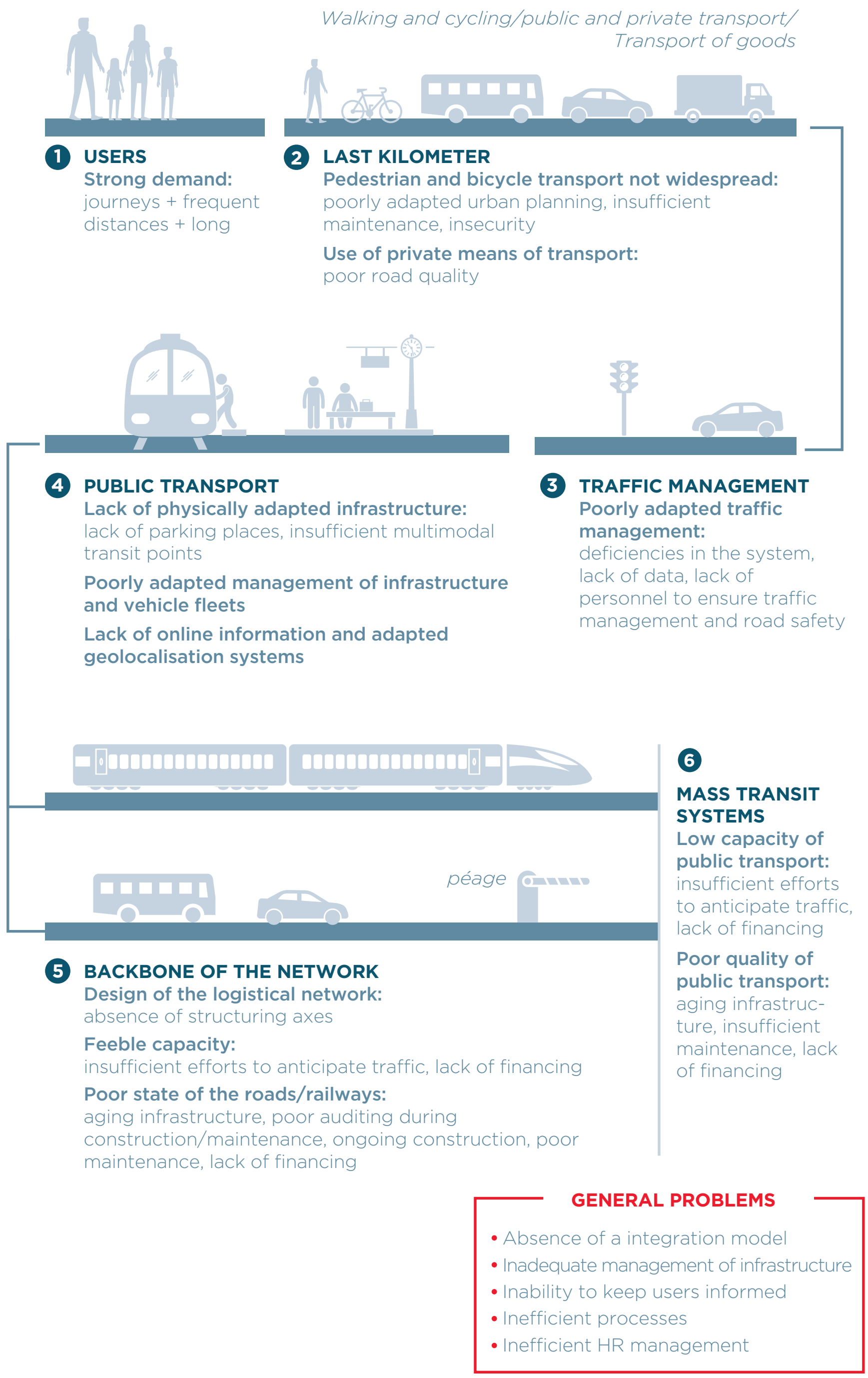
Maïdadi Sahabana
- Infrastructure Advisor, Petrolin

Organize the urban space by making use of new technology

In addition to traditional measures for improving urban logistics (installing car parks, fining illegal parking, etc.), African states can capitalize directly on "smart city" technology. It offers the chance to optimize traffic with very little investment (by reducing the number of vehicles on the roads) and to bring the city up to international standards of urban transit.
This technology includes car-sharing applications, real-time traffic management and GPS vehicle tracking systems, shared bicycle systems, and connected equipment solutions such as parking lots, tolls and traffic lights. In Nairobi, residents can pay their parking fees and monitor traffic in real time on their mobile phones.

Start-ups are implementing digital solutions to improve the supply chain of merchants in urban areas. One such is TradeDepot in Nigeria, which has developed a unique interface allowing operators to monitor their logistics activities and thus

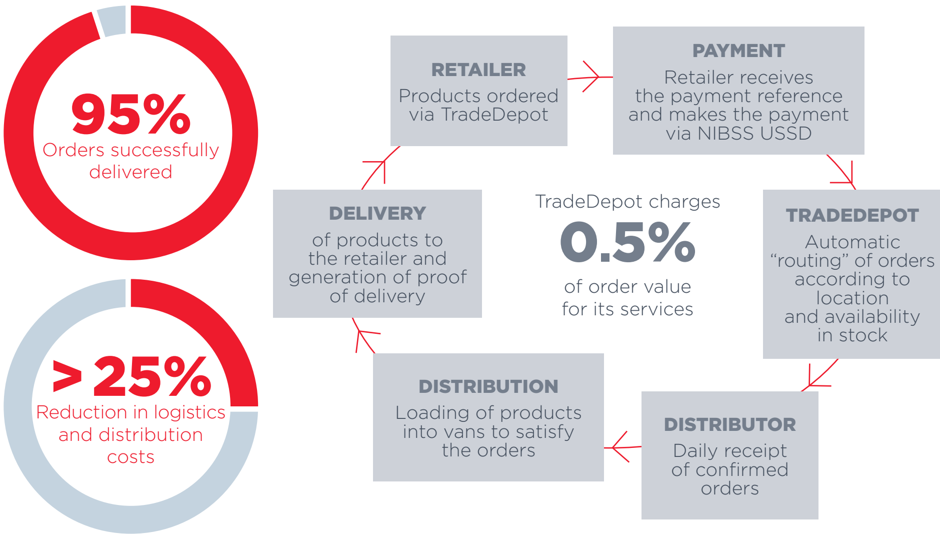
Major contemporary challenges of the urban logistics network



SOURCES: ACCENTURE – NASSCOM

integrate the entire chain, from manufacturers to distributors. On the delivery side, Sendy has set up a platform allowing users to send packages via a network of delivery agents including motorcycles, vans and pick-up drivers. The success of this innovation has led the start-up to establish a partnership with Masoko, the e-commerce subsidiary of the Kenyan telecom group Safaricom.

TradeDepot distribution model

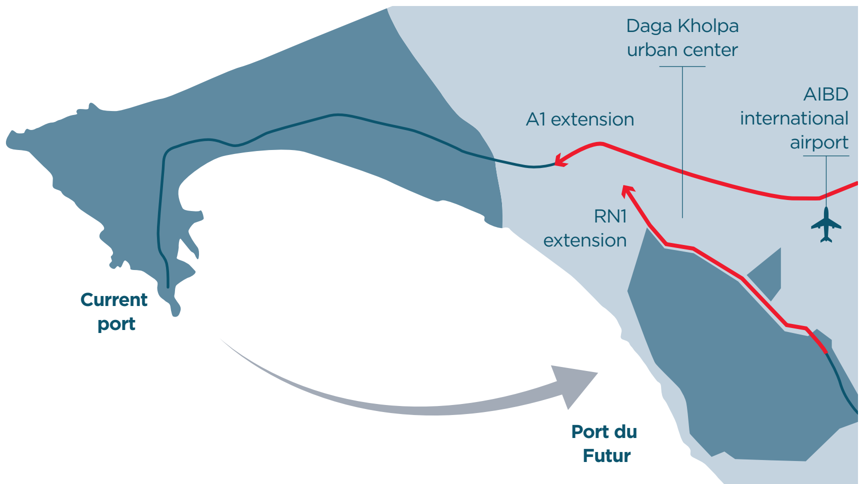


SOURCE: TRADEDEPOT

Improve port-city integration, consider building new ports away from cities

Many African cities grew up around their ports: Casablanca, Algiers, Mombasa, Cape Town, Dakar, Abidjan, etc. Port activity and the resulting flow of trucks (1 million TEU = at least 500,000 trucks) is a factor in urban congestion and gridlock, not to mention the safety and pollution risks it brings (massive fuel depots in the center of Dakar, trains carrying phosphates through Casablanca).

Gradual exit of port activities from Dakar



SOURCES: SENEGALESE MINISTRY OF URBAN RENEWAL, HABITAT AND STANDARD OF LIVING, JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

States must work in conjunction with private operators to improve port-city integration with a view to solving congestion problems. According to Olivier Ruth of R-Logitech, "in the vast majority of cases, a more organized management of truck flows combined with the use of trains would make it possible to solve most of the port congestion." In some cases, it means moving port activity out of cities through the construction of new ports (such as the Port du Futur project in Bargny, Senegal, to relieve congestion in Dakar).

5

Boost peri-urban logistics zones

African cities should follow the example of the world's most developed conurbations and create logistics zones on their peripheries. These lead to an efficient supply chain, improving the provisionment of the cities themselves. The development of these zones represents a significant market opportunity. Africa Logistics Properties (ALP), one of the pioneers in the sector, is developing modern peri-urban storage areas for distribution operators, and manufacturers in particular. In the Nairobi region, the group has developed two areas totaling more than 70 hectares, including a 22-hectare site located in the Tatu industrial park, where ALP has positioned itself to benefit from the growth potential of the logistics outsourcing market in South Africa (+4% between 2012 and 2016).

“Manufacturers and suppliers understand the promising opportunities in West Africa. They are looking for logistics solutions that allow them to transport their products efficiently in these markets.”

Geoffrey White
- CEO for Africa, Agility

INTERVIEW

Toby Selman
CEO, Africa Logistics Properties

"The logistics market tends to be more and more specialized, even if some groups prefer to carry out their own logistics activities."

Africa Logistics Properties (ALP) is a real-estate company that acquires, develops and manages modern logistics warehouses in Africa. With a team that has developed more than 1.5 million m^2 of warehouses in emerging countries, ALP is focused on Kenya, where the company has already developed two major warehouse zones.

What do logistics operators need?
They need storage facilities that meet international standards. Storage density, inventory management and truck traffic determine warehouse performance. Our 49-hectare site in West Nairobi is in demand by international and local clients who understand that efficient logistics is a key factor in success.

What do you see as the main trends in African logistics?
First, that the African consumer is expecting more. The middle class is developing with new ways of consuming: shopping malls, e-commerce. Companies must take this change on board and provide better services to their customers by optimizing delivery times and costs.
Secondly, we are witnessing the start of a modernization process, which is something we wish to support: the development of palletization (a key element for warehousing), the beginning of logistics outsourcing with the emergence of modern players in the sector. This outsourcing (still limited to 5% of flows) is progressing, as companies are aware of the importance of efficient logistics to their success.

How can we speed up the modernization of urban logistics?
We are still the pioneers, but the private sector – with its expertise and financing capacities – has a major role to play in the development of competitive peri-urban logistics zones. States must support the effort by setting up an incentive framework for our investments and by providing spaces for logistics platforms such as ours in their urban planning.

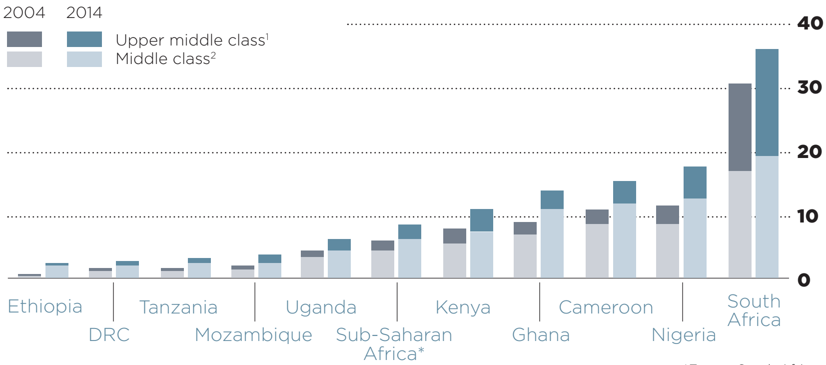
6 Put the African middle class at the heart of logistics modernization

The continent's middle classes are expanding, that we know. While the statistics are often disputed, there is no doubt that this phenomenon has led to the emergence of new consumption patterns in Africa, with the purchase of mass-market products, the burgeoning of shopping centers and the rise of e-commerce.

The number of modern shopping centers in Africa has doubled in less than a decade, reaching 579 business units in 2018, according to market research firm Sagaci Research. This is despite the strong growth in e-commerce.

In terms of people logistics, this middle class also uses new modes of transport and mobility (such as Taxify and Uber). These developments represent a major market opportunity for logistics operators. To meet it, they will need to increase the sophistication of their offer and respond to growing demands in terms of reliability, speed, traceability, inventory management and customer service.

Growth of the African middle classes (2004-2014)
Percentage of the population



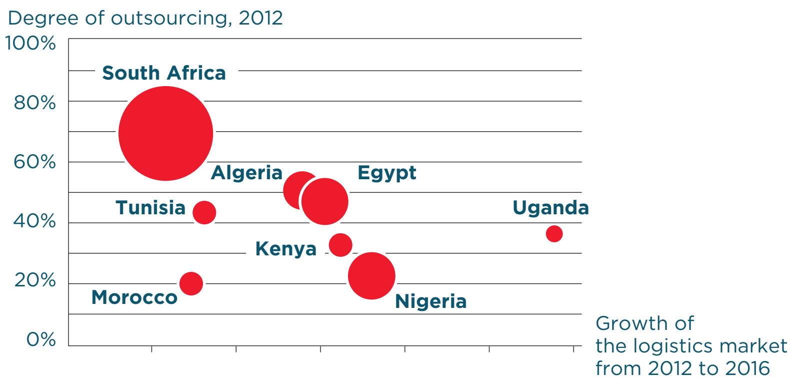
*Except South Africa
[1] $20-50; [2] $10-20, per person per day (purchasing power parity)
SOURCES: EIU CANBACK, ECONOMIST.COM

Logistics outsourcing by FMCG groups: a growing opportunity

To serve retail groups targeting the middle class, logistics will become more and more sophisticated.

There are many market opportunities for private operators: freight transport by truck, logistics services (3PL, 4PL), logistics zones (sorting platforms, warehousing), last-mile logistics (by van, car, delivery on foot).

Growth and outsourcing trends in the logistics market of selected African countries



SOURCE: AFRICA LOGISTICS, ANALYTIQA

Last-mile and cold-chain logistics: the main challenges

The development of e-commerce in Africa has had a significant impact on logistics operations between the depot and the end consumer. These "last-mile" logistics are costly all over the world, but particularly so in Africa, due to several factors: the generalized lack of addressing systems, the poor quality of the road network, the absence of a structured network of carriers in most countries, and a high degree of urban congestion in the main megacities. The e-commerce pioneer Jumia, which was founded in 2012, has begun to deploy a truly efficient parcel-transport solution. This has enabled it to develop the e-commerce sector in countries such as Nigeria, where the lack of structured carrier networks significantly limited online shopping. By regularly testing new approaches to adapt to local specificities, Jumia has constantly improved its delivery system in the 23 countries in which it operates.
Private operators are also beginning to invest in the refrigeration logistics segment, which is critical to the development of agro-industry and for the delivery of medicines. These include CFAO with Eurapharma, and local companies such as Imperial Logistics (South Africa) and Kennie-O Cold Logistics in Nigeria. To match the level of India, Kenya, for example, would have to increase its cold-storage capacity by 150 times.

"The number one challenge is to have the right address in regions without an addressing system. We have met this challenge through a number of measures that form part of our little secrets."

Sacha Poignonnec
- Co-CEO, Jumia

"A study on the cold chain in Kenya showed how extensive the need is. The challenge is to find a business model to develop the cold chain not only to serve exports, but also the local market."

Global Cold Chain Alliance

6

Start-ups are disrupting the people mobility market by offering solutions adapted to Africa

The African middle class is a major consumer of taxis. This is due to the under-equipment of private vehicles and the underdevelopment and overall poor quality of public transport systems in many African countries. Middle-class consumers will also take a taxi to avoid the security problems that affect many megacities on the continent.

Seizing this opportunity, international leaders in the field are deploying their solutions on the continent. Uber – the world leader – is now present in 17 cities in Africa. There is still room for competition, however, and particularly from the likes of Maramoja in Kenya, which insists on adapting its offer to the local situation (security provided by its drivers, payment by telephone, etc.). As shown by the withdrawal of Easy Taxi (which was present until 2016 in six cities in Africa, before leaving the continent), the perfect economic model is still difficult to find, and operators must take local habits into account.

"Our objective is to provide the most suitable means of transport for our customers. In East Africa, we have found that 'boda bodas' (motorcycle taxis) offer the best value for money."

Karl Aru
- CEO, Bolt Africa

THE PASSENGER TRANSPORT MARKET, AFRICAN "LEAPFROGGING" IN ACTION

A market where global giants have invested

World leaders in passenger transport applications such as Uber and Taxify have expanded into Africa. Together, they account for more than 3 million active users in sub-Saharan Africa.

These giants compete fiercely on the continent, which has led to the eviction of some heavyweights such as the Brazilian Easy Taxi, which ceased its operations in six African countries in 2016.

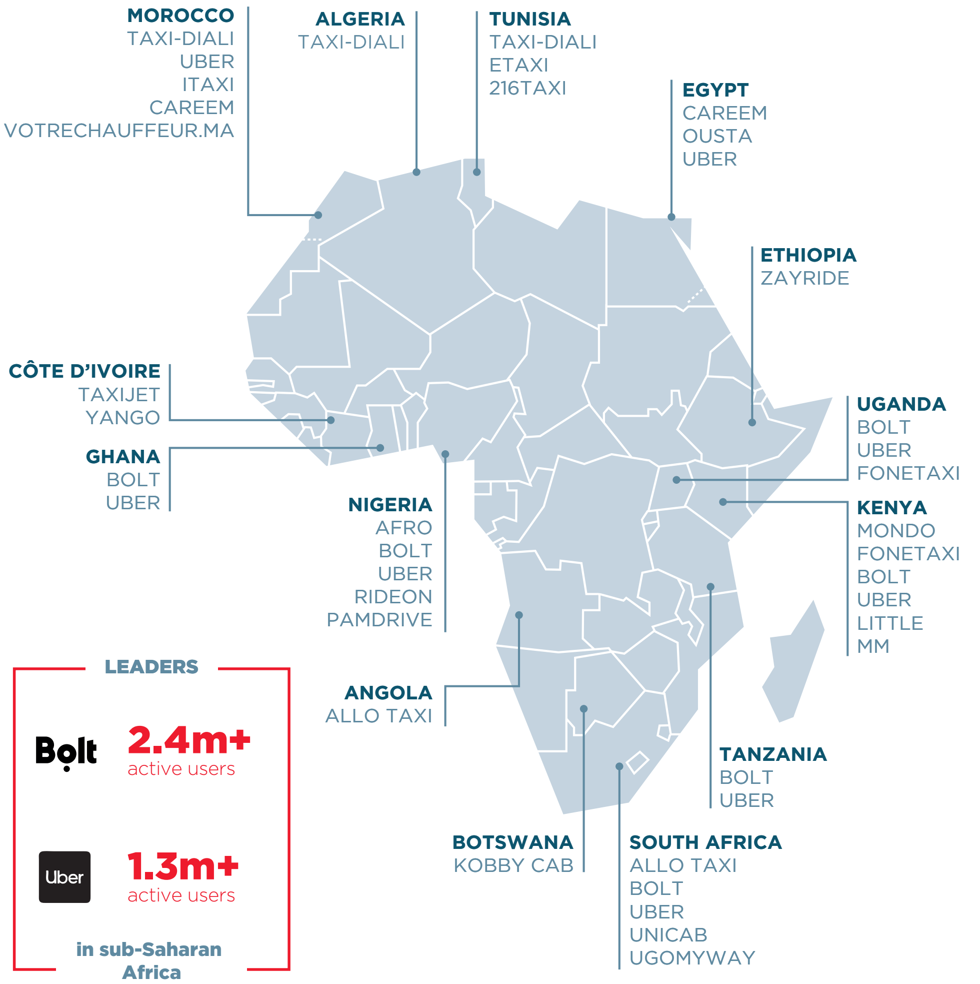
A multitude of local players

At the same time, myriad local brands are competing with these giants. Some of these operators are established over a region, such Taxi Diali or Careem in North Africa.

Most of these players are on a national scale, however, such as Maramoja or My Little Cab (supported by Safaricom), who compete with Uber for the Kenyan market.

6

Map of the main passenger transport apps in Africa



SOURCES: COMPANY WEBSITES, TECHCABAL.COM

> *"With our platform technology solution, we enable the optimization of existing truck fleets. With Kobo360, trucks can be used almost 100%. Thanks to our innovative solution, Africa can do more with what it already has."*

Prof. Ndubuisi Ekekwe - Strategy Execution/Board Member, Kobo360

Frédéric Maury – AFRICA CEO FORUM
Thomas Léonard, Amaury de Féligonde, Max Navarro-Roch – OKAN