AFRICA'S PORTS:

FAST-TRACKING TRANSFORMATION

The modernisation of Africa's port sector has yielded some spectacular results, with a number of global champions – such as Tanger Med, Port Said and Djibouti – emerging on the scene. What should public and private decision-makers do to speed up the process even more?

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AFRICA CEO FORUM

OKAN STRATEGY | FINANCE

Foreword

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Following on the success of the 2019 African logistics sector report, "Time for Revolution", the AFRICA CEO FORUM (which today has established itself as the largest international conference dedicated to Africa's private sector), in partnership with Okan (an Africa-focused strategy consulting and financial advisory firm), has decided to repeat the experience, centring its attention on ports this year.
In fact, the port sector has a special significance in Africa since more than 80% of the continent's trade passes through ports. The modernisation of port infrastructure assets is a fundamental component of Africa's transformation, competitiveness, industrialisation and economic integration. If Africa wants to draw attention to its vast resources, including its mining and agricultural products, and be able to export them, then it will need efficient ports. If Africa wants to become integrated into global value chains and industrialise, it will also need suitable infrastructure. Despite immense progress, particularly in the area of containers, much remains to be done. While noting the many strides made over the past 20 years, this report seeks to formulate recommendations that will enable public and private players to move forward with their modernisation efforts in the port sector. Africa also has plenty of success stories that provide ideal case studies.

In Morocco, Tanger Med has grown in a decade to become a world-class port hub with a powerful industrial centre. 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. Developments are impacting infrastructure, processes, digitalisation and container terminals just as other types of terminals (bulk, roll-on/roll-off, etc.). In 2019, the new Tanger Med 2 terminal opened in Morocco. Major infrastructure projects are in the process of being completed in sub-Saharan Africa, including TC2 in Abidjan (1.5 million TEU), Lekki in Nigeria (up to 2.7 million TEU over time) and MPS2 in Tema (3.5 million TEU over time).

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 come up with the six recommendations below. They are intended to be both realistic and ambitious.

"If Africa wants to be integrated into global value chains and industrialise, it needs efficient ports."

1. Invest wisely and avoid notorious 'white elephants'

Investment requirements continue to be very high on the continent, but before rushing into developing major, costly projects, African states must first clearly define the aim of their port projects. "Hub wars" are currently raging in Africa, leading to speculation that overcapacity may pose a considerable threat to the continent's container terminals. Despite countries' stated ambitions in numerous national development strategies, not all of them will be able to serve as hubs. Transshipment hubs are by definition few and far between and, in the long run, just four to five ports on the continent will be able to lay claim to this designation given that a majority of the spots have already been taken by the likes of Tanger Med, Port Said and the Port of Durban. Many countries stand to benefit from taking a more targeted, pragmatic approach to investing. The failure of Algeria's Djen-Djen port project is instructive: stiff competition between neighbouring countries and poor connectivity doomed the overly ambitious project, which sought to create a regional transshipment hub. Successful projects are built step-by-step. Projects that entail investing in stages are better given that they minimise financial risk. Being able to better identify and eliminate main bottlenecks can bring about significant performance gains, such as by decongesting port access routes and creating lorry parking facilities, all for an extremely modest cost. The Autonomous Port of Dakar is a shining example of this strategy. The creation of 400 to 500 lorry parking spaces outside the port, for a total investment cost of €8m, helped to considerably increase efficiency in the management of traffic.

2. End the vicious cycle of operational inefficiencies

African ports often suffer from major operational inefficiencies, straining their competitiveness and crippling local communities and businesses with high logistics costs: inadequate stakeholder coordination, poor turnaround management, burdensome administrative procedures, equipment theft and damage, inappropriately used storage areas, etc. According to the World Bank, cargo dwell time for containerised imports in most sub-Saharan African ports exceeds 20 days on average, compared to a dwell time of three to four days in major international ports.

Sometimes, instead of investing in hard assets, the best way to reduce these costly inefficiencies is to review operating procedures and improve cooperation between port players. This involves implementing incentive-based policies that encourage efficiency, turning to digitalisation and raising awareness among employees and various stakeholders. The Port of Durban's success in this regard is an eloquent example: policies promoting incentives and coordination between all players, accompanied by a few investments, enabled the port to reduce its average cargo dwell time by 50%.

3. Attract and mobilise the private sector...

In an environment where budgetary resources are limited and technical expertise continues to be in short supply, making use of a public-private partnership (PPP) is a particularly appealing solution for upgrading Africa's port infrastructure (as illustrated by logistics investments nearly tripling on the continent via PPP plans between 2001 and 2017). Recent experiences with greenfield port development, such as in Gabon via Arise and in Côte d'Ivoire with TC2 via Bolloré Group, show that it is even possible for states to develop new infrastructure assets at lower cost since the private sector provides all or part of the financing.

However, states must adopt a facilitation approach to be able to further attract and mobilise these valuable partners. This requires strengthening the PPP implementation framework: establishing a long-term strategy capable of providing clear direction to operators, defining a port management model with a separation of roles between each of the parties, ensuring greater transparency and offering solid legal safeguards. For example, such clarification efforts were carried out in Morocco through the port reform of 2006 which, by creating a landlord port model and assigning specific roles to public and private players, has resulted in significant efficiency gains and enhanced attractiveness.

4. ... while improving governance to defend public sector interests

PPPs are long-term agreements (lasting up to 50 years in some cases) and involve genuinely strategic assets. Therefore, African states must fully assume their sovereign role by conducting strict monitoring to ensure that risk is distributed fairly while safeguarding their sovereignty.

Before launching into a PPP, states need to keep three particular objectives in mind: making their investments profitable, ensuring that the level (quality and price) of services provided by the operators is in line with the objectives stated in the contracts and, lastly, making sure that the PPPs will effectively improve logistics competitiveness and guarantee equitable access to all users.

In this regard, advance preparation is necessary, such as through setting up dedicated PPP units with sound project evaluation expertise, as they can take a critical look at tenders from private partners. Afterwards, the partnership should be concluded based on detailed contractual requirements containing specific investment and performance commitments, which states must closely monitor throughout the project life cycle. For instance, the Gabonese government required Arise, as the new concession holder of Libreville's bulk carrier terminal, to meet specific performance commitments such as reducing turnaround time by 25% and port charges by one-third.

5. Streamline port-city interactions and improve connectivity with hinterlands

Many urban centres in Africa have been built up around ports, including Abidjan, Algiers, Cape Town, Casablanca, Dakar and Mombasa. Port operations attract lorry traffic, which thereby contributes to traffic gridlock and urban congestion, in addition to safety- and pollution-related problems. Going forward, it will be critical to find solutions in order to streamline traffic and, in many cases, the relocation of port operations outside of urban centres will need to be considered.

Ports and their surrounding areas are the most visible links in the logistics chain for African countries, but they are not everything. To stimulate hinterlands and make full use of the driving role of ports, multimodal connections (road, rail and potentially inland waterway transport) should be improved and inland dry ports established to facilitate trade. Setting up all this infrastructure, which is taking shape in several places on the continent (including the 760-kilometre road project in Togo to stimulate the hinterland of the new Port of Lomé and the Kagbelen Dry Port developed 35 kilometres outside the Port of Conakry by Bolloré Ports), will allow Africa to fully leverage its resources.

"To stimulate hinterlands and make ports genuine growth drivers, multimodal connectivity should be improved."

6. Integrate industrial zones and modernise the non-container segment to ensure the continent's full development

While most attention is drawn to major infrastructure assets accommodating containerised traffic (Tanger Med, Tema, Lomé, etc.), it is important to note that logistics, no matter how modern and efficient, cannot alone bring about Africa's industrialisation.

To modernise Africa's port apparatus, integrated industrial port projects (such as the Tanger Med complex, which powered the development of the automotive, aviation and textile sectors in northern Morocco) must be promoted.

What is more, the continent's needs cannot solely be met by containerised traffic. Quality infrastructure assets specialising in other types of traffic, such as mineral and bulk food, thus needs to be developed in parallel. Starting up production at Africa's plentiful, large mineral deposits requires the creation of big, efficient mineral terminals like Richards Bay in South Africa (coal) and Nouadhibou in Mauritania (iron). To meet the non-containerised cargo needs of a growing population, suitable terminals must be built (roll-on/roll-off, fruit, grain, etc.).

Lastly, this report, drafted in atypical circumstances as the health crisis and lockdown unfolded, explores the potential impact of Covid-19 on Africa's port sector landscape. While the exact nature and extent of the pandemic's fallout are difficult to predict at the present time, it is likely that both Africa and its ports will be affected. Business continuity during the crisis has amply demonstrated the strategic character of these assets. The sector has been – and will continue to be – confronted with many challenges in 2020, from operational upheavals to a temporary dramatic drop in business activity on both the import and export end. The sector may undergo a reshuffle, meaning new privatisations, the consolidation of certain players and fast-tracked digitalisation. In addition, production is likely to be brought back on African soil and continental trade is going to become a more regional affair, providing Africa with an opportunity to accelerate its industrialisation.

We hope you enjoy reading this report!

Preface

Kim Fejfer
CEO, A.P. Møller Capital

A.P. Møller Capital ("APMC") was created in 2017 by the Danish Mærsk McKinney Møller family, founder and majority shareholder of A.P. Møller-Mærsk, the parent company of Maersk Line, the world's largest container shipping company. APMC was established to raise large sums of private capital to help develop key infrastructure assets in growth markets. Beyond delivering financial returns to investors, we are looking to support and take part in projects that have a positive social and environmental impact.
In August 2017, we launched our first investment fund exclusively focused on Africa, The Africa Infrastructure Fund. With an initial target of 10 to 15 investments, the fund was subscribed for close to $1bn by Danish pension funds and A.P. Møller Holding. These investors have put their trust in our long-standing experience in infrastructure and our knowledge of Africa, paired with a network of advisors and industry partners covering some 40 countries on the continent.

Choosing Africa as the geographic area of interest for our first investment fund came naturally since the continent's infrastructure investment requirements are extremely vast and yet remain underfinanced. By providing our capital and expertise to projects in the transport and energy sectors, we aim to be a source of sustainable growth and to contribute to Africa's prosperity, and at the same time deliver attractive returns to our investors. For now, we have invested in four African countries, including our recent investment in the African port platform Arise Ports & Logistics, which operates or develops port infrastructure in countries such as Côte d'Ivoire and Gabon.

"The improvement of procedures, the coordination of players and the growing use of technology should help reduce operational inefficiencies."

This significant investment, carried out alongside several exemplary partners, including Olam International and the Africa Finance Corporation (AFC), highlights the importance we place in developing and modernising Africa's port network, one of the continent's most sizeable challenges in the years ahead. In fact, even though certain ports have been highly successful and proven themselves to be Africa's main hubs (Tanger Med in Morocco and the Port of Durban in South Africa), further progress can be made continent-wide to support Africa's move towards development and industrialisation. What is more, a number of highly promising port projects are currently under way in countries such as Côte d'Ivoire, Ghana, Mauritania and Senegal.

It is our view that this major development effort will need to take into account at least three significant challenges. First, large but properly dimensioned investments must be made to modernise and adapt wharves at Africa's ports. Such investments are best made via public-private partnerships, which African public authorities have gotten a better handle on over time. Second, the improvement of operating procedures, the coordination of players and the growing use of technology (artificial intelligence, Internet of Things [IoT], data analysis, blockchain) should help reduce operational inefficiencies that continue to be widespread on the continent. Lastly, the port sector's dynamism needs to be undergirded by broader economic efforts and initiatives, such as investing in logistics and the industrialisation of port hinterlands. Developing industrial and logistics complexes will promote value creation on the continent.

Over the months and years ahead, APMC wishes to position itself as a trusted partner in port development continent-wide. Thanks to our experience and financial leverage, today we are capable of actively supporting large-scale port projects and, in doing so, we contribute to Africa's growth.

The AFRICA CEO FORUM provides a unique opportunity to better grasp and drive home the critical importance of port-related challenges on the African continent. This report, which presents an accurate picture of global trends and Africa's specificities in the sector, identifies six pragmatic and ambitious recommendations to enable the full-fledged modernisation of Africa's ports, its gateways to the world.

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Impact of the Covid-19 crisis on the port sector

1 PROOF IS IN THE NUMBERS

Major transformation is under way

PROOF IS IN THE NUMBERS

1 Four global trends are transforming the port sector

For 20 years now, the global port sector has been undergoing major transformation. It has been disrupted by four main trends:

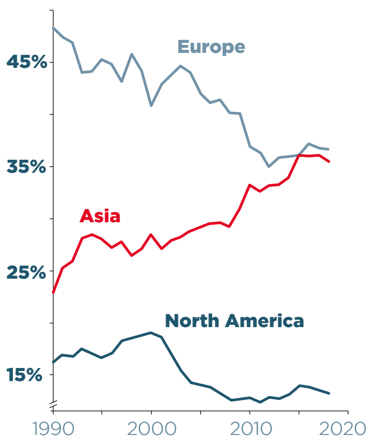
- **The Asian pivot:** traffic is being reorganised around the Asia-Pacific region, the world's new economic hub
- **The race to gigantism:** ships and infrastructure assets keep growing in size to generate economies of scale
- **The consolidation of the sector:** the growing concentration of the shipping business
- **The spread of new technologies in port operations** (digitisation, automation, big data, etc.)

THE ASIAN PIVOT

The Asia-Pacific region has established itself as the world's main industrial hub. The Asian continent's share in global exports has risen from 23% in 1990 to 35% in 2018. This economic shift has led to shipping routes being reorganised around the Asia-Pacific:

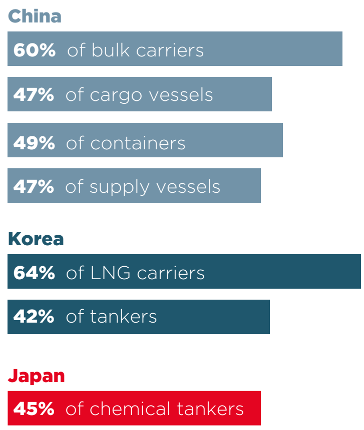
- Nine of the region's ports rank in the global top 10
- China accounts for 49% of overall container shipping volumes

Share of major economies in global exports
in %



SOURCE: IMF (DATAMAPPER)

Share of China, South Korea and Japan in global tonnage
in %



SOURCE: UNCTAD

The Belt and Road Initiative launched by China illustrates this shift. This massive investment programme aims to enhance logistics infrastructure across inland and sea routes to encourage trade between China and the rest of the world.

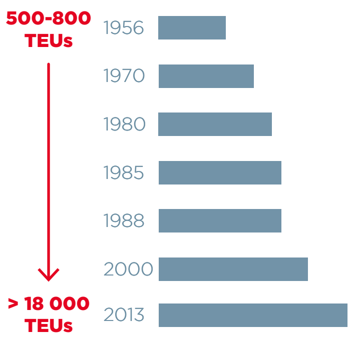
The Belt and Road Initiative, a massive logistics infrastructure investment programme

SOURCE: MERCATOR INSTITUTE FOR CHINA STUDIES

THE RACE TO GIGANTISM

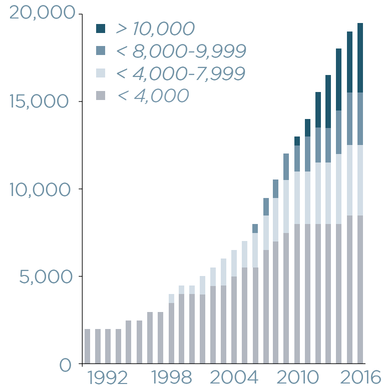
Competition is pressuring sector players to generate economies of scale. As a result, container ships are getting larger and larger. In the 1950s, the first container ships had a capacity of 500 to 800 TEU. The next generation – the Triple E-class container ship – has a capacity of more than 18,000 TEU.
The MSC Gülsün, the world's largest container ship, has a capacity of just under 24,000 TEU.
To be able to accommodate these ships, ports have to adapt, via dredging, expanding terminals, creating storage facilities, etc.

Changes in container ship size since the 1950s
in TEU



SOURCE: UNEP

Distribution of container ship classes in global tonnage
in thousand TEU

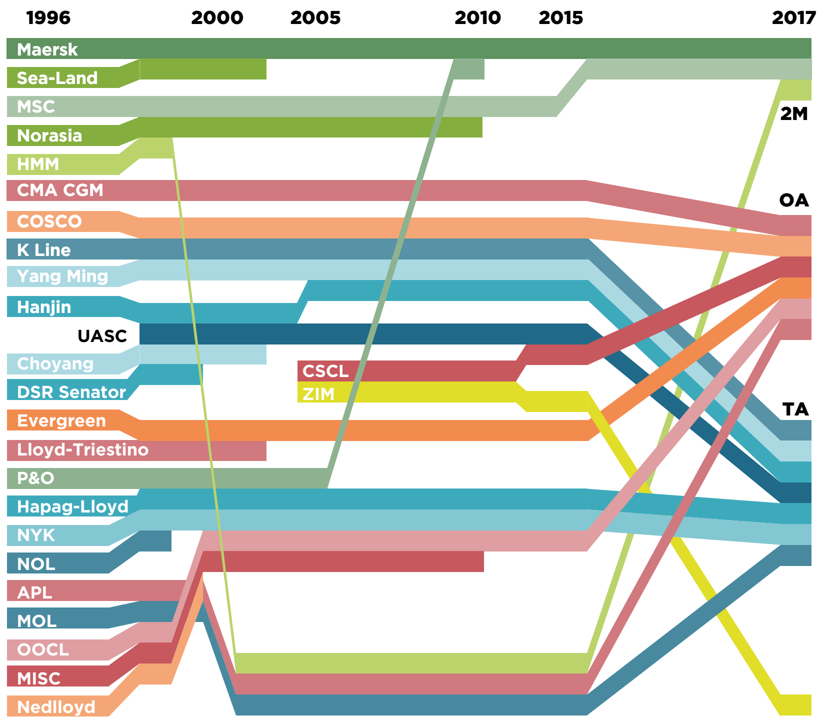


SOURCE: WSP

THE CONSOLIDATION OF THE SECTOR

Increased competition in the sector has resulted in shipping companies growing rapidly via M&A deals and strategic alliances. Since the 1990s, nearly half of the world's 30 leading shipping companies have disappeared.

Consolidation of the world's main shipping companies since the 1990s



SOURCE: ALPHALINER

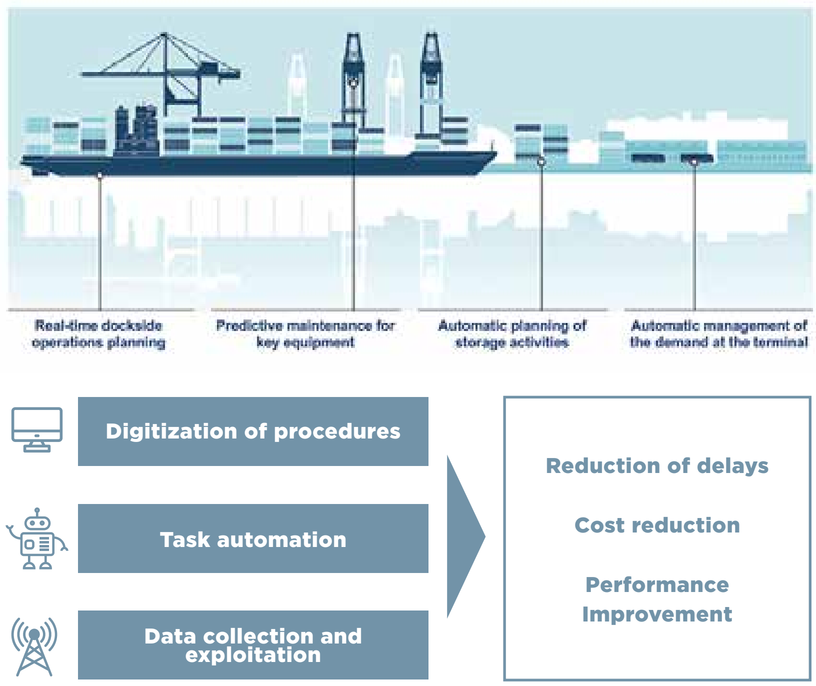
THE SPREAD OF NEW TECHNOLOGIES

New technologies (cloud computing, robots, IoT, big data, etc.) are being integrated into port operations at a quickening pace. Consequently, more than 40 ports have completely or partially automated their worldwide operations to date.

Such integration of new technologies helps to reduce turnaround time, lower costs and improve performance, and breaks down into three categories:

• Digitisation of procedures
• Task automation
• Data collection and use

The integration of new technologies into port operations



SOURCE: MCKINSEY

The Mærsk McKinney Møller, the first Triple-E class container ship

2 Africa’s port sector has not sat on the sidelines and is undergoing sweeping changes

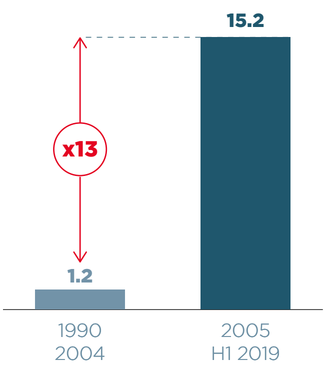
Africa’s port sector has also been impacted by the aforementioned global trends and has thus been deeply transformed over the past two decades in the following ways:

- Increasingly sizeable **investments**
- Growing involvement of **major economic powers and private international operators**
- Emergence of **world-class ports**
- Rapid development of **Asia-Pacific shipping routes**

INCREASINGLY SIZEABLE INVESTMENTS

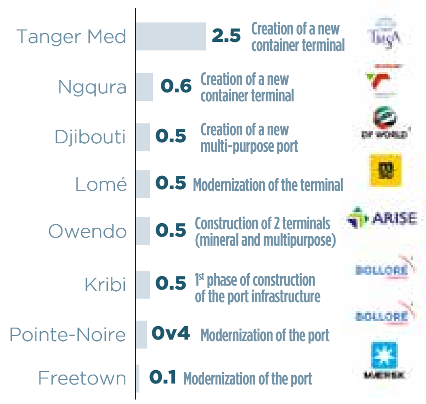
In Africa, the port sector has attracted a massive amount of investment in order for ports to be able to accommodate next-generation vessels. Private investment in Africa’s ports between 2005 and H1 2019 totalled $15bn (more than $50bn when taking it account public investment), or 13 times more than over the 1990-2004 period.

Private investment trends in Africa’s port sector
in US$ billion



SOURCE: WORLD BANK (PPI DATA)

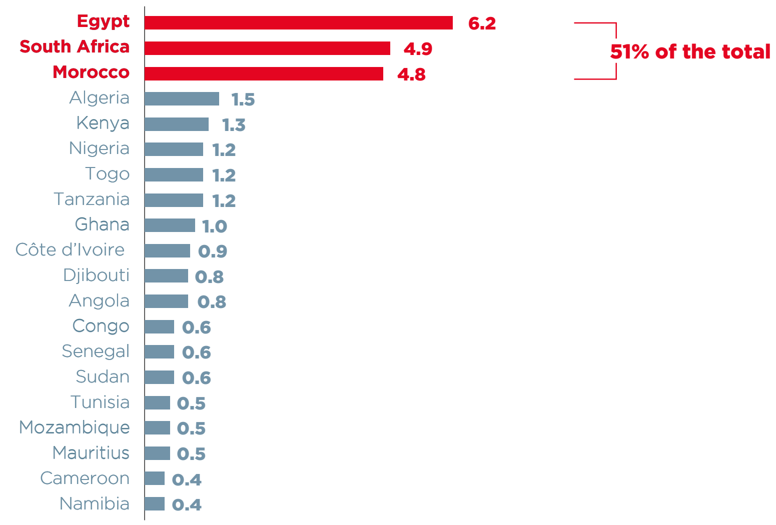
Investments made in Africa’s ports
in € billion



However, though investment is growing rapidly and concerns most of the continent’s countries, African port development continues to be very uneven.

Egypt, Morocco and South Africa are the sole African countries equipped to handle more than 4 million TEU in 2018. Taken together, these three countries account for 51% of volumes transported in Africa.

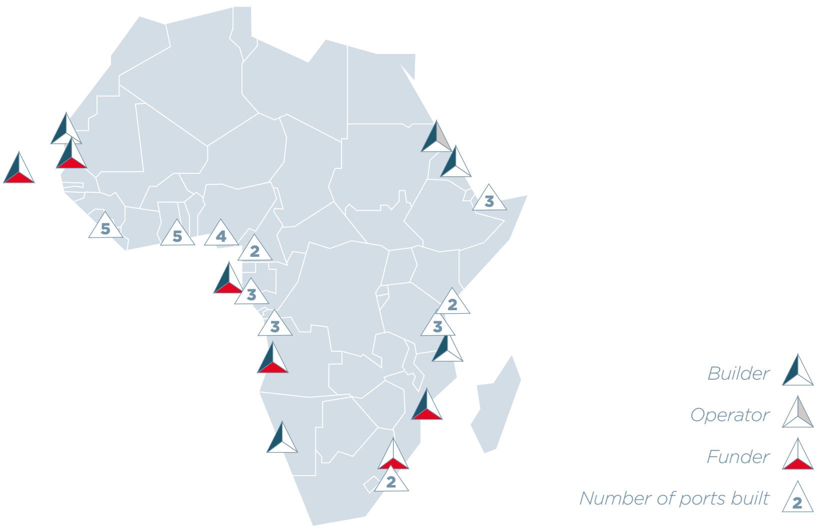
Container volumes transported by Africa’s top 20 ports
in million TEU



SOURCE: UNCTAD

GROWING INVOLVEMENT OF MAJOR POWERS AND PRIVATE OPERATORS:
Major economic powers are increasingly interested in Africa's port sector. For instance, China, which has become the continent's leading trade partner, has invested or plans to invest in at least 46 ports in sub-Saharan Africa. These investments primarily target East Africa and the Gulf of Guinea.

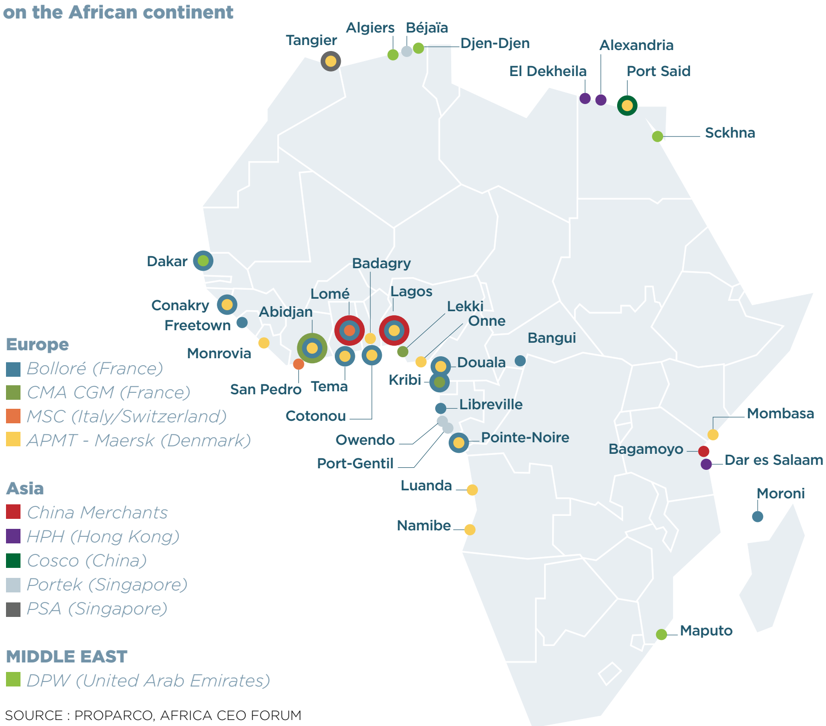
Involvement of China in Africa's port infrastructure



SOURCE: MARITIME SECURITY REVIEW

Private international port operators are also getting ever more involved in the sector. They participate in investments as well as in construction and management efforts as part of privatisation schemes/concession processes put in place by public authorities.

Main port concession holders on the African continent

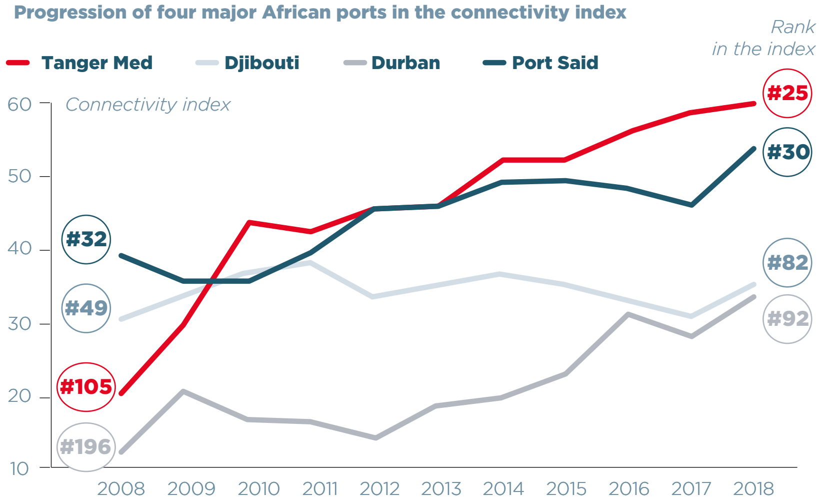


SOURCE : PROPARCO, AFRICA CEO FORUM

EMERGENCE OF WORLD-CLASS PORTS

These investments have stimulated the upscaling of Africa's ports, resulting in a significant rise in global rankings. The Port of Tanger Med now ranks among the world's top 50 ports in terms of connectivity[1], coming in 25th place globally.

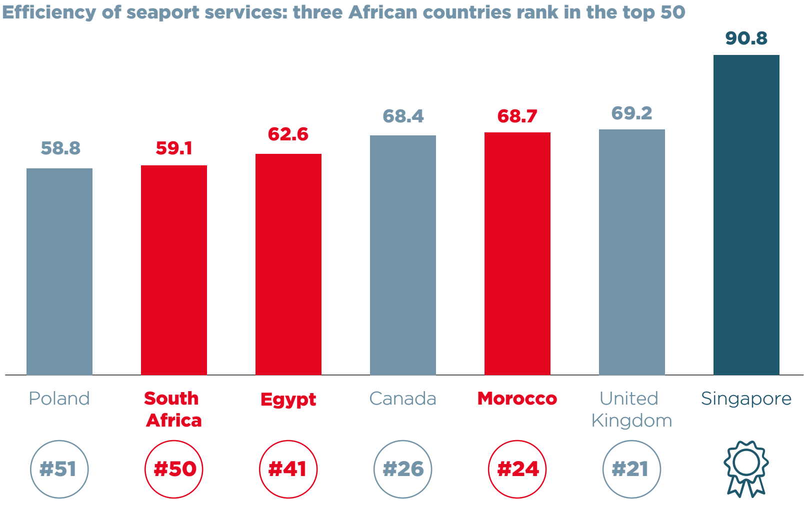
Progression of four major African ports in the connectivity index



SOURCE: UNCTAD

Three African countries (Egypt, Morocco and South Africa) now rank in the top 50 in terms of efficiency of seaport services[2].

Efficiency of seaport services: three African countries rank in the top 50



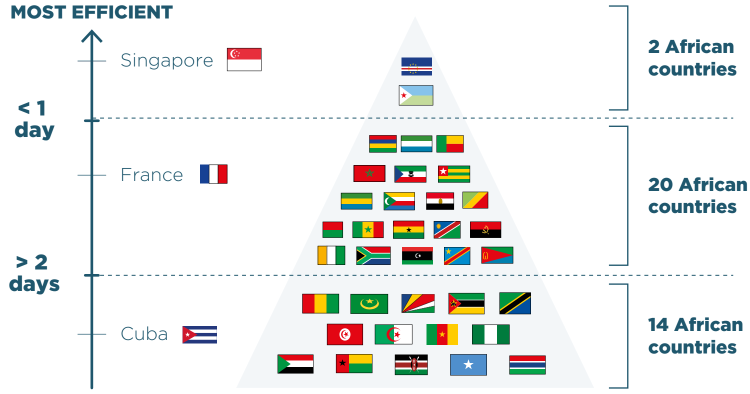
SOURCE: WORLD ECONOMIC FORUM

1. UNCTAD index measuring six indicators across more than 900 of the world's container ports:
(a) Number of scheduled ship calls per week in the port
(b) Deployed annual capacity in TEU
(c) Number of regular liner shipping services to and from the port
(d) Number of liner shipping companies that provide services to and from the port
(e) Size of the largest container ship operating liner shipping services on a regular basis
(f) Number of other ports connected to the port in question through liner shipping services

2. Rating based on a World Economic Forum survey of approximately 17,000 business executives around the world. Participants evaluated the efficiency of seaport services in their respective countries based on a number of indicators (frequency, punctuality, speed and price of seaport services).

In 22 African countries, ships spent a median time in port[1] of less than two days. At ports in Djibouti and Cape Town, this time has been reduced to less than a day.

Median time spent in port: breakdown by African country
in days

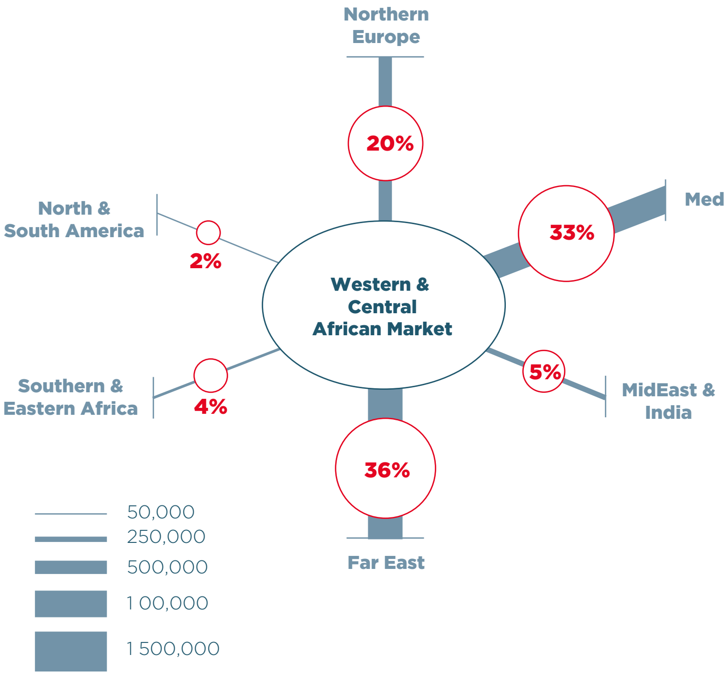


SOURCE: UNCTAD

RAPID DEVELOPMENT OF ASIA-PACIFIC SHIPPING ROUTES:
In keeping with overall sector trends, Africa is being greatly impacted as port traffic increasingly shifts to the Far East.

The simultaneous growth of import traffic of Asian manufactured goods and export traffic of commodities to industrial countries in Asia is having a remarkable impact on the continent. For example, in 2018 it was estimated that 36% of the trade capacity at Central and West African ports is devoted to traffic travelling in the direction of the Far East. This percentage is higher than that of any other region in the world, including the Mediterranean.

Breakdown of trade capacity deployed at Central and West African ports (by destination in 2018)
in TEU



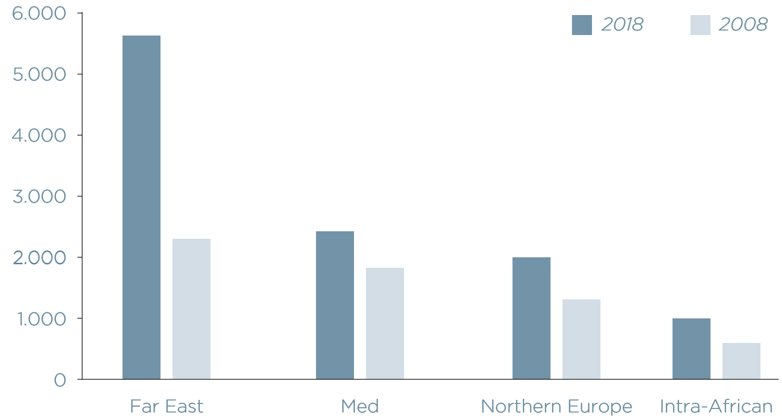
SOURCE: SEFACIL FOUNDATION

1. Median time spent by ships within port boundaries.

2

In addition, this growth in traffic to Asia has led to bulking up the vessels that connect the two continents. For instance, since 2008, average container ship capacity for vessels connecting Central and West Africa to the Far East has more than doubled.

Average container ship capacity at Central and West African ports (by destination)
in TEU



SOURCE: SEFACIL FOUNDATION

3 A fourfold deficit still needs to be addressed to modernise this strategic sector

The port sector is particularly strategic for Africa. Since intra-regional trade is underdeveloped, global trade is essential for the continent's economies.

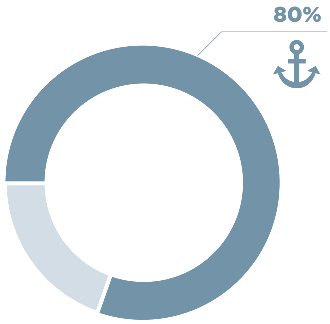
To become modernised, Africa's ports have four main challenges to address:

- **Port infrastructure deficit:** existing infrastructure is often inadequate to meet demand
- **Ill-adapted environment:** surrounding areas and hinterlands are generally poorly connected to ports
- **Limited operational efficiency:** port operational performance is poor
- **High operating costs:** port operations are relatively uncompetitive

STRATEGIC IMPORTANCE OF PORTS FOR AFRICA

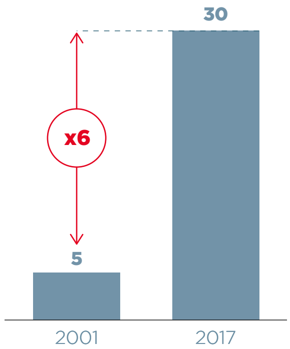
The port sector is strategic for Africa: 80% of Africa's external trade moves through ports. What is more, volumes have increased significantly over the past two decades, with containerised port traffic rising sixfold between 2001 and 2017. Despite this swift development, major challenges will need to be addressed to modernise Africa's ports.

Share of Africa's external trade moving through ports
in %



SOURCE: PROPARCO

Change in containerised port traffic in Africa
in million TEU

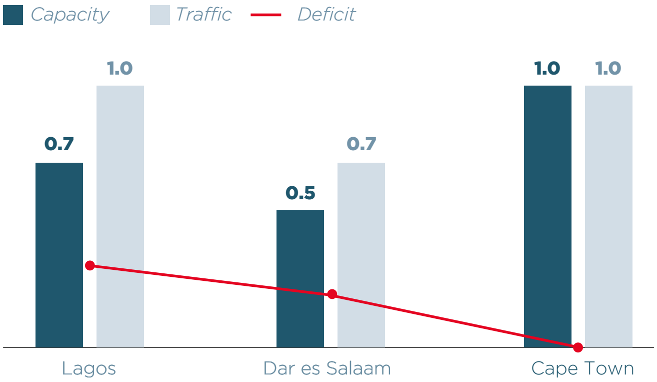


SOURCE: UNCTAD

INFRASTRUCTURE DEFICIT

Existing port infrastructure is often inadequate to meet demand. As a result, several major ports, including Lagos, Mombasa, Dar es Salaam and Cape Town, are on the verge of reaching their capacity limit, which can lead to costly congestion issues. Without investment, and taking into account growth in demand, the situation runs the risk of worsening.

Capacity and traffic at three major African ports
in million TEU

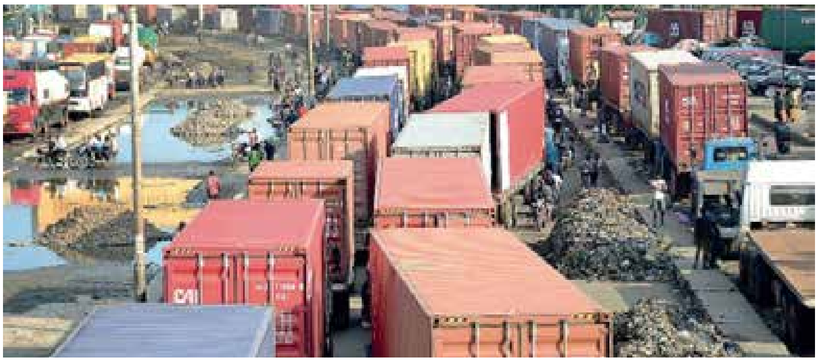


SOURCE: PWC

ILL-ADAPTED ENVIRONMENT

Surrounding areas and hinterlands are generally poorly connected to African ports. The poor quality or lack of inland logistics infrastructure (e.g., roads and railways) can thus delay, or even block, incoming and outgoing traffic.

Surrounding area of the Port of Lagos (Nigeria)



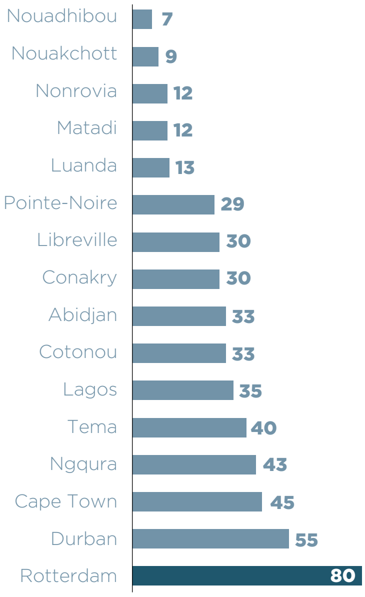
LIMITED OPERATIONAL EFFICIENCY

Although there are large disparities from one port to another, Africa's ports are generally relatively inefficient when taking into account the main performance criteria:

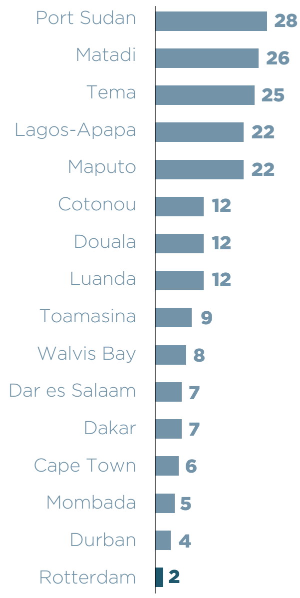
- Ship entry/exit
- Ship loading/unloading
- Cargo dwell time in port

As a result, the volumes processed per hour worked are hardly in line with top international standards, with 29 TEU per hour at Pointe-Noire and 55 TEU per hour at Durban, compared with 80 at Rotterdam. In addition, stakeholders are not encouraged to quickly clear out cargo, which leads to long dwell times (e.g., 25 days on average at Tema for containers vs. 2 days at Rotterdam).

Volumes processed per hour worked in port
TEU per hour



Average dwell time for containers in port
in days

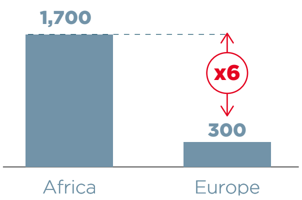


SOURCE: AFRICAN DEVELOPMENT BANK

HIGH OPERATING COSTS

Operations are also more expensive to run, as management, storage and local delivery fees in Africa cost up to six times more than in Europe's ports. This lack of competitiveness is an additional obstacle to the continent's integration into the global economy.

Average management, storage and local delivery costs for containers
in US$/TEU



SOURCE: PROPARCO, TEAM ANALYSIS

2 SIX RECOMMENDATIONS

Potential solutions to build a world-class port sector in Africa

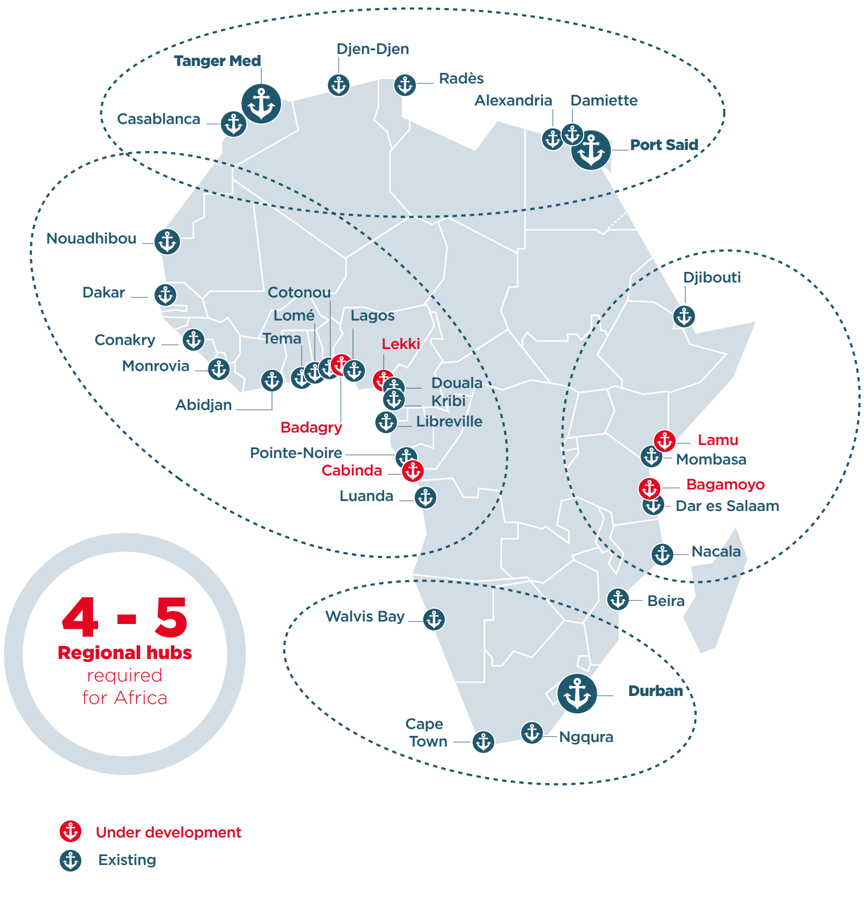
1 Invest wisely and avoid notorious "white elephants"

Africa's port sector is attracting more private investors than ever before ($15bn in private investment between 2005 and H1 2019), but in spite of this increased interest, the continent's requirements remain largely unmet. Going forward, investments need to be made with maximum impact. The first challenge facing Africa's ports is how to invest "wisely" while avoiding "the delusions of grandeur" trap. Despite countries' stated ambitions in numerous national development strategies, not all of them will be able to serve as continental hubs. Instead of investing in expensive, major infrastructure projects, many countries would benefit from taking a more conservative, step-by-step investment approach and focusing on the bottlenecks that hinder their operations.

PUT SERIOUS REFLECTION INTO PORT PROJECTS

Hub wars are currently raging in Africa, leading to speculation that overcapacity may pose a considerable threat to the continent's terminals. It is worth noting that in every other region of the world, the number of ports able to serve as continental port hubs is inherently limited (Singapore in the Asia-Pacific, Dubai in the Middle East and Rotterdam in Europe).

Only four to five of the continent's ports will be able to lay claim to this designation: two in North Africa (Maghreb/Machrek), one in West Africa and two in East and Southern Africa. In several regions, the role has already been taken: Tanger Med in the north-west, Port Said in the north-east and Durban in the south. Nevertheless, several of the continent's ports have thrown themselves into an investment race.



SOURCE : PROPARCO

1

In West Africa, while the Port of Lomé got a head start thanks to a massive €352m investment from Terminal Investment Limited (TIL), competition is raging with neighbouring ports. APM Terminals and Bolloré have announced a total investment of $1.5bn to expand and modernise Ghana's Port of Tema and aim to triple the port's current annual capacity to 3.5 million TEU over time. The Port of Abidjan has also undertaken a €400m investment to build a second container terminal (TC2) and aims to increase the port's capacity to 1.5 million TEU. Further projects include Nigeria's Lekki (a megaproject with a total cost of €1.6bn and a capacity of 2.7 million TEU over time) and Badagry.

Before undertaking investments, African states must first clearly define the aim of their port projects. Three scenarios are possible:

- **Continental hub:** ports such as Tanger Med and Port Said, with a minimum capacity of 3 million TEU and infrastructure enabling transshipment operations
- **Regional hub:** ports such as Djibouti, with a capacity ranging from 500,000 to 1 million TEU, serving a wider hinterland
- **National hub:** ports such as Libreville, with a capacity ranging from 100,000 to 500,000 TEU and able to fully serve its domestic market

Not all ports will be able to lay claim to the title of continental or regional hub if certain essential criteria are not met, including:

- **A strategic location in relation to global and regional shipping routes, and a favourable location** (deep water, limited dredging needs)

- **An environment where ports are still undeveloped in the region**

- **Substantial traffic demand**
  - Significant import and export traffic created by a full-fledged domestic market and a wider hinterland to serve
  - Transshipment traffic, particular by developing partnerships with international shipping companies
  - An existing industrial zone that can "fuel" the port's import and export traffic

- **Good connectivity with hinterlands:** fluid traffic flows in areas surrounding ports, existing transport infrastructure along corridors (e.g., roads and railways)

The example of the failure of Algeria's Djen-Djen port project is instructive in this regard. Djen-Djen sought to become a transshipment hub but the conditions were not in place for it to be an attractive, thriving project, as it suffered from stiff competition with neighbouring ports (Tanger Med and Port Said), poor connectivity with central Algeria and a lack of infrastructure, such as a protective seawall, storage facilities and means of transport.

CASE STUDY

The Port of Djibouti has the key advantages necessary for developing into a regional hub

AN IDEAL LOCATION

- **A strategic geographic position,** at the crossroads of Africa, Asia and the Arabian
- **Peninsula o Deepwater port**

SUBSTANTIAL DEMAND

- **A large Ethiopian market that is almost exclusively served by the port**
- **A promising industrial zone adjoining the port** (Djibouti Free Trade Zone) - 240-hectare zone in pilot phase already inaugurated

ADEQUATE INFRASTRUCTURE

- **Capacity to accommodate large vessels:** 15.3-metre draught able to accommodate ships of 100,000 DWT
- **Annual capacity of 8.2 million metric tonnes**

GOOD CONNECTIVITY WITH HINTERLANDS

- **By road: governments and private players (e.g., China and Kuwait)** are investing massively in the corridor
- **By rail: modern railway line** linking Djibouti and Addis Ababa inaugurated in 2017

1

SPREAD OUT INVESTMENTS OVER TIME

Port authorities should painstakingly study demand before investing massively in infrastructure assets. For example, many countries would benefit from spreading out their investments over time to minimise risk. It makes more sense to invest in infrastructure gradually by following the development of other projects that could “fuel” a given port with import and export traffic.

The mineral terminal in Libreville serves as a particularly instructive example of this approach. Arise Group developed the terminal in two phases in order to minimise financial risk. The first phase of construction helped to develop basic infrastructure assets and launch regional mining projects: a 170-metre jetty, four barges, rail transport links and rolling stock purchases.

GSEZ MP mineral terminal, Libreville (Gabon)

1

PRIORITISE ELIMINATING MAIN BOTTLENECKS

A given logistics chain is only as strong as its weakest link. Modern cranes alone will not be enough to ensure rapid handling. Port bottlenecks should be identified and analysed before launching into large-scale construction works. Considerable performance gains can be achieved by way of simple, extremely low-cost solutions.

For example, African ports need to prioritise reducing congestion caused by significant lorry traffic in areas surrounding ports. This can be easily achieved by creating lorry parking facilities and logistics zones in hinterlands, as demonstrated by the Autonomous Port of Dakar's investment plan comprising 400 to 500 parking spaces and a vehicle booking system to manage lorry traffic flows. This highly pragmatic solution will help to streamline cargo flows and improve the port's productivity.

"No need for 10km of docks. With the right tools, you can have a small but attractive port!"

Bernard Amoussou-Sossou
Executive Director, Sobemap

CASE STUDY

A pragmatic, low-cost solution to decongest the **Autonomous Port of Dakar (APD)**

A RELATIVELY MODEST INVESTMENT

- **Parking facilities inside the port** with a capacity of 400 to 500 spaces and a total surface area of 6.3 hectares
- **An electronic platform** (vehicle booking system) to manage traffic flows: appointment system for lorries with authorisation to enter the port
- **€8m investment**

STRONG PRIVATE SECTOR INVOLVEMENT

PPP between the Autonomous Port of Dakar and the company AGS via a five-year renewable concession contract

ELIMINATION OF APD'S BOTTLENECKS

- **Control of the number of lorries inside the port and decongestion of the surrounding area**
- **Greater efficiency in port operations** with significantly reduced vessel dwell time

2 End the vicious cycle of operational inefficiencies by focusing investment on soft assets

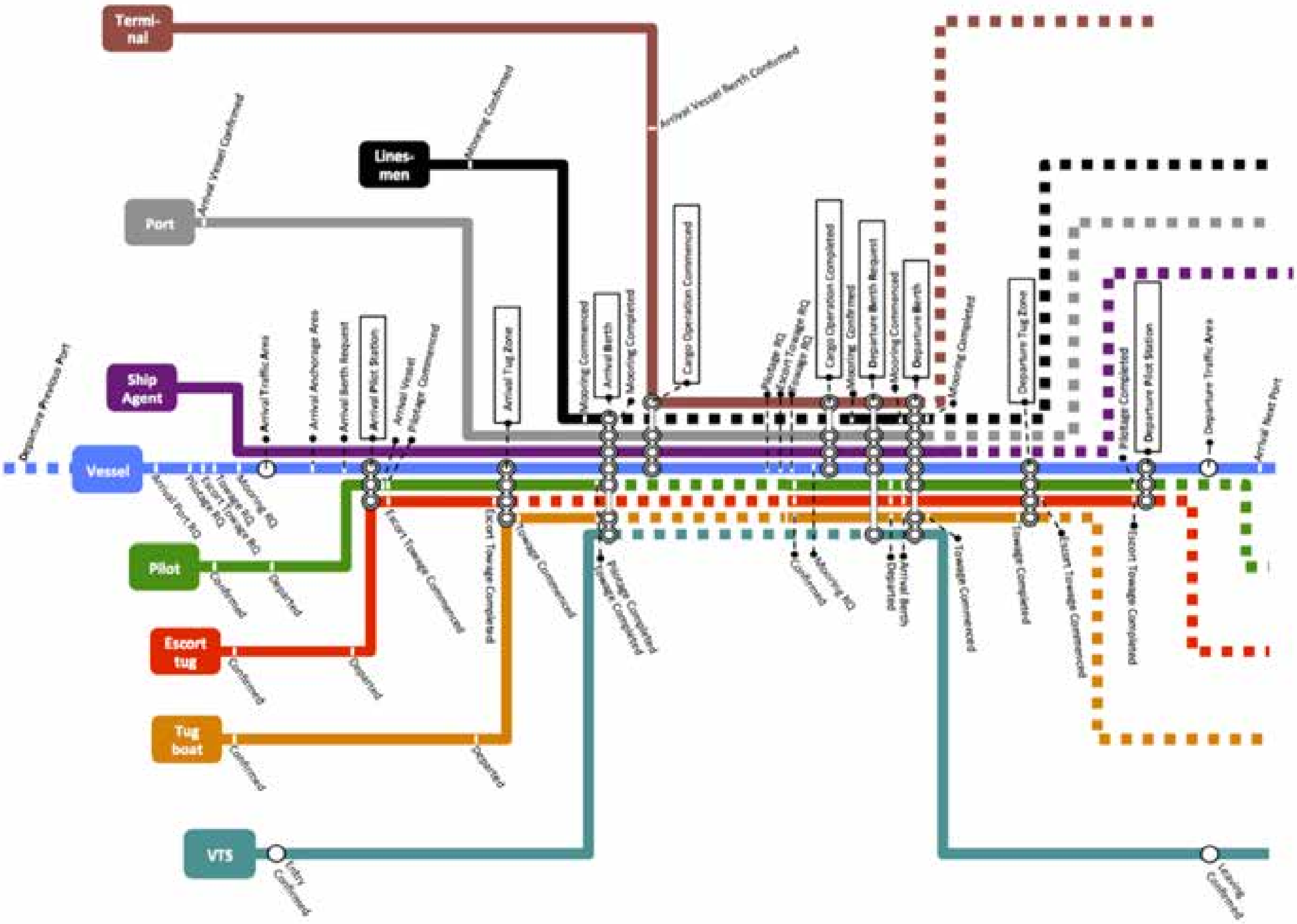
Besides a lack of infrastructure, Africa's ports often suffer from major operational inefficiencies, including inadequate stakeholder coordination, poor turnaround management, burdensome administrative procedures, equipment theft and damage and inappropriately used storage areas. These chronic inefficiencies do not mix well with the extreme complexity of port operations and thus put a heavy burden on the competitiveness of African ports. For example, the World Bank estimates that cargo dwell time for containerised imports in most sub-Saharan African ports exceeds 20 days on average, compared to a dwell time of three to four days in major international ports. This slow handling of cargo is certainly a major handicap for ports, which lose their attractiveness in the eyes of major international operators, but it is ultimately local communities and businesses who pay the highest price.

"Inclusive growth requires a comprehensive vision, including the measurement of social and economic impacts."

Philippe Labonne
Deputy Managing Director,
Bolloré Transport & Logistics

2

Illustration of the complexity of port operations



Sometimes, instead of investing in hard assets (additional storage capacity inside or outside the port, new wharves, etc.), the best way to eliminate these costly inefficiencies is to review operating procedures and improve cooperation between port players.

If inefficiencies are thoroughly eradicated, major benefits can be reaped. For instance, South Africa's Port of Durban managed to double its cargo handling capacity between 2002 and 2004 solely by reducing its dwell time from seven to three days.

2

TO INCREASE THE EFFICIENCY OF PORT OPERATIONS, THREE MAIN AREAS SHOULD BE EXPLORED.

Implement a full-fledged policy of efficiency-based incentives

One of the main factors contributing to operational inefficiencies in sub-Saharan African ports is the persistence of a status quo between various port players in which no one has an objective interest to improve the situation. In practical terms, import agents use very low-cost storage facilities for weeks or even months at a time, while port operators settle for the income provided by handling costs and storage fees. What is more, since customs agencies have no direct stake in a given port's traffic intensity, they often remain indifferent to its performance. They limit themselves to increasing inspections and do not try to simplify procedures.

"Long waiting times are in the interest of some actors in the port system, and addressing the suspected cause of the problem, namely the alleged lack of berths in African ports, is unlikely to be an effective solution."

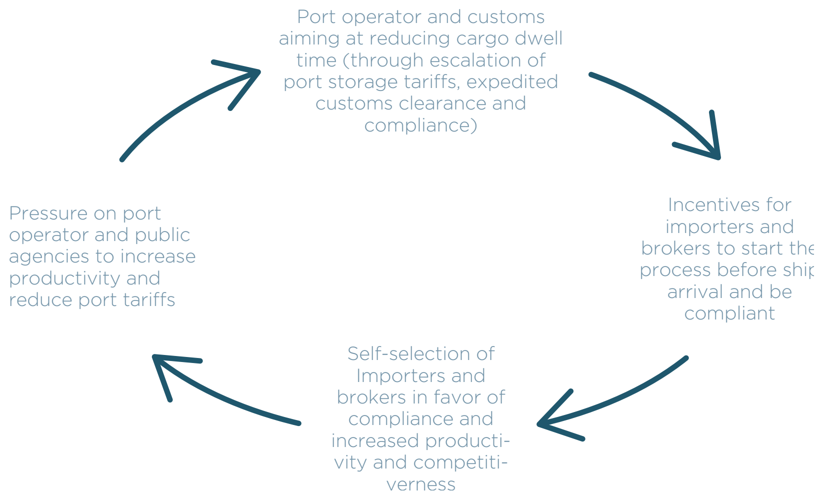
Shantayanan Devarajan
Former Chief Economist,
World Bank

To get out of this inefficient situation, port authorities need to have two objectives:

- **Reduce transaction time by simplifying procedures**
- **Reduce storage time by implementing strong incentive-based/punitive policies**

Implementing these measures will help bring about a virtuous circle: making efficient management a priority and applying hefty penalties when it is lacking will force each player to adapt and sideline those unwilling to play by the rules.

The virtuous circle of effective port management



SOURCE: WORLD BANK

CASE STUDY

Port of Durban: dwell time was reduced by 50% with the help of smart investments and strong policies promoting incentives and coordination

KEY INFORMATION

- **Dwell time at the Port of Durban was decreased from seven to three days between 2002 and 2004, bringing it in line with top international ports**
- **The port's handling capacity was doubled**
- **In addition to renovating infrastructure assets, significant measures were carried out to enhance soft assets:**
  - More stringent port storage pricing policy
  - Simplification and optimisation of customs and administrative procedures to help cargo move faster
  - Performance commitment agreements signed by the port and its main customers

CRITICAL SUCCESS FACTORS

- **Public authorities are strongly committed to ending poor port management**
- **Progress meetings are frequently organised to take stock of the effectiveness of measures and adjust them where necessary**
- **Communication is key in encouraging stakeholders to institute change and get across to them how it benefits them**

Use technology to streamline operations

Once all port players are on board to seek out ways to increase efficiency, making use of automation and technology may be a source of further improvement, just as ports like Rotterdam and Singapore have successfully done. In Africa, as elsewhere, the intensification of shipping traffic, the bulking up of vessels and the rapid development of new equipment and state-of-the-art technological solutions have made it increasingly clear to ports that they stand to benefit from using such technologies.

For African ports, the use of technology should be expanded in particular to facilitate collaboration between various stakeholders, for example by setting up platforms enabling data-sharing and the simplification of customs and administrative procedures.

"All leading ports are investing in the automation of their equipment, as well as in sophisticated terminal operating systems."

Kim Fejfer
CEO, A.P. Møller Capital

CASE STUDY

Pronto
Port Call Optimisation

The Port of Rotterdam's port call optimisation application

KEY INFORMATION

- **All port players have access to the platform, which provides an accurate, continuously updated schedule of each vessel's port calls**
- **Users can follow the port's operations in real time and make adjustments as needed**
- **Combination of public data/data retrieved directly from port companies/forecasts from AI applications**

ADVANTAGES FOR VARIOUS PLAYERS

- **Carriers:** shorter port calls, improved predictability, lower bunkering and chartering costs and lower CO_2 emissions
- **Terminals:** improved predictability, better terminal occupancy and shorter waiting times
- **Port authorities:** increased predictability and freight volume and lower CO_2 emissions
- **Agencies:** more time to serve customers thanks to clear and simplified communication and less need for phone calls to request updates

Train personnel and raise awareness among stakeholders

Lastly, to support the first two prongs of action mentioned above (incentive-based policies and use of technology), African port authorities should implement the necessary human resources policies at two different levels:

- Training of various port personnel, covering simplification procedures, technological tools, operational best practices, etc.
- Awareness raising among stakeholders, including civil society organisations and companies dependent on the port in question. As a matter of fact, these entities are best placed to encourage the continuous improvement of port operating procedures because, although not fully aware of it, they are the ones who pay the price for inefficiencies.

Port of Lomé

3 Raise capital and leverage private partner expertise...

Public-private partnerships (PPPs) have become an important driver of Africa's development and the use of this type of partnership continues to gain traction. Between 2001 and 2017, PPP investments in logistics virtually tripled (2.6 times)[1]. For one, the private sector contributes financing to governments with limited public financial resources. Recent experiences, such as in Gabon, with greenfield port development show that it is even possible for states to develop new infrastructure assets at no cost since the private sector provides all financing.

In addition, PPPs offer an opportunity to improve services and port infrastructure management thanks to private sector expertise and know-how, and help to adapt services to the needs of private companies. To illustrate, TIL (a subsidiary of MSC) succeeded in making the Port of Lomé a leading regional hub and transshipment platform thanks to its terminal management expertise and MSC's sea traffic management know-how.

Since investment requirements are still high on the continent, the challenge for states is to succeed in attracting and mobilising an ever-growing pool of private partners. To meet this challenge, states should first establish a clear port strategy that charts a course for these players, and then set up incentive-based organisational and regulatory frameworks.

"PPPs, provided they are well designed and well financed, are one of the preferred solutions for involving the private sector in development projects and reducing the infrastructure deficit, particularly in ports."

Thierry Déau - Founder, Meridiam

1. According to the "PPIAF – PPI" database

3

Establish a full-fledged port strategy and clear roadmaps

African states need to fully assume their role as planners and produce a long-term (15- to 20-year) strategic vision for port development. The port sector should be gradually expanded and, above all, calibrated in line with growth in other sectors. In this way, the developed ports will have capacities commensurate with the degree of development of the sectors that help generate their traffic. An example of this would be developing logistics and port infrastructure assets at the same time as a mining project to create ties between the mine and international markets and have a profitable mining port terminal.
Sound planning will provide public authorities with a comprehensive view of which projects should be implemented as a priority. This visibility will make it possible to guide private operators and provide them with a clearer vision of the highest priority projects to be developed by informing them of the support that public authorities wish to receive for these various projects.

Clearly define the role of each of the two parties

To better ensure the success of their partnerships with the private sector, public authorities must specify in advance the role of each of the different parties as well as the distribution of responsibilities, rights and risks. States should tailor each project and define a port management model based on the private support they wish to receive.

Several management models have been tested around the world, ranging from the 100% state-run model (as in South Africa with the public operator Transnet) to the 100% private model (such as the Anglo-Saxon model and the British Ports Association).

One model stands out and seems to be the most adapted to the African context: the landlord port model, where ownership of infrastructure is maintained by the port authority (public) and investment in fixed assets and their operation are entrusted to the private sector.

Port management models, World Bank

MODEL	INFRASTRUCTURE	SUPERSTRUCTURES	OPERATIONS
PUBLIC PORT	Public	Public	Public
"TOOL"	Public	Public	Private
LANDLORD	Public	Private	Private
PRIVATE PORT	Private	Private	Private

SOURCE: WORLD BANK

3

Set up a stable, transparent legal framework to encourage investors

PPPs generally take the form of long-term contracts, involving significant private investment. Since a considerable portion of the risks (construction, financial, commercial, etc.) are assumed by private sector players, states are responsible for establishing a transparent and secure framework to encourage them.

First and foremost, this is achieved through greater transparency in public-private interactions, starting with the concession holder selection process. Priority should be given to putting operators through a competitive bidding process and issuing tenders with well-defined evaluation criteria.

Some African countries have already established strict rules in this area, such as Egypt, where PPPs are granted only after a competitive bidding process.

That being said, such processes can be costly, lengthy and difficult to implement.

"The privatization of ports increases competition. All regions in Africa, where the States have entered partnerships with the private sector, have seen a considerable increase in investment. The competitiveness of these countries has increased compared to neighboring countries."

Kim Fejfer
CEO, A.P. Møller Capital

After the selection phase, public authorities must be able to offer their partners the appropriate conditions for a balanced partnership. The expectations of private sector players in terms of stability and security must be taken into account and they should be offered solid legal guarantees. This applies in particular to compliance with the terms of the contract, financial compensation in the event of termination and the guarantee of non-expropriation.

One of the biggest fears of private operators is to find themselves in the situation of DP World in 2018, which, following a dispute with Djibouti's authorities, had its concession contract withdrawn. The operator had invested $400m and been the holder of a 30-year concession contract for the Doraleh Container Terminal since 2006.

"A strong legal framework is needed to ensure that the partnership is balanced and leads to a win-win outcome for both public authorities and private enterprise."

Moussa Mara
Former Prime Minister, Mali

CASE STUDY

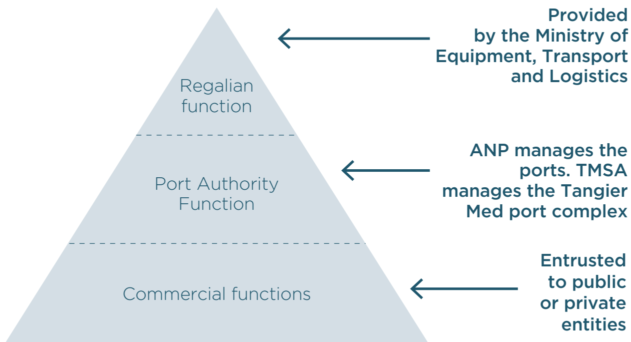
Landlord port model in Morocco clearly separating public and private sector roles

KEY INFORMATION

- Implementation of the landlord port model as part of **the 2006 port reform** (with the aim of modernising the sector, improving the competitiveness and efficiency of ports, and attracting private capital)
- **Strengthened governance through a clear separation between three functions:**
  - **Ministerial functions:** carried out by the Ministry of Equipment, Transport and Logistics
  - **Port authority functions:**
    - Morocco's national port agency, Agence Nationale Portuaire (ANP), manages the country's 33 ports
    - TMSA manages the Tanger Med SA port complex
  - **Commercial functions:** entrusted to public (e.g., Marsa Maroc, which operates nine port terminals) or private entities

CRITICAL SUCCESS FACTORS

- **A better separation between public and private sector roles** helps increase attractiveness for private investors
  - **Bringing competition into the mix in port services and operations**
  - **A model prioritising the pursuit of better performance, efficiency and competitiveness** (improving operational efficiency and reducing port throughput costs)



INTERVIEW

Philippe Labonne

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

"The private partner must demonstrate its long-term vision."

In your opinion, what are the conditions for a successful public-private partnership and how should the roles be divided up between public and private partners?
It is necessary to have a community or convergence of interests over the long term. The public partner needs to create a business environment, legal safeguards and positive externalities that will promote the development of many public-private partnerships. The private partner serves to give flexibility in the choices made and the management model. A private partner will be more agile and the variety of players will allow states to select the partner that best suits their long-term policy. The private partner must demonstrate its long-term vision, in particular through its employment and social policy. On this point, the training and promotion of local managers and executives is one of the keys to our success in Africa. Ninety-nine percent of our employees and more than 60 of our senior managers are African, meaning that Bolloré Group's Africa business is currently run by African managers and executives. Financing is also key to how the roles are divided up. Assuming that financial returns will definitely be generated, the financing will come from either public or private sources with a standard contractual balancing mechanism. It is a given that the contract's financial equilibrium will be based on a significant private contribution, with or without lenders but also with a contribution from the state that will either take the form of subsidies or tax/regulatory incentives.

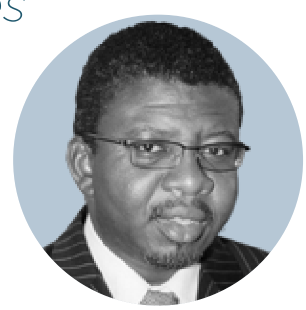
How can port operations help bring about inclusive economic growth in Africa?
Having connected African states to the rest of the world, particularly thanks to the €3.5bn we have invested over the last 10 years, we are faced with the unrealised potential of intra-African trade and the slow pace of inclusive growth. Today, we estimate that one million people make their living directly or indirectly from Bolloré Group's operations in Africa, but this isn't enough. Inclusive growth requires a comprehensive vision during the project development stage, including the measurement of social and economic impacts. For example, in Tema, Ghana, the port that we began operating in 2019 involved, from its inception, international lenders, the Ghanaian state and the port authority, but also local communities. Thanks to this approach, the MPS2 Terminal in Ghana received EDGE ("Excellence in Design for Greater Efficiencies") certification, which demonstrates that its facilities are 20% more energy efficient than a standard building. •
Finally, we believe it is essential to develop transport solutions that increase trade flows between African countries and particularly to landlocked states. Being an ideal complement to port projects, the rail sector represents a demanding partnership, one that requires the involvement of lenders and states.

4 ... while strengthening governance to safeguard the public interest

As PPPs are long-term commitments (up to 50 years in some cases) and concern genuine strategic assets, they need to be carried out under the strict supervision of public authorities in order to prevent any abuse of power and to safeguard the public interest.

Since subsequent renegotiations are difficult, states need to master the rules of the game from the outset. It is therefore necessary to better prepare these partnerships in advance, set strict rules underpinning them and ensure close monitoring of performance throughout the project's life cycle (from the execution phase to the operational phase).

"We cannot talk about privatization of ports in Africa. They are much too strategic infrastructures for the States to completely disengage from them."



Martin Ndendé
Specialist in maritime law - University of Nantes
Director of the Eurafrique Export Institute

Before committing to a PPP project, public authorities must especially keep in mind three fundamental objectives:

- Preserve the state's financial interest and generate a return on the investment costs incurred (e.g., through entry costs and royalties)
- Improve the competitiveness of port infrastructure (higher quality of port services and lower logistics costs) and guarantee equitable access to all users
- Ensure that the private partner meets its commitments throughout the term of the contract and provides the agreed-upon logistics services

"To succeed in a PPP, one must be inspired by marriage. Preparations must be well done to jointly define the project and arrive at a balanced concession contract. Respecting each party's commitments is essential. The parties must communicate transparently and remain flexible to ensure a successful union over time."

Gagan Gupta
CEO, ARISE Group

4

Better prepare PPPs in advance and establish contractual requirements that set investment and performance commitments

A number of studies need to be carried out to apprehend all the facets of a PPP project, including defining technical aspects (master planning, costing of the required investment, etc.) and the business model. To conduct these studies, governments must set up dedicated units made up of high-level executives which bring together all the necessary skills (engineering, project structuring, financing, legal affairs, etc.) to coordinate the supervision of PPP projects and take a critical look at tenders from private partners. Where needed, states can also seek advice from outside consultants (technical, legal and finance experts).

For example, Tunisia took this approach with the backing of the International Finance Corporation (IFC) and the European Bank for Reconstruction and Development (EBRD) when it set up a PPP authority made up of a multidisciplinary team (engineers, financiers, etc.) in charge of structuring and marketing PPP projects in the country.

Upon being set up, PPP units should work in cooperation with port authorities and be capable of questioning the assumptions contained in the business plans presented by private partners, both operational (volume forecasts, productivity) and financial (level of required investment, profitability).

Furthermore, special attention needs to be paid when drawing up and negotiating PPP contracts. Contracts must be clearly written and ensure a balance between the rights and obligations of the different parties. Above all, care must be taken to ensure that the financial covenants retained preserve the financial interest of public authorities and enable them to make a return on their financial investments. The partnership should be concluded based on detailed contractual requirements (project schedule, investment commitment, choice of equipment and superstructures, and commitments in terms of volume, performance, productivity, etc.).

Port of Rades (Tunisia)

Focus on improving port competitiveness and treating users equitably

Although public authorities must prioritise their return on investment (such as through royalties and import duties), they also need to emphasise improving port performance and ensure that all users are guaranteed equitable access to logistics services.

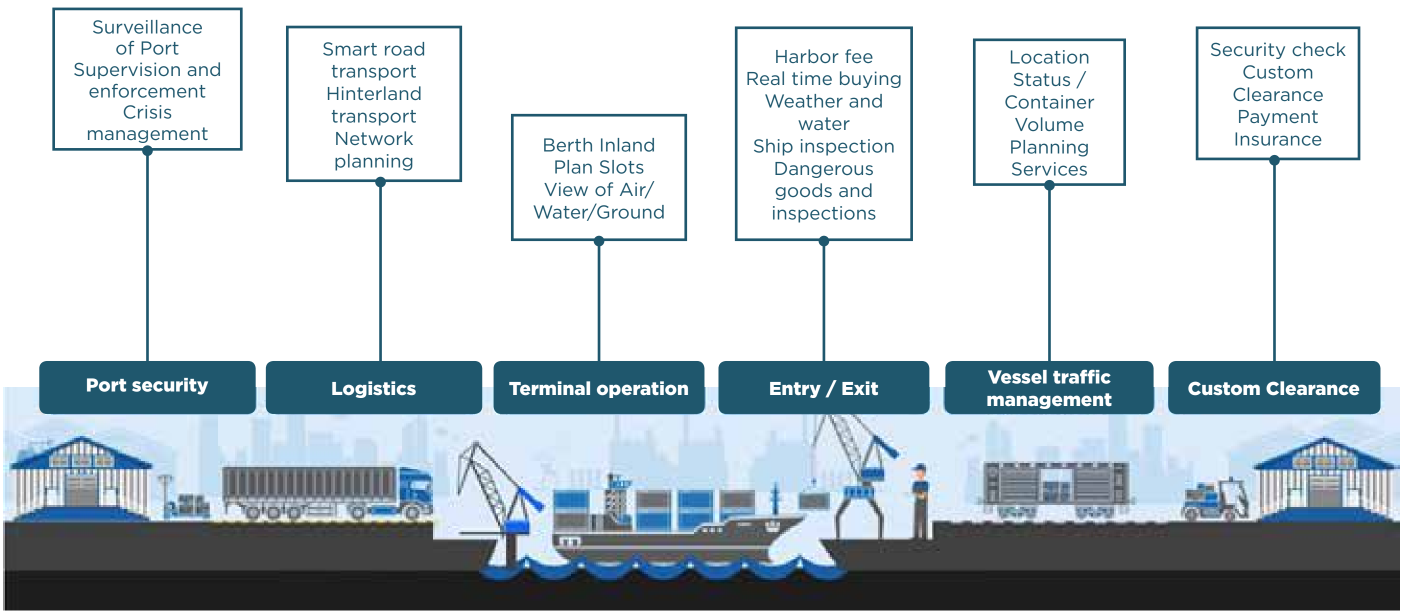
The main priority of private players should be to improve port attractiveness and bring down logistics costs. This needs to be an important criterion when selecting partners, as it encourages them to make the most advantageous tenders. Local communities and businesses, currently crippled by the continent's very high logistics costs, will reap the benefits. Regarding this point, an instructive example is that of the Gabonese government, whose priority during the concession process for the Libreville bulk terminal was to improve the port's performance. Arise Group, the concession holder, undertook to improve the port's competitiveness and reduce logistics costs for Gabonese communities and businesses. In practice, the company was able to decrease turnaround time by 25% and reduce port charges by one-third.

Finally, the logistics services provided remain in the public interest and must be accessible to all users on an equitable basis.

Improve communication and coordination, and ensure monitoring of investment and performance commitments

Partnerships need to be maintained over the long term, which means that the public and private parties must develop an ongoing dialogue and coordinate communication. Above all, public authorities should monitor investment and performance commitments to ensure the level of service stipulated in PPP contracts. Port authorities, together with dedicated and competent public teams, must interact with private partners and monitor the entire life cycle of port projects, during both their construction and operation. Public authorities need to closely monitor ports undergoing a concession process by requiring regular reporting and organising follow-up meetings. They should focus on a results obligation rather than a best efforts obligation. Regular operational and financial reporting (e.g., on a monthly basis) must be communicated to public authorities and contain a certain number of pre-defined indicators which need to cover operational, financial, environmental and security aspects.
Lastly, public authorities should also be ready to conduct proactive audits and not rely solely on the results provided by private partners. The implementation of strong incentive-based and punitive policies rounds out these recommendations. The outcome of audits should give rise to severe sanctions in the event that private partners fail to meet their commitments.

The various operations areas at a port



INTERVIEW

Dr. Yann Alix, General Delegate, Sefacil Foundation - Senior Manager, Abington Advisory

> *"African port governance has to adapt to tomorrow's challenges in terms of sustainable socioeconomic development."*

Since 2011, the Sefacil Foundation has been developing forward-thinking and strategic ideas on how to transform the international shipping, port and logistics sectors.

What is your assessment of the long-term viability of conventional port operations in Africa?

Container operations have continued to take market share away from conventional operations due to port investments orchestrated by private operators attracted by a tailored concession-based model. It is important to keep in mind one of the continent's specificities: conventional cargo remains essential to its multipurpose ports, which generate significant value-added locally. Heavy lifts, industrial projects, supplying the energy sector, oversized equipment: these types of port traffic are essential to keeping the African economy running. Public authorities need to pay particular attention to port logistics management at a time when terminal specialisation has a tendency to reduce the range of services on offer.

How can the continent's ports resolve congestion issues once and for all?

The problem of metropolitan/port congestion is reaching worrying levels of counterproductivity in places like Lagos and Dar es Salaam. Shipowners are making congestion taxes systematic and terminal operators are increasing demurrage charges for cargo that can't be shipped due to a lack of administrative and logistics fluidity. As a result, logistics performance has deteriorated, which is reflected in the fact that Africa has some of the world's highest transport and transaction costs. Parking facilities, peri-urban dry ports and the relocation of logistics zones will only meet some of the needs of a sector facing economic and population growth in most African port cities. Expanding terminal operators' concession rights to encompass pivotal intra- and peri-metropolitan traffic patterns is based on the assumption that innovative adaptations will be made to the current state of PPPs.

What governance model do you recommend for Africa's ports to have a bright future?

The majority of Africa's port authorities has adopted a conservative governance model for their business activities and property, with strong discipline at the administrative and political levels. Only on very rare occasions do sovereign governments share the decision-making process with private and civil stakeholders within advisory and supervisory bodies. With the announced increase in traffic, port authorities will strengthen their socioeconomic power, but they will also be responsible for the negative externalities that may impact the lives of millions of metropolitan area residents. The Sefacil Foundation, together with several political authorities from countries such as Benin, Cameroon and Côte d'Ivoire, is reflecting on how to open up the governance of port jurisdictions, particularly to civil society, which has not really fought for that right up to this point. A governance model suited to tomorrow's challenges in terms of sustainable socioeconomic development is essential if African port authorities want their facilities to grow and prosper.

5 Streamline port-city interactions and improve connectivity with hinterlands

Port attractiveness is not just measured by shipping connectivity and the quality of a given port's infrastructure. Ports are merely one link in a vast logistics chain permitting the flow of cargo – one that is only as strong as its weakest link. Accordingly, it is appropriate to move beyond ports and analyse the entire inland logistics chain. In an African context where ports are often embedded in cities, port-city interactions need to be improved in order to limit various types of pollution and avoid logistical bottlenecks along access roads to ports. Connectivity with inland areas should also be strengthened by developing an infrastructure network along the corridors leading to these areas (road networks, rail networks, logistics platforms and dry ports).

African ports could then fully play their driving role in economic development and enable Africa to harness its mining and agricultural resources, among others.

Streamline port-city interactions and limit congestion

Many urban centres in Africa have been built up around ports, including Abidjan, Casablanca, Dakar and Lagos. As cities have grown rapidly and the use of vehicles has become democratised, congestion around ports is becoming a bigger problem. Lorry traffic linked to port operations is significant (1 million TEU = at least 500,000 lorries) and causes major problems for cities, such as traffic jams, pollution issues, noise pollution, accidents and road damage.
"The main roadblocks to the sector's competitiveness currently come from the additional costs incurred at the port's exterior, especially those related to urban congestion, which account for between 5% and 6% of GDP," says Philippe Labonne, Managing Director of Bolloré Africa Logistics.

> *"It takes two hours to go from Kribi to Douala, but also two more hours to get in Douala city center and a very variable time to travel there."*

Dr. Yann Alix
General Delegate, Sefacil Foundation - Senior Manager, Abington Advisory

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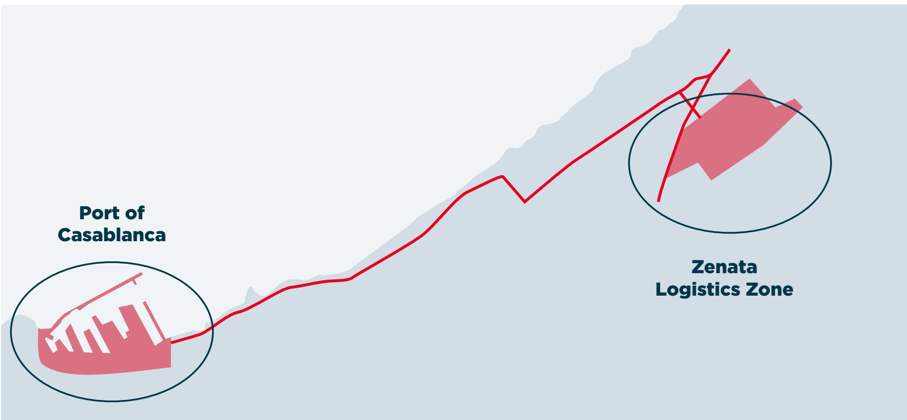
On a continent where urbanisation is happening at breakneck speed (in 2040 Africa will have one billion urban residents, i.e., two times as many as today), solutions must quickly be found to help streamline port-city interactions. For starters, such solutions include better managing lorry traffic flows in the areas surrounding ports: for instance, by (i) setting up dedicated parking facilities and an appointment system (like the one in Dakar), (ii) digitising customs procedures (in the manner of Cotonou, which set up a single-window system), (iii) building bypass roads, and (iv) developing external logistics platforms. Morocco took this route by building an 18-kilometre road connecting the Port of Casablanca to the Zenata logistics zone (which spans 28 hectares and will cover 323 hectares by 2030). The project's stated ambition is to streamline cargo flows passing through the port and improve traffic conditions thanks to this road reserved for heavy goods vehicles.

Another way to help streamline traffic is to prioritise trains as an inland logistics solution (one cut of wagons is equivalent to 30-50 lorries), which would considerably reduce the number of vehicles entering ports.
Lastly, it is also time to consider moving port operations outside of urban centres by building ports on the outskirts of cities (as is the case for Dakar's Port of the Future project) or by developing secondary ports, which would foster more evenly spread economic development across a given country's different regions. This is the approach Cameroon took when it built the Port of Kribi 180 kilometres south of the Port of Douala, which was saturated and under capacity.

Road connecting the Port of Casablanca to the Zenata Logistics Zone



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Rehabilitate ports and develop urban centres

Moving ports outside of cities could help support the development of the service sector on the continent, and in particular the tourism sector. Since ports are generally located in historic city centres, the newly vacant space could be monetised by developing the service sector via building offices, hotel resorts and even cruise ship terminals.

This trend is also in vogue in Africa. For example, the city of Casablanca undertook a massive port redevelopment project, the Wessal Casablanca Port, in 2015 that includes the construction of an urban and tourism centre featuring a cruise ship terminal in the port, a marina, a residential and office complex, shops and green spaces.

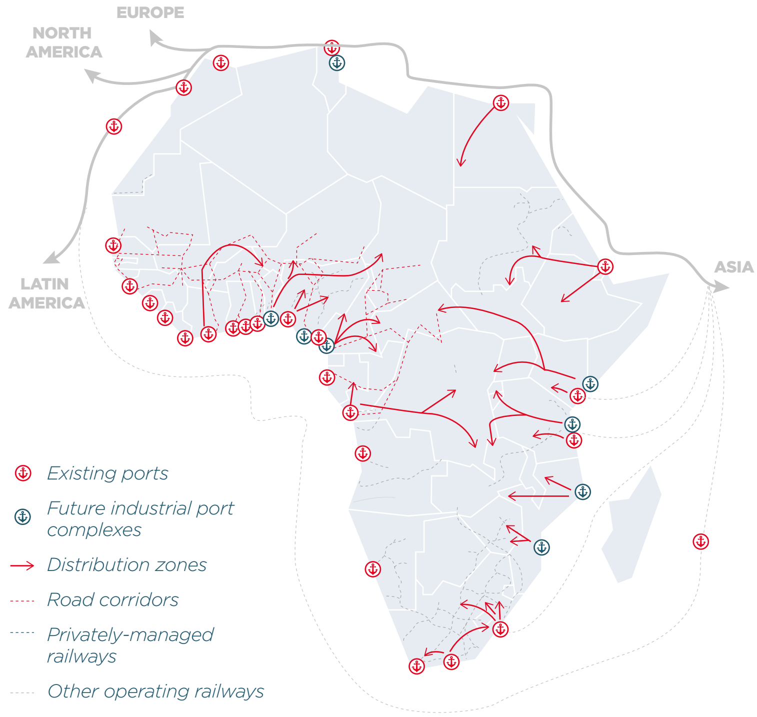
Former grain terminal in Cape Town converted into a hotel and museum

5

Improve connectivity with hinterlands

Even when ports are modern and high performing, they will not succeed in playing their driving role in regional economic development if an efficient inland logistics network does not exist. With this in mind, the challenge facing the continent is to connect all main urban centres as well as major agricultural and mining production zones to ensure economic development over the long term. This means developing intense multimodal logistics corridors (road, rail and inland waterway transport, where appropriate) to better connect inland areas to international markets and fully leverage Africa's agricultural and mining resources.

Main logistics corridors to the African hinterland



SOURCE : PROPARCO

Develop multimodal corridors

The continent's road and rail infrastructure requirements are massive: between $11bn and $17bn is needed per year, respectively, if Africa is to reach the development objectives set by PIDA[1]. This infrastructure deficit has a substantial impact on transport time, but an even greater impact on transport costs. It costs between $500 and $1,000 to transport a container from Shanghai to an East African port. To transport the same container from the Port of Kigali, it costs $5,000," says Bin Sulayem, Chief Executive Officer of DP World.

South Africa was a pioneer on the continent. The country managed to tap into its mining potential by developing a dense rail network linking mines and ports. Behind this success is the incorporated state-owned company Transnet (via its subsidiaries Transnet Freight Rail and Transnet Port Terminals), which has a 31,000-kilometre network (including 1,500 kilometres for heavy transport) and connects mine sites to the mineral ports it operates, such as Richards Bay and Saldanha.

1. Programme for Infrastructure Development in Africa, African Development Bank

5

Develop dry ports along corridors

Intra-African corridors need to be streamlined, while border control procedures simplified. This would help significantly reduce logistics costs for cargo in transit and boost the competitiveness of African businesses. One possible solution is to invest in building dry ports along major traffic routes that would function both as port terminals and logistics platforms (customs clearance, storage, stuffing/stripping, etc.). In addition to easing congestion in urban port areas, this solution would facilitate administrative and customs procedures for imports and exports.
For instance, DP World is using this approach with the construction of a dry port on a site with a surface area of 30 hectares (on completion) just 20 kilometres outside Kigali, Rwanda. With a pilot phase that began operating in September 2018, this platform has helped reduce lorry turnaround time from 10-14 days to just three days.

Ore transport, Transnet

"The dry port is a strategic tool in the logistics chain, and not only on the continent."

Eric Bonnemaison
Inland Logistics Manager, CMA CGM Africa

Develop coastal transport to decongest inland routes

Finally, to facilitate the work to streamline port-hinterland interactions and decongest main inland routes, Africa's coastal transport options should be expanded and made more reliable. This work, especially useful for short distances between neighbouring countries and ports, can be accomplished by modernising infrastructure assets and introducing attractive port dues and handling charges for intra-African traffic. In this area, regional hubs need to play a pioneering role.

CASE STUDY

Kagbelen Dry Port (Guinea)

KEY INFORMATION

- Project developed by Conakry Terminal, a subsidiary of Bolloré Ports and operator of the Port of Conakry's container terminal since 2011
- Dry port for vehicle storage, located 35 kilometres outside Conakry
- Project covering a surface area of 30 hectares, including 5 hectares of storage area with a total capacity of 2,000 vehicles and an overall cost of €1.7m
- Key in helping decongest the Port of Conakry, thereby enabling the storage of undelivered vehicles that have been parked for 10 days at the port terminal premises
- A regional intermediary capable of absorbing rapidly growing vehicle volumes in transit to Mali
- A logistics platform combining a storage area and special equipment as well as a customer and administrative services area, connected to the IT system of Guinea's National Customs Authority

CRITICAL SUCCESS FACTORS

- A complementary infrastructure asset to the Port of Conakry in that it improves the port terminal's performance and competitiveness
- A project strategically positioned to tap into dynamic regional trade flows
- Integrated logistics services, ranging from storage to commercial and administrative services
- Compatible with the Guinean government's strategy of decentralising administrative and customs formalities
- Involvement of the General Management of the Port of Conakry and the National Customs Authority
- Leveraging of Bolloré's expertise in the port and logistics sectors

INTERVIEW

Gagan Gupta
CEO, ARISE Group

"Logistics is a key area to master to ensure the competitiveness of companies."

Arise Group, backed by Olam Group and the AFC, was created in 2010 to develop a special economic zone (SEZ) in Nkok. The group later formed Arise Ports & Logistics (with APMC becoming majority shareholder in 2019), which develops and operates port terminals and integrated logistics solutions.

Why did you decide to get involved in developing and managing port infrastructure?
We began operating our business in 2010 with the development of the SEZ in Nkok, Gabon, which is primarily focused on timber processing. The zone quickly became an immense success – more than 77 companies are established there today – and export volumes have increased over time. The old Port of Owendo didn't have the port capacity needed to meet our requirements and support our development. So, we decided to conceive our project as an integrated port and to develop an efficient logistics tool to make our businesses more competitive.
We won the concession contract to build the Port of Owendo expansion. The gamble ultimately paid off for our group: the SEZ has enhanced its attractiveness by expanding its connections to international markets, while the volumes handled at the port are ensured by the SEZ.

Your group is also involved in inland logistics. How is that important for the SEZ?
Our objective is simple: make sure that the businesses setting up shop in the SEZ are globally competitive and play a genuine role in the development of Gabon's timber sector. Logistics is a key area to master if we are to achieve our objective: the logistics of transporting logs to the SEZ and the logistics of transporting processed products to the port.
In line with our objective, we have made significant strides, in partnership with the Gabonese government, in developing an efficient and multimodal (road, rail and inland waterway) logistics network. We made major investments: log loading stations, rolling stock (locomotives and wagons) and vehicle purchases, and logistics platforms for unloading and storage.
All these efforts have enabled us to keep the SEZ operating at full capacity, which has been the main driving force behind the development of the wood and furniture industries in Gabon.

6 Integrate industrial zones and modernise the non-container segment to ensure the continent's full development

In Africa, as elsewhere, public authorities, port authorities and companies focus their attention on containerised shipping, which drives the standardisation and facilitation of trade. Regarding public authorities, various West African countries (for instance, Benin, Côte d'Ivoire, Ghana and Senegal) are waging a "war" as they seek to have the largest container port in the region. Indeed, states have high hopes regarding the economic development potential of this type of infrastructure. In the private sector, major port operators compete head to head to win concession contracts for these top global shipping terminals. While this attention is justified, it should be nuanced with two important observations.

First, logistics is not everything. Even when ports are modern and ultra-efficient, they alone cannot bring about Africa's industrialisation. To contribute to industrialisation, the modernisation of the African port system must promote a maximum number of integrated industrial port projects, as this model has already proved successful all over the world.

Second, while the special attention paid to container ports is justified, such ports on their own will not be able to meet all the shipping needs of Africa or any other continent. Consequently, it is imperative that public and private players in Africa's port sector devote time and resources to creating/modernising other port solutions – such as bulk, roll-on/roll-off, grain, and oil and gas terminals – in line with the diversified and resilient economic model the continent's countries need.

Develop industrial port complexes to support the continent's industrialisation

The modernisation of Africa's ports should underpin the emergence of the continent's diverse, lasting industrial development.

To make this a reality, the development of integrated industrial zones adjoining future or existing port infrastructure must be encouraged. When properly established, these zones create a virtuous circle for ports and the businesses located there. Successful examples of this type of project are numerous and varied, both in terms of geographic location (the pioneering Shenzhen Special Economic Zone in Asia, Jebel Ali in the Middle East and TMSA in North Africa) and the industrial sectors concerned and the methods used to establish them.

For instance, TMSA is a project carried out by a state-owned management company focusing on the automotive, aviation and textile industries, while the special economic zone in Nkok, launched in Gabon in 2010 with close ties to the Port of Owendo, is managed by a private group (Arise, a subsidiary of Olam International) and specialises in the timber industry.

CASE STUDY

Tanger Med industrial port complex

KEY INFORMATION

- Two deep-water container terminals inaugurated in 2007 and two others inaugurated in 2019 (total capacity increased to 9 million TEU)
- A continental hub and major port of call with traffic of 4.8 million TEU in 2019 (up 38% year on year), making TMSA a credible contender as one of the world's top 20 ports
- Five free zones connected to the port via a railway line, bringing together more than 1,000 businesses representing total revenue of €8bn
- A hub that has helped Morocco's automotive sector grow, as vehicles are now its leading export product category: the port handled 500,000 units in 2019 (up 5% year on year)
- A roll-on/roll-off port to support the automotive industry was inaugurated in 2010

CRITICAL SUCCESS FACTORS

- A project conceived as an integrated port from the outset
- Transparent governance thanks to a quality state-owned project promoter: Tangier Mediterranean Special Agency (TMSA)
- Combining international expertise through PPPs (e.g., Maersk, Hapag-Lloyd and CMA-CGM)
- A project that is part of a broader industrial development strategy (Industrial Acceleration Plan 2014-2020 and Vision 2020)

6

Back the reinvention of the non-container segment for the efficient management of the continent's critical trade flows

Despite the benefits of containerisation, African port players should develop a comprehensive offering tailored to a diverse economy. As is the case for other continents, Africa needs to be able to efficiently handle and transport non-containerised cargo: certain types because the continent imports them massively and is dependent on international trade flows for them – such as grains, construction materials, and refined oil and gas products – and others because they are precious resources that the continent must better leverage – such as wood, ore, fruit and crude oil. Achieving this efficiency requires modernising and developing, where necessary, mineral, roll-on/roll-off, fruit, grain, bulk, and oil and gas terminals. Five major types of action need to be taken:

- **Specialise wharves** to ensure better cargo handling and boosted productivity.

- **Invest in state-of-the-art equipment** that is tailored to each cargo category to improve handling speed and overall terminal performance. For instance, at a grain terminal, the use of a grain vacuum is more efficient than a standard shovel.

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

Olivier Ruth
Business Development Manager, R-Logitech

Roll-on/roll-off terminal, Port Said (Egypt)

- **Accommodate larger-sized ships** to be in line with the overall trend towards the bulking up of vessels and generate economies of scale in cargo handling.

- **Coordinate all stakeholders interested in the terminal's development.**
  As a matter of fact, while container terminals are sustained by a large number of players, mineral and grain terminals are often dependent on just a few major customers (mines, fruit growers and grain farms) with different imperatives, such as the launch date of mine operations, harvest seasons and logistical constraints. Infrastructure assets thus need to be developed to meet these wide-ranging needs.

- **Attract a wider swath of private players to non-container segment projects:**
  50% of Africa's dry bulk terminals and 20% of Africa's liquid bulk terminals are still exclusively state-backed projects, compared to only 10% of container terminals. Yet, the financial and operational leverage of private players is essential.

Abidjan's grain port, which serves as the main source of supply of grains for Côte d'Ivoire and its hinterland (Burkina Faso, Mali and Niger), provides a useful illustration of the importance of securing strategic flows.

"The construction of a cereal terminal in the port is a food security issue, insofar as cereals are basic necessities for Ivorian populations and those of the entire subregion, whose needs naturally increase with population and economic growth."

Hien Sié - Director,
Autonomous Port of Abidjan

6

The continent's resources, particularly in the area of mining, continue to go largely untapped, especially when you consider their abundance (Africa is home to 85% of the world's platinum, 65% of manganese, 75% of diamonds and 40% of gold, etc.). While mineral port projects are more complex to get up and running than container ports due to the absence of standards, the need to coordinate sector players, etc., the potential gains generated are significant, at once for the company in charge of the project and the domestic economy. For example, the development of a modern mineral terminal in Owendo proved to be highly profitable and greatly paved the way for the success of Gabon's manganese sector (manganese exports were up 77% between 2015 and 2019). Another example: South Africa's Saldanha terminal is expanding alongside the country's iron ore sector and has become the continent's main point of export for iron ore.

East London grain terminal (South Africa)

CASE STUDY

Saldanha Iron Ore Terminal (South Africa)

KEY INFORMATION

- The iron ore terminal started operating in 1976 and has been expanded on a regular basis
- Capacity is currently being expanded to reach 82.5 million metric tonnes in the coming years
- Main point of export for iron in Africa (more than 1 billion metric tonnes exported since 1976)
- Inland transport via the more than 800-kilometre-long Sishen-Saldanha railway line
- South African iron exports have increased by a factor of more than 2.5 since 2005
- A driver of Transnet Group's profits in 2019 thanks to record volumes and consistent returns

CRITICAL SUCCESS FACTORS

- Gradual expansion of port capacity calibrated in line with the growth of the domestic iron ore sector
- Full logistics support provided by a single operator, ***Transnet,*** with a railway line connecting mines to the terminal

INTERVIEW

Nicolas Sartini, Executive Vice President of Ports & Terminals, CMA CGM

"The Port of Lekki (Nigeria) will be a game changer in West Africa."

Headed by Rodolphe Saadé and operating in 160 countries, CMA CGM is a leading global shipping and logistics group. In Africa, CMA CGM operates eight container ports and eight dry ports.

In your opinion, what are the most remarkable successes in Africa's port sector?
CMA CGM Group is taking part in the development of transshipment hubs in Africa. The objective is to fully capitalise on the next-generation ships used along the main East-West shipping route. Cargo loaded onto these ships is transferred at these hubs, located along the main route, and then shipped to the rest of the region. As we've been operating in Morocco since 1983, we decided to get involved in the Tanger Med project. Present in sub-Saharan Africa since 2001, the group is also seeking to develop regional transshipment hubs there, particularly along the western coast, that will be connected to regional shipping routes. Kribi (Cameroon), one of the few ports in the region to have this dual role as a gateway for inland countries and a regional hub, has strong growth potential.

Based on your experience, what are the main trends that have emerged in Africa's port sector over the past decade?
Africa's port sector has seen rapid change over the past decade. Containerisation has forced the continent's ports to adapt, fostering the growth of private container terminal concessions.
These concessions, better equipped and better managed, have played an essential role in modernising the continent's port infrastructure. All of these changes are part of a global trend of increased private sector presence in port investments and operations, and a shift in business model: fully state-owned ports are moving in the direction of a landlord port model. Many African ports have experienced this transformation. In addition to existing infrastructure assets undergoing concession processes, major projects to create new ports, such as Lekki in Nigeria, have been initiated. Investment in modern handling equipment, such as ship-to-shore cranes, as well as in innovative infrastructure assets has boosted productivity and reduced congestion.

In which areas should efforts be concentrated to improve the efficiency of Africa's ports in the years ahead?
Improving efficiency is a major challenge. Investment in road infrastructure, on top of port infrastructure, enables better connections between new ports and existing transport networks. This comes under the remit of states. The Port of Lekki, whose sub-concession was awarded to CMA CGM, is a multipurpose port located at the heart of the Lagos free zone. Ultra-modern and able to accommodate vessels with a capacity of 18,000 TEU, it is going to be a game changer in West Africa. However, before it can attain the status of a regional port, the road infrastructure serving it needs to be fully developed. With the development of the free zone and adjacent industrial complexes, Lekki is set to become a major logistics hub in Nigeria.

APPENDIX

Impact of the Covid-19 crisis on the port sector

It seems only fitting to conclude this report – written during the pandemic – by discussing the unprecedented crisis the world is currently experiencing. While the exact nature and extent of the Covid-19 pandemic's fallout are impossible to predict for the time being, it can be argued that both Africa and its ports will be affected. In this humbling period, our goal is to reflect on what additional challenges and issues Africa's ports will face in the very short term, but also in the months and years ahead, in light of these unusual circumstances.

A global health crisis with significant economic fallout

With more than 30 million cases reported, 900,000 deaths and 190 countries impacted as of September 2020, the Covid-19 pandemic is the worst health crisis in over a century.
In this climate, many states had no choice but to implement highly restrictive measures (general lockdowns, curfews, closures of non-essential factories and borders, etc.) that are currently plunging the world into a major, unprecedented economic crisis given that both supply and demand have been impacted. From the virtual shutdown of China's industrial apparatus to the nosedive in oil prices, there are many signs pointing to high levels of economic volatility and a general slowdown. Consequently, the IMF projects that the global economy will contract by 4.4% in 2020, i.e., much worse than during the 2008-2009 financial crisis.

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APPENDIX

Impact of the Covid-19 crisis on the port sector

Africa, and particularly its economy, will not come out unscathed

While clearly affected by the pandemic, Africa has been relatively spared from a health standpoint, with a total of one million Covid-19 cases and approximately 30,000 deaths related to the disease as of September 2020. These encouraging numbers, partly truncated by the lack of testing capacity in several regions of the continent, are said to be due to several concurrent factors: Africa's young population, limited intra-African travel as well as global travel, low population density (excluding cities) and public authorities' extensive experience with managing major health crises, including the Ebola epidemic. From an economic and social standpoint, however, the fallout from the crisis could be significant for Africa.

The crisis poses urgent challenges to Africa's port sector in the short run

As in the rest of the world, Africa's logistics sector, and more specifically the port sector, is largely vulnerable to the crisis's adverse impacts: the reorganisation of operations and implementation of safety measures, decreased traffic, overloaded storage facilities, etc. Consequently, although port and shipping operations have been able to remain up and running or resume early in many countries due to their essential status, players in these sectors are vulnerable to major challenges in the very near term.

1. PORTS ARE VULNERABLE TO OPERATIONAL UPHEAVALS, FALLING TRAFFIC AND CONGESTION AT STORAGE FACILITIES

The first major challenge comes in the form of the operational difficulties arising from the health crisis and the need to comply with strict standards. The situation has, as a matter of fact, involved the reorganisation of operations and work in the sector in an effort to better protect employees:

- Adapting to employee rotation process (such as at the Port of Abidjan, where two shifts were put in place instead of the usual three to meet curfew restrictions)
- Providing personal protective equipment, including masks and hand sanitiser, and implementing social distancing guidelines at sites
- Setting up telework
- Cancelling trips made by expatriate employees, thereby complicating the operations of operators highly dependent on foreign labour

This reorganisation was primarily carried out by way of effective cooperation between African port ecosystem stakeholders.

In addition to operational upheavals, a second major difficulty impacted Africa's ports: falling traffic. Partly due on the one hand to a significant decline in import flows of non-essential goods, and on the other hand to a fall in commodities exports, traffic was down by between 30% and 40% at some of the continent's ports.

Finally, at many ports, disrupted cargo flows have created a third problem: the saturation of storage facilities, where goods yet to be transported have been piling up.

Impact of the Covid-19 crisis on the port sector

2. SHIPPING COMPANIES GRAPPLE WITH DRASTIC SLOWDOWN OF TRADE FLOWS

Given the severity of the crisis, shipping companies have not been spared. Although they continue to carry out their services, cancellations of departures and port calls have become increasingly commonplace. The health measures adopted in some countries (especially quarantine requirements for the personnel and passengers aboard arriving vessels) have made their operations much more difficult.

From a financial standpoint, the significant decline in incoming flows has been offset by plummeting oil prices for the time being. According to Alphaliner, "only two out of the ten main container transporters have reported operating losses. Operating income is being positively impacted by lower fuel prices and higher freight rates". Although it is currently lifesaving, such higher freight rates will not have a positive impact forever: they are even counterproductive, as they deter importers and exporters from resuming their seaborne trade.

Health measures at the Port of Tanger Med

A container ship owned by CMA-CGM

Impact of the Covid-19 crisis on the port sector

The crisis will also have significant impacts in the medium to long term

In the medium to long term, the health and economic crisis provoked by Covid-19 is going to have impacts – ones that are difficult to fully grasp – on Africa's port sector.

1. RESHUFFLING AFRICA'S PORT INFRASTRUCTURE ASSETS

On the one hand, the financial difficulties African states experience in the years ahead could lead to a wave of port terminal privatisations and concession processes in order to make up for shortfalls. With public authorities taking a step back, the number of attractive opportunities for large private players operating on the continent would be expanded.

On the other, a trend towards consolidation could come about in the private sector. The players impacted the most by the crisis would then become attractive, high-value targets for their more resilient counterparts. Such consolidation would result in larger-sized players, with a possible upstream or downstream integration of the value chain.

2. FAST-TRACKING DIGITALISATION

Secondly, port players could put greater emphasis on digitising their processes, in compliance with contactless-type health recommendations implemented during the crisis. This could, for example, translate into setting up digital customs and administrative systems, with single-window systems, including payment services, to accelerate the pace of operations and limit contact between various port users.

3. BRINGING PRODUCTION BACK ON AFRICAN SOIL AND PROMOTING REGIONAL TRADE

Lastly, the disruptions to supply chains arising during the crisis could push countries the world over to review their logistics chains and prioritise local trade. For Africa, this trend is a dual opportunity, as it could fast-track the continent's industrialisation.

Frédéric Maury – AFRICA CEO FORUM
Amaury de Féligonde, Thomas Léonard, Kevan Raffi, Maha Khalfi, Max Navarro-Roch, Hubert Vermeren – OKAN PARTNERS