



## Angolan Transport Infrastructures

### (Re)Building for the Future

Research

December 2020

#### **Infrastructure follows pattern of population and natural resources**

Angola's population of around 31 million is unequally distributed across the country. The most densely populated areas are around the capital (Luanda) and a few other major cities (Cabinda, Benguela, Lubango and Huambo). Overall, the coast and the southern and eastern parts of the country are less populated than the interior highlands. The distribution of the Angolan population results, for the most part, from the devastating impact of the long-lasting civil war period (1975-2002). However, it is also influenced by the presence of vast natural resources and agricultural potential. The interior highlands are abundant in water resources and are, therefore, well suited for agriculture. The south and southeast are dry savanna while the far north is covered by rain forest. Angola's oil fields are located in the coastal region in the north and west. The country is also rich in various minerals that are found in its western and central parts. Meanwhile, the distribution of infrastructure networks follows the pattern of the population and natural resources. As such, greater density of transport, power and information and communication technology infrastructure is located along the western half of the country.

**Transport Infrastructures**

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#### **Local authorities have invested heavily in rebuilding infrastructure**

Angola's transport infrastructure suffered extensive damage during the civil war period (1975-2002), with destruction and neglect leading to the closure of most of the road and rail networks. In recent years, the authorities have undertaken huge investments in the rehabilitation of road, railway, seaport and airport infrastructures. Public account figures suggest that the government spent more than US\$ 38 billion on transport infrastructures during 2002-18, with nearly 70% of this amount invested on roads. On average, this corresponds to US\$ 2.3 billion per year and 2.4% of GDP. Most of these investments were financed by Chinese loans and credit lines that have helped rebuild and rehabilitate the country's infrastructures. However, infrastructure quality remains a major obstacle for Angola's overall development, as it continues to hinder the movement of the population and goods in the country.

#### **Good infrastructures will help economic growth and diversification**

The Angolan authorities remain committed to continuing to rebuild, rehabilitate and expand infrastructures. This will be crucial to their efforts of strengthening economic growth perspectives and diversifying the domestic economy from a persistently high dependence on the oil sector. These efforts are expected to be boosted by increased private sector involvement and interest in areas like rail, sea and air transport. Good quality roads, bridges and railway networks, combined with efficient seaports, logistics platforms and airports, will help improve economic productivity.

#### **National Director Plan for the Transport Sector**

The government's National Director Plan for the Transport Sector provides a real assessment of the existing conditions in the sector. It also sets out an investment program of 20 years (2018-38) for seaport, railway, road and airport infrastructures. The objectives are mostly related to (1) improving the movement of people and goods, connecting all of Angola's 18 provincial capital cities and their municipalities, (2) increasing private sector financing, namely through the promotion of public-private sector partnerships and (3) reinforcing Angola's role in the African continent, including improving the regional corridor to the SADC region and other regional corridors. That said, the government's ability to finance transport infrastructure investments remains limited (estimate of 1.4% of GDP per year) and should only increase once economic activity improves.

**1 – BRIEF DESCRIPTION OF THE ANGOLAN POPULATION**

Angola’s population is currently estimated to stand at roughly 31 million after expanding at a relatively fast pace in recent years. The country has a very young population, with projections showing that only 3.6% of the people are over 60 years old, 22.5% between the ages of 30 and 60 while the remaining 73.9% is under the age of 30. Said differently, the average age of the local population is about 18 years old. In terms of gender, official figures show that 51% of the population is female and 49% is male.

*Angola’s population is currently estimated to stand at about 31 million*

It is estimated that about 62% of Angolans live in urban areas. This is mainly due to a large proportion of the rural population having fled the countryside during the Civil War, leading to the expansion of the shanty town areas in the major cities, particularly in Luanda. Also as a result of the Civil War, much of the population became and remains concentrated in the coastal regions of the country.

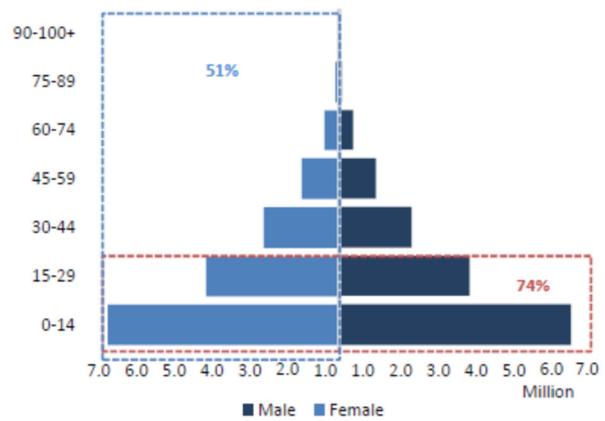
*More than 60% of the local population lives in urban areas*

**ANGOLAN POPULATION – GEOGRAPHICAL DISTRIBUTION**



Source: INE.

**ANGOLAN POPULATION – AGE DISTRIBUTION**

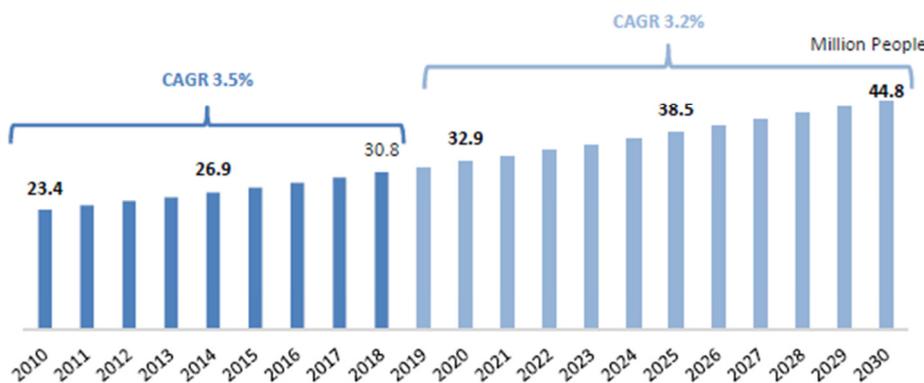


Source: World Population Review.

The United Nations expects that Angola’s population will continue to grow at roughly the same annual pace (3.2%) until 2030. This means that the number of people living in the country is forecasted to reach 44.8 million at the end of the period, an increase of almost 14 million over the next decade.

*Angola’s population is forecasted to reach 44.8 million by 2030*

**ANGOLAN POPULATION – EVOLUTION AND GROWTH PROJECTIONS (2010-2030)**



Source: United Nations.

The projected population growth in the country will necessarily imply a greater demand for all means of transportation in the years ahead. As a result, the expansion and improvement of the existing transport infrastructures is critical for the economic development of Angola. We note that the transportation sector represented less than 5% of the country’s GDP in 2019, whereas in other countries it stands at double-digits.

*Population growth will imply greater demand for transportation*

## 2 - INFRASTRUCTURES NATIONAL DEVELOPMENT PLAN

The Transport and Logistics cluster plays vital importance in the future economic and social development of Angola. This cluster lays upon the inter-modality of various types of transport, significantly wagering on a rail sector that connects seaport and airport infrastructures with a vast road network that allows the coverage of the entire country. The interconnection points between sea, rail and road transport take place in a vast national network of logistics platforms that facilitate the transferal of goods between the various means of transport.

*The transports and logistics cluster is of vital importance for the future economic and social development of Angola*

Air and sea transportation play fundamental roles in the north-south relations in the Angolan territory. They are equally important on the international front where Angola intends to have a relevant role in the primary objective of reaching an “integral connectivity of infrastructures of the African continent” set in the African Union’s Agenda 2063.

*Air and sea transportation play key roles in the north-south relations in the country*

Today, the importance of having efficient logistics and transport services is widely recognized as these allow (1) the expansion of domestic and international trade, (2) the diversification of exports and imports and (3) the capture of foreign direct investment. This will ultimately lead to faster growth as well as greater economic and social development for a country. As a result, the new logistics paradigm began to be focused on the end consumer, based on the construction of interoperable and interconnected transport networks that go beyond national borders and allow the circulation of goods more efficiently and at lower costs.

*The importance of having efficient logistics and transport services is widely recognized*

In the African continent and, in particular, in Angola where the primary objectives continue to be focused on combating hunger and poverty, ensuring food self-sufficiency as well as creating jobs, it is important to proceed towards the ordering of logistical services and the transportation of goods bearing in mind of the following:

*Ensuring efficiency in the logistics and transportation of goods will help combat hunger and poverty*

- Define the transport infrastructure network already existing and the one that is to be projected considering the future network for the circulation of goods that ensures the permanent supply nationwide. This would allow meeting the basic food needs and improving economic activity in all of the 164 existing municipalities;
- Ensure the different types and utilizations of the transportation network (sea, rail, road and air) as strategic vectors for the future System for the Transportation of Goods;
- Encourage the partnership between public and private entities in order to promote and manage new logistics spaces. This would be done by attracting investments from well-known logistics operators that would promote Angola as a distributor of goods in the domestic, Southern African Development Community (SADC) and world markets.

Angola’s transport infrastructure compared favorably to most of the countries in Sub-Saharan Africa (SSA) in the World Economic Forum’s most recent Global Competitiveness report for 2019. However, on a global scale, the country performed relatively poorly as it received a score of only 36.2% and ranked 116 out of 141 countries. As shown below, this performance was due to the poor quality of the road infrastructures, airport connectivity as well as efficiency of air transport and seaport services.

*Angola’s transport infrastructure compared favorably to most of the countries in SSA in the Global Competitiveness report*

| GLOBAL COMPETITIVENESS                       | Angola        |              | South Africa  |              | Nigeria       |              | DR of Congo   |              | Mozambique    |              | Ethiopia      |              |
|--|---------------|--------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|--------------|
|  | Score (0-100) | Rank (/ 141) |
| <b>Transport Infrastructure</b>              | <b>36.2</b>   | <b>116</b>   | <b>58.7</b>   | <b>45</b>    | <b>31.6</b>   | <b>130</b>   | <b>21.5</b>   | <b>138</b>   | <b>28.6</b>   | <b>133</b>   | <b>34.9</b>   | <b>121</b>   |
| Road connectivity                            | 77.7          | 61           | 96.3          | 7            | 77.5          | 63           | 59.3          | 111          | 68.0          | 90           | 53.3          | 124          |
| Quality of road infrastructure               | 19.2          | 135          | 59.1          | 47           | 25.5          | 130          | 18.4          | 138          | 23.4          | 134          | 33.7          | 115          |
| Railroad density (km/1,000 km <sup>2</sup> ) | n.a.          | n.a.         | 43.2          | 47           | 10.4          | 73           | 4.0           | 93           | 9.9           | 75           | 1.6           | 101          |
| Efficiency of train services                 | n.a.          | n.a.         | 34.1          | 68           | 13.2          | 98           | 15.3          | 95           | 27.2          | 80           | 32.6          | 71           |
| Airport connectivity                         | 26.9          | 112          | 63.5          | 39           | 43.2          | 78           | 16.9          | 129          | 18.9          | 127          | 49.6          | 69           |
| Efficiency of air transport services         | 38.1          | 129          | 74.5          | 27           | 39.6          | 125          | 30.7          | 136          | 33.4          | 134          | 38.3          | 128          |
| Liner shipping connectivity                  | 25.1          | 61           | 40.1          | 44           | 19.0          | 68           | 3.5           | 106          | 10.5          | 84           | n.a.          | n.a.         |
| Efficiency of seaport services               | 30.4          | 118          | 59.1          | 50           | 24.7          | 122          | 24.0          | 123          | 37.9          | 101          | 30.6          | 117          |

Source: World Economic Forum.

Moreover, Angola’s logistics sector significantly lags its regional peers in all metrics, as shown in the aggregate Logistics Performance Index published by the World Bank. In 2018, this index placed Angola at 159 out of 160 countries, providing the local authorities with significant space to implement numerous measures for improvement.

*But it lagged its peers in terms of logistics performance*

| LOGISTICS PERFORMANCE              | Angola      |              | South Africa |              | Nigeria     |              | DR of Congo |              | Kenya       |              | Zambia      |              |
|------------------------------------|-------------|--------------|--------------|--------------|-------------|--------------|-------------|--------------|-------------|--------------|-------------|--------------|
|                                    | Score (1-5) | Rank (/ 160) | Score (1-5)  | Rank (/ 160) | Score (1-5) | Rank (/ 160) | Score (1-5) | Rank (/ 160) | Score (1-5) | Rank (/ 160) | Score (1-5) | Rank (/ 160) |
| <b>Logistics Performance Index</b> | <b>2.05</b> | <b>159</b>   | <b>3.38</b>  | <b>33</b>    | <b>2.53</b> | <b>110</b>   | <b>2.43</b> | <b>120</b>   | <b>2.81</b> | <b>68</b>    | <b>2.53</b> | <b>111</b>   |
| Customs                            | 1.57        | 160          | 3.17         | 34           | 1.97        | 147          | 2.37        | 108          | 2.65        | 67           | 2.18        | 129          |
| Infrastructure                     | 1.86        | 153          | 3.19         | 36           | 2.56        | 78           | 2.12        | 132          | 2.55        | 79           | 2.30        | 108          |
| International Shipments            | 2.20        | 143          | 3.51         | 22           | 2.52        | 110          | 2.37        | 127          | 2.62        | 99           | 3.05        | 54           |
| Logistics quality and competence   | 2.00        | 155          | 3.19         | 39           | 2.40        | 112          | 2.49        | 100          | 2.81        | 64           | 2.48        | 103          |
| Tracking and tracing               | 2.00        | 157          | 3.41         | 35           | 2.68        | 92           | 2.51        | 114          | 3.07        | 56           | 1.98        | 158          |
| Timeliness                         | 2.59        | 140          | 3.74         | 34           | 3.07        | 92           | 2.69        | 133          | 3.18        | 79           | 3.05        | 94           |

Source: World Bank.

Against this backdrop, the Angolan government has set the following strategic objectives in the transport sector for the period 2018-22:

- Endow the country with infrastructure that connects and promotes the large axis and national corridors through the National Network of Logistics Platforms;
- Improve the service and comfort levels of the country’s airports in accordance with the rules set by ICAO/IATA and also expand, rehabilitate and construct new airports;
- Develop the necessary infrastructure to allow the transport and operation of maritime activities, promoting the construction and modernization of seaport infrastructures considered of priority intervention for the national development;
- Develop urban, suburban and long-distance rail transportation, offering conditions that will promote the competition between the different means of transportation of goods.

*The Angolan government set several strategic goals in the transport sector for the period 2018-22*

The government believes the involvement of the private sector is essential for the execution of the announced targets for the transport sector. The government is focused on attracting strategic investors with high financial capabilities and international experience in the exploration and operation of large-sized transport infrastructures capable of generating value for the national economies.

*The authorities believe that the involvement of the private sector is essential*

With this in mind, the government recently announced a list of investment projects that will be structured as Public-Private Partnerships (PPP). The Ministry of Economy and Planning and the Ministry of Finance will coordinate the preparation and implementation process of these public investment projects under PPP advantageous for the Angolan State until December 2021. The aim is to ensure that public accounts will not be negatively impacted neither at the present nor the future, selecting as assets to be included under PPP those that have a strong base in terms of their economic and social rationality.

*The Angolan authorities announced a list of investment projects that will be structured as PPP*

The list of 41 potential investment projects to be structured as PPP includes several projects in the infrastructure sector. We have included these projects in the table below together with the type of PPP contract.

*Several of these 41 projects are in the infrastructure sector*

| POTENTIAL PUBLIC PRIVATE PARTNERSHIPS (PPP)  | Contract  |
|--|---|
| Construction of a new bridge over the Kwanza River   | BOT (Build-Operate-Transfer)                      |
| Construction of a motorway in the North-South Corridor with priority for the North/South axis (Soyo/Santa Clara - 1,400km) | BOOT (Build-Own-Operate-Transfer)                 |
| Installation and operation of a toll system in Barra do Kwanza   | DBFOM (Concept-Build-Finance-Operate-Maintenance) |
| Installation and operation of a toll system in the Border Zone of Iema   | DBFOM (Concept-Build-Finance-Operate-Maintenance) |
| Installation and operation of a toll system in the Border Zone of Luau   | DBFOM (Concept-Build-Finance-Operate-Maintenance) |
| Installation and operation of a toll system in the Border Zone of Luvo   | DBFOM (Concept-Build-Finance-Operate-Maintenance) |
| Installation and operation of a toll system in the Border Zone of Massabi  | DBFOM (Concept-Build-Finance-Operate-Maintenance) |
| Installation and operation of a toll system in the Border Zone of Noqui  | DBFOM (Concept-Build-Finance-Operate-Maintenance) |
| Installation and operation of a toll system in the Border Zone of Santa-Clara  | DBFOM (Concept-Build-Finance-Operate-Maintenance) |
| Rehabilitation, operation and maintenance of Estrada Nacional 160  | BOT (Build-Operate-Transfer)                      |
| Rehabilitation, operation and maintenance of Estrada Nacional 250  | BOT (Build-Operate-Transfer)                      |
| Construction of a railway link from Caminho-de-Ferro de Luanda to the border with DRC to connect Katanga-North Corridor    | DBFOM (Concept-Build-Finance-Operate-Maintenance) |
| Construction of a railway link between Caminho-de-Ferro de Moçâmedes, Namibia and Victoria Falls                           | DBFOM (Concept-Build-Finance-Operate-Maintenance) |
| Construction and exploration of the Logistics Platform of Caála  | DBFOM (Concept-Build-Finance-Operate-Maintenance) |
| Construction and exploration of the Logistics Platform of Lombe  | DBFOM (Concept-Build-Finance-Operate-Maintenance) |
| Construction and exploration of the Logistics Platform of Luvo   | DBFOM (Concept-Build-Finance-Operate-Maintenance) |
| Construction and exploration of the Logistics Platform of Soyo   | DBFOM (Concept-Build-Finance-Operate-Maintenance) |
| Construction and exploration of a railway link between Angola and Zambia (Caminho-de-Ferro de Benguela)                    | DBFOM (Concept-Build-Finance-Operate-Maintenance) |
| Construction and exploration of the Luanda Overground Metro  | DBFOM (Concept-Build-Finance-Operate-Maintenance) |
| Construction and exploration of the railway link Caminho-de-Ferro de Benguela to Caminho-de-Ferro de Moçâmedes             | DBFOM (Concept-Build-Finance-Operate-Maintenance) |
| Construction and exploration of the railway link Caminho-de-Ferro de Luanda to Caminho-de-Ferro de Benguela                | DBFOM (Concept-Build-Finance-Operate-Maintenance) |

Source: Ministry of Economy and Planning.

### 3 - SEAPORTS SECTOR

#### 3.1 - SEAPORT ACTIVITY IN SUB-SAHARAN AFRICA

Countries in Sub-Saharan Africa face considerable challenges in the development of their seaports infrastructures. Africa has been a region that has mainly exported raw materials and commodities such as oil, non-precious metals, rare minerals, cocoa, coffee, fruit and wood. The export of these goods has been mainly done by sea transport due to the long-distance from the centers where they are consumed.

*Countries face significant challenges in the development of their seaports infrastructures*

As a result, seaport infrastructures play a very relevant part in the supply chains of the SSA region. Indeed, the size of the region, coupled with the fact that a lot of countries are not accessible by sea, means that a significant number of seaports have hinterlands, making them critical for the economic development of the region.

*These infrastructures play a very relevant part in the supply chains of the region*

Seaport activity in SSA faces challenges and restrictions that limit its normal functioning and the economic contribution that it could generate, namely:

*Challenges and restrictions that limit the normal functioning and economic contribution*

- Reduced efficiency in terms of stowage and storage;
- Public control of the companies/seaport management companies limits the financing capabilities to upgrade/renovate infrastructures;
- Lower cargo volumes compared with other regions of the world;
- Deficiencies or absence of connectivity with other modes of transportation;
- Transport logistics hampered by the current state of road networks and large distances;
- Need for greater development of road/rail corridors connecting seaports to hinterlands to ease the transport of goods to other regions.

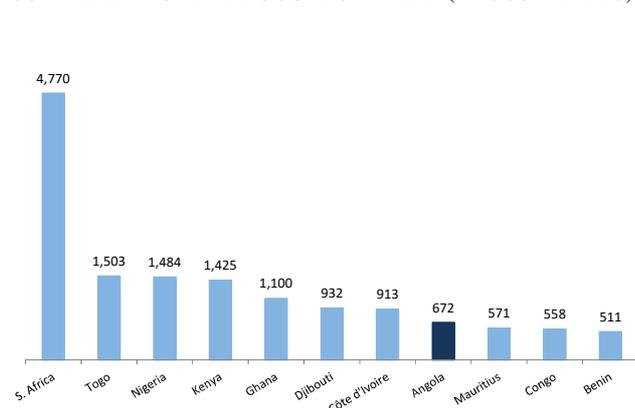
In terms of capacity, the largest seaports in SSA are definitely located in South Africa, namely in Durban, Cape Town and Port Elizabeth. The latest available data shows that the combined container port throughput in the country reached nearly 4.8 million TEU in 2019. Seaports in Togo had a total throughput of 1.5 million TEU followed by the ports in Nigeria, Kenya and Ghana, with all of them having a throughput above one million TEU. Ports in Angola had a total throughput of 672,213 TEU.

*The largest seaports in Sub-Saharan Africa are located in South Africa*

Other data showed that the largest average container carrying capacity per container ship was recorded in Djibouti (5,620 TEU) followed by South Africa (5,068 TEU). Benin had over 4,200 TEU while Angola had about 3,560 TEU, as shown below.

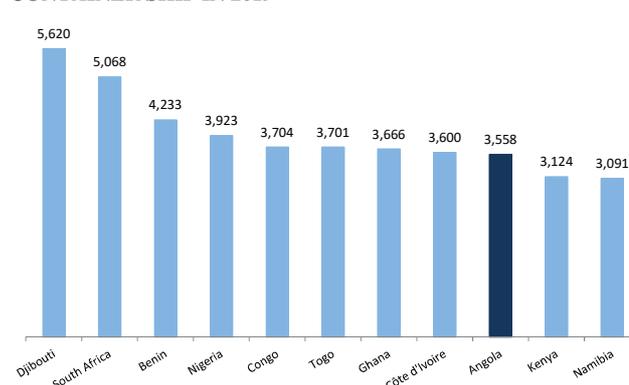
*Djibouti had the largest average container carrying capacity per container ship*

CONTAINER PORT THROUGHPUT IN 2019 (THOUSAND TEU)



Source: UNCTAD Stat.

AVERAGE CONTAINER CARRYING CAPACITY (TEU) PER CONTAINER SHIP IN 2019



Source: UNCTAD Stat.

Another trend recently witnessed relates to the increased trade between China and countries in SSA. China has been a relevant importer of commodities, including oil, minerals and wood, produced in Africa. On the other hand, China has exported manufactured goods to Africa and has granted credit lines associated with the export of goods and services from China. These trade transactions have contributed to the development of sea transportation and seaport infrastructures in Africa.

*Increased trade between China and countries in SSA*

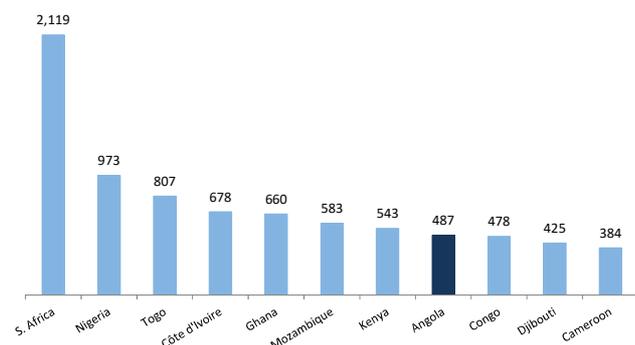
Port performance is a key indicator of trade efficiency that determines connectivity and trade costs. Every hour of ship time saved in a port helps ports, carriers and shippers save money on port infrastructure investments, capital expenditures on ships and inventory holding costs of merchandise goods. A shorter time in port is a positive indicator of a port’s efficiency and trade competitiveness. In general, dry bulk carriers could spend almost three times the median time of a container ship during a port call.

*Port performance is a key indicator of trade efficiency*

In 2019, the largest number of container ship arrivals was recorded in South Africa (2,119). Nigeria was a distant second (973 arrivals), followed by Togo (807). The number of container ship arrivals in Angola stood at 487 in the same period. However, ports in Djibouti were the most efficient in terms of the shortest median time in port (one day), while ports in Nigeria had the longest (2.96 days). The median time in port in Angola was 1.86 days.

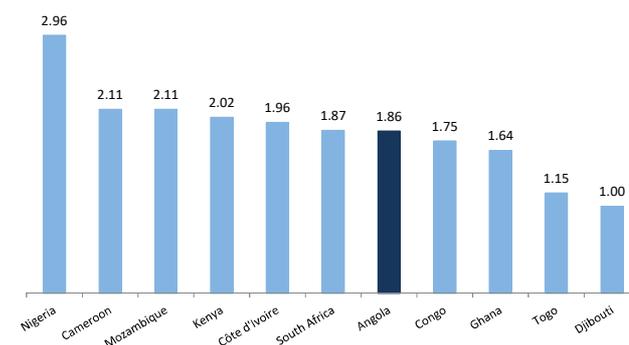
*The largest number of container ship arrivals was recorded in South Africa while the short mean time at port was in Djibouti*

NUMBER OF CONTAINER SHIP ARRIVALS IN 2019



Source: UNCTAD Stat.

MEDIAN TIME IN PORT IN 2019 (DAYS)



Source: UNCTAD Stat.

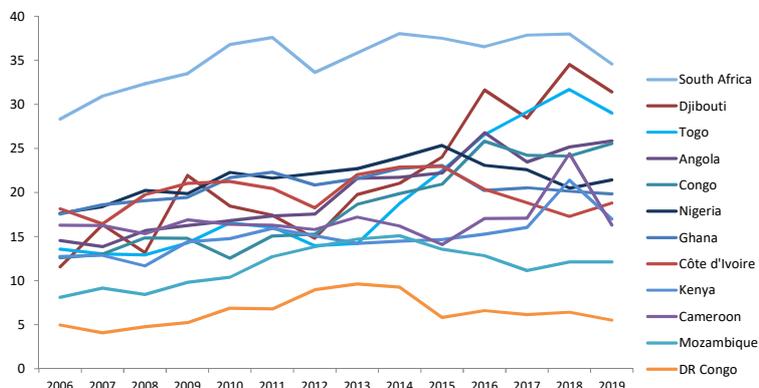
The position of a country or port in the global container shipping network, or its connectivity, is also a key determinant of accessibility to global trade, trade costs and competitiveness. The UNCTAD Stat provides an indicator for this connectivity, which aims to capture a country’s level of integration into the existing global liner shipping network by measuring liner shipping connectivity. The higher the level of the liner shipping connectivity index, the easier it is for a country to access the global maritime freight transport system, including in terms of capacity, transport options and frequency, and thus effectively participate in international trade. The index is set at 100 for the maximum value of country connectivity in 2006, which was represented by China.

*The liner shipping connectivity index is an important indicator in terms of measuring accessibility to global trade*

In SSA, the most connected ports are located in South Africa, which has recorded the highest index over the years, evidencing its importance as a gateway to other countries in the region in terms of overseas trade.

*The most connected ports in SSA are located in South Africa*

LINER SHIPPING CONNECTIVITY INDEX (ANNUAL)\*



\*Maximum 2006=100 for China. Source: UNCTAD Stat.

Angola is the fourth largest economy in SSA, providing significant exporting potential that is yet to be fully exploited. Due to its location, Angola could offer an entry point, or a way out for

*Angola provides significant exporting potential to other*

exports, for international transport to the southern region of the Democratic Republic of Congo (DRC), Zambia and Botswana, as these countries do not have direct access to the sea. *neighboring countries*

**MAIN SEAPORTS AND RAILWAY CORRIDORS IN AFRICA**



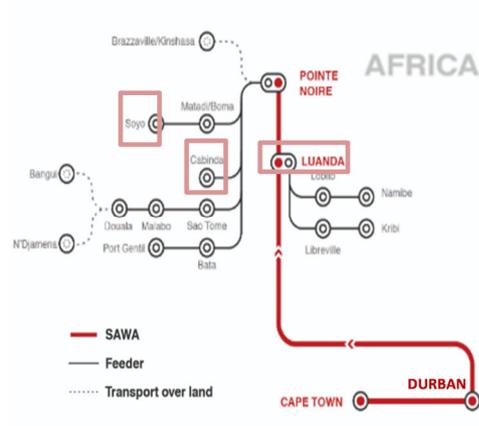
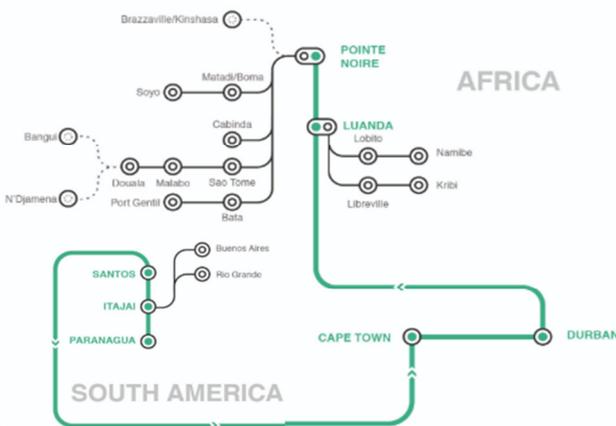
Source: AICD database.

Some of the country’s main seaports (Luanda, Soyo and Cabinda) are actually part of several international routes operated by the largest maritime transport companies, including Niledutch, CMA-CGM, Maersk and UAL. These include the West Europe-West Africa route linking the seaports of Antwerp, Le Havre, Lisbon, Algeciras, Pointe Noire, Luanda, Libreville and Kribi as well as the East Coast South America – West Africa and South Africa – West Africa routes, as described below.

*Some of Angola’s main ports are part of several international routes*

**EAST COAST SOUTH AMERICA – WEST AFRICA (ECWA)**

**SOUTH AFRICA – WEST AFRICA (SAWA)**



Sources: CMA-CGM and Niledutch.

Sources: CMA-CGM and Niledutch.

It is against this backdrop that the IFC (World Bank group) recommended in a diagnostic study about Angola’s private sector that private initiative should play a bigger role in the country’s transport sector. In particular, the IFC suggested that the private sector should have a more relevant presence in those areas that provide greater potential such as sea and air transport, as these are the most important entry points to the country.

*Angola’s private sector should play a bigger role in the country’s transport sector*

Indeed, there are already several international seaport operators in Africa, with APM Terminals having a presence in Angola through the operations in the container terminal in the Port of Luanda and another in the Port of Namibe (both through Sogester).

*There are several overseas seaport operators in Africa*

| LARGEST OPERATORS     | SEAPORT TERMINALS UNDER OPERATION IN AFRICA   |
|-----------------------|---|
| APM Terminal          | 13 container terminal concessions: Angola (2), Benim (1), Cameroon (1), DRC (1), Egypt (1), Congo (1), Guinea (1), Ivory Coast (1), Liberia (1), Morocco (1) and Nigeria (2)              |
| Bolloré               | 12 container terminal concessions: Ivory Coast (1), Cameroon (2), Ghana (1), Nigeria (1), Gabon (1), Congo (1), Benim (1), Sierra Leone (1), Togo (1), Guinea (1) and Comoros Islands (1) |
| Transnet              | Owner and operator of 16 terminals in 7 south african seaports  |
| DP World              | 7 seaport concessions in Egypt (1), Djibouti (1), Argel (2), Somalia (1), Mozambique (1) and Senegal (1). 1 concession in the Rwanda logistics center                                     |
| ICTS                  | 2 seaport concessions in Congo and Madagascar   |
| Hutchinson Ports      | 3 seaport concessions in Egypt (2) and Tanzania (1)   |
| COSCO                 | 1 seaport concession in Egypt (20% of the container terminal in the Suez Channel, controlled by APM)  |
| China Merchants Group | 1 seaport concession in Togo  |

Source: Public Information.

### 3.2 - SEAPORT INFRASTRUCTURES IN ANGOLA

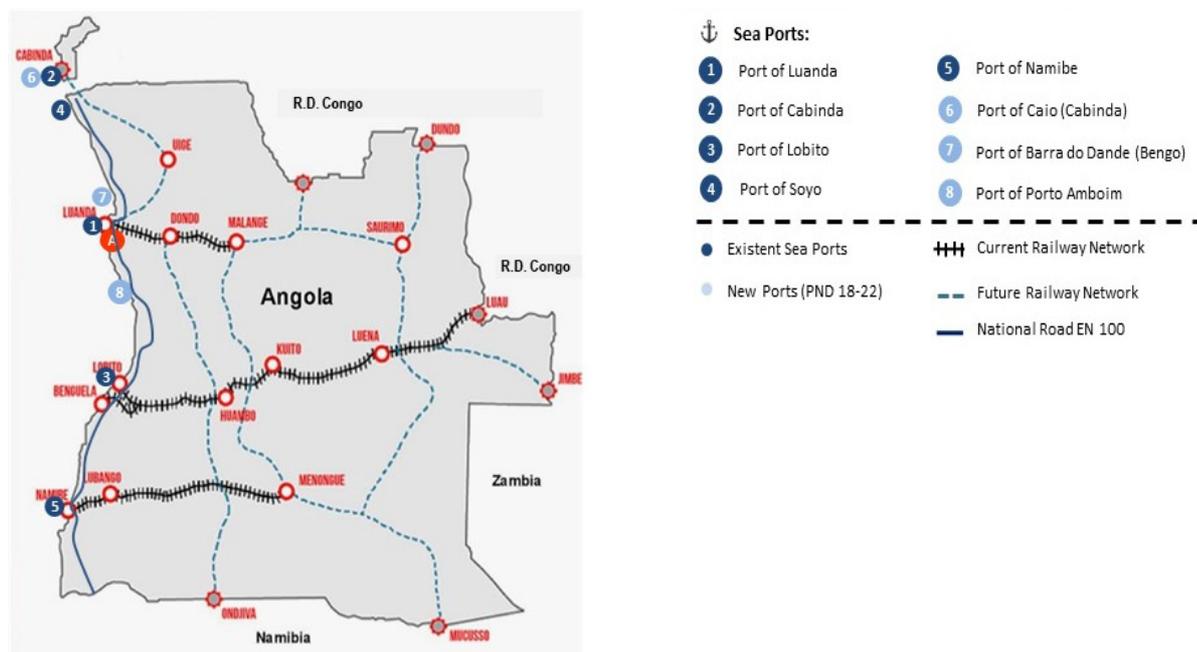
Angola currently has five seaports strategically located from north to south along the Atlantic coast of the country. These seaports are Luanda, Lobito, Namibe, Cabinda and Soyo. The country’s National Development Plan for 2018-22 (PND 18-22) envisages the construction of three additional seaports, namely Caio in Cabinda (intended as a container terminal), Barra do Dande in Bengo and Porto Amboim.

*Angola currently has five seaports located from north to south along the Atlantic, with the PND 18-22 envisaging the construction of an additional three ports*

The Port of Luanda is the seaport that records the largest cargo turnover, as it serves the most populated city and province of the country, Luanda. It has a railway connection to the city of Malange, located inland of the country and approximately 340km from the capital. The PND 18-22 envisages the extension of the railway to the city of Saurimo and the construction of a railway branch to the border city of Dundo, which will allow the creation of another transport corridor to the DRC.

*The Port of Luanda records the largest cargo turnover*

#### NATIONAL NETWORK OF SEAPORTS AND RAILWAYS



Source: National Development Plan of Angola 2018-22.

The second seaport is Port of Lobito, which supplies Angola’s Planalto Central region along the Benguela railway. It is currently the only seaport that has a railway connection to a border country to Angola, namely the DRC, therefore offering potential to handle imports and exports of goods and raw materials from the southern region of the country. The PND 18-22 includes plans to build a railway branch that will eventually allow the connection to the actual railway infrastructure (CFB) to Zambia. The EN-100 is the road axis that crosses the length of Angola from north to south and provides access to all the major seaports of the country (Luanda, Lobito, Namibe, Cabinda and Soyo).

*The Port of Lobito is currently the only seaport with a railway connection with a border country to Angola*

Seaports in the country are prepared to handle cargo types/volumes and welcome the number of vessels in accordance with the levels recorded during the period 2008-14. The latest figures suggest that activity in the main seaports currently stands at 40% of those levels, meaning that nowadays there is excess capacity. They also primarily handle imports coming into the country, as export activity remains limited. As a result, there is a large imbalance between the levels of container cargo that is imported and exported in the country. The Angolan authorities have made forecasts for the levels of container cargo at the main seaports for the period 2020-40 and identified improvement and expansion projects that need to be made at these existing seaports.

*There is currently excess capacity in the country’s main seaports*

#### 3.2.1 - Port of Luanda

The Port of Luanda is located in the bay of the city of Luanda, offering excellent navigability conditions and for operating sea transport vessels. On the regional front, its location in the

*Located in the bay of the city of Luanda*

middle of the west coast of the African continent makes the infrastructures of the Port of Luanda a mandatory stop in the sea routes to the west of the continent. The port is managed by Empresa Portuária de Luanda (EPL), a public company responsible for granting concessions to operate the various existing cargo and passenger terminals, under a “Landlord Port” regime.

EPL has several types of terminals (one of them dedicated to supporting the oil industry) that operate 24/24 hours daily. The passenger terminal is managed by IMPA (*Instituto Marítimo e Portuário de Angola*, or Maritime and Seaport Institute of Angola). The general cargo terminal (concessioned to Multiterminais) handles liquid and solid bulk and cereals. The multivalent terminal (managed by Multicargas, a public entity under the supervision of the Ministry of Transport) is intended to operate simultaneously general and container cargo. The container terminal handles only goods that are inside containers and is concessioned to Sogester.

*EPL has several types of terminals, all of them operating 24/24 hours daily*

The multipurpose terminal is also intended to simultaneously operate general and container cargo. We note that EPL is currently responsible for the daily management of this terminal, as there is an ongoing international tender process launched in December 2019 for its concession. The concession period lasts 20 years after it is awarded.

*There is an ongoing international tender process for the concession of the multipurpose terminal*

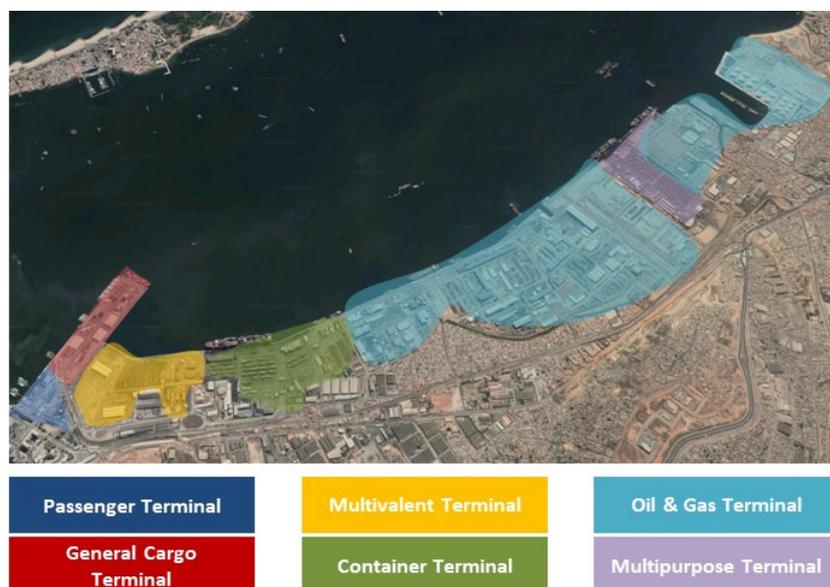
| PORT OF LUANDA   |                      |                      |                      |                        |                         |
|------------------|----------------------|----------------------|----------------------|------------------------|-------------------------|
| Type of Terminal | Quay Length (meters) | Water Depth (meters) | Area (square-meters) | Current Concessionaire | Concessionaire Deadline |
| Passenger        | 46                   | n.a.                 | 4,090                | IMPA                   | n.a.                    |
| General Cargo    | 900                  | 3.5 - 9.5            | 80,000               | Multiterminais         | 20 years (2005-25)      |
| Multivalent      | 536                  | 10                   | 178,641              | Unicargas              | 20 years (2005-25)      |
| Container        | 550                  | 10.5 - 12.5          | 142,467              | Sogester               | 20 years (2007-27)      |
| Oil & Gas        | 1,987                | 12.5                 | 1,597,544            | Sonils (Sonangol)      | 25 years (1995-2020)    |
| Multipurpose     | 1,000                | 12.5                 | 229,100              | -                      | -                       |

Sources: IMPA and EPL.

The Port of Luanda is the largest seaport infrastructure in the country. It is responsible for more than 80% of the turnover of the cargo transported by sea in the Angolan territory and where most international trade takes place (70% of all imports arrive in container cargo). It underwent a US\$ 130 million refurbishment program, which was completed in 2014.

*The Port of Luanda is responsible for more than 80% of the turnover of the cargo transported by sea in Angola*

MAP OF THE PORT OF LUANDA AND EXISTING TERMINALS



Source: National Plan for the Transport Sector, MINTRANS.

Figures released by EPL show that 4,024 ships docked in the Port of Luanda during 2019, with 504 of these being long-haul ships and 3,520 supply boats mostly related to the oil industry. Compared to the previous year, the total number of ships docking in the Port of Luanda rose by 305 (8.2%) while, since 2015, the number of ships fell by an average annual rate of 11.5%.

*Despite increasing in 2019, the number of ships docking in the Port of Luanda has declined in recent years*

The lower frequency of ships arriving to the terminals of the Port of Luanda in recent years has

*This lower vessel traffic*

been largely due to the deceleration of the Angolan economy and the decreasing activity in the oil sector following the sharp drop in international oil prices. This has led to a strong reduction in the level of imported goods and the transport of oil and its by-products by sea. It is worth noting that the terminal that supports activity in the oil sector is the main responsible for the vessel traffic in the Port of Luanda, accounting for more than 85% of the total traffic in the port in the last five years.

Figures from EPL also show that the number of passengers registered in the Port of Luanda reached 97,108 during 2019, of which 95,671 were transported in vessels related to the oil and gas industry and only 1,437 passengers were from long-haul vessels. During the first half of 2020, the number of passengers stood at 26,968, with all of them related to operations in the oil sector as the Covid-19 pandemic hit activity in cruise ships. Moreover, the total volume of cargo handled reached 7,142 thousand tons in 2019, rising only 0.9% from the previous year.

*has been mostly due to the deceleration in economic activity, namely in the oil industry*

*The large majority of the passengers registered at the Port of Luanda relates to the oil and gas industry*

| PORT OF LUANDA                       |               |               |               |               |               |               |                |  |
|--------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|--|
| Period                               | 2015          | 2016          | 2017          | 2018          | 2019          | 1H 2020       | CAGR (2015-19) |  |
| <b>Number of Ships</b>               | <b>6,562</b>  | <b>4,622</b>  | <b>4,144</b>  | <b>3,719</b>  | <b>4,024</b>  | <b>1,758</b>  | <b>-11.5%</b>  |  |
| Long-haul                            | 900           | 732           | 633           | 555           | 504           | 238           | -13.5%         |  |
| Cabotage                             | 5,662         | 3,890         | 3,511         | 3,164         | 3,520         | 1,520         | -11.2%         |  |
| <b>Passenger Traffic</b>             | <b>54,734</b> | <b>69,277</b> | <b>65,361</b> | <b>85,413</b> | <b>97,108</b> | <b>26,968</b> | <b>15.4%</b>   |  |
| Long-haul (Cruises)                  | 2,508         | 13,539        | 456           | 1,317         | 1,437         | 0             | -13.0%         |  |
| Cabotage (Support Oil Industry)      | 52,226        | 55,738        | 64,905        | 84,096        | 95,671        | 26,968        | 16.3%          |  |
| <b>Cargo Traffic (Thousand Tons)</b> | <b>8,910</b>  | <b>7,190</b>  | <b>7,703</b>  | <b>7,081</b>  | <b>7,142</b>  | <b>3,034</b>  | <b>-5.4%</b>   |  |
| Liquid Bulk                          | 74            | 17            | 0             | 2             | 8             | 0             | -42.7%         |  |
| Solid Bulk                           | 1,127         | 820           | 501           | 741           | 613           | 285           | -14.1%         |  |
| Fractioned General Cargo             | 1,101         | 881           | 801           | 715           | 503           | 316           | -17.8%         |  |
| Container General Cargo              | 6,608         | 5,471         | 6,400         | 5,624         | 6,017         | 2,432         | -2.3%          |  |

Source: EPL.

The government is considering reforming the Port of Luanda as (1) stowage activities could be handled by private operators instead of public companies in order to achieve productivity gains and (2) a new director plan is being developed (contract awarded in January 2020) with the aim of giving more efficient use of the stowage space and available storage in order to reinforce the overall cargo handling capabilities of the seaport infrastructure.

*Reforming the Port of Luanda*

Container forecasts for 2030 (and beyond) suggest that demand for cargo handling capabilities will exceed existing capacity. There are also plans for a new deep-water seaport outside the Bay of Luanda that would have adequate links to the interior of the country. The options would be Port of Barra do Dande (about 60kms north of Luanda), with a reported capacity to handle 3.2 million tons of cargo a year, and Port Amboim (about 260km south of Luanda and located between Luanda and Lobito, in the province of Cuanza Sul).

*Forecasts suggest that demand for cargo handling capabilities will exceed existing capacity starting in 2030*

| CONTAINER TRAFFIC | Thousand TEU |            |              |
|-------------------|--------------|------------|--------------|
|                   | 2023         | 2028       | 2038         |
| Imports - full    | 293          | 365        | 572          |
| Imports - empty   | 0            | 0          | 0            |
| Exports - full    | 76           | 85         | 200          |
| Exports - empty   | 217          | 280        | 372          |
| <b>Total</b>      | <b>586</b>   | <b>730</b> | <b>1,144</b> |

Source: Angolan authorities.

Sea freight to Angola is significantly more expensive than to other seaports. For instance, the sea freight from Le Havre (in northern France) to Abidjan or Dakar is half of the amount that it is to Angola while for Lagos it is two-thirds of the amount. This is due to several reasons, such as (1) lower competition of alternative corridors (Lagos, for instance, competes with Cotonou), (2) local costs in Angola are higher, (3) lower productivity of the stowage, (4) informal trade agreements among shipping lines and (5) own country risk.

*Sea freight to Angola is much more expensive than to other seaports in Africa*

As a result, there is great potential for improvement in terms of cost efficiency considering that a significant number of the reasons aforementioned could be resolved with decisions taken by the Angolan authorities and the involvement/investment of the private sector. These include (1) bottlenecks at the seaport, (2) required time for cargo unloading, (3) lack of trucks to transport the cargo and (4) road and railway traffic inland that lead to part of the Port of Luanda being used as storage area and, therefore, requiring the need to resort to dry ports to attend to these bottlenecks (namely in handling empty containers).

*Significant potential for improvement in terms of efficiency*

### 3.2.2 - Port of Lobito

The Port of Lobito is located in the middle of the Angolan coast, 500km south of Luanda. It is a deep-water seaport with five different types of terminals: (1) general cargo, (2) container, (3) dry port, (4) support and (5) mining. The container terminal has modern facilities, while the minerals terminal has a railway connection to the Benguela Railway linking Lobito to the mineral regions of the DRC and Zambia. This provides the Port of Lobito with huge potential to become the main port for the export of minerals from these two countries.

*The Port of Lobito has five different types of terminals*

The port was refurbished in 2014 in anticipation of the completion of the Benguela Railway for the export of copper and other minerals to these two countries in a US\$ 1.2 billion program. It is also well connected to the national road network. Currently, the port handles container cargo, bulk cargo, construction materials and imports of oil derivatives. It is also responsible for about 10% of the total imported and exported cargo in the country.

*The port has good connections to the Benguela Railway and national road network*

#### MAP OF THE PORT OF LOBITO AND EXISTING TERMINALS



Source: National Plan for the Transport Sector, MINTRANS.

The Port of Lobito now has capacity to handle 2.9 million tons of cargo a year, including the export of refined oil products. It is worth noting that one oil refinery is currently under construction in Lobito and two further oil refineries are subject to tenders and development in Cabinda and Soyo. The government launched a public tender for the construction of the new Soyo refinery in October 2019, with the results expected sometime in the near future.

*The port now has capacity to handle 2.9 million tons of cargo a year, including the export of refined oil products*

| CONTAINER TRAFFIC           | Thousand TEU |            |            |
|-----------------------------|--------------|------------|------------|
|                             | 2023         | 2028       | 2038       |
| Imports - full              | 36           | 45         | 70         |
| Imports - empty             | 0            | 0          | 0          |
| Exports - full              | 4            | 4          | 9          |
| Exports - empty             | 32           | 41         | 62         |
| Transshipment entry - full  | 45           | 52         | 70         |
| Transshipment entry - empty | 50           | 61         | 94         |
| Transshipment exit - full   | 79           | 94         | 139        |
| Transshipment exit - empty  | 16           | 19         | 25         |
| <b>Total</b>                | <b>262</b>   | <b>316</b> | <b>469</b> |

Source: Angolan authorities.

Contrary to what happens at the Port of Luanda, the management model of the Port of Lobito remains a “Service Port” regime, where the local port authority is responsible for the operations of the terminals. We also note that, in July 2019, the government revoked the concession of the terminals of the port and has since then launched two public tender processes (also open to overseas entities) for the concessions of the general and container cargo terminals as well as the mining terminal.

*In July 2019, the government revoked the concession of the terminals of the port and has launched two public tender processes for the concessions*

The Angolan authorities also see great potential for the Port of Lobito in capturing cargo from neighboring landlocked countries, namely through the utilization of the Benguela Railway as a means to maneuver goods to (and from) these countries.

*Potential to capture cargo from neighboring landlocked countries*

3.2.3 - Port of Namibe

The Port of Namibe is currently the third largest seaport in the country and is mostly used for the transportation of mining products, including exports of granite and iron ore, as well as the transportation of fuel to Angola’s southern provinces. It is well connected to the national road network and the Moçâmedes Railway.

*The Port of Namibe is currently the third largest seaport in the country*

The port underwent a US\$ 3 billion refurbishment program completed in 2015 and has the capacity to handle 1.4 million tons of cargo a year. The modernization works will also allow 30 to 35 movements per hour. Its standstill capacity was increased from 1,700 to 2,700 TEU and its refrigeration connections from 25 to 100 power plugs. These works also included the rehabilitation of 240 meters of the pier and paving the existing container park.

*Modernization works took place at the Port of Namibe*

PORT OF NAMIBE EXISTING TERMINALS AND EXPANSION PLANS



Source: National Plan for the Transport Sector, MINTRANS.

The Port of Namibe includes a container and minerals terminals. The container terminal has (1) a total area of 135,000 square-meters and 875 meters of continuous pier, (2) a container storage area of 12,150 square-meters, (3) electric cranes throughout the pier and (4) a connection to Moçâmedes railway through the minerals terminal of Sacomar at Port Saco-Mar. The minerals terminal currently (1) works as the main fuel and lubricant terminal for Sonangol in the southern part of the country, (2) has a pier that is 525 meters long and 19 meters deep and (3) handles cargo consisting of fuel and its derivatives weighing about 300,000 tons.

*It includes two terminals, namely container and minerals*

| CONTAINER TRAFFIC | Thousand TEU |           |            |
|-------------------|--------------|-----------|------------|
|                   | 2023         | 2028      | 2038       |
| Imports - full    | 13           | 17        | 26         |
| Imports - empty   | 14           | 20        | 46         |
| Exports - full    | 27           | 36        | 73         |
| Exports - empty   | 0            | 0         | 0          |
| <b>Total</b>      | <b>54</b>    | <b>73</b> | <b>145</b> |

Source: Angolan authorities.

This port will also be utilized for the export of iron and steel coming from the Cassinga mine after the government announced last year that it was relaunching mining activities in Cassinga. This mine is located in the municipality of Jamba (province of Huila), about 350km from the city of Lubango.

*The Port of Namibe will be used for the transportation of iron and steel from the Cassinga mine*

### 3.2.4 - Port of Cabinda

The Port of Cabinda is located in the province of Cabinda, which borders Congo in the north and DRC in the south. It is located 400km north of Luanda, 220km southwest of Matadi (DRC) and 200km north of the city of Pointe Noire (Congo). The port is the only access way to the imports required by the local population, amounting to more than 15 million. As a result, its importance is clear, as there are no roads or railways linking Cabinda to the rest of the country.

*The Port of Cabinda is of paramount importance for the local population*

The port has (1) two storage facilities of 1,000 square-meters, (2) a storage area with capacity of 8,000 TEU and (3) a new pier bridge, including a dock 120 meters long, 32 meters wide and five meters high.

*The infrastructures of the port*

#### PORT OF CABINDA



Source: National Plan for the Transport Sector, MINTRANS.

Two new investments are currently being undertaken at the existing Port of Cabinda, with both of them expected to be completed by end-2020. A new breakwater pier aims to endow the port with docking capabilities for container ships carrying up to 10,000 tons (DWT) and for vessels of the roll-on roll-off (“RO RO”) type as well as cabotage ferry-boats. The new pier, which is expected to be about 660 meters long and cost US\$ 65 million, also aims to provide protection for the existing floating terminal against undulation risks.

*New investments are currently being undertaken at the Port of Cabinda*

A new maritime passenger terminal is also being constructed for the province of Cabinda and aims to be an interface for people, merchandise goods and vehicles that are transported to/from Soyo/Luanda. This would be an alternative connection by sea between the several provinces of Angola. The new passenger terminal will have an area of around 50,000 square-meters and cost US\$ 70 million.

*These investments are a new breakwater pier and a new passenger terminal*

| PORT OF CABINDA         |               |               |               |               |               |               |                |                |                |                |                |                |
|-------------------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Year                    | 2008          | 2009          | 2010          | 2011          | 2012          | 2013          | 2014           | 2015           | 2016           | 2017           | 2018           | 2019           |
| <b>Number of Ships</b>  | <b>276</b>    | <b>259</b>    | <b>250</b>    | <b>269</b>    | <b>208</b>    | <b>235</b>    | <b>255</b>     | <b>255</b>     | <b>439</b>     | <b>180</b>     | <b>145</b>     | <b>134</b>     |
| Long-haul               | 79            | 85            | 80            | 82            | 118           | 147           | 156            | 165            | 278            | 72             | 61             | 71             |
| Cabotage                | 197           | 174           | 170           | 187           | 90            | 88            | 99             | 90             | 161            | 108            | 84             | 63             |
| <b>Containers (TEU)</b> | <b>13,616</b> | <b>14,529</b> | <b>14,974</b> | <b>19,480</b> | <b>19,001</b> | <b>28,665</b> | <b>26,156</b>  | <b>25,909</b>  | <b>14,205</b>  | <b>10,986</b>  | <b>17,827</b>  | <b>13,192</b>  |
| Full                    | 7,350         | 7,976         | 8,338         | 11,290        | 11,476        | 13,620        | 14,576         | 12,626         | 8,945          | 8,557          | 9,486          | 7,999          |
| Empty                   | 6,266         | 6,553         | 6,636         | 8,190         | 7,525         | 15,045        | 11,580         | 13,283         | 5,260          | 2,429          | 8,341          | 5,193          |
| <b>Cargo (Tons)</b>     | <b>n.a.</b>   | <b>n.a.</b>   | <b>n.a.</b>   | <b>n.a.</b>   | <b>n.a.</b>   | <b>n.a.</b>   | <b>349,619</b> | <b>342,094</b> | <b>313,184</b> | <b>327,888</b> | <b>259,224</b> | <b>205,075</b> |
| Container               | n.a.          | n.a.          | n.a.          | n.a.          | n.a.          | n.a.          | 311,835        | 280,878        | 197,210        | 232,556        | 214,105        | 186,432        |
| Bulk                    | n.a.          | n.a.          | n.a.          | n.a.          | n.a.          | n.a.          | 37,784         | 61,216         | 115,974        | 95,332         | 45,119         | 18,643         |

Source: MINTRANS.

The latest figures for the Port of Cabinda (in the table above) show that traffic has declined in recent years as well as containers and cargo processed. In particular, the port welcomed 134

*Traffic at the Port of Cabinda has declined in recent years*

vessels (long-haul and cabotage) during 2019, processing 13,192 containers and 205,075 tons of cargo.

Meanwhile, in 2012, Caioporto SA was founded as a specific vehicle for the development and construction of the new Port of Caio, with an estimated investment amounting to US\$ 800 million. The company was awarded the financing, planning, projecting, building and management of the Port of Caio under the terms and conditions of the concession agreement signed between a private entity and Angola’s Ministry of Transport. Caioporto SA is currently held by the country’s Sovereign Wealth Fund (*Fundo Soberano de Angola*).

*Caioporto SA was founded as a specific vehicle for the development and construction of the new Port of Caio*

The future Port of Caio is being developed in two stages, with the first stage being located 8km from the Port of Cabinda and to have an area of 150 hectares. The characteristics of the first stage include (1) length of the wall of the commercial seaport: 630 meters; (2) bridge and access pier to the seaport terminal: 2 km long; (3) access channel: 180 meters high and 15.5 meters deep; (4) handling capacity: 60 containers/hour per docking pier; and (5) docking basin: 200 meters wide and 14 meters deep.

*The future Port of Caio is being developed in two stages*

And the second stage of development of this project will require the following: (1) a docking pier 1,130 meters long and 16 meters deep (docking of four large ships simultaneously) with capacity to welcome some of the world’s largest ships; and, (2) an access channel that is 28 km long, 200 meters wide and 18 meters deep.

*Characteristics of the second stage of development of the project*

**LAYOUT OF FIRST STAGE OF THE FUTURE PORT OF CAIO**



Source: National Plan for the Transport Sector, MINTRANS.

**LAYOUT OF SECOND STAGE OF FUTURE PORT OF CAIO**



Source: National Plan for the Transport Sector, MINTRANS.

**3.2.5 - Port of Soyo**

The Port of Soyo is located next to the border between Angola and the DRC, on the south side of Zaire river, and about 350km north of Luanda. The port is also strategically located near the country’s most productive offshore (oil and gas) blocks and directly serves as a gateway for the import/export of goods to/from inland. It consists of a commercial pier (200 meters long and 80 meters wide) as well as a supply base for the Kwanda island. The maximum moving capacity for container cargo is 12 TEU/hour and about 35,250 tons of storage while the commercial pier has a docking capacity of just two vessels (depending on their size).

*The Port of Soyo is located about 350km north of Luanda*

| PORT OF SOYO                  |                |                |                |                |                |                |                |                |                |                |                |                |
|-------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Year                          | 2008           | 2009           | 2010           | 2011           | 2012           | 2013           | 2014           | 2015           | 2016           | 2017           | 2018           | 2019           |
| <b>Number of Ships</b>        | <b>276</b>     | <b>259</b>     | <b>250</b>     | <b>269</b>     | <b>208</b>     | <b>235</b>     | <b>255</b>     | <b>255</b>     | <b>439</b>     | <b>180</b>     | <b>145</b>     | <b>134</b>     |
| Long-haul                     | 79             | 85             | 80             | 82             | 118            | 147            | 156            | 165            | 278            | 72             | 61             | 71             |
| Cabotage                      | 197            | 174            | 170            | 187            | 90             | 88             | 99             | 90             | 161            | 108            | 84             | 63             |
| <b>Containers (TEU)</b>       | <b>13,616</b>  | <b>14,529</b>  | <b>14,974</b>  | <b>19,480</b>  | <b>19,001</b>  | <b>28,665</b>  | <b>26,156</b>  | <b>25,909</b>  | <b>14,205</b>  | <b>10,986</b>  | <b>17,827</b>  | <b>13,192</b>  |
| Full                          | 7,350          | 7,976          | 8,338          | 11,290         | 11,476         | 13,620         | 14,576         | 12,626         | 8,945          | 8,557          | 9,486          | 7,999          |
| Empty                         | 6,266          | 6,553          | 6,636          | 8,190          | 7,525          | 15,045         | 11,580         | 13,283         | 5,260          | 2,429          | 8,341          | 5,193          |
| <b>Cabotage Cargo (Tons)</b>  | <b>220,335</b> | <b>181,327</b> | <b>243,427</b> | <b>186,903</b> | <b>61,128</b>  | <b>31,587</b>  | <b>41,421</b>  | <b>80,440</b>  | <b>129,989</b> | <b>79,658</b>  | <b>45,365</b>  | <b>25,215</b>  |
| Loading                       | 107,021        | 78,370         | 130,099        | 46,797         | 4,140          | 4,980          | 4,482          | 5,495          | 3,997          | 1,317          | 2,443          | 2,012          |
| Unloading                     | 113,314        | 102,957        | 113,328        | 140,106        | 56,988         | 26,607         | 36,939         | 74,945         | 125,992        | 78,341         | 42,921         | 23,204         |
| <b>Long-haul Cargo (Tons)</b> | <b>176,484</b> | <b>169,566</b> | <b>192,843</b> | <b>303,800</b> | <b>280,821</b> | <b>305,566</b> | <b>308,198</b> | <b>261,654</b> | <b>183,195</b> | <b>248,230</b> | <b>213,859</b> | <b>179,860</b> |
| Loading                       | 155,477        | 154,630        | 166,579        | 270,728        | 273,797        | 289,115        | 297,090        | 235,297        | 160,215        | 44,686         | 168,881        | 154,384        |
| Unloading                     | 21,007         | 14,936         | 26,264         | 33,072         | 7,024          | 16,451         | 11,108         | 26,357         | 22,980         | 203,544        | 44,978         | 25,476         |
| <b>Total Cargo (Tons)</b>     | <b>396,819</b> | <b>350,893</b> | <b>436,270</b> | <b>490,703</b> | <b>341,949</b> | <b>337,153</b> | <b>349,619</b> | <b>342,094</b> | <b>313,184</b> | <b>327,888</b> | <b>259,224</b> | <b>205,075</b> |

Source: Angolan authorities.

The main purpose of the Port of Soyo and the Kwanda petrochemical supply base is to provide logistical support for the offshore and onshore oil and gas projects. The Kwanda base is crucial for Angola’s oil and gas industry, as large players and service providers for oil fields operate here. Auctions for new blocks are also expected to take place in the future, which would result in increased activity at the supply base. It is also worth noting that Sonangol is a shareholder of Kwanda Lda, which operates the Kwanda supply base.

*The main purpose of the port is to provide logistical support for oil and gas projects*

A new passenger and cargo terminal is currently under construction at the Port of Soyo, with the project almost reaching its conclusion stage and expected to cost US\$ 70 million. The terminal aims to provide an interface for people, merchandise goods and vehicles moving on the Luanda/Soyo/Cabinda route. It would serve as an alternative maritime route connecting the different provinces of the country. The terminal was conceived to accommodate vessels of the catamaran and “RO RO” types for the transport of passengers, cargo, containers and vehicles.

*A new passenger and cargo terminal at the Port of Soyo is nearly completed*

### 3.2.6 - Conclusion

In sum, all deep-water seaports in the country play a key role in supporting the government’s aim for the economic development of Angola as a country and its part in the African continent. The government believes that there is potential for private sector financing of the new projects envisaged for the next few years, where costs would be shared (assuming 50%-50%) between the landlord of the port (public sector) and the concession operator (private or public sector). The environmental impact of the development of the existing ports would be low since this would take place in areas that are already affected by seaport activity, while the impact of the new ports would be studied in detail as part of the development of the project.

*All seaports play a key role in the economic development of the country and its integration in the African continent*

The private sector’s involvement could also take the form of an increased private participation in port stevedoring activities (containers, bulk and conventional cargo) in the ports of Luanda, Cabinda, Lobito and Namibe.

*Greater private sector involvement in stevedoring activities*

The table below summarizes the projects that are part of the Angolan government’s investment plan for the seaport sector in the next years:

*Investment plan for the seaport sector*

| SEAPORT | Description   | Estimated Costs (US\$ mn) | Potential financing from the private sector         | Timing      |
|---------|---|---------------------------|---|-------------|
| Namibe  | Improve the unloading and loading capacity of the commercial pier of the Port of Namibe                             | 36                        | 50%   | Short-term  |
| Namibe  | Rehabilitate the terminal for solid cargo exports of the Port of Saco (Port of Namibe)                              | n.a.                      | 0% (the operator is the state company)              | Short-term  |
| Caio    | Conclude of phase 1 of the Port of Caio   | n.a.                      | 0%  | Short-term  |
| Luanda  | Improve the container moving capacity of the Port of Luanda (three options to be considered in a feasibility study) | 56, 80 or 320             | 25-50% (the operator is 50-100% private)            | Medium-term |
| Soyo    | Improve the development of the container terminal of the Port of Soyo   | 45                        | 0-50% (according to the public terminal concession) | Medium-term |
| Dande   | Develop a new deep-water seaport in Barra de Dande  | 1,500 (estimate)          | 50%   | Long-term   |
| Lobito  | Expand the container terminal of the Port of Lobito   | 60                        | 50%   | After 2038  |
| Namibe  | Expand the commercial pier of the Port of Namibe  | 50                        | 50%   | After 2038  |

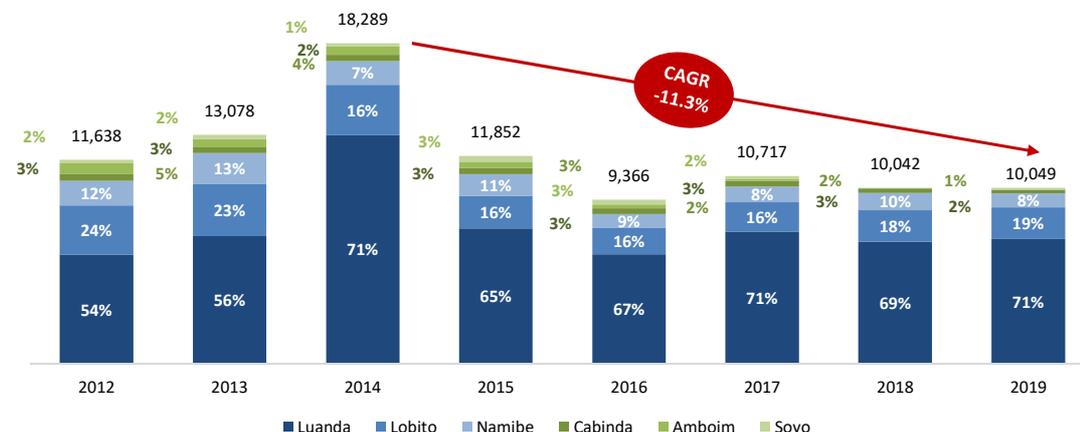
Source: National Plan for the Transport Sector, MINTRANS.

### 3.2.7 - Angolan Seaport Sector in Numbers

The volume of cargo handled in the ports of Angola has been gradually decreasing since the year 2014 at an average annual rate of -11.3%. In recent years, the volume of cargo handled in the ports of Angola reached its peak in 2014 (at 18,289 thousand tons), of which 71% were handled in the Port of Luanda, 16% in the Port of Lobito, 7% in the Port of Namibe and the remaining 6% handled between the Ports of Cabinda, Soyo and Amboim.

*The volume of cargo handled has been declining in recent years*

**CARGO VOLUMES HANDLED IN THE PORTS OF ANGOLA BETWEEN 2012 AND 2019**



Source: Research and Strategic Planning Bureau, MINTRANS.

In 2019, the total volume of cargo handled in Angola reached 10,049 thousand tons, remaining unchanged from the previous year. The Port of Luanda saw a 3% YoY increase, while the Port of Soyo recorded a sharp recovery after a very weak performance in 2018. This meant that the Port of Luanda, which clearly remains the main seaport for entry and exit of cargo in Angola, had a slightly higher share of the total cargo handled (71% vs. 69% in 2018). It is worth noting that Luanda has kept a relatively stable share of the total cargo handle in the last three years after declining in the period 2015-16. Moreover, the Ports of Lobito and Namibe, which in 2014 accounted for 23% of the total goods handled in the ports of Angola, were responsible for nearly 26% of the total goods handled by Angolan seaports in 2019.

*Total volume of cargo handled by the ports in Angola remained relatively unchanged in 2019 from the previous year*

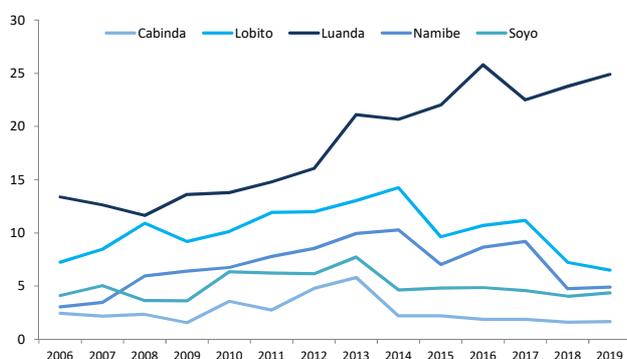
The latest available data relates to the first half of 2020 and showed that the Port of Luanda had a share of 74.6% of the total cargo handled in the period, while the combined share of the Ports of Lobito and Namibe stood at only 21%.

*The Port of Luanda increased its share of the total cargo handled to 74.6% in 1H 2020*

Meanwhile, as expected, the Port of Luanda is also Angola's most connected port to the rest of the world, as measured by the Liner Shipping Connectivity Index. This index stood at just 24.9 in 2019 (out of a maximum 2006=100 for the Port of Hong Kong), standing significantly above the index for the Port of Lobito (6.5) and the other ports (their index stood below 5).

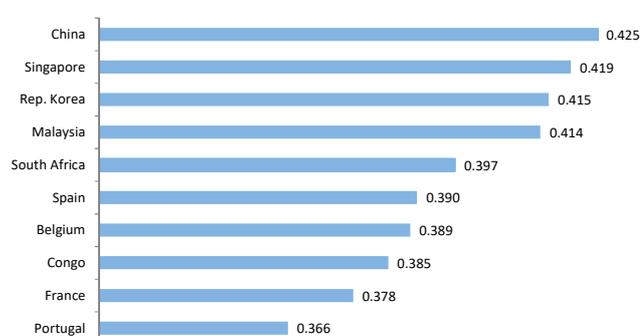
*The Port of Luanda is the most connected port in the country*

**LINER SHIPPING CONNECTIVITY INDEX-ANGOLAN PORTS\***



\*Maximum 2006=100 and Port of Hong Kong as reference.  
Source: UNCTAD Stat.

**BILATERAL CONNECTIVITY INDEX TOP 10 PARTNERS (2019)**



Source: UNCTAD Stat.

UNCTAD Stat also publishes the Bilateral Connectivity Index, which provides an indication of a country pair's integration level into global liner shipping networks. The index is composed of measures such as (1) number of transshipments required to get from country A to country B, (2) number of direct connections common to both country A and B, (3) number of common connections by country pair with one transshipment, (4) level of competition on services that connect country A to country B and (5) the size of the largest ship on the weakest route connecting country A to country B. It is also not a surprise that Angola is more connected to China than any other country, with an index of 0.425 (out of a value between 0 and 1) in 2019, as China is Angola's main trading partner.

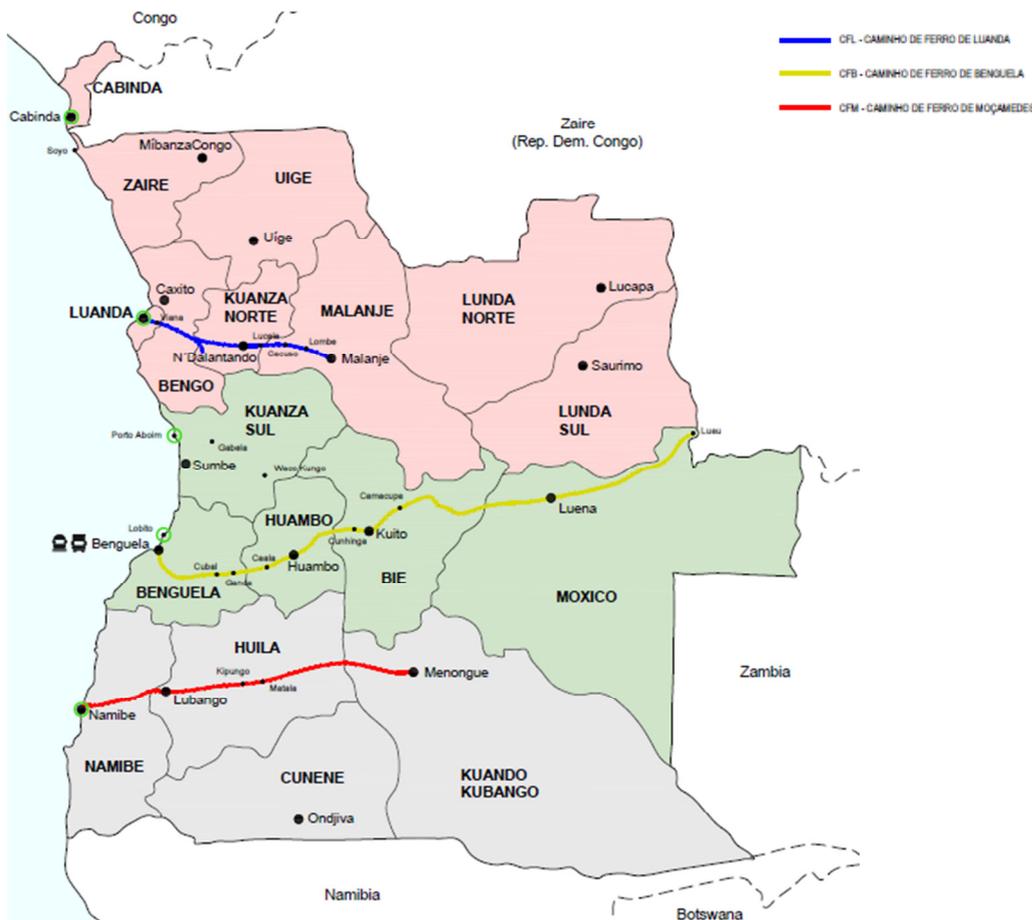
*Angola is more integrated with China than with any other country*

#### 4 - RAIL INFRASTRUCTURES IN ANGOLA

Angola has three railway systems run by public companies comprising a total rail extension nearly 2,700km long. These were built eastwards from the coast in colonial times, linking the country’s key Atlantic ports (Luanda, Lobito and Namibe) to the hinterland. The three lines are disconnected from each other and from railways in neighboring countries, except the Benguela Railway line that connects to the DRC. Railway traffic is currently low while its operation is not profitable and requires subsidies from the government.

*Angola has three railway systems run by public companies, with a network of nearly 2,700km*

##### RAIL AND SEAPORT INFRASTRUCTURES



Source: Eaglestone Securities.

Luanda Railways (Caminho de Ferro de Luanda: CFL; 500km) connects Luanda to the inland province of Malange. The line is mostly operational, providing access to the Port of Luanda. Luanda Railways operates an extension line (55km) from Zenza to Dondo, which are cities in the Kwanza-Norte province. This railway is used for the transport of container cargo from the Port of Luanda to the dry Port of Viana. CFL is also focused on the transport of petrol and gas to Dondo as well as other goods such as cement, construction materials, machinery and vehicles. Suburban passenger trains also run on this railway, with the Angolan authorities aiming to increase the number of passengers that are transported in the suburban train service of Bungo/Baia.

*Luanda Railways connects Luanda to Malange and has a distance of 500km*

Benguela Railways (Caminho de Ferro de Benguela: CFB; 1,344km) connects Lobito to the eastern border-town of Luau and to the rail networks of south-western DRC, Zambia and beyond. This line was rehabilitated in 2013 and is now fully operational. It is mostly used for the transport of minerals coming from the DRC and Zambia to be exported through the Port of Lobito. The hinterland served by CFB, also known as the Lobito Corridor, connects and serves an area of nearly 360,000 square-km, encompassing 39 municipalities and is home to nearly six million people.

*Benguela Railways is the longest rail network in the country (1,344km)*

Moçamedes Railways (Caminho de Ferro de Moçamedes: CFM; 856km) connects Namibe to

*Moçamedes Railway*

the eastern province of Kuando Kubango. This line was rehabilitated and has been operational since the second half of 2012. It is mostly used for the transport of iron coming from Cassinga and to be exported through the Port of Namibe.

*(856km) has been operational since the second half of 2012*

The rail network is extremely important as a means to reach the interior of the country, as the inland towns and cities have been cut off from the developments that have been taking place in the coastal regions for many years. Sectors like agriculture and mining, which are focused in the interior of Angola, will clearly benefit from a functioning rail system. Transporting imports (like equipment and goods) to the interior will also be easier.

*The railway system is very important as a means to reach the interior of the country*

The latest available data showed that the three railway companies transported a combined total of just over one million passengers in the first half of this year while cargo transported stood just below 140.000 tons. CFL transported 45.0% of the total passengers, with CFB and CFM transporting 33.9% and 21.1% of the total, respectively. In terms of cargo, CFM was the one that has clearly transported more cargo in recent years (55.6% in the first half of 2020) and cargo transported by CFL stood at only 6.2% of the total, as detailed below.

*CFL transports more passengers while CFM clearly stands out in terms of cargo transported*

| PASSENGERS AND CARGO            |                  |                  |                  |                  |                  |                  | % of Total    |               |               |               |               |               |
|---------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                                 | 2015             | 2016             | 2017             | 2018             | 2019             | 1H 2020          | 2015          | 2016          | 2017          | 2018          | 2019          | 1H 2020       |
| <b>Passengers Transported</b>   |                  |                  |                  |                  |                  |                  |               |               |               |               |               |               |
| Caminho de Ferro de Luanda      | 3,471,106        | 2,802,557        | 1,459,833        | 1,431,583        | 1,660,981        | 489,236          | 80.7%         | 62.8%         | 47.5%         | 36.5%         | 40.5%         | 45.0%         |
| Caminho de Ferro de Benguela    | 469,557          | 692,643          | 561,047          | 1,166,473        | 987,531          | 368,045          | 10.9%         | 15.5%         | 18.3%         | 29.8%         | 24.1%         | 33.9%         |
| Caminho de Ferro de Moçâmedes   | 358,330          | 967,620          | 1,052,819        | 1,321,443        | 1,455,300        | 229,295          | 8.3%          | 21.7%         | 34.3%         | 33.7%         | 35.5%         | 21.1%         |
| <b>Total</b>                    | <b>4,298,993</b> | <b>4,462,820</b> | <b>3,073,699</b> | <b>3,919,499</b> | <b>4,103,812</b> | <b>1,086,576</b> | <b>100.0%</b> | <b>100.0%</b> | <b>100.0%</b> | <b>100.0%</b> | <b>100.0%</b> | <b>100.0%</b> |
| <b>Cargo Transported (Tons)</b> |                  |                  |                  |                  |                  |                  |               |               |               |               |               |               |
| Caminho de Ferro de Luanda      | 79,448           | 25,712           | 60,944           | 63,783           | 19,328           | 8,649            | 48.7%         | 23.4%         | 31.7%         | 17.6%         | 6.4%          | 6.2%          |
| Caminho de Ferro de Benguela    | 29,225           | 23,802           | 30,708           | 98,066           | 124,936          | 53,358           | 17.9%         | 21.7%         | 16.0%         | 27.1%         | 41.3%         | 38.2%         |
| Caminho de Ferro de Moçâmedes   | 54,447           | 60,375           | 100,478          | 200,167          | 158,028          | 77,676           | 33.4%         | 54.9%         | 52.3%         | 55.3%         | 52.3%         | 55.6%         |
| <b>Total</b>                    | <b>163,120</b>   | <b>109,889</b>   | <b>192,130</b>   | <b>362,016</b>   | <b>302,291</b>   | <b>139,683</b>   | <b>100.0%</b> | <b>100.0%</b> | <b>100.0%</b> | <b>100.0%</b> | <b>100.0%</b> | <b>100.0%</b> |

Source: Angolan authorities.

Meanwhile, the government is planning to create in 2020-21 a new entity called *Companhia Ferroviária Nacional* (national railway company) that will have the responsibility of managing and maintaining the country's railway infrastructure. This will lead to the extinction of the aforementioned railway companies, as all three will be integrated into the new entity.

*The government plans to create one new entity to run the country's railway infrastructure*

The strategic aim of the Angolan authorities is also to connect the three existing "horizontal" railway lines with a "vertical" corridor from Soyo (at the border with the DRC) to Lubango, passing through Luanda and Lobito. The creation of one railway infrastructure company is the first step toward the management of the whole railway system that will be linked with the new line and that will cross from north to south of the country along the coastline. There is also another project for a "vertical" line further hinterland to connect Malanje to Huambo and Menongue.

*It also aims to connect the "three" railway lines with a "vertical" corridor from Soyo to Lubango*

The new company will also allow (as a second step) to open the railway business to the private sector by offering some of its services on a concession basis. However, a potential privatization of the railway system looks unlikely at this stage, as it is not included in the government's privatization program (PROPRIV) for the period 2019-22.

*The new entity will allow to open the railway business to the private sector*

The Angolan authorities have identified 13 new potential railway connections to be constructed in the years up to (or after) 2038. The new railway links are expected to have a total distance of just over 8,000km and cost US\$ 23.8 billion, representing an ambitious plan by the government that would leave Angola with one of the largest railways systems in Africa and would make the country a true hub in the SADC region. These projects are described in the table and identified on the map both on the next page.

*The government has identified 13 new potential railway connections to be constructed up to (or after) 2038*

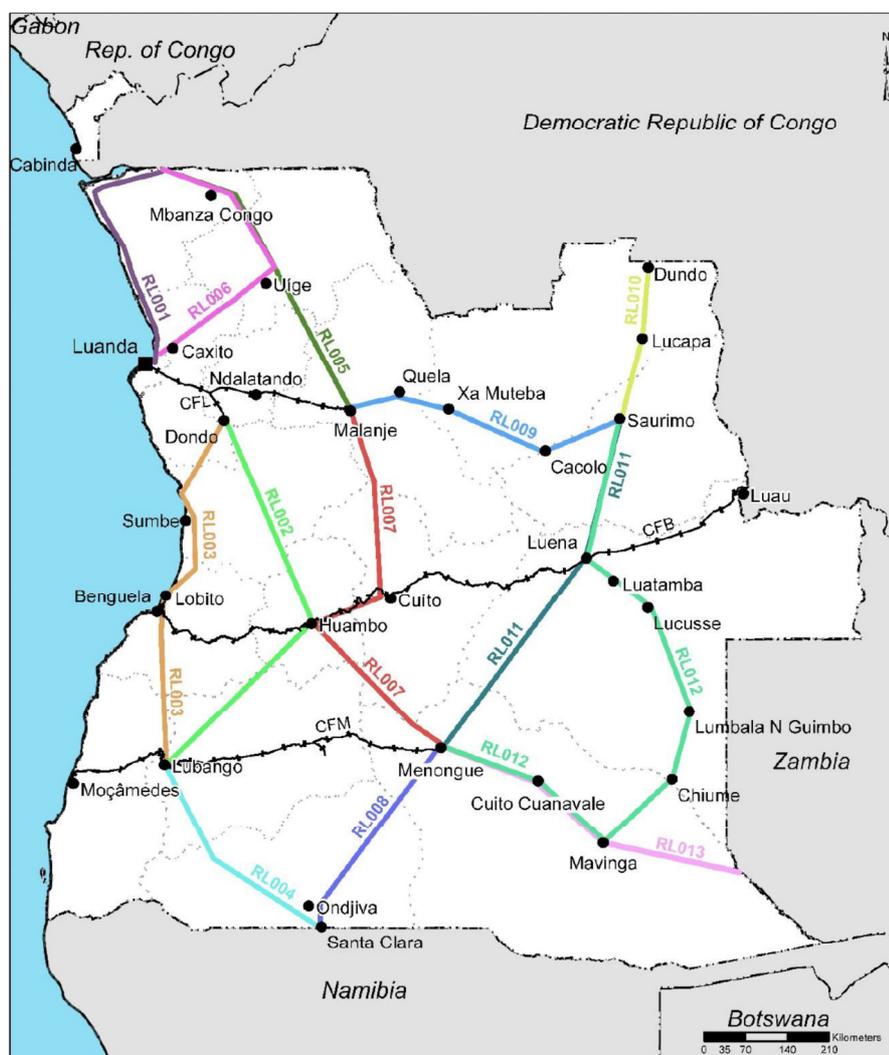
The government considered the following criteria when selecting these projects: (1) support the territorial development strategy; (2) potential for private sector financing; (3) strengthen regional connections; (4) economic development; and (5) environmental impact. In particular, the projects were initially ordered in terms of their impact on economic development. Short-term priority relates to the first five years of the project (until 2023), medium-term from years six to 11 (until 2028), long-term until 2038 and after 2038 are those projects with a worse impact in terms of economic development.

*It considered several criteria when selecting these projects*

| PROJECT NAME  | Reference Number | Distance (km) | Estimated Cost (US\$ billion) | Priority in Economic Development |
|---|------------------|---------------|-------------------------------|----------------------------------|
| Coastal Corridor North-South: DRC (Noqui), Soyo to Luanda         | RL001            | 489           | 1.47                          | Short-term                       |
| Coastal Corridor North-South: Luanda (Dondo), Huambo to Lubango   | RL002            | 773           | 2.32                          | Long-term                        |
| Central Corridor North-South: Luanda (Dondo), Benguela to Lubango | RL003            | 689           | 2.41                          | Short-term                       |
| Central Corridor North-South: Lubango to Namibia (Santa Clara)    | RL004            | 413           | 1.24                          | Long-term                        |
| Central Corridor North-South: DRC (Noqui), Uíge to Malanje        | RL005            | 590           | 0.88                          | Medium-term                      |
| Central Corridor North-South: DRC (Noqui), Uíge to Luanda         | RL006            | 554           | 0.83                          | Medium-term                      |
| Central Corridor North-South: Malanje, Huambo to Menongue         | RL007            | 788           | 2.36                          | Medium-term                      |
| Central Corridor North-South: Menongue to Namibia (Santa Clara)   | RL008            | 406           | 1.22                          | After 2038                       |
| East Corridor: Malanje to Saurimo                                 | RL009            | 513           | 1.54                          | Medium-term                      |
| East Corridor: DRC (Dundo) to Saurimo                             | RL010            | 302           | 0.91                          | Long-term                        |
| East Corridor: Saurimo, Luena to Menongue (direct)                | RL011            | 711           | 2.49                          | After 2038                       |
| East Corridor: Saurimo, Luena to Menongue (indirect)              | RL012            | 1,258         | 4.40                          | Long-term                        |
| East Corridor: Menongue to south of Zambia                        | RL013            | 582           | 1.75                          | After 2038                       |
| <b>Total</b>  |                  | <b>8,068</b>  | <b>23.82</b>                  |                                  |

Source: National Plan for the Transport Sector, MINTRANS.

RAIL INFRASTRUCTURE PROJECTS



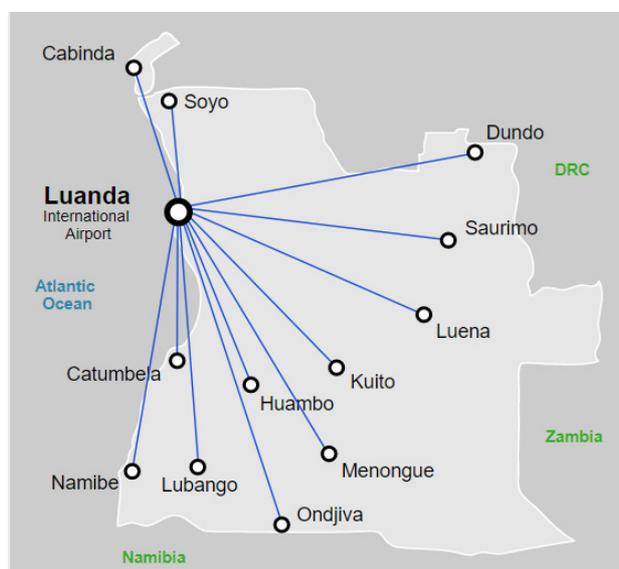
Source: National Plan for the Transport Sector, MINTRANS.

### 5 - AIRPORT INFRASTRUCTURES IN ANGOLA

Angola’s main international airport is located in Luanda and is served by several international and regional airlines. Flights from and to Portugal and Brazil are very common and reflect the cultural ties between these countries. The international terminal of the Luanda airport was refurbished in 2010 before the African Cup of Nations, which was hosted by Angola.

*The main international airport is located in Luanda*

#### DOMESTIC FLIGHT ROUTES FROM LUANDA INTERNATIONAL AIRPORT\*



\*The Luau airport (not listed on this map and located about 440km from Luanda) is practically inoperative as it only serves 4-6 military airplanes per month. Source: Luanda International Airport.

Several provincial airports have also been renovated or are undergoing renovation, as detailed on the next page of this report. Construction works at the New International Airport of Luanda (NAIL) were also due to restart at the end of 2019, with the government stating at the time that not a lot of engineering work remained to be done before the conclusion of these works that would then permit advancing to the certification stage of the project. However, the Angolan authorities are still not committing to a possible opening date for the NAIL, raising uncertainty as to how much longer it will take before the new airport becomes a reality.

*There is still no official timetable regarding the opening date of the new international airport in Luanda*

The latest available figures from ENANA (Angola’s air navigation authority) showed that the total number of domestic and international flights continued to decline in 2019 while passenger demand in the country’s airports remains relatively low when compared with some years ago. Specifically, the combined number of flights (domestic and international) stood at 66,714 during 2019, with 54% of these flights taking place in the Luanda airport, while the number of passengers reached a total of 3.57 million in the same period (70% in Luanda).

*Passenger demand for Angola’s airports remains low*

| AIRPORTS     | Number of Flights (Domestic + International) |                |               |               |               |               | Number of Passengers |                  |                  |                  |                  |                  |
|--------------|--|----------------|---------------|---------------|---------------|---------------|----------------------|------------------|------------------|------------------|------------------|------------------|
|              | 2014   | 2015           | 2016          | 2017          | 2018          | 2019          | 2014                 | 2015             | 2016             | 2017             | 2018             | 2019             |
| Cabinda      | 26,084                                       | 24,152         | 12,270        | 11,194        | 9,179         | 7,520         | 492,121              | 396,653          | 288,584          | 303,931          | 335,568          | 380,901          |
| Catumbela    | 3,303  | 2,883          | 2,726         | 3,169         | 3,465         | 2,594         | 160,684              | 150,438          | 139,247          | 177,373          | 188,793          | 135,515          |
| Dundo (1)    | 876  | 0              | 8             | 578           | 968           | 1,152         | 12,693               | 0                | 63               | 14,320           | 40,318           | 61,037           |
| Huambo (1)   | 2,653  | 2,682          | 1,646         | 2,172         | 1,418         | 1,512         | 64,817               | 70,843           | 66,442           | 87,471           | 77,101           | 61,516           |
| Luanda       | 63,842                                       | 54,772         | 43,234        | 38,909        | 35,304        | 36,023        | 2,900,702            | 2,692,038        | 2,490,313        | 2,405,946        | 2,515,118        | 2,494,991        |
| Lubango      | 5,958  | 4,545          | 4,296         | 3,986         | 3,737         | 3,756         | 132,699              | 111,002          | 109,122          | 125,314          | 131,347          | 136,452          |
| Luena (1)    | 2,344  | 2,572          | 1,473         | 1,535         | 1,150         | 1,443         | 87,603               | 64,912           | 43,679           | 53,511           | 40,476           | 48,672           |
| Malange (1)  | 1,099  | 1,240          | 691           | 698           | 1,057         | 1,175         | 5,506                | 3,414            | 1,398            | 1,686            | 7,253            | 6,072            |
| Menongue (1) | 5,159  | 2,904          | 2,591         | 1,779         | 1,056         | 921           | 41,924               | 27,354           | 27,392           | 32,181           | 23,523           | 22,671           |
| Namibe (1)   | 1,792  | 1,223          | 946           | 1,202         | 973           | 932           | 49,429               | 38,764           | 33,948           | 38,025           | 34,215           | 31,471           |
| Ondjiva (1)  | 2,645  | 1,459          | 1,308         | 1,060         | 64            | 664           | 97,228               | 88,191           | 28,068           | 32,672           | 28,646           | 26,377           |
| Saurimo (1)  | 3,034  | 1,510          | 1,406         | 1,506         | 4             | 2,476         | 46,014               | 42,646           | 51,726           | 92,322           | 48,620           | 70,263           |
| Soyo (1)     | 14,828                                       | 11,143         | 7,760         | 6,346         | 1,202         | 3,653         | 175,185              | 142,576          | 142,532          | 125,740          | 89,544           | 71,346           |
| Other (1)    | 5,441  | 5,649          | 3,997         | 3,311         | 7,923         | 2,893         | 35,845               | 44,469           | 34,312           | 34,657           | 18,843           | 26,624           |
| <b>Total</b> | <b>139,058</b>                               | <b>116,734</b> | <b>84,352</b> | <b>77,445</b> | <b>67,500</b> | <b>66,714</b> | <b>4,302,450</b>     | <b>3,873,300</b> | <b>3,456,826</b> | <b>3,525,149</b> | <b>3,579,365</b> | <b>3,573,908</b> |

(1) Number of flights for 2019 are estimates based on January-November figures. Source: ENANA.

The Angolan authorities believe that part of the reason for the scarce demand for air travel is explained by the low disposable income of most of the local population and the high ticket

*Scarce demand for air travel is explained by the low disposable income of*

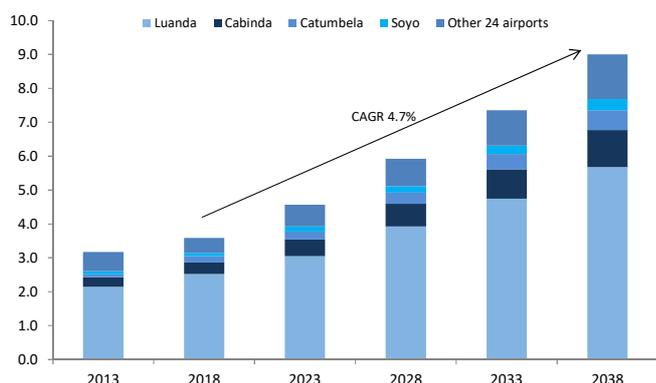
prices. There are also limited connections amongst the provincial airports, as most of the air travel activity is centered in Luanda. The low demand for air travel represents a heavy burden for Angola’s public accounts due to the elevated costs and limited revenues.

*most of the population*

The latest forecasts for passenger demand suggest that it should expand at 4.7% annually in the period 2018-38. These forecasts include passenger demand for the new international airports in Cabinda and Catumbela. They foresee that the market share of the Luanda airport in terms of passenger demand will fall from 70.3% in 2018 to 63.1% at the end of the period. The airports that are likely to benefit the most from this expected slower growth in passenger demand at the Luanda airport are Cabinda, Catumbela and Soyo, which are forecasted to see their number of passengers more than treble during 2018-38. In the same period, the 24 provincial airports will see their number of passengers nearly treble while Luanda is expected to more than double its number of passengers.

*Passenger demand is expected to expand at 4.7% annually during 2018-38*

**PASSENGER FORECASTS (MILLION)**



| PASSENGERS<br>Year | Million     |             | Market Share  |               |
|--------------------|-------------|-------------|---------------|---------------|
|                    | 2018        | 2038        | 2018          | 2038          |
| Luanda             | 2.52        | 5.68        | 70.3%         | 63.1%         |
| Cabinda            | 0.34        | 1.09        | 9.4%          | 12.1%         |
| Catumbela          | 0.19        | 0.59        | 5.3%          | 6.5%          |
| Soyo               | 0.09        | 0.32        | 2.4%          | 3.5%          |
| Other 24 airports  | 0.45        | 1.33        | 12.6%         | 14.7%         |
| <b>Total</b>       | <b>3.58</b> | <b>9.00</b> | <b>100.0%</b> | <b>100.0%</b> |

Source: National Plan for the Transport Sector, MINTRANS.

Source: National Plan for the Transport Sector, MINTRANS.

The government is currently undertaking rehabilitation and expansion works at several airports in Angola. This includes works on (1) passenger and cargo terminals, (2) aircraft parking areas and (3) parallel runways. As described below, expansion works on the passenger terminals of most existing airports are expected to be completed by 2023 as well as on plane parking areas of the Lucapa and Soyo airports. Expansion works on cargo terminals at the NAIL and Cabinda airport are also scheduled to be concluded by 2028 and 2033, respectively, with the latter also expecting to see works on a parallel runway by 2028.

*Rehabilitation and expansion works are currently being done at several airports*

| EXISTING AIRPORTS           | Passenger Terminal      |            | Cargo Terminal          |            | Plane Parking Area      |            | Parallel Runways        |            |
|-----------------------------|-------------------------|------------|-------------------------|------------|-------------------------|------------|-------------------------|------------|
|                             | Expansion (sqd. metres) | Deadline   | Expansion (sqd. metres) | Deadline   | Expansion (sqd. metres) | Deadline   | Length x Width (metres) | Deadline   |
| Cabinda                     |                         |            | 300                     | Until 2033 |                         |            | 1,750 x 25              | Until 2028 |
| Catumbela                   | 5,000                   | Until 2023 |                         |            |                         |            |                         |            |
| Huambo                      | 1,050                   | Until 2023 |                         |            |                         |            |                         |            |
| 4 Fevereiro (International) | 1,750                   | Until 2023 |                         |            |                         |            |                         |            |
| 4 Fevereiro (Domestic)      | 4,900                   | Until 2023 |                         |            |                         |            |                         |            |
| NAIL (1)                    |                         |            | 5,200                   | Until 2028 |                         |            |                         |            |
| Lubango                     | 2,100                   | Until 2023 |                         |            |                         |            |                         |            |
| Lucapa                      | 660                     | Until 2023 |                         |            | 1,100                   | Until 2023 |                         |            |
| Soyo                        | 150                     | Until 2023 |                         |            | 2,750                   | Until 2023 |                         |            |

(1) New International Airport of Luanda. Source: National Plan for the Transport Sector, MINTRANS.

The aim of the local authorities is to strengthen regional connections and the economic role of Angola in the African continent, which would be facilitated by the capacity expansion of these airports. In particular, the expansion plans for the Catumbela airport would be specifically designed to accommodate international flights.

*The aim is to strengthen regional connections and the economic role of Angola*

The government also identified five potential new airports (listed in the table below) that could see renovation works and be converted from already existing aerodromes located in the towns of Cahama, Rivungo, Mavinga, Matala and Sumbe. This would help support the strategy of developing the Angolan territory by providing access to remote areas of the country (Rivungo and Mavinga) and help the decentralization of economic activity (Cahama, Matala and Sumbe).

*The government has identified five potential new airports*

That said, at least two criteria for these potential new airports have been set by the authorities, namely that they would require passenger demand of at least 40,000 and would have to be located outside a 100km radius from another airport or aerodrome with considerable traffic.

| POTENTIAL NEW AIRPORTS   | Passenger Terminal<br>(sqd metres) | Plane Parking Area<br>(sqd metres) | Runways       |                    |                   |                       |
|--------------------------|------------------------------------|------------------------------------|---------------|--------------------|-------------------|-----------------------|
|                          |                                    |                                    | Surface       | Length<br>(metres) | Width<br>(metres) | Area (sqd.<br>metres) |
| Cahama (Cunene)          | 500                                | 7,000                              | Asphalt       | 1,850              | 23                | 42,550                |
| Rivungo (Cuando Cubango) | 300                                | 1,100                              | Dirt / Gravel | 1,850              | 23                | 42,550                |
| Mavinga (Cuando Cubango) | 300                                | 1,100                              | Dirt / Gravel | 1,850              | 23                | 42,550                |
| Matala (Huila)           | 1,100                              | 13,000                             | Asphalt       | 1,850              | 23                | 42,550                |
| Sumbe (Cuanza Sul)       | 1,200                              | 6,300                              | Asphalt       | 950                | 19                | 18,050                |

Source: National Plan for the Transport Sector, MINTRANS.

The government believes that it will be difficult to attract financing from the private sector for the expansion plans of most of the already existing airports. The only exceptions could be the new terminals planned for the Catumbela and Lucapa airports and the expansion of the cargo terminal planned for the NAIL. The potential new airports would also be mostly financed by the public sector, possibly excepting the modernization of the Sumbe and Matala aerodromes.

*The expansion plans of the existing airports and the modernization of existing aerodromes would be mostly financed by the government*

| INVESTMENTS       |   |                       |   |             |
|-------------------|---|-----------------------|---|-------------|
| Airport           | Description   | Estimated Cost (US\$) | Potential for Private Sector Financing      | Timing      |
| Catumbela         | Expansion of passenger terminal to accommodate overseas flights | 27.3                  | Could attract some private sector financing | Short-term  |
| Huambo            | Expansion of passenger terminal                                 | 5.7                   | Probably financed by the government         | Short-term  |
| Luanda (existing) | Expansion of domestic and international passenger terminals     | 36.3                  | Probably financed by the government         | Short-term  |
| Lubango           | Expansion of passenger terminal                                 | 11.4                  | Probably financed by the government         | Short-term  |
| Lucapa            | Operation of low-cost aerodrome                                 | 8.6                   | Could attract some private sector financing | Short-term  |
| Soyo              | Expansion of passenger terminal and aircraft parking area       | 1.4                   | Probably financed by the government         | Short-term  |
| Rivungo           | Operation of low-cost aerodrome                                 | 7.9                   | Probably financed by the government         | Short-term  |
| Mavinga           | Operation of low-cost aerodrome                                 | 6.2                   | Probably financed by the government         | Short-term  |
| NAIL              | Expansion of cargo terminal                                     | 25.4                  | Could attract some private sector financing | Medium-term |
| Cabinda           | Construction of parallel runway                                 | 9.5                   | Probably financed by the government         | Medium-term |
| Matala            | Operation of low-cost aerodrome                                 | 14.3                  | Could attract some private sector financing | Medium-term |
| Cabinda           | Expansion of cargo terminal                                     | 0.7                   | Probably financed by the government         | Long-term   |
| Cahama            | Operation of low-cost aerodrome                                 | 8.8                   | Probably financed by the government         | Long-term   |
| Sumbe             | Operation of low-cost aerodrome                                 | 11.3                  | Could attract some private sector financing | Long-term   |

Source: National Plan for the Transport Sector, MINTRANS.

The total planned investments in Angola's airport infrastructures are expected to reach nearly US\$ 175 million. The majority of these investments are anticipated to take place in the short-term (60% of the total) and, of these, the largest share is expected to be allocated to the capacity expansion of the existing airports (47% of the total), as detailed below.

*Total investments in airport infrastructures are expected to reach almost US\$ 175 million*

| INVESTMENTS  |   |                             |              |
|--------------|---|-----------------------------|--------------|
| US\$ Million | Capacity Expansion of Existing Airports | Airfield Operationalization | Total        |
| Short-term   | 82.1                                    | 22.7                        | 104.8        |
| Medium-term  | 34.9                                    | 14.3                        | 49.2         |
| Long-term    | 0.7                                     | 20.1                        | 20.8         |
| <b>Total</b> | <b>117.7</b>                            | <b>57.1</b>                 | <b>174.8</b> |

Source: National Plan for the Transport Sector, MINTRANS.

The Angolan authorities have also been implementing a thorough reform of the country's civil aviation sector. This reform has led to significant progress in terms of the adaptation of the existing regulatory framework to international best practices as well as the specialization of the entities currently providing services to the sector. The government announced a global strategic plan defining a set of major development guidelines that aim to modernize, reinforce security and improve service quality in the civil aviation sector.

*The government has been reforming the country's civil aviation sector*

In particular, these guidelines include the liberalization of national airspace (in the context of the Single African Air Transport Market) that would aim to strengthen economic integration in the African continent. The opening of Angolan airspace would result in more competition for the national carrier (TAAG), which will require the elaboration of a new strategic concept and business model for the company to ensure its importance in the Angolan market, as well as its economic and financial sustainability.

*It has also defined several major guidelines for the sector*

Other strategic development guidelines for the country's airport sector include (1) revising the existing legal and regulatory framework (to the norms set by ICAO and IATA), (2) defining a strategy for the different airport and aerodrome segments, (3) attracting and promoting new routes and airlines, (4) defining a strategic vision for the non-aviation business, (5) adjusting existing tariff framework of the regulated and non-regulated activities, (6) modernizing the key entities of the sector, including ANAC (civil aviation authority), ANIPAA (airport accident investigation and prevention authority) and ENNA (air navigation authority) and (7) defining the privatization model of the concessionaire (SGA, SA) through the sale of a majority stake to private investors, preferably to experienced international airport operators.

*These guidelines include defining the privatization of the concessionaire for the airport sector*

## 6 - ROAD INFRASTRUCTURES IN ANGOLA

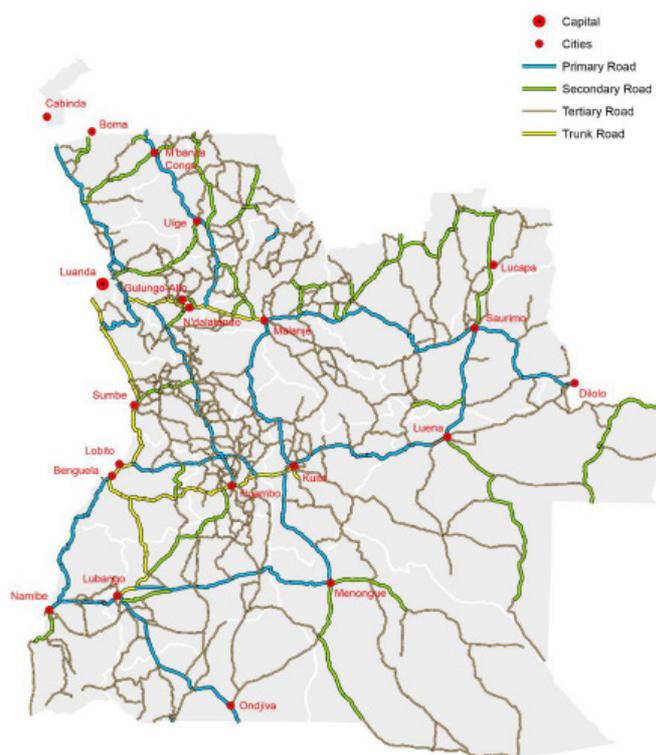
Angola has invested heavily in the reconstruction of its dilapidated road infrastructure since the end of the civil war in 2002. In particular, public accounts show that spending on roads and bridges amounted to an estimated US\$ 27.5 billion over the period 2002-18, averaging US\$ 1.6 billion yearly. This makes Angola one of the highest spenders on road infrastructure in Africa.

*Angola is one of the highest spenders on road infrastructures in Africa*

Angola has quite an extensive road network covering a total distance of around 76,000km, with its fundamental road network comprising about 26,000km. The country's road infrastructure remains in relatively poor condition though. Most of the traffic is concentrated in the area surrounding Luanda, but overall traffic levels are comparatively low. The inadequate condition of the roads caused by years of destruction and lack of maintenance is one of the factors contributing to the low traffic levels.

*Road infrastructure remains in relatively poor condition*

### ROAD NETWORK (PRIMARY, SECONDARY AND TERTIARY)



Source: National Plan for the Transport Sector, MINTRANS.

A study conducted in 2017 showed that 57% of Angola's road network has dirt pavement, 27% is asphalted and 16% is under construction. Moreover, 45% of the road infrastructure remains in critical or degraded condition while 18% is in reasonable or good condition and the rest is unknown.

*A recent study showed that 45% of the road network is in critical or degraded condition*

In terms of regional integration, Angola's most salient international road corridor connects the country to the DRC and Zambia in the east. However, the quality of these road corridors also remains rather poor, making regional connectivity with the SADC economic area difficult. This situation both prevents Angola from developing regional trade with surrounding countries and limits these countries from making greater use of the Ports of Luanda and Lobito.

*The quality of the road corridors also remains poor, making regional connectivity more difficult*

The government's Road Infrastructure Maintenance Program (PRIR) has resulted in more than 13,232km of the country's fundamental road network being asphalted since 2011. According to Angola's Road Institute (INEA), road works to asphalt a further 7,620km are reportedly in the contract signing stage or have already begun.

*More than 13,232km of the country's fundamental road network has been asphalted since 2011*

**ROAD NETWORK – STATUS AND CONDITION**



Source: National Plan for the Transport Sector, MINTRANS.

The government also disclosed information on the current road conditions linking the country’s main corridors to SADC countries. Their total distance covers 6,216km, with 4,628km already paved (or 74% of the total). In particular, corridors 1 and 4 are mostly paved (95% or more) as is corridor 2 (74%). However, corridor 3, which together with corridor 1 is part of the Trans-Africa Motorway Network, is far from being completely paved (45%). As stated above, these corridors remain in relatively poor condition, requiring rehabilitation and/or maintenance work.

*Current road conditions linking Angola’s main corridors to SADC countries*

| ROAD CORRIDOR   | Distance (km) | Paved (%) |
|---|---------------|-----------|
| Corridor 1: North-South   | 1,812         | 95%       |
| Corridor 2: Luanda-Soyo-Cabinda (Angola, Congo Brazaville, DRC) | 539           | 74%       |
| Corridor 3: Lobito (Angola, DRC, Zambia)                        | 1,206         | 45%       |
| Corridor 4: Malanje (Angola, DRC)                               | 1,155         | 97%       |
| Corridor 5: Namibe (Angola, Namibia, Botswana, Zambia)          | 1,502         | 56%       |

Source: National Plan for the Transport Sector, MINSTRANS.

**SADC ROAD CORRIDORS**



Source: National Plan for the Transport Sector, MINTRANS.

Against this backdrop, the local authorities have defined three sets of objectives for the road infrastructure sector. These include short-term, medium to long-term and long-term goals. In particular, the short-term aims include (1) improving and developing the current road network, (2) ensuring connections to the provincial capitals, main cities and economic activity centers in Angola and (3) preserving the current road assets through periodic and efficient maintenance. The medium to long-term aims include strengthening the economy through the construction of a strategic road network. This network will ensure a link to neighboring countries as well as the main economic activity centers of Angola. And, the long-term goal includes the construction of a motorway network, subject to demand growth and financing from the private sector.

*The Angolan government has defined several objectives for the country's road infrastructure sector*

In terms of short-term objectives, the government aims to conclude the current projects at hand in the country, namely those affecting the fundamental road network. The local authorities also plan to create a road management system in order to help decide whether to build a new road, repair, replace or improve it as well as decide when, where, how and why this is done. Finally, they plan to install weighing stations on the entire road network to help reduce the degradation of the pavement due to excessive cargo.

*Short-term objectives include the conclusion of current projects at hand, create a new road management system and install weighing stations*

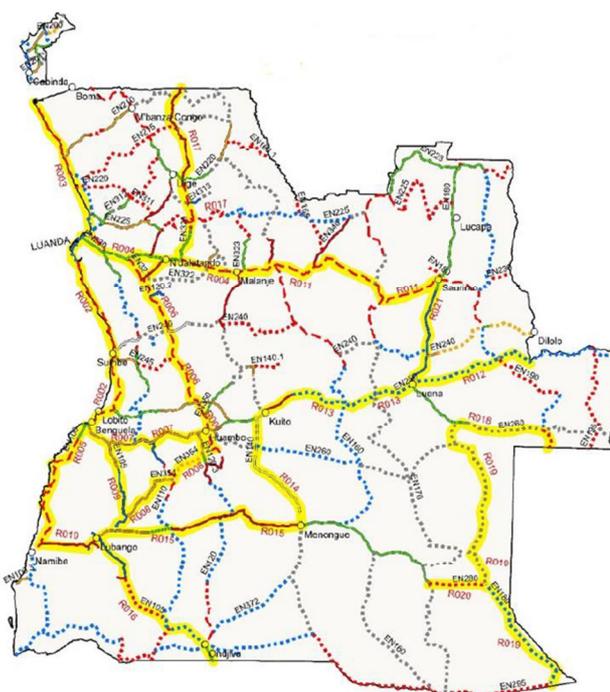
Meanwhile, the medium to long-term objectives include the rehabilitation of just over 8,000km of roads in the country, as detailed in the table and map below.

*Aim to rehabilitate more than 8,000km of roads*

**REHABILITATION OF FUNDAMENTAL ROAD NETWORK\***

| ROAD SECTION                 | Road Name     | Distance (km) |
|------------------------------|---------------|---------------|
| Luanda x Benguela            | EN100         | 540           |
| Luanda x Soyo                | EN100         | 483           |
| Luanda x Malanje             | EN230         | 381           |
| Benguela x Namibe            | EN100         | 403           |
| Maria Teresa x Dondo x Waku  |               |               |
| Kungo x Huambo               | EN120         | 489           |
| Huambo x Benguela            | EN260         | 343           |
| Huambo x Lubango             | EN120 / EN354 | 487           |
| Lubango x Benguela           | EN105 / EN260 | 358           |
| Lubango x Namibe             | EN280         | 188           |
| Malanje x Saurimo            | EN230         | 564           |
| Luau x Saurimo               | EN250         | 317           |
| Kuito x Luena                | EN250         | 413           |
| Kuito x Menongue             | EN140         | 322           |
| Lubango x Menongue           | EN280         | 508           |
| Lubango x Ondjiva            | EN105 / EN260 | 382           |
| N'dalatando x Kidompala      | EN140         | 502           |
| Lucusse x border with Zambia | EN250         | 260           |
| Lucusse x Luiana             | EN180         | 760           |
| Maninga x EN180              | EN280         | 120           |
| Saurimo x Luena              | EN240         | 265           |
| <b>Total</b>                 |               | <b>8,086</b>  |

Source: National Plan for the Transport Sector, MINSTRANS.



\*Proposed plan in yellow. Source: National Plan for Transport Sector.

The rehabilitation of the fundamental road network is the most critical program for Angola's transport sector, as it supports the government's social and economic development objectives as well as the integration of the country in the rest of the continent. As such, the main criteria proposed by the local authorities in order to prioritize these investment projects include (1) providing access year-round to less developed areas by promoting integration and development equality, (2) reinforcing the role of Angola in the region by improving the main road network to the SADC area and (3) improving road conditions.

*Rehabilitating the road network is the most critical program for the country's transport sector*

| ROAD MAINTENANCE PROGRAMS              | Short-term (2019-2023) | Medium-term (2024-2028) | Long-term (2029-2038) | Yearly Average (2019-2038) |
|--|------------------------|-------------------------|-----------------------|----------------------------|
| Road Repair Program (Total Km)         | 3,125                  | 1,875                   | 1,280                 | 312                        |
| Road Maintenance Program (Km per Year) | 1,480                  | 1,626                   | 975                   | 1,264                      |
| Estimated Cost (US\$ million)          | 2,681                  | 1,658                   | 1,146                 | n.a.                       |
| Yearly Cost (US\$ million)             | 536                    | 332                     | 115                   | 274                        |

Source: National Plan for the Transport Sector, MINSTRANS.

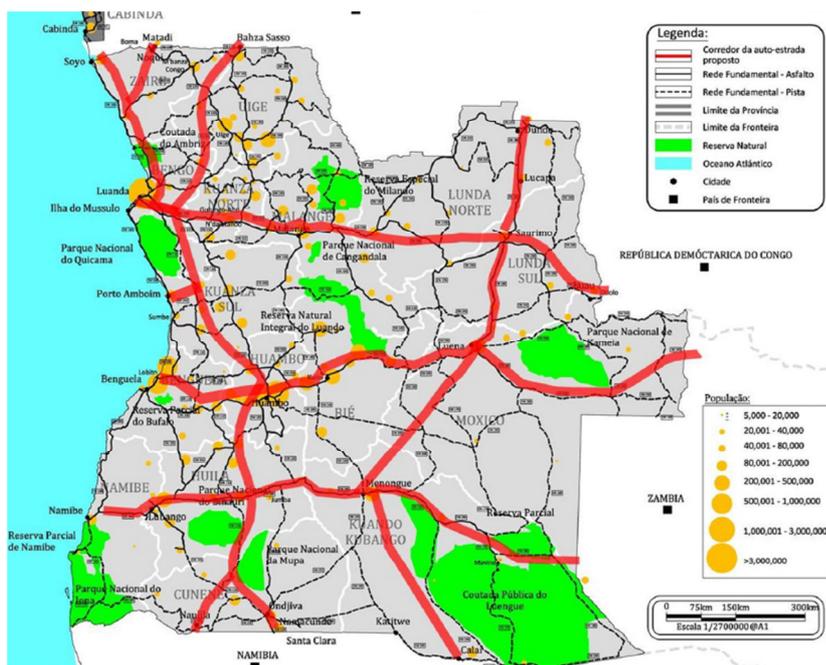
Finally, the government has the long-term objective of possibly building a motorway network in Angola that will aim to connect (1) population centers, (2) mineral resources locations and (3) areas for agriculture, forestry and livestock industry. It is worth noting that Angola’s most populated regions are located in the western part of the country, namely in the cities of Luanda, Huambo and Benguela. The production of mineral resources also takes place in the west. Gold has been extracted in the province of Cabinda while diamonds are extracted in Lunda Norte and Lunda Sul. Natural gas is transformed into LNG in Soyo. Meanwhile, most of the activity in the agriculture industry takes place in Huambo, Huila, Benguela, Cuando Cubango, Cuanza Norte and Malange. Angola’s main forests are located in Huambo, Benguela, Cuando Cubango and Cuanza Sul whereas livestock production is done in Cuando Cubango and Moxico.

*Long-term objective to construct a motorway network in Angola*

Based on current traffic projections, the plan to construct a motorway network is unlikely to be viable in the next years without construction subsidies or availability payment mechanisms. The local authorities also believe that it should be financed by the private sector.

*The government believes that the motorway network should be financed by the private sector*

**POTENTIAL MOTORWAY NETWORK\***



\*Potential motorway network in red. Source: National Plan for the Transport Sector, MINTRANS.

The following corridors are to be included in the National Plan for the Transport Sector:

| Corridor  | Distance (km) | Cost (US\$ billion) | Importance  |
|---|---------------|---------------------|---|
| Luanda - Malanje                                | 380           | 1.98                | This section links Luanda to the eastern part of the country, serving the hinterlands to the city of Malanje, is part of the Malanje corridor   |
| Malanje - Saurimo                               | 520           | 3.12                | This section links Malanje to the eastern part of the country, serving the hinterlands to the city of Saurimo, is part of the Malanje corridor  |
| Benguela - Huambo                               | 270           | 1.60                | This section links Benguela and Lobito to Huambo. It is also part of the Lobito corridor and the east-west TAH 9, linking the Atlantic to the Indian Ocean  |
| Huambo - Kuito - Luena                          | 495           | 2.97                | This section links Huambo to the eastern part of the country, serving the hinterlands through the cities of Kuito and Luena. It is also part of the Lobito corridor and the east-west TAH 9, linking the Atlantic to the Indian Ocean |
| Namibe - Menongue                               | 535           | 3.21                | This section is part of the Namibe corridor that links Namibe, on the southern coast, to the eastern boarder and serves the city of Lubango   |
| Border to the north (Soyo and Noqui) - Luanda   | 410           | 2.45                | This corridor links Luanda to the northern border of Soyo. As a last resort, it serves the land axis with the crossing of Cabinda through the Congo   |
| Border to the north (Maquela do Zombo) - Luanda | 508           | 3.05                | This section will be part of the axis that will serve the TAH 3, the north-south motorway, Tripoli-Windhoek - Cape Town. It will also link Luanda indirectly to the northern border in Maquela do Zombo                               |
| Luanda - Huambo                                 | 490           | 2.94                | This section will be part of the axis that will serve the TAH 3, the north-south motorway, Tripoli-Windhoek - Cape Town. It will also link Luanda to the hinterland clusters, mainly the largest city of Huambo                       |
| Huambo - H3-1                                   | 270           | 1.62                | This section will be part of the axis that will serve the TAH 3, the north-south motorway, Tripoli-Windhoek - Cape Town. It will also link Huambo, and Luanda indirectly, to Namibe and Menongue through the motorway H3-1            |

Source: National Plan for the Transport Sector, MINTRANS.

### 7 - LOGISTICS PLATFORMS IN ANGOLA

A logistics platform is a defined area where activities related to the transportation, logistics and distribution of cargo can be done by several operators. It can be managed by a single entity, public or private, or a group of entities. Some of the benefits of a logistics platform include (1) lower transportation costs, (2) faster, more reliable and predictable freight costs, (3) reduced congestion charges, (4) regional economic growth, (5) job creation and (6) reduced emissions and residues. The benefits result from the fact that these platforms provide (1) larger economies of scale, (2) a more optimized utilization of the transportation freight, (3) some specialization in cargo transfer and (4) income diversification through complementary businesses.

*Benefits of a logistics platform*

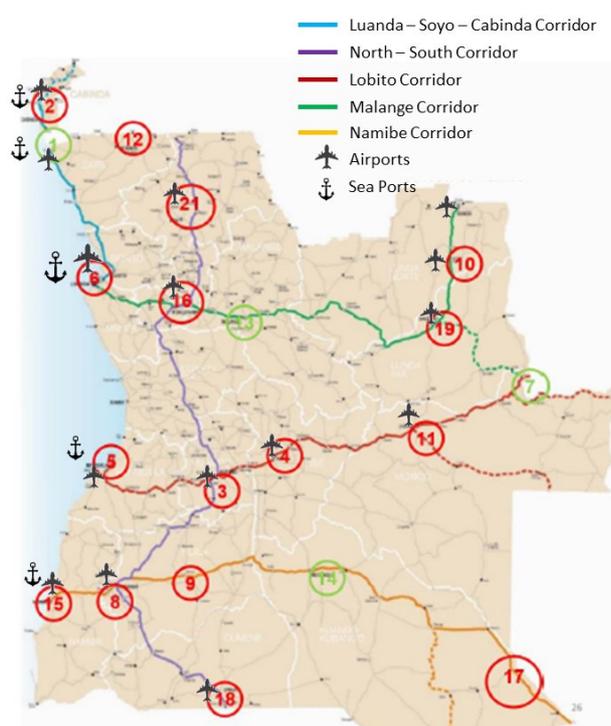
The Angolan authorities believe that a logistics platform network is fundamental to support the economic leverage and diversification in the country, namely through the facilitation of transport services and logistics operations that will reduce input costs. However, these logistics platforms necessarily have to be economically viable while also have an existing or planned transport infrastructure to provide support to the network.

*A logistics platform network is crucial to support the economic leverage and diversification of Angola*

According to the latest available information, there are 17 locations that have been identified by the local authorities and are being analyzed as potential locations for logistics platforms. An additional four locations have already been confirmed, including Soyo (which is already under construction), Malange, Luau and Menongue. The government expects that all of the 21 logistics platforms will be ready by 2038 and will be less than 30 acres in size.

*The government has identified a total of 21 potential locations for logistics platforms*

#### NATIONAL NETWORK OF INFRASTRUCTURES



| PLATFORM LOCATION               | Province       | Label |
|---------------------------------|----------------|-------|
| Soyo Logistics Platform         | Zaire          | 1     |
| Cabinda Logistics Platform      | Cabinda        | 2     |
| Huambo Logistics Platform       | Huambo         | 3     |
| Cuíto Logistics Platform        | Bié            | 4     |
| Lobito Logistics Platform       | Benguela       | 5     |
| Luanda Logistics Platform       | Luanda         | 6     |
| Luau Logistics Platform         | Moxico         | 7     |
| Lubango Logistics Platform      | Huíla          | 8     |
| Matala Logistics Platform       | Huíla          | 9     |
| Lucapa Logistics Platform       | Lunda Norte    | 10    |
| Luena Logistics Platform        | Moxico         | 11    |
| Mbanza Congo Logistics Platform | Zaire          | 12    |
| Malange Logistics Platform      | Malange        | 13    |
| Menongue Logistics Platform     | Cuando Cubango | 14    |
| Namibe Logistics Platform       | Namibe         | 15    |
| N'Dalatando Logistics Platform  | Cuanza Norte   | 16    |
| Sudeste Logistics Platform      | Cuando Cubango | 17    |
| Ondjiva Logistics Platform      | Cunene         | 18    |
| Saurimo Logistics Platform      | Lunda Sul      | 19    |
| Benguela Logistics Platform     | Benguela       | 20    |
| Uíge Logistics Platform         | Uíge           | 21    |

Source: National Plan for the Transport Sector, MINTRANS.

Source: National Plan for the Transport Sector, MINTRANS.

Angola's Ministry of Transport intends to expand the logistics infrastructure to include, among others, the Luanda-Malanje and the Lobito Corridors. Construction is expected to commence in 2020.

*It also intends to expand the logistics infrastructure*

An evaluation of all of the 21 potential logistics platforms has been made where each one was graded based on four criteria. First, they were graded based on their initial year of profitability and taking into account a 50/50 (private-public) financing structure. It turned out that only five logistics platforms would be viable by (or before) 2023, with four viable between 2023-27, three between 2028-32, two between 2033-37 and one after 2038. Second, they were graded based on their perceived demand risk being positive or negative. Third, they were graded based on their access to other transportation connections. And fourth, they were graded on a social

*All of the potential logistics platforms were graded based on four criteria*

evaluation of each province according to the unemployment rate, percentage of population with access to potable water and electricity.

Based on this evaluation, the government is proposing the following implementation calendar plan for Angola’s logistics platforms network for the period 2019-38. The table below also provides an estimated cost for each of the platforms as well as the potential involvement from the private sector.

*Implementation calendar for Angola’s logistics platforms network*

| Period      | Logistics Platform        | Province       | Estimated Cost (US\$ Million) | Private Sector Contribution (Estimate) |
|-------------|---------------------------|----------------|-------------------------------|--|
| 2019 - 2023 | Soyo (under construction) | Zaire          |                               |  |
|             | Lubango                   | Huila          | 41.66                         | 60%                                    |
|             | Luanda                    | Luanda         | 67.53                         | 90%                                    |
|             | Malanje                   | Malanje        | 37.04                         | 80%                                    |
| 2024 - 2028 | Huambo                    | Huambo         | 27.33                         | 20%                                    |
|             | Lobito                    | Benguela       | 31.79                         | 50%                                    |
|             | Central de Benguela       | Benguela       | 25.70                         | 70%                                    |
|             | Luena                     | Moxico         | 26.96                         | 50%                                    |
|             | Uíge                      | Uíge           | 24.99                         | 50%                                    |
| 2028 - 2038 | Saurimo                   | Lunda Norte    | 22.91                         | 70%                                    |
|             | N'Dalatando               | Cuanza Norte   | 20.90                         | 50%                                    |
|             | Menongue                  | Cuando Cubango | 20.99                         | 90%                                    |
|             | Luau                      | Moxico         | 26.96                         | 90%                                    |
|             | Ondjiva                   | Cunene         | 15.23                         | 90%                                    |
|             | Namibe                    | Namibe         | 29.52                         | 50%                                    |

Source: National Plan for the Transport Sector, MINTRANS.

As mentioned above, the Angolan authorities hope to attract private sector investors to help finance their planned expansion of the country’s logistics platforms network. However, they recognize that the interest from the private sector is not very significant due to two main reasons. First, the high freight volume that is required to make these platforms economically viable (estimated at about 200,000 tons/year just to ensure a positive operating performance). And second, the concession period for a private sector investor has to be longer than the maximum period of 10 years that is currently determined by law (this period can be prolonged though).

*Challenges in attracting private sector investors for the logistics platforms network*

That said, logistics platforms also provide great opportunities for investors. These include (1) strong potential for demand growth in the agriculture and mining sectors, with an improvement in the wages of the local population also likely resulting in higher demand for consumer goods, (2) recent improvements in transport infrastructures, including the expansion of the paved road network allowing greater connectivity to the logistics platforms, and the rehabilitated rail network providing opportunities for intermodal platforms, (3) commitment of “anchor tenants”, including attracting other potential users of the platforms (e.g., distributors, agriculture agents and mining companies) and (4) logistics companies (ideally already present in Angola) acting as concessionaires (e.g., train operators and forwarding agents) that already do business with the client base of the logistics platforms.

*The logistics platforms network also provides opportunities for investors*

In sum, the critical aim of the Angolan authorities is to evaluate the financial viability of each of the 17 potential locations for the logistics platforms and determine the first profitable year of each one of them. The deadline for the delivery of all of the logistics platforms would be 2038. However, the following would also have to be taken into account (1) the existing and planned transport infrastructure that would support the logistics platforms, (2) demand risk, namely resulting from competition between logistics platforms (seaports like Soyo and Namibe already have logistics platforms and so this would lower demand for new logistics platforms) and (3) the social disadvantage of the province where the logistics platform is located.

*The critical aim is to evaluate the financial viability of each of the potential new logistics platforms*

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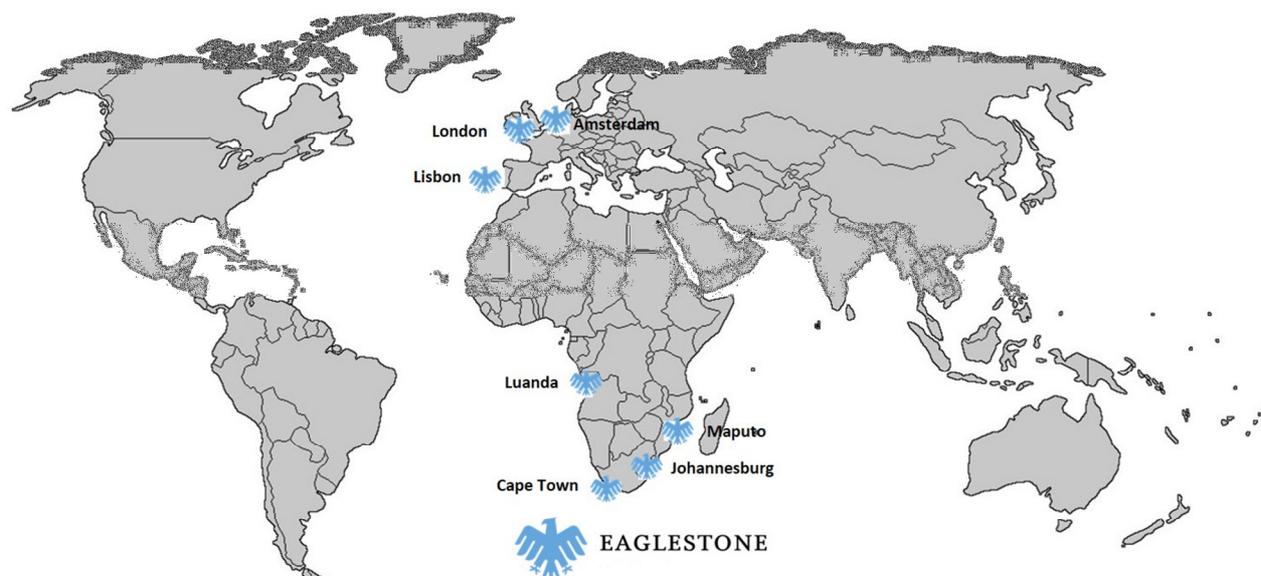
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## Disclosures

Eaglestone was founded in December 2011 with the aim to be a committed partner for the development of businesses located primarily in Sub-Saharan Africa and to support the development of renewable energy projects on a global basis.

The company has three business activities - financial advisory services, asset management and brokerage - and currently has offices in Amsterdam, Cape Town, London, Lisbon, Luanda and Maputo

Eaglestone is committed to operating and behaving according to the highest standards of corporate governance. Its subsidiary in the United Kingdom is authorized and regulated by the Financial Conduct Authority.

Eaglestone operates with a clear vision and mission to act on behalf of and in the best interests of all its stakeholders, whether they are investors, employees or users of its services.

## EAGLESTONE SECURITIES

### Research

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