

Technical and statistical report

Angola sustainable freight transport assessment



United
Nations

Technical and statistical report

Angola sustainable freight transport assessment



United Nations

Geneva, 2025

© 2025, United Nations

This work is available through open access, by complying with the Creative Commons licence created for intergovernmental organizations, at <http://creativecommons.org/licenses/by/3.0/igo/>. The designations employed and the presentation of material on any map in this work do not imply the expression of any opinion whatsoever on the part of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Photocopies and reproductions of excerpts are allowed with proper credits.

This publication has been edited externally.

United Nations publication issued by the United Nations
Conference on Trade and Development

UNCTAD/DTL/TLB/2024/3

eISBN: 978-92-1-107077-4

Acknowledgments

The Angola Sustainable Freight Transport (SFT) Assessment was prepared, under the overall guidance of Shamika N. Sirimanne, Director of the Division on Technology and Logistics of UNCTAD, under the coordination of Jan Hoffmann, Head of the Trade Logistics Branch, Division on Technology and Logistics, and led by Frida Youssef by a team consisting of Hidenobu Tokuda, Xinqi Feng, Helder Preza (UNCTAD consultant) with additional input and feedback from Hassiba Benamara. Special thanks are also extended to Johanna Silvander for her review and comments on the report.

The assessment was conducted under the EU-UNCTAD Joint Programme for Angola: Train for Trade II, with funding by the European Union, under the Transport and Logistics Component.

The assessment benefited from the qualitative contributions from 16 public institutions, 23 companies, and 4 business associations, through the SFT online surveys and bilateral interviews.

Special thanks go to all those who participated in this qualitative assessment through the online survey from 2 November to 18 December 2023 and the interviews conducted from 11 November to 17 November 2023. Special thanks are also due to Adelino Muxito, national coordinator, who assisted in coordinating the interviews and provided input.

The report was translated into Portuguese by Carlos Fiuza.

Note

All references to dollars (\$) are to United States dollars, unless otherwise stated.

All references to AKZ are to Angolan kwanzas.

The terms “countries” and “economies” refer to countries, territories or areas.



List of Abbreviations

3PL - Third-Party Logistics

AARG - All-American Rail Group

AfCFTA - African Continental Free Trade Area

ANTT - Agência Nacional de Transportes Terrestres (National Land Transport Agency)

ARCCLA - Agência Reguladora de Certificação de Carga e Logística de Angola (Angola's Regulatory Agency for Cargo and Logistics Certification)

ASYCUDA - Automated System for Customs Data

ATI - African Trade Insurance Agency

CFB - Caminho de Ferro de Benguela

CFL - Caminho de Ferro de Luanda

CFM - Caminho de Ferro de Moçâmedes

COMESA - Common Market for Eastern and Southern Africa

DTSER - Direcção de Trânsito e Segurança Rodoviária (Directorate of Traffic and Road Safety)

EAC - East African Community

ENAC - National Strategy for Climate Change 2018-2030

EU - European Union

EVI - Economic and Environmental Vulnerability Index

FAO - Food and Agriculture Organization

GDP - Gross Domestic Product

GHG - Greenhouse gas

GPS - Global Position Systems

HGV - Heavy goods vehicle

ICAO - International Civil Aviation Organization

ICT - Information and communication technology

ILO - International Labour Organization

IMO - International Maritime Organization

INE - Instituto Nacional De Estatísticas (National Statistics Institute)

INEA - Instituto Nacional de Estradas de Angola (National Institute for Roads)

ITS - Intelligent Transport Systems

JUCE - Janela Única do Comércio Externo (Single Window for Foreign Trade)



JUL - Janela Única da Logística (Single Window for Logistics)

KPIs - Key performance indicators

LAR - Lobito Atlantic Railway

LDCs - Least Developed Countries

LPI - Logistics Performance Index

LSCI - Liner Shipping Connectivity Index

MINOPUH - Ministry of Public Works, Urbanism and Housing

MOU - Memorandum of Understanding

MSW - Maritime Single Window

NDC - Nationally Determined Contribution

ND-GAIN - Notre Dame Global Adaptation Initiative

OECD - Organisation for Economic Co-operation and Development

OSBP - One-Stop Border Posts

PDIA - National Industrial Development Plan

PIDCR - Integrated Rural Trade Development Programme

PNCTI - National Policy for Technological Science and Innovation

PPP - Purchasing power parity

PPPs - Public-private partnerships

Propriv - Privatization Programme

SAATM - Single African Air Transport Network

SADC - Southern African Development Community

SDGs - Sustainable Development Goals

SFT - Sustainable Freight Transport

SGA - Sociedade Gestora de Aeroportos

SWiFT - Single Window for Facilitation of Trade

TTTFP - Tripartite Transport and Transit Facilitation Programme

UNCTAD - United Nations Conference on Trade and Development

UNFCCC - United Nations Framework Convention on Climate Change

WB - World Bank

WTO - World Trade Organisation

Table of contents

Acknowledgments.....	iii
Note	iii
List of Abbreviations	iv
Chapter 1 Background and introduction.....	1
Chapter 2 Angola's economic landscape: An overview	5
General information.....	7
Economic aspects	8
Agribusiness sector overview	11
Agricultural production	11
Food demand and food security	12
Transport of agriproducts.....	12
Implications of the economic landscape for Angola's freight transport sector sustainability	14
Chapter 3 Transport sector profile, strategies, and planning.....	17
Transport sector	19
Overview	19
Maritime Transport	21
Road Transport	22
Rail Transport	22
Air Transport.....	23
Implications of the transport sector profile for Angola's freight transport sector sustainability	24
Main transport and trade corridors	24
Overview	24
Lobito corridor.....	25
Malanje corridor.....	28
Namibe corridor.....	28
Angola's transport strategies and planning	30
Transport-related national policies	30
Climate change policies.....	30
Trade facilitation and transport digitalization strategies	33
Chapter 4 SFT Assessment.....	35
Quantitative assessment and scoring	37
Internationally comparable SFT scores: UNCTAD SFT index.....	37
Survey-based SFT scores	41
Summary of the quantitative assessment	42



Qualitative assessment	44
Assessing the economic pillar of sustainable freight transport	44
Assessing the social pillar of sustainable freight transport	48
Assessing the environmental pillar of sustainable freight transport	50
Assessing the transport of agricultural products and agribusiness	52
Summary of the qualitative assessment	52
Chapter 5 Policy recommendations	55
Investment and finance	57
Road rehabilitation and maintenance	59
Road transport facilities, equipment, and vehicles	60
Rail infrastructure and equipment	61
Port infrastructure and equipment	62
Logistics platforms and facilities	63
Technology and ICT	63
Automation	63
Digitalization and intelligent freight transport	63
Green technology	64
Market structure and competition	65
Market openness and competition	65
Informal sector	66
Regulation and institutional setup	66
Institutional framework	66
Harmonization with regional rules and participation in international treaties	68
Environmental and social regulations	69
Law enforcement	69
Trade facilitation	69
Capacity building, training, and awareness raising	70
Training of truck drivers	70
Capacity building and training for women	71
Capacity building and training of the informal sector	72
Capacity building and training of farmers	72
Capacity building and training of government inspection agencies	73
Awareness raising about social and environmental sustainability	73
Coordination and partnerships	74
Intermodal transport	74
Agricultural transport	74
Data and monitoring	75
Data collection	75
Information sharing and reporting	75
Data publication	76
Monitoring	76
Gender mainstreaming	77
Female participation and representation	77



Cross-cutting issue: first-mile/rural freight transport for the agribusiness sector	78
First-mile/rural road maintenance and rehabilitation	78
Truck operators and vehicles serving the first-mile/rural freight transport	78
Summary of key recommendations and priority action matrix	80
Chapter 6 Summary and conclusion	85
References	94
Annexes	102
UNCTAD SFT Assessment: scope and methodology	102
Assessment scope	102
Assessment methodology	102
UNCTAD maritime profile of Angola	107

Figures

Figure 1. SFT Assessment: Three pillars and some key action areas	4
Figure 2. Angola's GDP growth rate at constant prices	9
Figure 3. Angola's main trading partners, 2022	11
Figure 4. Angola's agricultural production and population per province	13
Figure 5. Angola's access of agricultural production to main markets, by time thresholds and non-accessibility	14
Figure 6. Growth in Angola's transport and storage sector's value added (constant prices) ..	20
Figure 7. The shares of male and female workers in employment offered by major transport sector operators and agencies in Angola	20
Figure 8. Regional Highway Corridors in Angola	26
Figure 9. Angola's SFT ranks and scores from international data sources, across the economic, social, and environmental pillars, in comparison to World and African averages	38
Figure 10. Angola's SFT scores from international data sources, across twelve categories of the economic, social, and environmental pillars, in comparison to World and African averages	39
Figure 11. Angola's survey-based SFT scores, across nine categories of the economic, social, and environmental pillars, breakdown by mode of transport	41
Figure 12. Angola's survey-based SFT scores, across 15 categories of the economic, social, and environmental pillars, breakdown by respondents' sector (public/private)	42
Figure 13. Possible causes of poor rural road network conditions	88
Figure 14. UNCTAD maritime profile for Angola	108



Tables

Table 1.	General and economic profile.....	7
Table 2.	Angola's trade with neighbouring countries, 2021	10
Table 3.	Summary of Angola's economic features and implications for its SFT performance	15
Table 4.	Some facts and figures of Angola's main transport infrastructure	19
Table 5.	Volume of cargo handled or moved in 2021 in Angola, by transport mode	21
Table 6.	Summary of Angola's transport sector features and implications for its SFT performance	24
Table 7.	Major five corridors in Angola.....	25
Table 8.	Key features of the Lobito corridor.....	27
Table 9.	Key features of the Malanje corridor.....	28
Table 10.	Key features of the Namibe corridor.....	29
Table 11.	Summary of major projects set out in Angola's National Transport Plan dealing with road, rail and maritime transport.....	31
Table 12.	Angola's National Strategy for Climate Change 2018-2030: Climate change mitigation measures and actions in freight transport	32
Table 13.	Selected SFT-related indicators	40
Table 14.	Key findings of the quantitative assessment	43
Table 15.	Key findings of the qualitative assessment	53
Table 16.	Some practices implemented by leading countries in the electric vehicle industry	65
Table 17.	List of responsibilities of ministries and government agencies with a mandate in the road freight transport sector.....	67
Table 18.	Recommended Priority Actions and Response Measures	81
Table 19.	List of indicators used for calculation of general SFT scores.....	104
Table 20.	Sample of the questions in the main body of the UNCTAD survey questionnaire	106







Chapter 1

Background and introduction



Freight transport systems are essential for economic growth, trade competitiveness, and sustainable development. Demand for freight transport infrastructure and services expands in tandem with growth in population, urbanization, international trade, and economic development. Despite the strategic economic importance of freight transport for trade and development, increased freight transport activity can, nevertheless, generate negative externalities and sustainability challenges. These include increased noise pollution, greenhouse gas (GHG) emissions, traffic congestion, road safety concerns, and environmental degradation. If left unchecked, future freight transport growth can potentially undermine the effective achievement of the objectives set in the 2030 Agenda for Sustainable Development, the Sustainable Development Goals (SDGs), and the Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC).

Recognizing the strong linkages between sustainable development and freight transport and logistics, the United Nations Conference on Trade and Development (UNCTAD) launched the Sustainable Freight Transport (SFT) Assessment tool. The SFT Assessment enables the conduct of qualitative and quantitative analyses to generate a comprehensive assessment of the state of the freight transport sector. It assesses the sector's performance as regards the economic, social, and environmental dimensions of sustainable development.

This report sets out the main findings of the SFT Assessment in Angola. Angola's SFT Assessment is carried out across the three pillars of sustainability, i.e., economic, social, and environmental. The methodology underpinning the SFT Assessment allows some flexibility whereby standardized diagnoses can be carried out while bearing in mind the specific requirements and needs of country and wide-ranging beneficiaries. Making use of the SFT Assessment, the current situation and performance of Angola's freight transport and ability to meet relevant sustainability objectives are analysed. Assessing the state of play has helped to identify the main challenges and obstacles undermining the sustainability

of Angola's freight transport sector and clarify their underlying causes. Special attention is also given to the role of freight transport and logistics in supporting the agribusiness and value chains as well as corridor development in Angola.

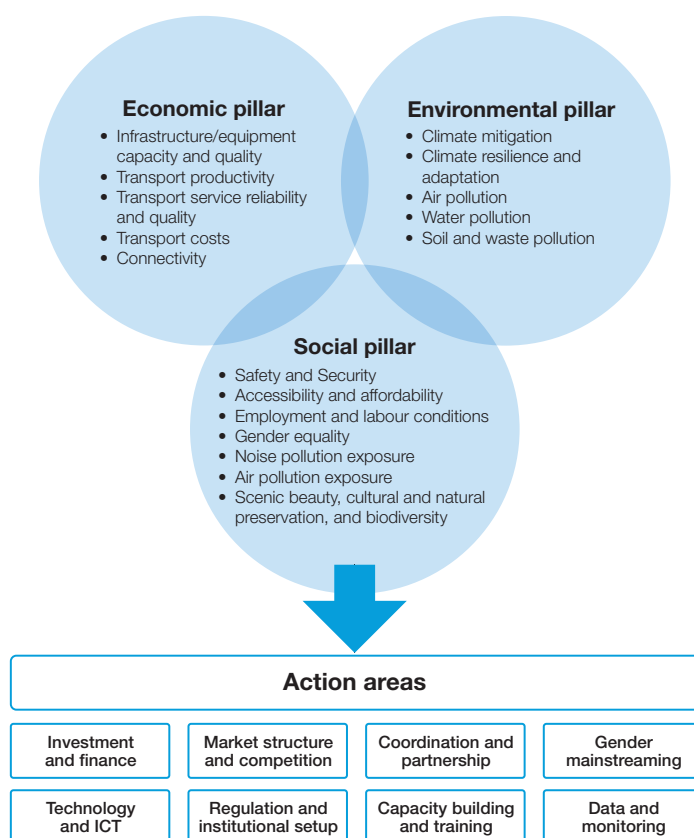
The SFT Assessment comprises of the quantitative and qualitative parts, and the former part is based on internationally comparable scores and survey-based scores. For the internationally comparable scores, several indicators have been identified from international data sources to measure SFT performance across the three sustainability pillars. These indicators were aggregated to create internationally comparable SFT scores. For the survey-based scores, stakeholders were asked about their opinions on a specific SFT performance aspect and to select their response from answer options. Responses to the closed-ended questions were used to form quantitative scores across the various freight transport modes, taking into account the profiles of the respondent stakeholders. The qualitative assessment is based on open-ended questions in the stakeholder survey and results of stakeholder interviews.

The assessment concludes with a proposed intervention/recommendations/

action plan spanning various action areas such as investment and finance, market structure and competition, regulation and institutional setup, coordination and partnership, technology and information and communication technology (ICT), capacity building, training, and awareness building, data and monitoring, and gender mainstreaming (Figure 1). The findings of Angola's SFT Assessment and the resulting action matrix will help inform decisions aimed at improving the sustainability performance of the country's freight transport system. The findings and outcomes of the SFT Assessment constitute a first step and a building block in the development of an SFT Strategy as defined under the UNCTAD SFT Framework.¹ Insights gained through the SFT Assessment can also help countries, including Angola, to identify their capacity building and technical assistance needs.

This report is structured as follows: chapters II and III establish Angola's profile, including as regards its freight transport sector. An overview of existing national and transport policies is presented highlighting the broader context and underscoring the important role of sustainable freight transport for Angola. Chapter IV sets out the main findings of Angola's SFT Assessment based on UNCTAD methodology supported by quantitative and qualitative analyses. Chapter V features a number of policy recommendations put forward together with an action matrix. Chapter VI summarizes the findings and identified recommendations and concludes with UNCTAD's role in improving Angola's freight transport sustainability. The Annexes provide more details about the methodology behind the UNCTAD SFT Assessment.

Figure 1.
SFT Assessment: Three pillars and some key action areas



Source: UNCTAD secretariat.

¹ UNCTAD, 2017



Chapter 2

Angola's economic landscape: An overview



This section summarises Angola's economic landscape with a focus on its agribusiness sector. Setting out this overall context helps to better understand the strategic importance of increasing sustainability in freight transport for the country. It also highlights the agribusiness sector because the government is strengthening its efforts to diversify the economy, and the agribusiness sector is one of the potential areas that can substantially increase its exports to global markets. Yet, freight transport emerges as a major obstacle to the growth and competitiveness of the agribusiness sector. Therefore, promoting sustainable freight transport is essential to overcoming these challenges and unlocking the sector's full potential.

Table 1.
General and economic profile

Land area	1,246,700 km ²	GDP (PPP, current price)	\$248 billion (2022)
Remoteness and landlockedness index	62.4 (94 th among 143 developing countries in terms of connection to the world markets)	GDP per capita (PPP, current price)	\$6976.0 (2022)
Population	36,684,203 people (2023)	GDP growth rate (constant price)	3.0% (2022)
Population density	29 people / km ² (2023)	Poverty rate (% of population under the international poverty line)	32.8% (2023)
Population growth rate	3.0% (2023)	Gini coefficient	0.513
Median age	16.3 years (2023)	Unemployment rate	30.2% (2022)
Urban population share	68.1% of total population (2023)	Informal sector employment	79.9% of total employment (2022)
ND-GAIN index (Vulnerability score)	0.510 (144 th among 185 countries)	Export / GDP ratio	41.2% (2022)
ND-GAIN index (Readiness score)	0.268 (171 st among 192 countries)	Import / GDP ratio	14.7% (2022)

Source: Compiled by the UNCTAD secretariat, based on several data sources indicated in the footnotes to the main text.

General information

Located on the west coast of Southern Africa, Angola is bordered by Namibia to the south, the Democratic Republic of the Congo (DRC) to the north and northeast, and Zambia to the east. Angola covers a land area of 1,246,700 square kilometres and comprises 18 provinces, with Luanda as its capital (Table 1).² Angola features a substantial coastline along the South Atlantic Ocean, stretching approximately 1,600 kilometres.

Angola, although a coastal country, often faces challenges similar to those faced by landlocked countries given its infrastructural and logistical constraints that undermine its transport connectivity to the global marketplace. Angola is considered relatively remote when measured by a trade-weighted average of a country's distance from global markets. In 2021, the Economic and Environmental Vulnerability Index (EVI), which includes a component assessing remoteness and landlockedness, indicates that Angola achieved a score of

² Government of Angola, 2023

62.4. The country ranked 94th among the 143 developing countries and 29th among the Least Developed Countries (LDCs) in terms of connection to the world markets.³

Compared to its size, Angola had a small population of around 36.7 million in 2023, making it the 12th largest population in Africa and the 41st worldwide.⁴ Its population density is relatively low at 29 per square kilometre in 2023.⁵ However, its population growth rate is high at around 3.0 per cent per year, which makes it one of the ten countries with the highest population growth rate in the world. As a result, Angola's population is young with a median age of 16.3 years.⁶

Urbanization is also high, with 68 per cent of Angolans living in cities in 2022,⁷ partly due to the country's 27-year civil war, which prompted a significant rural-to-urban migration. It is estimated that around 37 per cent of Angola's urban population will live in the Luanda-centred urban agglomeration in 2025 and Luanda will rank in the 30 largest urban agglomerations in terms of population by 2035.⁸

Angola is recognized for its vulnerability to natural and climate-related disasters, such as floods and droughts, which pose significant threats to its socio-economic development. In 2021, Angola ranked 144th in terms of vulnerability to climate change factors according to the Notre Dame Global Adaptation Initiative (ND-GAIN) Index – Vulnerability Score. In this context, upgrading Angola's readiness level

to cope and adapt to climate change factors is crucial. This is even more important as the country ranked 171st in terms of the ND-GAIN Index - Readiness Score.

This ranking underscores the need for Angola to develop and implement effective strategies and measures to enhance its sustainability and resilience in the face of the adverse effects of climate change.⁹

Economic aspects

Trends in GDP and income per capita.

Angola has made significant economic and political progress since the end of the civil war in 2002. While Angola was earlier recommended for graduation from the LDC category based on the "income-only" criterion and expected to graduate after additional transition periods in February 2024, the country's graduation has now been deferred to a later date as its gross national income per capita fell below the graduation criteria due to the impacts of the COVID-19 pandemic, unstable prices, droughts, food price hikes and currency devaluation.¹⁰ In 2022, Angola's GDP (expressed in current international dollars, converted by purchasing power parity (PPP) conversion factor) reached \$248 billion while its GDP per capita averaged \$6976.0.¹¹ Angola's economy is predominantly driven by oil production, which significantly contributes to its GDP. This reliance makes the economy highly susceptible to global oil price fluctuations. From 2016 to 2020, Angola experienced a negative GDP growth

³ United Nations Department of Economic and Social Affairs (UNDESA), 2021. The Economic and Environmental Vulnerability Index (EVI) is a measure designed to assess the vulnerability of countries, particularly those classified as Least Developed Countries (LDCs), to economic and environmental challenges.

⁴ United Nations Population Fund, 2023

⁵ Population Division, United Nations Department of Economic and Social Affairs (UNDESA), 2022

⁶ Ibid

⁷ World Bank, 2022a

⁸ Population Division, United Nations Department of Economic and Social Affairs (UNDESA), 2018

⁹ Notre Dame Global Adaptation Initiative (ND-GAIN), University of Notre Dame, 2023 and United Nations Development Programme (UNDP), 2023

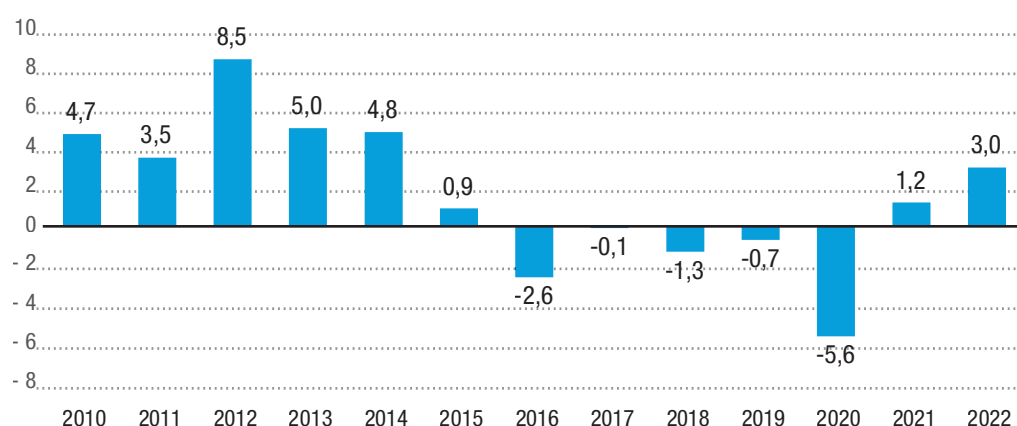
¹⁰ The deferral is to enable the UN Committee for Development Policy to consider further the situation of Angola and its smooth transition strategy, and for the Economic and Social Council to update its recommendation to the Assembly in 2024. United Nations Department of Economic and Social Affairs (UNDESA), 2023; United Nations General Assembly, 2023; and United Nations (UN), 2023

¹¹ World Bank, 2023a

rate, primarily due to a downturn in global oil prices and a lack of economic diversification (Figure 2). In 2022, the country's GDP grew by 3.0 per cent, up from 1.2 per cent in 2021, mainly due to a strong recovery in activity in the transport and storage sector, as a result of an increase in international and regional flights to/from Angola, and an increase in public administration activity.¹²

In 2022, however, Angola's GDP expanded at a slower rate than its population, leading income per capita to marginally contract (-0.1 per cent). The slow GDP growth was attributed to the sluggish recovery of the country's two largest sectors, namely, oil extraction (0.5 per cent) and retail and wholesale (1.0 per cent).¹³

Figure 2.
Angola's GDP growth rate at constant prices



Source: National Statistics Institute (INE), Government of Angola, 2023a

Poverty and inequalities. In 2023, 32.8 per cent of Angola's population were estimated to live below the international poverty line of \$2.15 per day (adjusted for 2017 PPP) compared to 31.1 per cent in 2018.¹⁴ Specifically in rural areas, more than half of the people earn less than \$2.15 daily and primarily depend on small-scale farming to get by. The country also exhibits pronounced inequalities, reflected in a Gini coefficient of 0.513, exceeding the widely accepted warning level of 0.4.¹⁵ In urban areas, 63 per cent of the population resided in slums in 2020.¹⁶ Around 54 per cent of Angola's

population suffers from multidimensional poverty in the dimensions of health, education, and standard of living.¹⁷ The high poverty rate and inequality of Angola are closely tied to the scarcity of quality jobs, as evidenced by a high unemployment rate of 30 per cent and a predominance of informal employment, which constitutes 80 per cent of the job market.¹⁸

Economic structure and trade. Angola is endowed with abundant natural resources, being Africa's second-largest oil producer and the largest oil exporter among LDCs.¹⁹ The export of goods accounts for 41.2 per

¹² National Statistics Institute (INE), Government of Angola, 2023c

¹³ African Development Bank, 2023a

¹⁴ World Bank, 2023b

¹⁵ World Bank, 2022b

¹⁶ World Bank, 2023c

¹⁷ United Nations Economic and Social Council (ECOSOC), 2023, and National Statistics Institute (INE), Government of Angola et al., 2020

¹⁸ National Statistics Institute (INE), Government of Angola, 2023b

¹⁹ Organization of the Petroleum Exporting Countries (OPEC), 2022, and World Trade Organization (WTO), 2023a

cent of Angola's GDP in 2022.²⁰ The oil sector represented 26 per cent of its GDP, 62 per cent of tax revenues, and 95 per cent of exports.²¹ Due to its heavy reliance on oil production and export, Angola's economy is significantly impacted by global oil demand and oil revenue volatility.²² With oil production being finite and the global shift towards decarbonization, Angola faces an urgent need to diversify its economy.

Regional and international trade relations.

Although Angola's trade relations with neighbouring countries are currently limited, they are however on the rise. In 2021 the value of exports with Namibia and Zambia increased from almost zero in 2007, to \$19.2 million and \$68,700, respectively

(Table 2). The majority of the exports were oil and minerals, while food items made up the majority of imports. Angola is a member of the 16-nation Southern African Development Community (SADC), which aims to improve economic cooperation. In addition, Angola's membership in the World Trade Organization (WTO) and its ratification of the African Continental Free Trade Area (AfCFTA), which came into effect in 2019, demonstrate its commitment to engaging in broader international trade. Discussions are underway to establish customs agreements with neighbouring Namibia, Zambia, South Africa, and the DRC, signalling Angola's intention to deepen regional trade relations and economic integration.



Table 2.
Angola's trade with neighbouring countries, 2021

Partner country	Exports	Imports
South Africa	Total: \$427M	Total: \$364M
	Crude Petroleum: \$398M	Cereal Meal and Pellets: \$19.6M
	Diamonds: \$19.4M	Stone Processing Machines: \$13.2M
	Planes, Helicopters, and/or Spacecraft: \$2.59M	Refined Petroleum: \$11.8M
Democratic Republic of Congo	Total: \$262M	Total: \$6.72M
	Refined Petroleum: \$191M	Beauty Products: \$894k
	Raw Iron Bars: \$6.31M	Large Construction Vehicles: \$876k
	Hard Liquor: \$5.42M	Ground Nuts: \$442k
Namibia	Total: \$19.2M	Total: \$33.9M
	Glass Bottles: \$5.23M	Cereal Flours: \$7.54M
	Insulated Wire: \$2.28M	Bovine: \$3.09M
	Gas and Liquid Flow Measuring Instruments: \$1.81M	Onions: \$2.5M
Zambia	Total: \$68.7K	Total: \$2,92M
	Centrifuges: \$19.3k	Dried Legumes: \$745k
	Furniture: \$4.57k	Corn: \$600k
	Electric Heaters: \$4.53k	Mill Machinery: \$274k
Total (Angola's trade with the world)	Total: \$34,959M	Total: \$11,212M

Source: Datawheel, 2024.

China and the European Union (EU) stand out as Angola's primary trading partners.

In 2022, China was the key destination for Angola's merchandise trade, representing

²⁰ World Trade Organization (WTO), 2023a

²¹ World Bank, 2023e

²² World Bank, 2023b

a substantial 42.7 per cent of the total exports (Figure 3). Meanwhile, the EU is the main origin of Angola's imports, accounting for 31.7 per cent of the total. Additionally, India, the United Arab

Emirates (UAE), the United Kingdom (UK), the United States of America (USA), and the Republic of Korea (RoK) are other significant trading partners for Angola.²³

Figure 3.
Angola's main trading partners, 2022

Export destination country



Import origin country



Source: World Trade Organization (WTO), 2023b

The above indicators and features of Angola's economy and trade patterns underscore the crucial need for Angola to diversify away from its current oil-dependent economy. There is a need to reduce poverty and inequality and bolster the country's trade relations for more sustainable growth. Embracing economic diversification and fostering robust regional and international partnerships are key to establishing a resilient and sustainable economy that ensures prosperity for all.

Agribusiness sector overview

The assessment highlights the critical role of freight transport in the development of Angola's agribusiness sector, which is key to diversifying the country's economy. Agriculture, which is predominantly located in rural areas, is recognised as a vital sector

that is currently constrained by inefficient freight transport. Therefore, this assessment singles out agribusiness and transport of agriproducts to investigate in which aspects and by which ways freight transport of enhanced performance can contribute to the prosperity of the agricultural sector.

Agricultural production

Angola possesses significant untapped productive capacity, characterized by its abundant freshwater resources, fertile arable land, and young labour. Currently, only about 10 percent of the nation's arable land is under cultivation. Furthermore, nearly half of the population is aged between 15 and 35 years, offering a vast and growing workforce potential.²⁴

In recent years, the share of the agricultural sector in Angola's economy has been growing rapidly. The contribution of

²³ World Trade Organization (WTO), 2023b

²⁴ Food and Agriculture Organization (FAO), 2023b

agriculture and forestry to Angola's GDP increased to 10.5 per cent in 2022.²⁵ During the same year, Angola's agricultural production reached 24.8 million tons, with an increase of 5.6 per cent compared to 2021.²⁶

The Central and Southern regions of Angola contribute significantly to the country's agriculture, accounting for 70 per cent of the national agricultural production.²⁷ Agriculture plays a crucial role in Angola's employment landscape, providing 55 per cent of the total jobs, most of which are informal, with women providing most of the labour force.²⁸ It is estimated that 80 per cent of farmers are small holders and family farming is responsible for more than 80 per cent of critical agricultural production.²⁹ Farmers lack access to agricultural inputs and other assets required for agricultural production. They need seeds, adequate tools to work on the land, animals for traction, and fertilizers. As a result, agricultural productivity is not competitive.

Food demand and food security

Angola's demand for food is expanding driven by the rapid population growth. The domestic food supply is still not sufficient, and 4.9 million people were estimated to have inadequate food consumption in December 2021.³⁰ In 2023, around 4 per cent of the total population experienced acute food insecurity in Southwestern Angola³¹ and Angola ranks 99th out of 125

countries in the 2023 Global Hunger Index, demonstrating a serious level of hunger.³²

To fill the gap between local food supply and demand, Angola imported about 3.3 million tons of food, causing a significant economic burden. Due to the escalating price and mounting demand, Angola's expense on food product imports increased by 40 per cent in 2022.³³ By 2027, Angola is expected to experience an average annual growth in grain consumption of about 6 per cent³⁴, with a consumption gap of around 4.5 million metric tons, on average, for the next 5 years.³⁵

Angola's vulnerability to climate change and climatic shocks has been directly impacting its food security. Cyclical droughts and rainfall shortages in the south and centre of the country significantly reduce agricultural production, which is the main source of food for rural households. For example, the economic impacts of the severe drought from 2013 to 2019 are estimated at over \$749 million across all sectors, with the agricultural sector, livestock, and fisheries being the most damaged.³⁶ The generalized rise in food prices also restricts households' purchasing power. Irrigation currently plays a modest role in Angola but has great potential to support the resilience of the agricultural sector to water-related risks.³⁷

Transport of agriproducts

The provinces located in the centre and east of the country (Uíge, Malange, Huambo, Kwanza Norte, Kwanza Sul, Bié,

²⁵ Xinhua, 2023b

²⁶ Ibid

²⁷ Food and Agriculture Organization (FAO), 2023b

²⁸ Food and Agriculture Organization (FAO), 2023b, and International Fund for Agricultural Development (IFAD), 2024

²⁹ Food and Agriculture Organization (FAO), 2023b

³⁰ World Food Programme (WFP), 2022

³¹ Ibid

³² Concern Worldwide and Welthungerhilfe, 2023

³³ Ver Angola, 2023a

³⁴ Food and Agriculture Organization (FAO), 2023b

³⁵ Food and Agriculture Organization (FAO), 2023a

³⁶ Serrat-Capdevila et al., 2022

³⁷ Leao and Shetty, 2022

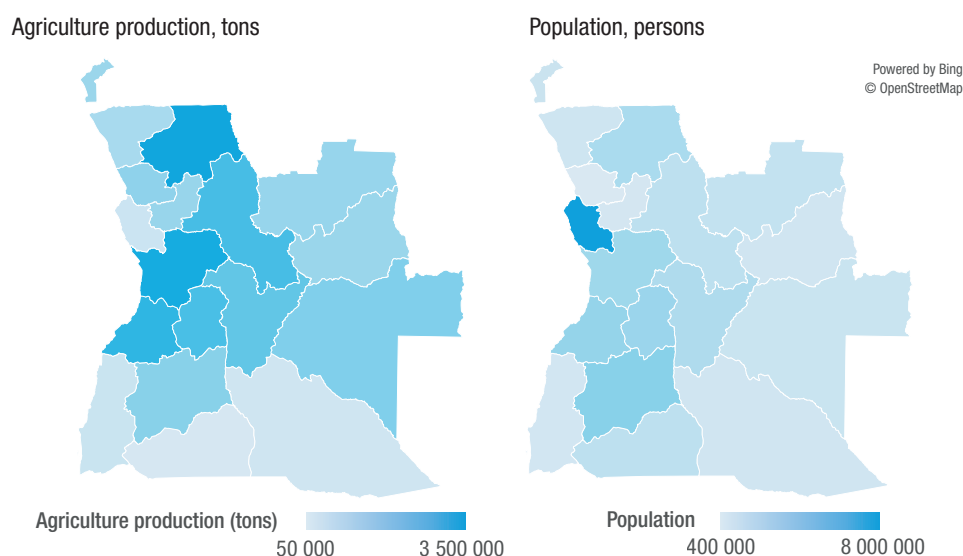


and Moxico) are those with the largest productive agricultural area (Figure 4). However, the main consumption centres

are located in major cities (Luanda, Benguela, Huambo, and Lubango).



Figure 4.
Angola's agricultural production and population per province



Source: Ministry of Agriculture and Fisheries, Government of Angola, 2020 and World Bank, 2017

Angola does not have a structured chain for the conservation and transport of goods from production sites to consumption points. Due to this insufficiency, about 2.7 million tons of about 25 million tons of agricultural output (over 10 per cent) was wasted during transport and storage and did not reach places of consumption.³⁸

Social and physical infrastructure is badly damaged due to the country's 27-year civil war. In particular, the lack of roads and bridges impedes trade as it prevents farmers from getting their products to markets. Consequently, the overall accessibility of agricultural production to primary markets is poor, with 71 per cent of the total agricultural production value unable to reach markets.

While Moxico had the largest agricultural production value in Angola in 2010, i.e., approximately 16 per cent of the national value, 83 per cent of Moxico's value was

not accessible to markets (Figure 5).

This partly explains the decline in 2020 of its share in agricultural production as indicated in Figure 4. Uige and Malanje retained a high agricultural production share partly because more products can reach markets than other provinces. However, even for Uige and Malanje, some of the agricultural products cannot reach the main markets due to the logistics challenges.

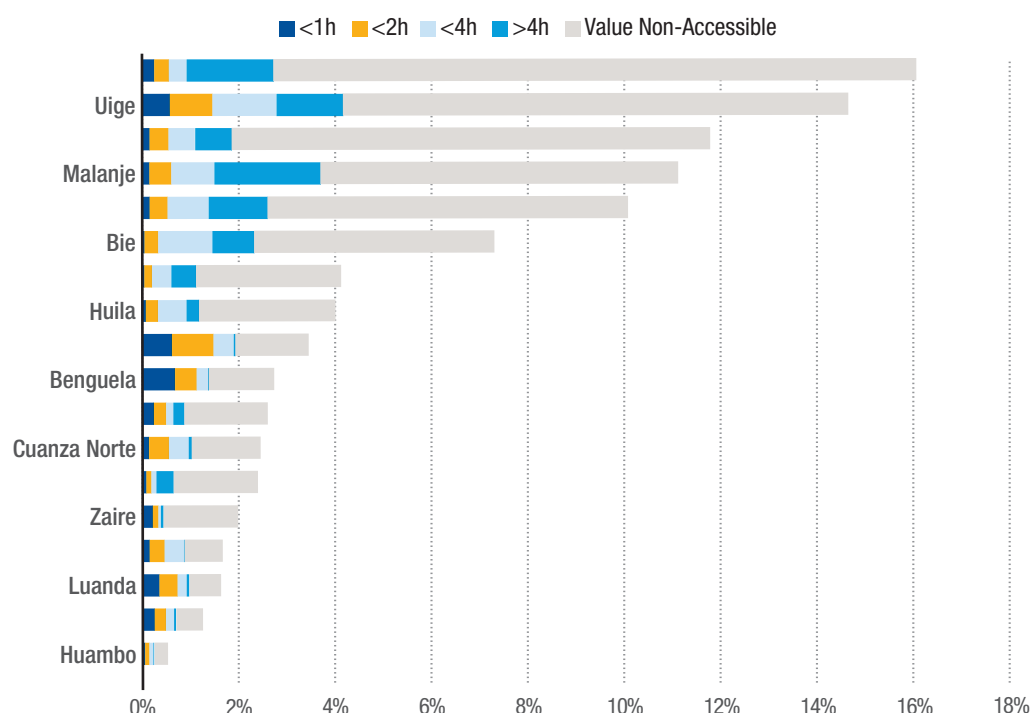
The logistical obstacles are also impeding the growth of agriproduct exports. In 2023, Angola exported only \$154 million of food items (0.3 per cent of total exports, or 4.8 per cent of non-fuel exports). Meanwhile, it imported \$1,544 million during the same year.³⁹ Improving transport and logistics infrastructure would not only to boost Angola's agricultural export sector, but also to significantly reduce the country's dependence on food imports.

³⁸ Food and Agriculture Organization (FAO), 2024

³⁹ UNCTAD, 2023f

**Figure 5.**

Angola's access of agricultural production to main markets, by time thresholds and non-accessibility



Source: Benmaamar et al., 2020

Note: Agricultural production value is based on crop production in 2010.

Implications of the economic landscape for Angola's freight transport sector sustainability

Angola is in a good geographic position for the development of the sustainable freight transport sector. The long coastal line and land borders with neighbouring countries give a great opportunity to become a regional transport hub (Table

3). Angola has enormous potential in agricultural exports with the blessings of nature such as high-quality soil, abundant water, and a comfortable climate.

However, its economic and social situation would pose challenges in the development of freight transport sustainability. The low population density outside the capital implies difficulty in ensuring access to freight transport services in rural areas and a high poverty rate can lead to a limited supply of skilled labour for the freight transport sector.





Table 3.
Summary of Angola's economic features and implications for its SFT performance

	Major characteristics	Implications for SFT performance
General information	• Located on the South Atlantic Coast of West Africa • Distance from world markets • Bordered by DRC, Zambia, and Namibia	• Presents both advantageous and disadvantageous for transport connectivity including maritime shipping connectivity • Offers advantageous for Angola's potential role as a regional transport hub
	• Low population density outside Luanda	• Causes increased in the domestic transport costs • Higher transport costs impede access
	• High population growth rate	• Causes an increase in demand for transport infrastructure and services
	• Vulnerable to natural and climate-related disasters	• Requires enhanced resilience and adaptation of transport system, including freight transport
Economic information	• Prolonged LDC status • Slow GDP growth	• Results in limited resources for SFT development
	• Reliance on oil export	• Provides incentive to develop the domestic transport industry which, in turn, can boost exports and trade and diversify Angola's economy • Offers an incentive to improve the efficiency and productivity of transport including maritime transport
	• High poverty rate • High unemployment rate	• Provides an incentive to develop SFT which in turn can boost economic growth and create jobs • Leads to difficulty in getting skilled labour
	• The abundance of natural resources in Angola and neighbouring countries	• Advantageous for becoming a regional transport hub
	• Growing trade with neighbouring countries	• Provides an incentive to improve cross-border transport
Agribusiness overview	• Great agricultural production potential • The rapid growth of agricultural production's share of GDP	• Provides an incentive to improve the efficiency and productivity of agribusiness transport and logistics
	• Prevalence of family farming • Most employment absorbed by agribusiness • Lack of access to agricultural inputs	• Poses difficulty in reaching high coverage of transport service for farmers • Provides an incentive to improve agribusiness transport and logistics to boost production
	• Expanding demand for food • Food security impacted by climate change	• Provides an incentive to ensure efficient agribusiness transport to support food supply • Incentivises the decarbonization of the freight transport sector • Promotes enhanced resilience of the freight transport sector
	• Lack of connectivity between production sites and consumption centres • Agricultural products are wasted given the lack of access to market	• Provides an incentive to ensure access to affordable transport services for agricultural producers

Source: UNCTAD secretariat, 2024







Chapter 3

Transport sector profile, strategies, and planning



Transport sector

Overview

Table 4.
Some facts and figures of Angola's main transport infrastructure

Road transport	
Total road length	76,626 km (19,156 km are paved)
---- Classified road	43,655 km
----- Fundamental road	26,000 km (13,600km are paved)
----- Complementary road	17,500 km
---- Unclassified road	32,345 km
Rail transport	
Total length	2,761 km
---- CFL	424 km
---- CFB	1,344 km (1,866km including the DRC section)
---- CFM	857 km
Maritime transport	5 major seaports (Luanda, Lobito, Cabinda, Namibe, and Soyo) and some minor ports (such as Amboim and Ambriz)
Air transport	Over 30 asphalted airports
Inland waterway	Around 1,300 km navigable inland waterways

Source: Compiled by UNCTAD secretariat based on Ministry of Transport and Ministry of Public Works, Urbanism and Housing, 2020; Benmaamar et al., 2020; and Central Intelligence Agency (CIA), U.S. Government, 2024.

Endowed with an extensive coastline and bordered by mineral-rich countries, Angola has the potential to become a logistics hub of considerable importance in the region. Over the past decade, the transport and storage sector, including freight and passenger, grew at an average rate of 4.3 per cent.⁴⁰ The sector's value-added declined by 38.7 per cent in 2020 due to the COVID-19 pandemic, but growth rebounded to 28.9 per cent in 2021 and 32.8 per cent in 2022 (Figure 6). Despite the recovery, the contribution of transport and storage to Angola's economy remained limited, with a 1.6 per cent share of GDP in 2022.

In 2021, Angola's transport and storage sector employed 346,472 people, representing 3.1 per cent of the country's total employment.⁴¹ The majority, i.e., 86.5 per cent of transport and storage sector employment was hired by the land transport sector, followed by warehousing (11.9 per cent) and water transport (1.6 per cent). The sector is male-dominated, with males representing 99 per cent (or 74.4 per cent if the informal road sector is not included, Figure 7) of the labour force.⁴² Data for 2022 shows that when taking into account the accommodation and communication sectors,⁴³ 65.6 per cent of the workers were active in the informal sector.⁴⁴

⁴⁰ UNCTAD calculation based on National Statistics Institute (INE), Government of Angola, 2023d

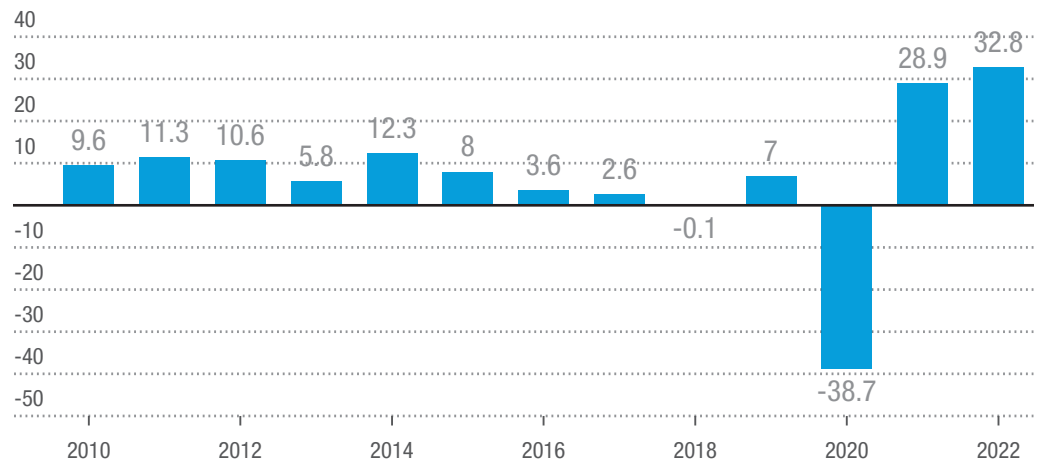
⁴¹ International Labour Organization (ILO), 2023

⁴² International Labour Organization (ILO), 2023 and Ministry of Transport, Government of Angola, 2021. The latter source relies on administrative data, and supposedly does not include informal road sector.

⁴³ Accommodation sector includes hotels and guesthouses.

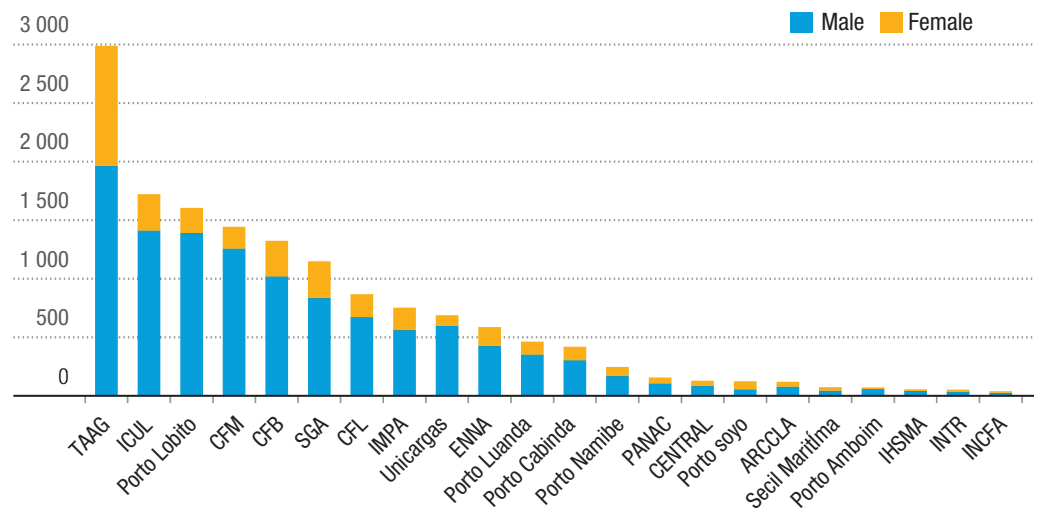
⁴⁴ National Statistics Institute (INE), Government of Angola, 2023b

Figure 6.
Growth in Angola's transport and storage sector's value added (constant prices)



Source: National Statistics Institute (INE), Government of Angola, 2023a

Figure 7.
The shares of male and female workers in employment offered by major transport sector operators and agencies in Angola



Source: UNCTAD based on data from Ministry of Transport, Government of Angola, 2021

Maritime and road transport are the two major modes used for freight and cargo shipments in Angola. Ports handled 17.1 million tons of total cargo in 2021, including about 1.7 million tons of export cargo and about 5.6 million tons of import cargo (Table 5).⁴⁵ The road sector transported

most of the cargo within Angola, with volumes carried estimated at 4.1 million tons.⁴⁶ In comparison, rail and air transport have a limited role in freight transport. In 2021, rail carried 0.5 million tons of cargo, while air transported 0.02 million tons of cargo (mostly international cargo).

⁴⁵ Ministry of Transport, Government of Angola, 2021

⁴⁶ Road transport volume can be underestimated due to presence of informal sector.



Table 5.
Volume of cargo handled or moved in 2021 in Angola, by transport mode

Ports	17.1 million tons (including cabotage)
---- Export cargo	1.7 million tons
---- Import cargo	5.6 million tons
Road	4.1 million tons
Rail	0.5 million tons
Aviation	0.02 million tons

Source: Compiled by the UNCTAD secretariat based on data from Ministry of Transport, Government of Angola, 2021

Maritime Transport

Maritime transport is Angola's main access to international markets. Angola's international trade is highly dependent on its ports, which handle over 90 per cent of all imports.⁴⁷ Maritime transport is also the cornerstone of Angola's ambition to be an important regional logistic service provider to its landlocked neighbouring countries. Angola's major ports include Luanda, Lobito, Cabinda, Namibe, and Soyo. In 2021, with five specialized terminals (Multiterminais for break-bulk, Sogester for container, Sonils for oil and gas, and Unicargas and Soportos as multipurpose terminals), the Port of Luanda accounted for over 80 per cent of total cargo handled in Angolan ports. Meanwhile, Lobito and Namibe handled 8.7 per cent and 5.6 per cent, respectively.

In addition to being the leading port in Angola in terms of volume of (non-petroleum) cargo handled, the Port of Luanda is also one of the fastest-growing ports in Africa.⁴⁸ In 2021, 14.2 million tons of goods (export, import, and cabotage) were moved through the Port of Luanda, with export and import volumes reaching 1.1 million tons and 4.1 million tons,

respectively.⁴⁹ The main goods handled were cement for exports and agricultural products (such as wheat, rice and meat) and oils for imports.⁵⁰ Until 2021, the Port of Luanda was administered by the state-owned Empresa Portuária de Luanda. In 2021, DP World, a UAE state-owned multinational logistics company, has been awarded a 20-year concession to manage and operate the facility. The company is investing \$190 million to transform the terminal into a regional maritime hub.⁵¹ However, the port faces serious congestion and delays due to some underlying capacity constraints. Consequently, the Angolan government started the construction of a new port at Barra do Dande in the Bengo Province north of Luanda.⁵²

Compared with the Port of Luanda, the Port of Lobito, the second-largest port in Angola, serving as the main Atlantic gateway to the Copperbelt region, has the advantage of being connected to the Benguela railway network (CFB) to facilitate the transport of minerals from DRC and Zambia.⁵³ The Port of Lobito handled 1.5 million tons of total cargo (export, import, and cabotage) in 2021, including 0.2 million tons of export cargo and 1.3 million tons of import cargo.⁵⁴

⁴⁷ PwC, 2013

⁴⁸ Ibid

⁴⁹ Ministry of Transport, Government of Angola, 2021

⁵⁰ Ibid

⁵¹ DP World, 2021

⁵² Goosen, 2022 and Hawilti, 2021

⁵³ Cross Border, 2021

⁵⁴ Ministry of Transport, Government of Angola, 2021



The majority of the export cargo was wheat bran (35 per cent) and granite block (24 per cent), while import cargo was mostly made of agriproducts and food items (such as preserves, fresh produce, and wheat).

In 2021, the Port of Namibe, considered as the third largest port in Angola and a key cargo gateway to the southern part of Angola, handled 1.0 million tons of cargo (export, import, and cabotage), with export and import cargo totalling 0.4 million tons and 0.1 million tons, respectively. The export cargo included mineral products. 80 per cent of exports were made of ornamental rocks while 20 per cent were iron ore. These were mostly destined for China, Portugal, and Germany.

Road Transport

Road transport is the primary mode of transport within Angola. Although Angola has a road network of around 76,626 kilometres (Table 4), its road density is relatively low compared with other African countries, and the road network is unevenly distributed.⁵⁵ Most of the roads are concentrated in the western half of the country along the coast, connecting the port cities of Luanda, Lobito, and Namibe. Half of the Angolan population has no access to any road within 2 kilometres.⁵⁶

The total volume of cargo transported by road hit 4.1 million tons in 2021. Most of the transport occurred along the coast, with 44 per cent of total cargo in Namibe province and 36 per cent in Luanda province.⁵⁷

The classified road network is around 43,655 kilometres in length or 58 per cent of the total road network. This network includes around 26,000 kilometres of fundamental roads which connect the capital to the 18 provinces and the main cities to each other, and around 17,500

kilometres of complementary roads. The fundamental road network is under the responsibility of INEA (Instituto Nacional de Estradas de Angola), of which around 13,600 kilometres (52 per cent) are paved roads. The remaining classified road network (17,500 kilometres) are complementary roads and are also under the responsibility of INEA of which only 210 kilometres are paved. The remaining road network consists of around 32,345 kilometres of unclassified local roads which provide connectivity within the 164 municipalities areas and are under the responsibility of the local authorities.⁵⁸

Roads in eastern Angola are scarcer, which is a main obstacle for the bordering countries to transport their goods through Angola and for Angola to emerge as a transport service supplier for its neighbours. Road infrastructure condition still needs improvement although the authorities have undertaken substantive investments in recent years, such as the asphalt of more than 13,232 km secured by the Road Infrastructure Rehabilitation Programme (PRIR) from 2011 to 2020.⁵⁹ The current status of Angola's road network makes it difficult for Angola to facilitate trade with its neighbours and discourages landlocked countries in Southern Africa from making greater use of Angola's ports.

Rail Transport

The railway transport in Angola consists of three main rail lines that stretch over approximately 2,700 kilometres and connect Angola's key Atlantic port cities to the interior of the country. The three separate railway lines are Luanda Railway (CFL), located in the north, connecting Luanda port to Malanje, Benguela Railway (CFB), located in central Angola, connecting Lobito port to Luau on its border with DRC, and Moçâmedes

⁵⁵ Angola's road density was 0.06 kilometres per square-kilometre of land area, which was lower than African average of 0.25 and world average of 1.23. See quantitative assessment in Chapter IV.

⁵⁶ Benmaamar et al., 2020

⁵⁷ Ministry of Transport, Government of Angola, 2021

⁵⁸ Benmaamar et al., 2020

⁵⁹ World Trade Organization (WTO), 2024

Railway (CFM), located in the south, connecting Namibe port to Menongue.⁶⁰

The three railways carried 0.5 million tons of cargo in 2021. Half of the total railway cargo was carried by the CFM, followed by CFB (46 per cent) and CFL (4 per cent).⁶¹ Sonangol is a major rail transport customer, regularly transporting oil-refined products from cities like Luanda, Lobito, and Namibe to cities along the rail lines. The next section on Main Transport and Trade Corridors discusses the three railways in more detail.

Air Transport

Angola has 32 asphalted airports, with Quatro de Fevereiro International Airport near Luanda as the busiest airport.⁶² All airports are owned and managed by the State and they handled 19,000 tons of cargo in 2021, with about 90 per cent being international cargo and passing through the airport in Luanda. In terms of transport work, air freight transport in Angola declined over the 2018 to 2020 period. The country experienced a marginal increase in air freight transport to 31 million ton-kilometres in 2021 but the transport work had not returned to its previous levels, such as 60 million ton-kilometres on average from 2014 to 2018.⁶³

New Luanda International Airport on the outskirts of Luanda Province was

inaugurated and commenced cargo operations in December 2023. It will serve as an alternative to the crowded Quatro de Fevereiro International Airport with an annual cargo capacity of 35,000 tons.⁶⁴

Privatization of airports and the national airline is part of Angola's whole Privatization Programme (Propriv) for its state-owned assets and companies.⁶⁵ The privatization process of Sociedade Gestora de Aeroportos (SGA) started in the last quarter of 2023, with the aim to improve its performance and profitability and transform the country into an airport hub. In 2018, TAAG Angola Airlines became a public limited company still fully owned by the State. Angola removed the requirement for domestic flight operators to be majority-owned by Angolan citizens, but TAAG remains the sole licensed operator and the only airline authorized to operate scheduled domestic flights, thus being granted with a monopoly position on scheduled cargo transport.⁶⁶ It is expected to be privatized before 2025.⁶⁷ Recently, Angola's accession to the Single African Air Transport Network (SAATM), an initiative of the African Union to create a single unified air transport market in Africa, was approved. This initiative is a major step forward for Angola and its efforts to reinforce its regional air transport integration.⁶⁸

⁶⁰ Cross Border, 2021

⁶¹ Ministry of Transport, Government of Angola, 2021

⁶² Airportcodes, 2023

⁶³ World Bank, 2021

⁶⁴ Luanda Airport, 2023

⁶⁵ Nhede, 2023, and PwC, 2023

⁶⁶ World Trade Organization (WTO), 2024

⁶⁷ Ver Angola, 2022

⁶⁸ Ver Angola, 2023can "advantageous" mechanism that will allow Angola to open new routes and more frequent flights, according to the authorities.", "container-title": "Ver Angola", "language": "en", "title": "Angola's accession to the Single Air Transport Market in Africa approved", "URL": "https://www.verangola.net/va/en/072023/Transports/36535/Angola's-accession-to-the-Single-Air-Transport-Market-in-Africa-approved.htm", "author": [{"family": "Ver Angola", "given": ""}], "accessed": {"date-parts": ["2023", "10", "3"]}, "issued": {"date-parts": ["2023", "7", "27"]}], "schema": "https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}

Implications of the transport sector profile for Angola's freight transport sector sustainability

Ports are relatively well-developed, especially the Port of Luanda, which is the

fastest-growing port in Africa (Table 6). However, road and rail connections are inadequate, posing challenges for cross-border freight transport in many border areas and freight transport in rural areas.



Table 6.
Summary of Angola's transport sector features and implications for its SFT performance

	Major characteristics	Implications for SFT performance
Maritime transport	• Luanda Port is one of the fastest-growing ports in Africa	• Advantageous for becoming a regional maritime transport hub
	• Congestion and delays in ports	• Increases the need for more efficient and larger port handling capacity
	• Lobito Port connecting to the railway (corridor)	• Advantageous for facilitating the transport of minerals sourced from the bordering countries
Road transport	• Dispersed and unevenly distributed roads, mainly along the coast	• Poses a disadvantage for domestic road connectivity
	• Poor quality of roads and safety issues aggravated by flooding	• Increases the requirement for road maintenance and climate change mitigation and adaptation
	• Road corridors not fully paved	• Creates a disadvantage for freight transport involving bordering countries
Rail transport	• Promising corridors (especially "Lobito Corridor")	• Provides an advantage that can support Angola's potential role as for becoming a regional train-to-ship export hub
	• Cross-border railways need to be upgraded and operated collaboratively	• Increases the requirement for enhanced regional cooperation and Public-Private Partnerships (PPPs)
	• The three railways are not connected to each other	• Weaken the competitiveness of freight rail transport
Air transport	• Expected privatization of airports and the national airline	• Offers an opportunity to attract private sector investments
	• Join Single African Air Transport Network	• Supports the reinforcement of Angola's regional air transport market integration

Source: UNCTAD secretariat, 2024

Main transport and trade corridors

Overview

Angola's transport sector has been developed along major transport and trade corridors. The Lobito, Malanje, Namibe, North-South, and Luanda-Soyo-Cabinda are Angola's main transport and trade corridors,

serving as vital conduits for both domestic and international trade, using railways and roads to streamline the movement of goods and people, thus supporting Angola's strategic approach to promoting economic growth and regional connectivity. The Lobito, Malanje and Namibe corridors are rail and road, while the North-South and Luanda-Soyo-Cabinda corridors are road. Table 7 provides an overview of the five corridors.





Table 7.
Major five corridors in Angola

Corridor	Transport mode	Network and connections	Road length and pavement rate
Lobito	Road, rail, port, and airport	Lobito – Huambo – Kuito – Luena – Luau (DRC border)	1206 km (45% paved)
Malanje	road, rail, port, and airport	Luanda – Malanje – Saurimo – Dundo (go to DRC)	1,155 km (97% paved)
Namibe	road, rail, and port	Namibe – Lubango – Menongue – Luiana (Namibia border)	1,502 km (56% paved)
North-South	Road and airport	Lemba (DRC border) - N'dalatando - Huambo – Lubango – Santa Clara (Namibia border)	1812 km (95% paved)
Luanda-Soyo-Cabinda	Road, port, and airport	Luanda – Soyo - Cabinda (via DRC between Soyo - Cabinda)	539 km (74% paved)

Source: UNCTAD based on Ministry of Transport and Ministry of Public Works, Urbanism and Housing, 2020

Note: Sections in bold text have railways, and the other sections have only roads. Places with underlines have ports. Lobito Corridor and North-South Corridor are also part of the Trans-African Highways.

The following map shows the road network (i.e., highway corridors) serving these five corridors (Figure 8). Four of these five corridors overlap with the corridors prioritized by SADC, namely the Trans Cunene corridor (between Angola and Namibia), Namibe corridor (between Angola and Namibia), Lobito-Benguela corridor (through Angola, DRC and Zambia), and Malange corridor (through Angola and DRC).⁶⁹ The total road length of the five corridors is 6,216 kilometres, of which 74 per cent were paved.⁷⁰ More efforts are needed to maintain and upgrade the road network of these five corridors, especially for Lobito Corridor, Namibe Corridor, and Luanda-Soyo-Cabinda Corridor.

Bearing in mind the five corridors highlighted above, the present SFT Assessment will focus on only three main corridors, namely Lobito Corridor, Malanje Corridor, and Namibe Corridor. As noted above, all three corridors involve both road and railway networks and services.

Lobito corridor

The Lobito corridor (both roads and railways) extends from the Lobito port on Angola's West Coast to East Angola, reaches into the DRC and Zambia, and connects to other highways or railways to reach Zimbabwe, Mozambique, or South Africa (Table 8). The corridor is one of the most significant corridors in the Southern African Development Community (SADC) region because it connects to the Copperbelt region in the southern DRC and northern Zambia. The Zambian Copperbelt area is one of the largest potential copper-producing zones in the world and the DRC has some abandoned manganese mines that may be exploited.⁷¹ Mineral and other material transport activities are expected to grow as the corridor can emerge as the fastest train-to-ship export route for landlocked countries.⁷² The Corridor also serves as a connection for 40 per cent of the nation's population. It is witnessing numerous substantial investments in the agricultural and retail sectors in the provinces of Benguela, Huambo, Bie, and Moxico, which are all intersected by

⁶⁹ Tripartite Transport & Transit Facilitation Programme (TTTFP), 2023

⁷⁰ Ministry of Transport and Ministry of Public Works, Urbanism and Housing, 2020

⁷¹ Japan International Cooperation Agency (JICA), 2010

⁷² Railway Technology, 2022

Figure 8.
Regional Highway Corridors in Angola



Source: Ministry of Transport and Ministry of Public Works, Urbanism and Housing, 2020

the Corridor.⁷³ In 2023, the Government approved a 260 km railway project worth \$1.2 billion connecting Moxico and Lunda Sul provinces, aiming at serving local mining and agriculture sectors and connecting the region with the Port of Lobito in future.⁷⁴

The three corridor countries, Angola, the DRC and Zambia, with support and

coordination of the Southern African Development Community (SADC), signed the Lobito Corridor Transit Transport Facilitation Agency (LCTTFA) Agreement in January 2023.⁷⁵ The Agreement aims to develop harmonized laws, policies, regulations, infrastructure development strategies and activities, dissemination of

⁷³ African Development Bank, 2023b

⁷⁴ Ver Angola, 2023b

⁷⁵ Southern African Development Community (SADC), 2024a

traffic data and business information, and the implementation of trade facilitation instruments. The first meeting of the Committee of Ministers took place in December 2023.⁷⁶ The meeting established interim Secretariat for the LCTTFA, reviewed and recommended coordination mechanisms involving the United States, the European Commission, the African Development Bank (AfDB), and the Africa Finance Corporation (AFC), and established sub-committees to harmonize policies and formulate a comprehensive infrastructure plan, including the development of dry ports for the DRC and Zambia at the Port of Lobito in Angola.

The Benguela rail line (CFB), the rail part of the Lobito Corridor, is the longest railway in Angola, accounting for half (i.e. 1,344 kilometres or 1,866 kilometres including the DRC section) of the total rail length (i.e., 2,761 kilometres) in Angola. CFB carried about 0.2 million tons of cargo in 2021, including construction materials (26 per cent of total CFB cargo) and fuels (17 per cent). The Lobito Corridor has the potential to serve as the gateway to southern Africa as agricultural and mineral products transported from the connected countries can then be shipped through the Port of Lobito, connected to the Atlantic

Ocean, instead of the Indian Ocean.

Lobito Corridor is essential to Angola's ambition to become a regional trade hub.

Regional cooperation and joint efforts are critical to upgrade and operate the Lobito Corridor railway. Angola has already implemented its portion of the rehabilitation of the Lobito Corridor.⁷⁷ In November 2022 the Ministry of Transport signed a concession agreement with the Lobito Atlantic Railway (LAR), a consortium of three investors (Trafigura Group, Belgian rail operator Vecturis, and Mota-Engil Engenharia e Construção África), to operate and maintain the railway part of the Lobito Corridor for freight transport for 30 years with the main goal to promote exports of copper ore and cobalt.⁷⁸ The concession covers the total length of the Benguela Railway stretching for 1,344 kilometres between the Port of Lobito on the Atlantic Coast and the border with the DRC near Luau in eastern Angola. The LAR will invest \$455 million in Angola to purchase 1,555 wagons and 35 locomotives. The agreement also includes an option for a 20-year extension on condition that the concessionaire builds a branch off the Benguela Railway from Luacano in Moxico province to Jimbe on the Zambian border, with costs estimated at \$930 million.

Table 8.
Key features of the Lobito corridor

Mode	Locations or sections	Conditions
Port	Lobito	
Rail	Lobito – Luau (Border of DRC): 1344Km	Rehabilitated
Road	Lobito – Benguela: 32 km	
	Benguela – Huambo: 343 km	Acceptable (sufficient pavement)
	Huambo – Kuito: 154 km	Good (paved)
	Kuito – Luena: 413 km	Mostly critical (mostly earth track)
	Luena – Luau: 317 km	Critical (earth track)
Proposed / planned logistics platforms	Lobito (Benguela), Huambo, Kuito (Bie), Luena (Moxico) and Luau (Moxico)	

Source: Compiled by the UNCTAD secretariat based on information sourced from Ministry of Transport and Ministry of Public Works, Urbanism and Housing, 2020

⁷⁶ Southern African Development Community (SADC), 2024b

⁷⁷ United Nations Economic Commission for Africa (UNECA), 2019

⁷⁸ Boechat, 2023

Malanje corridor

The Malanje Corridor, originating from the Port of Luanda and extending east to Malanje (railway stops here) and Saurimo and then north to Dundo (DRC's border), is undergoing significant development (Table 9). The road from Luanda to Dundo has been improved.⁷⁹ The railway line has been extensively rehabilitated by China although the Zenza – Cacuso section (215 kilometres) requires further rehabilitation. The government secured an external loan for the rail rehabilitation. It also has a long-term plan to extend the railway line east to Saurimo, and then north to Dundo (Border of DRC) and south to Luena (CFB connection). The Ministry of Transport signed a Memorandum of Understanding (MOU) with the All-American Rail Group (AARG) for advisory

services for connecting the CFL with Lubumbashi, the southern city of the DRC.⁸⁰

Intervention measures relating to the Malanje corridor include enhancing the intermodal infrastructure connections at the Port of Luanda, reorganizing the maritime terminal, modernizing the technical nautical services units and navigational aids, and developing a dry port in Viana, located on Luanda's eastern outskirts. To improve connectivity between Luanda and Saurimo and increase access to the Port of Luanda and the Luanda railway, Angola launched the "EN230 road project" to construct and rehabilitate the national road. This project is supported by a 10-year lending facility worth \$305 million from Deutsche Bank and benefits from 95 per cent insurance coverage from the African Trade Insurance Agency (ATI).⁸¹



Table 9.
Key features of the Malanje corridor

Mode	Locations or sections	Conditions
Port	Luanda	
Rail	Luanda – Zenza: 135 km	Rehabilitated
	Zenza – Cacuso: 215 km	Need rehabilitation
	Cacuso – Malanje: 74 km	Rehabilitated
	(Malanje – Saurimo: 513 km)	Long-term plan (\$1.54 billion)
	(Saurimo – Dundo (Border of DRC): 302 km)	Long-term plan (\$ 0.91 billion)
	(Saurimo – Luena (CFB connection))	Long-term plan
Road	Luanda – N'dalatando: 214 km	Good (asphalt)
	N'dalatando – Malanje: 168 km	Bad (under rehabilitation)
	Malanje – Saurimo: 564 km	Bad (under rehabilitation)
	Saurimo – Dundo (Border of DRC): 281 km	Good (asphalt)
Proposed / planned logistics platforms	Luanda, N'dalatando (Cuanza-Norte), Malanje, Saurimo (Lunda-Sul) and Lucapa (Lunda-Norte)	

Source: Compiled by the UNCTAD Secretariat based on information sourced from Ministry of Transport and Ministry of Public Works, Urbanism and Housing, 2020

Namibe corridor

Namibe Corridor links Namibe Port and Lubango, Menongue (rail stops here), and Luiana on the Zambia border. It also

connects to the SADC's Trans-Cunene corridor (which overlaps with Angola's North-South corridor) in Lubango, which goes south to Ondjiva and Santa Clara (Namibia border) in Angola, and Oshikango,

⁷⁹ Japan International Cooperation Agency (JICA), 2010

⁸⁰ Abraham, 2024

⁸¹ Deutsche Bank, 2023

Ondangwa, Tsumeb and Otjiwarongo to Walvis Bay in Namibia (Table 10). The corridors encompass the port facilities in the ports of Namibe, Tombua, and Walvis Bay.

The Moçâmedes Railways (CFM) line starts from Namibe and goes east to Menongue, with a total length of 857 kilometres. Several extension plans have been proposed, including extensions from Menongue to Southern Zambia, from Menongue to Santa Clara, and from Lubango to Santa Clara. The Lubango-Santa Clara line is more prioritized as it can be linked to Namibia's TransNamib railway in Oshikango. The Government

has a concession plan for the CFM and is finalizing the scope of the concession.

The connection of the Namibe corridor to the Trans-Cunene corridor is expected to usher in a new era of east-north economic integration, while also consolidating SADC's vision of a free trade area. The completion of this connection will be a milestone in South-South and regional cooperation, thereby attracting foreign investments and promoting trade. The connection requires substantial road rehabilitation in the Namibe-Lubango section of the Namibe corridor and the Lubango-Santa Clara section of the Trans-Cunene (or North-South) corridor.

Table 10.
Key features of the Namibe corridor

Mode	Locations or sections	Conditions
Port	Namibe	
Rail	Namibe – Lubango – Menongue: 857 km	Rehabilitated
	(Menongue – Southern Zambia: 582 km)	Not prioritized (\$1.75 billion)
	(Lubango – Santa Clara (Namibia border): 413 km)	Medium-term plan (\$1.24 billion)
	(Menongue – Santa Clara: 406 km)	Not prioritized (\$1.22 billion)
	Namibe – Lubango: 188 km	Bad (asphalt)
Road	Lubango – Menongue: 509 km	Mostly bad (asphalt)
	Menongue – Mavinga: 450 km	Good (asphalt)
	Mavinga – Neriquinha: 120 km	Bad (earth track)
	Neriquinha – Luiana (Zambia border)	Critical (earth track)
	(Part of Trans-Cunene corridor) Lubango – Ondjiva – Santa Clara (Namibia border): 380 km	1/3 critical (asphalt), 1/3 bad (earth track), 1/3 critical (earth track)
Proposed / planned logistics platforms	Namibe, Lubango, Matala, Menongue, Zambia border	

Source: Compiled by the UNCTAD Secretariat based on information sourced from Ministry of Transport and Ministry of Public Works, Urbanism and Housing, 2020

Angola's transport strategies and planning

Transport-related national policies

Transport planning is a process of examining major transport challenges and identifying a plan of action to improve the transport system's performance. In Angola, a number of different planning instruments are in force. At the national level, the National Development Plan (PDN 2023–2027),⁸² the National Industrial Development Plan of Angola (PDIA 2025),⁸³ and the National Policy for Technological Science and Innovation (PNCTI), all address the transport sector in broad and general terms. However, they do not address the sustainability of Angola's freight transport in a sufficient amount of detail or specificity.

The government of Angola approved in 2021 the National Master Plan for the Transport Sector and Road Infrastructure (Presidential Decree No. 157/21).⁸⁴ The document addresses transport infrastructure operations, maintenance, and development. The Master Plan identifies several projects and actions to be implemented in the short term (2019–2023), the medium term (2024–2028) and the longer term (2029–2038; Table 11). The responsibility for the implementation of the Master's Plan is shared between the Ministry of Transport and the Ministry of Public Works, Urbanism and Housing.

To ensure a sustainable freight transport industry, it is crucial to consider a comprehensive set of factors for effective policy and planning. These considerations include, but are not limited to:

- Constructing and maintaining secondary and rural roads to enhance connectivity;

- Manufacturing spare part and maintaining vehicles, rolling stocks, and ships to ensure operational efficiency;
- Introducing policy reforms to improve overall performance within the transportation sector;
- Developing the human resources and build their capacity for better service delivery;
- Enforcing regulations and ensure compliance to maintain standards and safety.

A formal institution shall be charged to monitor the implementation level of the Master Plan and to propose adjustment in response to new events or unforeseen situations.

Climate change policies

According to its Nationally Determined Contribution (NDC) report,⁸⁵ Angola recognizes its vulnerability to climate change and sets to adopt mitigation measures in wide-ranging sectors including energy, in which transport (civil aviation, rail, sea, and road transport) is an important element. Furthermore, Angola is aiming to ensure climate adaptation of infrastructure including transport infrastructure. Angola is committed to reducing its GHG emissions by up to 14 per cent compared to business-as-usual by 2025, with a further 10 per cent reduction conditional on support.⁸⁶ However, Angola's current NDCs do not seem to include mitigation plans in the freight transport sector.⁸⁷

The energy sector (comprising transport, as well as production/processing of hydrocarbons, electricity generation, etc., according to ENAC 2018–2030) is Angola's largest emission-producing sector.⁸⁸ Angola's total greenhouse gas GHG

⁸² Government of Angola, 2023

⁸³ Ministry of Industry and Commerce, Government of Angola, 2021

⁸⁴ Ministry of Transport and Ministry of Public Works, Urbanism and Housing, 2020, and *Diário da República*, 2021a

⁸⁵ Ministry of Culture, Tourism, and Environment, Government of Angola, 2021

⁸⁶ United Nations Development Programme (UNDP), 2023

⁸⁷ Passenger road transport has conditional mitigation plan of introducing 4,000 natural gas buses.

⁸⁸ Ministry of the Environment, Government of Angola, 2017



Table 11.
Summary of major projects set out in Angola's National Transport Plan dealing with road, rail and maritime transport

Short-term (2019-2023)	
Road	- Maintenance and rehabilitation of the road network: 3,125km of fundamental road - First phase of tollbooths and weighbridges: Massabi, Lema, Noqui, Luvo, Luau, and Santa Clara - Study and implementation of RMS (Road Management System) - Road safety study - Road user charges and roads financing options study
Rail	- Maintenance of the rail network - Rehabilitation of Zenza-Cacuso section on CFL - Feasibility study and design of CFB to Zambia link - Two new rail lines: Luanda-Benguela-Lubango, and Malanje-Saurimo - Creation of a national railway company
Maritime	- Namibe port infrastructure improvement (rehabilitation of dry bulk terminal and new container terminal) - Luanda port infrastructure improvement (enhance container handling capacity) - Phase 1 of the new Port of Caio - Working Group on the creation of a National Maritime Agency
Logistics platforms	Four logistics platforms: Soyo, Lubango, Malanje, and Luanda
All	- Study for Greenhouse Gas (GHG) Emissions Quantification in the Angolan transport sector - Design and implementation of a data warehouse system - Technical assistance to MINTRANS PPP unit
Medium-term (2023-2028)	
Road	- Maintenance and rehabilitation of road network: 1,875km of fundamental road - The second phase of tollbooths and weighbridges
Rail	Four new rail lines (2,400km): DRC (Noqui)-Soyo-Luanda, DRC (Noqui)-Uige-Malanje, DRC (Noqui)-Uige-Luanda, Malanje-Huambo-Menongue
Maritime	- Port of Luanda: enhancement of container handling capacity - Port of Soyo: Enhancement of container terminal capacity
Logistics platforms	Five logistics platforms: Benguela, Huambo, Lobito, Luena, and Uige
Long-term (2029-2038)	
Road	Maintenance and rehabilitation of road network: 1,250km of fundamental road
Rail	Four new rail lines (2,700km): Luanda-Huambo-Lubango, Lubango-Namibia (Sana Clara), DRC (Dundo)-Saurimo, Saurimo-Luena-Menongue
Maritime	- Port of Luanda: Enhance container handling capacity - New port: Barra do Dande
Logistics platforms	Six logistics platforms: Saurimo, Ndalatando, Luau, Ondjiva, Namibe, Menongue
Longer-term (beyond 2038)	
Road	Expressway network: expected to be funded by the private sector and timescales depend on the market
Rail	Three new rail lines (1,700km): Menongue-Namibia (Santa Clara), Saurimo-Luena-Menongue, Menongue-Zambia south
Maritime	- Port of Lobito: Expansion of container terminal - Port of Namibe: Improvement of the ship-to-shore capacity of commercial quay - Phase 2 of Port of Caio
Logistics platforms	Six logistics platforms: Cuito, Mbanza Congo, Cabinda, Matala, South East (Cuando Cubango), and Ondjiva

Source: Compiled by the UNCTAD Secretariat based on information sourced from Ministry of Transport and Ministry of Public Works, Urbanism and Housing, 2020



emissions measured in metric tons of carbon dioxide equivalent (mtCO₂e) reached 126.3 in 2022.⁸⁹ According to Angola's National Strategy for Climate Change 2018-2030 (ENAC 2018-2030),⁹⁰ low-carbon transport is key to reducing emissions from the energy sector (Table 12). For road transport, Angola will promote gas-fuelled vehicles and more efficient engines, legislate regulations to limit emissions on roads, and promote the production of ethanol from sugar cane in the country. Specifically for freight transport, Angola plans to provide training to logistics companies to optimize transport of goods and identify more efficient distribution routes. In rail transport, Angola plans to continue promoting railways for passenger and cargo transport as rail transport is considered less

polluting. The plan is also to replace diesel locomotives with electric locomotives, which presupposes the gradual electrification of railways. As to maritime transport, Angola plans to enhance the implementation of maritime fuel consumption monitoring rules with the guidance of the International Maritime Organization (IMO) to improve energy efficiency and reduce GHG emissions. As regards air transport, Angola is planning to improve the monitoring of fuel consumption and the estimation of GHG emissions in accordance with the International Civil Aviation Organization (ICAO) guidelines and establish GHG emissions compensation programmes at the level of the national airline. Angola also expects to promote multimodal transport.



Table 12.

Angola's National Strategy for Climate Change 2018-2030: Climate change mitigation measures and actions in freight transport

Road	• Adopt legislation limiting the import of high GHG emitting (per kilometre) vehicles • Adopt legislation that requires the incorporation of a percentage of biofuel in road transport fuel mix; promote Angola's ethanol production from sugar cane • Review existing regulations on pollution limits and the frequency of inspections of road vehicles to control GHG emissions • Promote training activities for companies in the logistics sector to optimize the cargo transported and define more efficient distribution routes
Rail	• Continue the rehabilitation of railway lines to extend the supply of public transport and freight transport in Angola • Replace diesel locomotives with electric locomotives, a measure that also presupposes the progressive electrification of the railway
Aviation	• Improve monitoring of fuel consumption and estimation of GHG emissions based on ICAO guidelines • Prepare a GHG emissions compensation programme in national airlines with a view to joining CORSIA
Maritime	• Promote the implementation of fuel consumption monitoring rules based on IMO guidelines • Promote the adoption of technical and operational measures that lead to greater energy efficiency and reduction of GHG emissions based on IMO guidelines

Source: Compiled by the UNCTAD secretariat based on the information contained in Angola's ENAC 2018-2030 Ministry of the Environment, Government of Angola, 2017

⁸⁹ World Bank, 2023d

⁹⁰ Ministry of the Environment, Government of Angola, 2017



Trade facilitation and transport digitalization strategies

Angola has benefited from the assistance of UNCTAD's Automated System for Customs Data (ASYCUDA) for the implementation of its flagship customs IT system, ASYCUDAWorld. ASYCUDAWorld optimizes customs clearance procedures and reduces the time and expense costs associated with importing and exporting, thereby facilitating regional and international trade.⁹¹ The ASYCUDAWorld system was introduced in Angola in 2017 to fully automate Angolan Customs, creating a paperless and electronic user-friendly environment. The ASYCUDAWorld system has modernized the clearance and revenue collection procedures across entry and exit points in Angola. The customs clearance process is fully digital and no paper copies of any documents are required. Payment of customs duties, charges, and other taxes is processed electronically.⁹² For further improvements, integration of key trade stakeholders, and efficiency in the process of import and export of goods, Angola also plans to implement the Single Window for Foreign Trade (Janela Única do Comércio Externo, JUCE) with the support from UNCTAD. Based on ASYCUDA technology, the Single Window integrates

partner government agencies through the digitalization of their procedures, including but not limited to the registration, licensing, monitoring and control of import and export operations, through a single computerized flow of information (Presidential Decree No. 220/18).⁹³ Meanwhile, Cargo XML, a standard for electronic communication among airlines, shippers, freight forwarders, ground-handling agents, customs, and security agencies was also implemented.⁹⁴

In 2021, the Port of Lobito was selected by IMO to be a pilot port to implement its Single Window for Facilitation of Trade (SWiFT) Project, which is financed by Singapore. The Project aims to develop a system to allow the electronic submission of all information required by government agencies when a ship calls at a port, through one single portal, namely the Maritime Single Window (MSW) system. The Port of Lobito is provided with necessary MSW software, hardware, and IT services, as well as policy advice and training.⁹⁵

Bilaterally, Angola collaborates with the United Arab Emirates to implement its digital transformation programme (Digital Angola 2024). According to the memorandums of intentions for cooperation in the transport sector signed by Angola and the United Arab Emirates, the latter will participate in Angola's strategy in the field of logistics platforms.⁹⁶

⁹¹ UNCTAD, 2023a

⁹² UNCTAD, 2021 and World Trade Organization (WTO), 2024

⁹³ Diário da República, 2018, and Angola Press Agency, 2020

⁹⁴ International Air Transport Association (IATA), 2023

⁹⁵ International Maritime Organization (IMO), 2021

⁹⁶ Embaixada da República de Angola em Portugal, 2022





Chapter 4

SFT Assessment



The current section presents the key findings derived from Angola's SFT Assessment, focusing on the three pillars of sustainable development, namely economic, social, and environmental pillars. The assessment, both quantitative and qualitative, is mainly based on three types of information sources, namely international data sources available online (e.g., UNCTAD, the World Bank, and the ILO), stakeholder responses to a survey questionnaire, and stakeholder interview results.

Indicators from international data sources provide quantitative information about the SFT performance. Twenty indicators from international sources have been used to evaluate SFT across the three sustainability dimensions.⁹⁷ The subsequent section, titled "Internationally comparable SFT scores: UNCTAD benchmark", examines Angola's SFT performance in comparison to global and African averages.

However, the availability of indicators from international data sources is constrained. For example, indicators for road or rail connectivity have limited country coverage, compared to the connectivity indicator for the maritime transport sector, namely UNCTAD's Liner Shipping Connectivity Index (LSCI). Hence, the assessment of connectivity from international data sources relies on LSCI, which exclusively covers the maritime transport sector. In addition, some indicators are available only for the entire transport sector, including passenger and freight and all modes of transport. These limitations are taken into account in the interpretation of the assessment results presented in the "Internationally comparable SFT scores" subsection below.

To address the aforementioned limitations of the international data sources, a stakeholder survey was conducted to obtain more comprehensive and granular insights into Angola's freight transport system and its SFT performance. The results and analysis of the survey-based

scores are detailed in the section below titled "Survey-based SFT scores".

The open-ended question following the closed-ended questions in the stakeholder survey encouraged respondents to freely express their opinions about the respective SFT categories (e.g., infrastructure quality and capacity). The responses to the open-ended questions of the survey and interviews are used to identify major challenges and solicit stakeholders' perspectives on causes, impacts, and policy recommendations. The analysis and policy recommendations are presented in the "Qualitative assessment" and "Policy recommendations" sections of this SFT Assessment report.

Quantitative assessment and scoring

Internationally comparable SFT scores: UNCTAD SFT index

UNCTAD has developed a robust methodology that assesses the sustainability of countries' freight transport in an internationally comparable manner (see Annex1 for additional information relating to the UNCTAD SFT Assessment methodology, approaches, and tools). In the following analysis, the internationally comparable SFT scores and their underlying indicators are used to assess

⁹⁷ For example, the International Road Federation World Road Statistics Data Warehouse provides road density information for over 150 economies, reflecting the state of road infrastructure development.

Angola's SFT performance in comparison to global and African economies,^{98, 99}

The SFT Assessment applied to Angola's freight transport system result brings to an important conclusion. Compared to the world and the African average scores, today Angola ranks relatively low in terms of sustainable freight transport performance. Taking the overall score that combines economic, social, and environmental

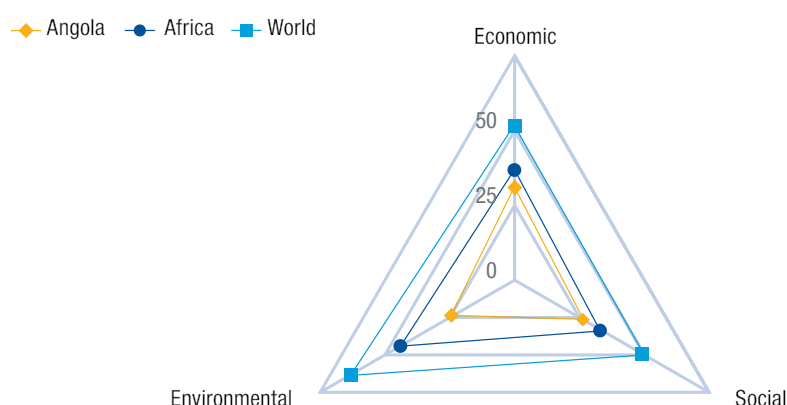
dimensions of sustainable freight transport, Angola comes in the 152nd position on a total sample of 165 countries worldwide (Figure 9). Angola shows low scores in the three pillars of sustainable freight transport. That said, scores achieved by Angola's freight transport as regards the social and environmental sustainability dimensions, are found to be significantly lower than the African equivalent average scores.



Figure 9.
Angola's SFT ranks and scores from international data sources, across the economic, social, and environmental pillars, in comparison to World and African averages

Total rank	Economic rank	Social rank	Environmental rank
152	141	152	143

SFT scores from international data sources



Source: UNCTAD calculation based on twenty indicators from international data sources (see Annex 1 for the detailed data list), 2024.

Note: Countries with the worst performance globally receive a score of 0, while countries with the best performance attain a score of 100.

The low performance levels of Angola's freight transport sector relating to social sustainability are largely explained by the current safety and labour conditions (Figure

10). Angola's road traffic death rate was 30.7 per 100,000 people in 2019, which was significantly higher than the world median (12.8 per 100,000) and the African

⁹⁸ The internationally comparable SFT scores are calculated with values of the underlying indicators in respective SFT areas. For example, the SFT score for transport infrastructure summarizes three indicators, namely, road density, road paved ratio, and infrastructure dimension of World Bank's Logistics Performance Index (LPI).

⁹⁹ When evaluating the underlying indicators for Angola, UNCTAD methodology compares Angola's values to median values of the world and African economies because the median is less influenced by skewed data and extreme values, making it a more reliable measure for this comparison. In contrast, average values are used for the comparison of the internationally comparable SFT scores, because the score calculation process addressed issues related to skewed distribution and extreme values. The censoring and log-transformation during the score calculation are supposed to address the skewness and extreme values.

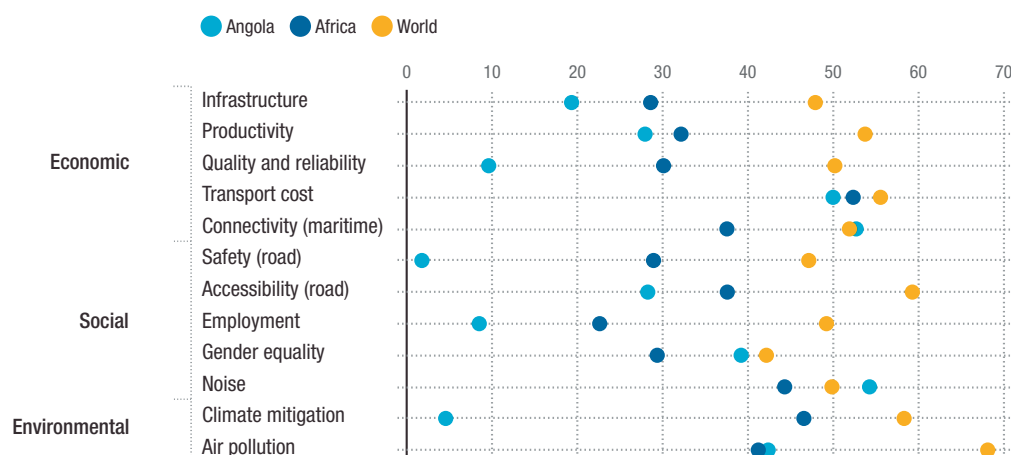
median (18.0 per 100,000) (Table 13).¹⁰⁰ Monthly earnings in Angola's transport sector, one of the major indicators informing about the underlying labour conditions,

was estimated at \$399 (purchasing power parity in 2019). These earnings were lower than the median values at the world (\$1,122) and African (\$444) levels.¹⁰¹



Figure 10.

Angola's SFT scores from international data sources, across twelve categories of the economic, social, and environmental pillars, in comparison to World and African averages



Source: UNCTAD calculation based on twenty indicators from international data sources (see Annex 1 for the detailed list), 2024.

Note: The connectivity score exclusively reflects the connectivity of the maritime transport sector, while the safety and accessibility scores only pertain to safety or accessibility of the road transport sector, due to limited data availability. Countries with the worst performance globally receive a score of 0, while countries with the best performance attain a score of 100.

Under the environmental pillar, Angola's freight transport sector is lagging behind in terms of climate mitigation. Over the 2016-2021 period, the level of GHG emissions from Angola's transport sector (7.5 million tons CO₂ equivalent) was higher than the world median and African median of GHG emission levels (6.1 million tons and 2.0 million tons, respectively). Even if adjusted for the size of the transport sector activity, GHG emissions intensity in Angola's transport sector was 3.3 kilogram per dollar of value-added, which is more than double the world median (1.5 kilogram per dollar) and approximately 60 per cent higher than African median (2.0 kilogram per dollar).¹⁰²

Under the economic pillar, Angola's freight transport scored significantly lower than the African average on the infrastructure criteria and on the quality and reliability criteria. In contrast, Angola's freight transport achieved a higher score than the world average on the connectivity criteria. In terms of infrastructure, the density of Angola's road transport network was 0.06 kilometres per square-kilometre in 2019, lower than the world median (0.29 kilometres per square-kilometre) and the African median (0.09 kilometres per square-kilometre).¹⁰³ In terms of quality and reliability, the assessment is based on, "logistics competence and quality" and "timeliness" as defined under the World Bank Logistics

¹⁰⁰ Institute for Health Metrics and Evaluation (IHME), 2020

¹⁰¹ International Labour Organization (ILO), 2024

¹⁰² European Commission et al., 2022a

¹⁰³ International Road Federation (IRF), 2023

Performance Index. Angola achieved low scores (2.3 and 2.1, respectively in 2023) compared to almost all other countries.

Regarding connectivity, Angola scored relatively high in terms of the Liner Shipping Connectivity Index compared to other African countries. Luanda Port is the major contributor to Angola's connectivity in the global shipping network.¹⁰⁴ Angola has high bilateral liner shipping connections to South Africa, Congo, China, Singapore, Malaysia, Spain, Belgium, Cameroon, Portugal, and Ghana.¹⁰⁵ However, Angola's shipping connectivity has been decreasing from Q2 2020 to Q2 2022. In 2023, Angola held the 70th position in

terms of its liner shipping connectivity in a total of 174 countries. This is partly due to reduced connections suffered during the global logistic disruptions in the aftermath of the COVID-19 pandemic.¹⁰⁶

Angola's relatively low performance in terms of the economic pillar under the SFT Assessment is consistent with the country's low ranking observed when looking at its Logistics Performance Index (LPI). Angola ranked 134th out of 139 countries and lagged behind Sub-Saharan Africa. The biggest challenge for Angola relates to customs and infrastructural issues as well as timeliness.

Table 13.
Selected SFT-related indicators

	Angola	World median (average)	African median (average)
Economic pillar: Infrastructure			
---- Road density (km/km ²)	0.06	0.29 (0.84)	0.09 (0.26)
---- Infrastructure (LPI score)	2.1	2.7 (2.9)	2.3 (2.4)
Economic pillar: Service quality and reliability			
---- Logistics competence and quality (LPI score)	2.3	2.9 (3.0)	2.5 (2.6)
---- Timeliness (LPI score)	2.1	3.2 (3.3)	2.7 (2.8)
Social pillar: Safety			
---- Traffic death rate (deaths per 100,000 people)	30.7	12.8 (15.0)	18.0 (20.4)
Social pillar: Labour conditions			
---- Transport sector monthly earnings (\$ in PPP)	399	1,122 (1,587)	444 (757)
Environmental pillar: Climate mitigation			
---- Transport sector GHG emissions level (million tons-CO ₂ eq)	7.5	6.1 (41.3)	2.0 (7.4)
---- Transport sector GHG emissions per value added (kg/\$)	3.3	1.5 (1.7)	2.0 (2.2)

Source: UNCTAD calculation based on international data sources, 2024.

Note: For the complete list of twenty indicators, see Annex1.

¹⁰⁴ UNCTAD, 2023b

¹⁰⁵ UNCTAD, 2023c

¹⁰⁶ UNCTAD, 2023d

Survey-based SFT scores

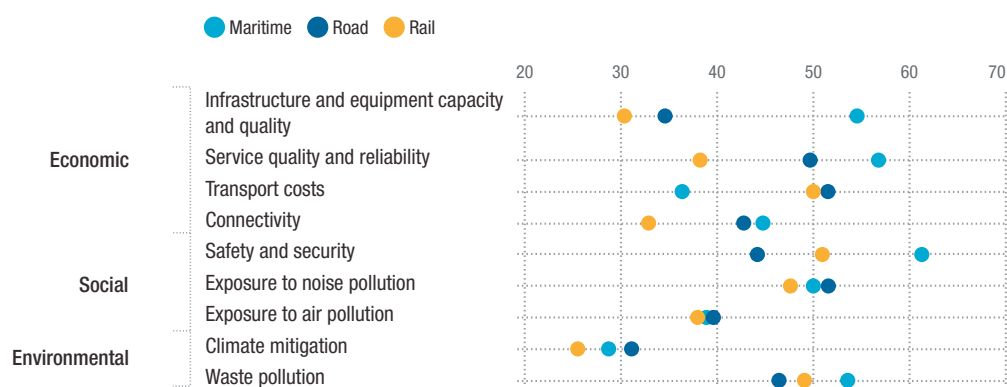
The scores calculated based on information and input received in response to the stakeholders' survey questionnaire confirm that Angola's freight transport systems perform poorly when it comes to climate change mitigation and road safety and security. Angola's freight transport sector's low performance in terms of infrastructure and equipment is attributable to the road and rail sectors (not to ports; Figure 11). The rail sector also contributed to the poor performance relating to service quality and reliability. Although Angola's maritime connectivity was considered to be good, by the respondent stakeholders, its rail connectivity on the other hand was perceived to be low. According to the responses received, the maritime sector was performing well across most of the SFT indicators and criteria although Angola's score relating

to transport costs was low due to several shipping and port fees (see Table 14).

It should be noted that the low score for climate change mitigation is mainly due to insufficient implementation of data collection and monitoring systems. Stakeholders did not consider the level of GHG emissions to be problematic. This is because Angola's freight transport GHG emissions absolute levels were not necessarily high. This perception is also consistent with the above analysis that draws upon widely available SFT indicators from international sources. However, as the emission intensity relative to the sector's economic output was high, the results of the present Angola's SFT Assessment underscore the need to strengthen emission data collection and monitoring systems as well as to enforce environmental regulations that aim to avoid an increase in total GHG emissions.

Figure 11.

Angola's survey-based SFT scores, across nine categories of the economic, social, and environmental pillars, breakdown by mode of transport



Source: UNCTAD secretariat calculations based on stakeholders' responses to the survey questionnaire, 2024.

Note: Worst performance (where all stakeholders answered "poor" performance) is indicated by a score of 0, and best performance is indicated by a score of 100. Six SFT categories (i.e., accessibility and affordability, employment, gender equality, scenic beauty and cultural preservation, climate resilience and adaptation, and waste pollution) are not available for the breakdown by mode of transport because questions on these categories are only about all transport modes. As slightly different questions are used for each transport mode (e.g., questions about "quality of existing railways" vs "quality of existing roads"), comparison across transport modes requires careful interpretation.

Responses to the survey revealed that a huge gap is separating the public and private sector perceptions (Figure 12). The public sector seems to be more

optimistic than the private sector across all the sustainability indicators and criteria, except for noise exposure. The largest divides prevail in terms of accessibility and

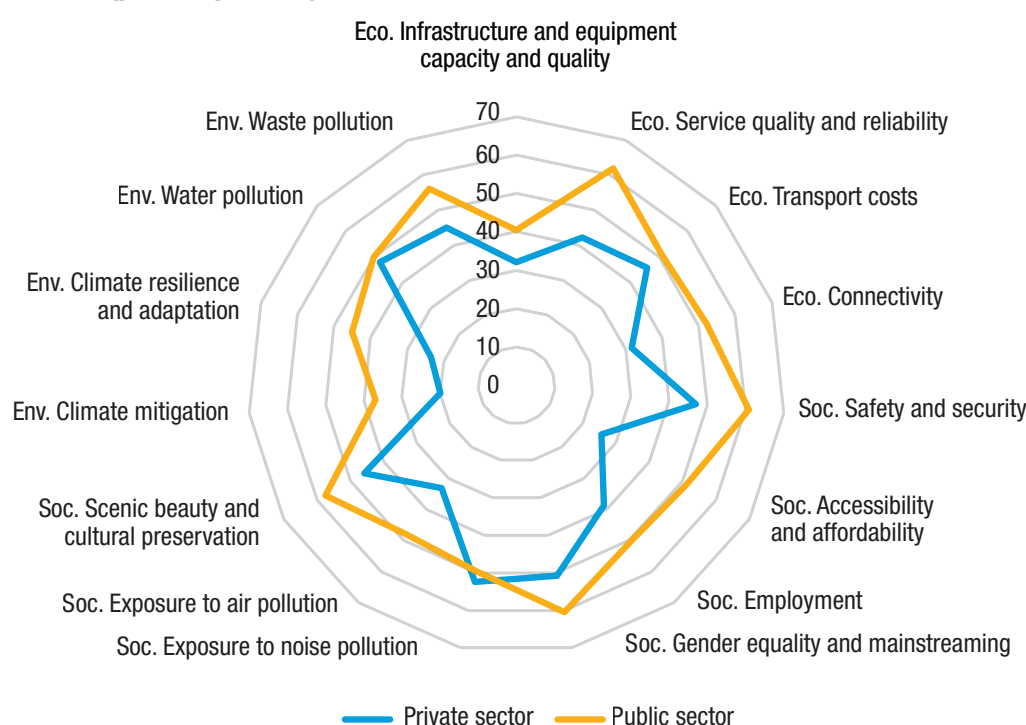
affordability, followed by climate resilience and adaptation, and connectivity. This implies that more private sector information, consultation and involvement is required for better transport planning to improve

the freight transport sector sustainability performance. In contrast, responses whether received from male or female respondents have shown little divergence.



Figure 12.

Angola's survey-based SFT scores, across 15 categories of the economic, social, and environmental pillars, breakdown by respondents' sector (public/private)



Source: Calculated by the UNCTAD secretariat based on stakeholders' responses to the survey questionnaire, 2024.

Note: Worst performance (where all stakeholders answered "poor" performance) is indicated by a score of 0, and best performance is indicated by a score of 100.

Summary of the quantitative assessment

- The following table summarizes the categories linked to sustainability where Angola's freight transport is showing low-performance levels according to data on sustainability criteria/

indicators that are widely available and published by international sources as well as information and input obtained through the SFT survey questionnaire administered by the UNCTAD secretariat to Angola's freight transport stakeholders.



Table 14.
Key findings of the quantitative assessment

SFT categories	Identified challenges
Economic pillar	
Infrastructure	• Low road and rail network density • Low quality of existing roads and railways, rolling stocks, and infrastructure along corridors • Insufficient implementation of regulations aimed at preventing road damages • Limited availability of logistical facilities along the corridors
Transport costs	• High road freight transport costs • High charges/surcharges by ports and shipping companies • High inland and logistics costs and border crossing costs
Quality and reliability	• Low availability and reliability of rail freight transport service • Long waiting times during modal shifts • The difficulty of tracking and tracing cargo across different transport modes
Connectivity	• Low connectivity of railways from production sites • Low port-hinterland connectivity • Low cross-border connectivity of corridors
Social pillar	
Safety and security	• High rate of deaths caused by road traffic and accidents • Insufficient implementation of safety measures for vehicle operations
Accessibility and affordability	• Low access to affordable all-weather transport and services for rural/ production areas • Low access to affordable logistic facilities and services for producers/ manufacturers/ SMEs • Insufficient implementation of strategies/plans to improve rural transport and logistics accessibility and affordability
Labor condition	• Low wage levels compared to the African average • Low incentives to make the sector more attractive for employment • Insufficient supply of skilled labour
Exposure to noise pollution	• Insufficient implementation of regulations and technical measures aimed at reducing/managing noise levels (ports, roads, railways)
Exposure to air pollution	• Insufficient monitoring, evaluation, and reporting on air pollution (ports, roads, railways) • Insufficient implementation of regulations/measures aimed at reducing air pollution (ports, roads, railways)
Environmental pillar	
Climate mitigation	• High GHG emission levels and intensity compared to median values of the world and African economies • Insufficient collection of data that enables the measurement of GHG emissions from ports, roads, railways, and across corridors • Insufficient implementation of regulations and measures aimed at reducing/managing GHG emissions from ports, roads, railways, and across corridors
Climate resilience and adaptation	• Insufficient monitoring and evaluation of climate-related vulnerability, risks, and impacts • Insufficient implementation of climate resilience and adaptation strategies/ plans/ measures • Insufficient availability of finance for implementing climate resilience and adaptation strategies/plans/ measures
Waste pollution	• Insufficient Implementation of waste management regulations and measures for road freight transport

Source: Compiled by the UNCTAD secretariat, 2024.



Qualitative assessment

The qualitative assessment in this SFT Assessment of Angola's freight transport builds on the responses to open-ended questions of the survey questionnaire administered to stakeholders as well as on the information and input gathered by way of interviews with the freight transport stakeholders. The survey questionnaire and the interviews allowed for more granular information about the challenges faced by transport stakeholders in Angola to be identified. They also helped to narrow down their causes and impacts. The key findings of the qualitative assessment are set out below.

Assessing the economic pillar of sustainable freight transport

Multiple challenges are combined to undermine the performance of Angola's freight transport under the economic pillar of SFT. These challenges span infrastructural and equipment issues, reduced productivity, concerns regarding service quality and reliability, connectivity barriers, and high transport costs.

Transport Infrastructure, equipment, and fleet capacity and quality

i. Road infrastructure and vehicles:

- **Predominance of road freight transport:** Road transport is the primary

mode for the overland movement of cargo because it is more reliable and widely accessible compared to rail, coupled with the absence of standardized and seamless interconnections between railway systems, commonly known as “modular interconnections”.

- **Generally poor road conditions:** A significant number of primary, secondary, and tertiary roads fall below minimum quality standards, with many in poor condition. This is attributable to the lack of proper maintenance and the impact of periodic torrential flooding. This has several negative implications, including increased fuel consumption, emissions and tyre damages, longer transport time, higher transport costs, and more accidents.¹⁰⁷
- **Maintenance and responsibility:** The qualitative assessment signals a lack of governance of road rehabilitation projects, leading to higher maintenance costs, delays in implementation, and neglected roads. This was also reflected in some other reports and analyses carried out.¹⁰⁸
- **Truckload control and axle regulation compliance:** Weighbridges, which are important equipment to enforce axle load limits and prevent road damages,¹⁰⁹ are inactive or non-existent in Angola.¹¹⁰ The presence of only a few weighbridges in Angola results in inadequate control of truck weights, which also leads to road damage.¹¹¹ This also affects the competitiveness of Angolan trucks in

¹⁰⁷ The impacts on emissions and accidents are also underscored by the high emission intensity (3.3kg/\$) and traffic deaths rate (30.7 deaths/100,000 people) indicated in the quantitative assessment (see Internationally comparable SFT scores section).

¹⁰⁸ World Bank (Benmaamar et al., 2020) indicated concerns including poor road sector governance (i.e., inefficient spending and implementation of road maintenance) and little attention to complementary and municipal roads.

¹⁰⁹ The relationship between axle weight and inflicted pavement damage is not linear but exponential. For example, a 8.16 ton single axle causes over 12 times more damage to a pavement than a 4.54 ton single axle (Pavement Tools Consortium, n/d"container-title":"Pavement Interactive", "language":"en-US", "title":"Equivalent Single Axle Load", "URL":"https://pavementinteractive.org/reference-desk/design/design-parameters/equivalent-single-axle-load/", "author":{"family":"Pavement Tools Consortium", "given":"",""}, "accessed":{"date-parts":["2024", 2, 11]}}, "schema":"https://github.com/citation-style-language/schema/raw/master/csl-citation.json").

¹¹⁰ Logistics Cluster, 2022

¹¹¹ A stakeholder indicated that only one weighbridge was operational in Luanda. Also, a report by TTTFP showed that only one weighbridge (which was on the Humpata-Lubango road) was operational as of February 2017, and no enforcement was operational (Tripartite Transport & Transit Facilitation Programme (TTTFP),

neighbouring countries due to SADC regulations. Angolan trucks, which are predominantly 2-axle, are at a competitive disadvantage to 3-axle trucks as they need to reduce load to operate in neighbouring countries. In addition, some stakeholders raised a concern regarding the non-compliance of imported 3-axle trucks with the regulation on the length between the axles.

- **Lack of spare parts for truck maintenance:** Insufficient supply of spare parts causes disruptions in delivery schedules and raises safety risks, even though vehicle dealers are supposed to provide technical assistance and spare parts from the countries of origin. In addition, as most of the spare parts are imported, it increases truck maintenance costs and transport prices, especially during currency depreciation.
- **Parking slots and rest areas:** Some stakeholders raised a concern regarding the insufficient truck parking spaces and rest areas that would ensure rest hours as required by the SADC regulation. Drivers tend to park in safe areas such as near police stations. However, lack of proper parking can cause congestion (when trucks park in non-designated areas, especially in or near already busy or critical zones they can obstruct traffic flow), accidents, as well as gender-related issues as safety concerns are more serious for female truck drivers when they are compelled to park and rest outside designated safe areas.

ii. Railway infrastructure:

- **Performance and challenges:** Despite post-civil war rehabilitation, the railways suffer from poor performance due to inadequate maintenance, poor services, and insufficient funding, including a lack of fuel and spare parts for daily operations.
- **Positive developments:** The development of PPPs, such as the

30-year concession agreement for Benguela Railways, is considered a step forward, with the potential to improve the reliability and performance of the railways. The Government has also a concession plan for the CFM and is finalizing the scope of the concession.

iii. Port infrastructure:

- **Strengths:** Stakeholders responding to the survey questionnaire and the interview questions noted that Angola's port infrastructure was robust, with investments and policies contributing to adequate operations. Angola utilizes concessions (e.g., for terminal operations) to improve efficiency, and a new concession is ongoing in Namibe port.
- **Challenges:** Some terminals, such as in the Port of Luanda, lack essential equipment like scales, leading to potential damage to cranes, and trucks and accidents due to overweight loads. The Port of Luanda will make it mandatory for every terminal to have scales. However, insufficient space in some terminals can be a bottleneck for their installation.

iv. Logistics platforms and dry ports:

- **Opportunities and government initiatives for logistics platforms:** By providing a range of related services, including access to rail and road networks, port facilities, warehousing, consolidation points, and other logistics support (e.g., truck parking, container parking, fuel station, terminals for minerals, cold storage, customs, immigration), logistics platforms facilitate multimodal transport and have the potential to enhance and stimulate trade. The Angolan government is proactively promoting a network of logistics platforms (around 30 are planned and six are underway).
- **Challenges affecting logistics platforms:** However, the qualitative assessment reveals that the effectiveness

2017). The lack of weighbridges also resulted in the Angola's low compliance rate (6 per cent) with TPTT's weighbridge requirement reported in the Transport Master Plan.

of these platforms can be hampered by inefficiencies in rail and road transport that affect the seamless flow of goods. Also, logistics platforms will be mostly used for export, as most import cargo would directly go to customers from ports.

- **Dry ports – strengths, challenges, and opportunities:** The presence of operational dry ports, for example, Viana, Panguila, and Via Expresso in or near Luanda, is an important asset in Angola's logistics infrastructure. However, there are challenges, mainly due to the lack of important hinterland connections, such as the lack of a direct rail connection to the Viana dry port in the south of Luanda, despite its proximity to the CFL rail link. Consequently, truck operators prefer not to use the dry port because moving cargo from the Luanda port to the dry port by truck will add transport costs. Opportunities exist, particularly along the CFL railway line between Luanda and Malanje, which offers both space and potential for the establishment of additional dry ports.

Transport connectivity

- **Road transport regional connectivity:** Inefficient connectivity of regional road transport networks hampers cross-border trade, which also affects neighbouring countries. Poor road conditions pose a challenge to efficient cross-border transport.
- **Rail transport regional connections:** Currently, only the CFB (Caminho de Ferro de Benguela) maintains regional rail transport connections, primarily with the DRC and Zambia.
- **Maritime transport regional connectivity:** Stakeholders noted that the maritime transport sector was hindered by inadequate regional connectivity, including a lack of regional shipping lines. Cargo often needs to transit through European countries, leading to inefficiencies.
- **Port-hinterland gaps:** Stakeholders observed that there were no major issues

regarding connecting hinterland roads to ports. Trucks primarily handle the transport of cargo from ports. There may be some gaps, particularly in rail connections, including to dry ports.

- **Road-rail transport integration challenges:** Road-rail transport integration is limited in efficiency, mainly due to the poor performance of railways and the lack of multimodal connectivity and facilities along rail lines. Consequently, transporters often prefer the road-only transport option.
- **Rail-airport cargo transport potential:** There is potential to improve cargo transport efficiency if the railway line linking Luanda to the new airport is extended to the airport's cargo terminal.
- **Connectivity between production and consumption areas:** Inadequate secondary and tertiary road transport networks are a major obstacle to transporting goods from remote agricultural and mining areas. This problem results in the isolation of production and consumption areas, affecting trade and access to markets.

Transport costs

- **High road freight transport costs:** Stakeholders stressed the poor road conditions and limited service availability leading to increased transport costs. This includes higher maintenance costs for damaged tyres and increased fuel consumption. In addition, trucks often spend more time on the road, resulting in higher logistical support costs. Furthermore, the difficult working environment for transporters, characterised by poor roads, insufficient logistical support, and long driving times, limits the number of reliable transporters. Another factor is the lack of sufficient export volumes, which means that on most of the return journeys from the inland cities to the coast ports, trucks travel empty, further increasing transport costs for imported cargo to move from ports to inland areas.

- **Lower rail freight transport costs:** Rail transport generally offers lower transport prices than roads, despite inflexibility and reliability issues.¹¹² However, the price competitiveness of the CFL is limited compared to the other railways partly due to their limited rail length¹¹³ as the rail length is one of the key factors that determine rail transport competitiveness.
- **High indirect costs in ports:** Stakeholders raised a concern regarding the high indirect costs that result from terminal charges and other surcharges and fees such as storage and demurrage fees within ports. The high terminal fees are partly due to insufficient transshipment volumes, especially exports, as well as high fuel costs. Ports are trying to reduce fuel costs by building power stations. In contrast, storage fees are necessary to avoid port congestion as importers use port spaces to store their cargo rather than using other, more expensive storage facilities. Luanda has several dry ports (e.g., Sogester, Multipaque, Unicargas) as extensions of the terminals, but moving goods from the port to the dry ports requires trucks and adds to transport costs hence the need for a well-structured port logistics system and strategy.
- **Other factors affecting freight costs:** The depreciation of the real exchange rate is partly responsible for the high costs of imported fuels and spare parts). An insufficient supply of electricity (i.e., lack of grid in many locations) increases fuel costs in logistics facilities. Export duties on imported contents of manufactured goods, unofficial customs charges by the neighbouring countries, and the lack of transparent pricing mechanisms within the

freight transport sector are also pointed out, which can create uncertainty among stakeholders and affect transport costs.

Transport productivity

- **Roads:** The poor quality of road infrastructure has been identified as a significant constraint on productivity, with service providers focusing on service delivery rather than productivity improvement.
- **Railways:** Rail transport systems face similar productivity challenges, with low average speeds, poor quality of rolling stock, limited services, and lack of smooth intermodal transit platforms, making them less attractive than road transport.

Transport service reliability and quality

- **Road:** Road transport reliability is compromised by several factors, including the poor condition of roads and bridges, as well as the high incidence of the informal sector, even though some formal truck operators can assure their customers to some extent of the reliability of the transport service. Informal operators face greater challenges, operating in an uncertain environment with issues related to the lack of insurance and emergency support during accidents, and truck reliability. Customers of informal operators are not well protected in case of bankruptcy. In some cases, informal operators deviate from agreed routes and schedules to take more cargo and passengers, causing transport delays.
- **Rail:** The qualitative assessment shows that reliability of the rail transport system is hindered by persistent problems

¹¹² Transport prices of the CFL, CFB, and CFM were AKZ 546 per kilometre (approximately \$0.86 based on exchange rate in 2021), AKZ 29 to 121 per kilometre (approximately \$0.05 to 0.19, varied rates depending on route with the lowest rate for Luena-Luau and the highest rate for Lobito-Huambo), and AKZ 205 per kilometre (approximately \$0.32), respectively, for twenty-foot containers in 2021. The road transport prices from Luanda were AKZ 315 to 2,554 per kilometre (approximately \$0.50 to 4.04, different rates depending on destination with the lowest rate for Luanda Norte and the highest rate for Bengo), with average of AKZ 762 per kilometre (approximately \$1.21).

¹¹³ The total length of the CFL is only 424 kilometres and the half of them (215 kilometres) needs rehabilitation. In contrast, the total length of the CFB is 1,344 kilometres inside Angola and 1,866 kilometres if DRC section is included. Total length of the CFM is 857 kilometres.

such as fuel shortages, a lack of spare parts, and insufficient maintenance. The rail system's low speed can also reduce the quality of services.

Assessing the social pillar of sustainable freight transport

The qualitative assessment underscored some key issues that are critical for the social sustainability performance of Angola's freight transport. These include safety, security, accessibility, affordability, employment, and gender considerations across various transport modes.

Safety and security

- **Road transport safety:** Road accidents in Angola are high¹¹⁴ due to factors such as poor road conditions¹¹⁵, inadequate vehicle maintenance (especially in the informal sector), insufficient parking spaces for drivers to rest or sleep, overspeed, and lack of law enforcement, according to the assessment.¹¹⁶ Some truck operators in the formal sector use Global Positioning Systems (GPS) to track their vehicles and monitor driving speed and driver rest periods. In the informal sector, compliance is generally very low¹¹⁷, the operating condition of most vehicles is poor, and most drivers do not have adequate training. The causes of some accidents are not properly determined through evaluation by qualified professionals, given the lack of engineering capacity. Meanwhile, the causes of certain accidents are not always clear.
- **Cargo security:** Responses to the survey questionnaires and interviews with stakeholders revealed that cargo security is not perceived as a major problem. Cargo movement is generally

safe across all modes of transport, with investments in GPS tracking for trucks and containers improving security.

- **Rail transport safety and security:**

Rail transport safety is a major concern, namely with the CFL which is facing challenges with frequent pedestrian accidents primarily due to unauthorized railway crossings and the establishment of informal markets along the rail tracks, particularly in urban areas like the stretch between Bungo and Baia in Luanda. Additionally, the theft of vital rail infrastructure components such as rail lines, electric cables, and signalling systems further exacerbates safety and security challenges.

Accessibility and affordability

- **Limited accessibility and low affordability in rural areas:** Availability of transport services is limited, and affordability is low in rural areas as the poor state of transport infrastructure and services, including access to all-seasoned roads in rural areas, leads to high maintenance costs (e.g., damages to tyres and imports of spare parts) and fuel costs. Some stakeholders indicated that informal police fees add to these costs. In this context, only informal transport operators are willing to serve rural villages, and they have to pass on the high maintenance and operating costs to customers. Due to the lack of scales, their transport costs are higher than the formal sector which operates mainly in urban areas and on main roads.
- **Lack of information:** The low affordability is exacerbated by the lack of detailed and systematic research or reliable data on freight transport

¹¹⁴ Traffic death rate is 30.7 per 100,000 people in Angola, which is higher than world average (15.0) and African average (19.6), as indicated in quantitative assessment (Internationally comparable SFT scores).

¹¹⁵ Angola adopted SADC safety norms for road construction (e.g., size of pavement, cross walk and pedestrian bridges) but many roads require rehabilitation to comply with these rules.

¹¹⁶ Another road safety issue raised in the literature is landmines left over from the civil war outside urban areas. During the rainy season, the situation is worse as the landmines may be displaced outside the recognized minefields (Cross Border, 2021).

¹¹⁷ For example, many informal sector operators drive trucks at night even without lights.

prices in rural areas because the lack of information prevents a clear understanding of fair transport prices.

Employment

- **Lack of skilled labour:** Insufficient supply of skilled labour, particularly, persons with machine maintenance and operation capacity, is one of the major concerns stated by stakeholders as it results in delays in road maintenance and deterioration of vehicle conditions. In the informal sector, some truck drivers do not have a license and lack proper driving skills, leading to safety concerns and obstacles to eco-friendly driving. The problem is more serious in rural areas and the government is facing a challenge to get qualified human resources for the new logistics platforms in rural areas.
- **Limitation of employment statistics:** The qualitative assessment also underscored a lack of reliable and detailed statistics on employment in the transport sector. The National Statistics Institute (INE) conducts employment surveys, but their reports do not provide a sufficient breakdown of the transport sector. This could be attributed in part to issues with sample design and the processing of microdata by the International Labour Organization (ILO), which results in unreliable figures for certain categories. Angola's Ministry of Transport also keeps track of the number of workers, but the coverage of the informal road transport sector can be limited as they rely on administrative data.

Gender

- **Low female representation in road and rail transport sectors:** Due to the nature of work and cultural reasons, the freight transport sector is not very attractive to female workers, as noted by some survey respondents. National employment statistics show that in

2021, 99 per cent of transport sector employment was accounted for by male workers.¹¹⁸ It is particularly so in the road and railway sectors. In road transport, the number of females working as drivers, engineers, or technicians is very low. Some efforts to bridge this gap are evident in initiatives like the training centre in Luanda, where approximately 300 women have been trained in engine engineering. In the railway industry, the majority of women employed occupy administrative roles, with minimal representation in technical and operational positions.

- **Efforts to promote female participation in ports:** Ports are also a male-dominated sector, with around 70-80 per cent of the workforce being male workers (see Figure 7 in Transport sector profile section).¹¹⁹ But Angolan ports are promoting female participation, including in some technical areas like crane operators, maintenance, and technical engineering. Female participation in ports is going through phases as retired men have gradually been replaced by women. Some port stakeholders indicated that women have high qualifications such as high technical degrees and competence, and it is not difficult to find female engineers from university graduates. Some ports organize promotional events such as Women's Day.

Noise pollution exposure

- **Lack of data and supervision:** Even though noise pollution has not been a major problem in Angola, it is expected to worsen in the future due to rapid population growth and urbanization. Some stakeholders indicated that several instruments exist, including sound dampers and speed limits for railways. However, the absence of noise level measurement and lack of incentives and supervision for noise reduction were also reported by stakeholders.

Air pollution exposure

¹¹⁸ See Overview of transport sector profile.

¹¹⁹ Ministry of Transport, Government of Angola, 2021

- **Non-compliance with relevant regulations:** The long hours of road haulage, which often exceed legal limits (in the early morning or outside normal working hours), contribute to increased air pollution. Non-compliance with these regulations is exacerbated by the lack of stringent measures (e.g., the imposition of high fines).
- **Lack of vehicle inspection:** A concerning absence of inspections on vehicle" exhaust and pollution control systems allows a substantial number of deteriorated vehicles to continue operating, exacerbating air pollution.
- **Lack of air pollution monitoring mechanisms and investments:** Stakeholders noted that there is no monitoring mechanism for air pollution. Therefore, there is a lack of data available for analysing pollution levels and planning interventions. Additionally, there is an evident shortfall in the technical investments necessary to improve air quality monitoring, which are crucial steps needed across various transport infrastructures such as port terminals, roadways, and railway system.
- **Absence of supporting legislation:** The lack of supportive legislation, particularly on fuel quality and the lack of effective monitoring and inspection further hamper efforts to address air pollution.

Scenic beauty, cultural and natural preservation, and biodiversity

- **Lack of consideration for landscape and biodiversity factors:** The integration of landscape and biodiversity considerations into transport infrastructure projects in Angola has been inadequate, primarily due to resource constraints that favour economic development over environmental protection. As a result,

critical biodiversity ecosystems, such as the Okavango, have experienced gradual degradation due to commercial development activities.¹²⁰

Assessing the environmental pillar of sustainable freight transport

Environmental protection, especially in terms of climate mitigation, emerged as the lowest-performing area in the stakeholder survey, indicating that it has not been a priority focus in Angola. Both the government and the private sector have prioritized economic issues, with national strategies assuming that environmental and social dimensions will naturally improve with economic growth.

Climate change mitigation

- **Emissions from the transport sector:** The transport system in Angola is a significant contributor to GHG emissions, relative to its size of activity.¹²¹ The survey findings indicate that there have been minimal efforts to mitigate these emissions. Furthermore, inadequate information hampers thorough analysis in this area. Oversight of related actions falls under the responsibility of the ministerial department responsible for environmental issues, highlighting the need for enhanced collaboration and coordination to address this challenge.
- **Impact of poor road transport infrastructure:** It was noted that Angola's roads are in poor condition, resulting in increased fuel consumption, battery usage, and tyre damage for trucks, exacerbating emissions and contributing to climate change. Despite a road rehabilitation programme after the Civil War, insufficient attention has been paid to road standards. Although Angola has adopted SADC standards

¹²⁰ Euronews, 2021

¹²¹ Transport sector contributed 10.5 per cent of total GHG emissions in Angola in 2019, which is about 10 times higher than the sector's contribution to GDP (i.e., 1.6 per cent in 2022; European Commission et al., 2022a and National Statistics Institute (INE), Government of Angola, 2023a).

for road construction, many roads do not meet these requirements.

- **Impact of inefficient road vehicles:** Stakeholders indicated that there was an age limit for imported used trucks but that there was no legislation for fuel standards. Imported trucks are usually selected based on economic factors such as low import prices, with energy efficiency being a secondary consideration. In addition, several truck drivers are unaware of efficient driving techniques or lack training, as some do not even have a driving licence, especially in the informal sector.
- **Impact of inefficient rolling stocks:** All railways use diesel engine locomotives and some of the existing rolling stocks are old and not fuel-efficient. The CFL lacks funding to invest in fuel-efficient rolling stock, while the Lobito Atlantic Railway is committed to investing in 1,555 wagons and 35 locomotives. A study for electrification is budgeted but it is only a part of the CFL from Bungo station to the new airport.
- **Efforts by ports to reduce GHG emissions:** In response to global concerns about climate change, ports in Angola are actively promoting the adoption of strategic measures to address environmental challenges. Concession agreements with ports include green elements such as electrical cranes and more energy-efficient fuels. Port of Luanda is working to reduce emissions and be fuel efficient. Energy supply to vessels in port can be provided by the port grid, and they are planning to build a new power station that will contribute to clean energy. Luanda Port also plans to use more wind power in terminals.

Climate change resilience and adaptation

- **Adaptation of road transport infrastructure:** Adaptation of road transport infrastructure to climate change is a significant challenge for Angola as its roads have been frequently damaged by severe floods. This challenge is recognized by the NDC and the ENAC 2018-2030 but dedicated information for adaptation of road transport infrastructure, such as materials for road construction and drainage design, is not found in these strategies.
- **Adaptation of ports:** Some survey respondents indicated that climate change adaptation initiatives are underway in ports, such as the ongoing project focused on the rehabilitation of the terminals of the Port of Namibe.

Water pollution

- **Water pollution mitigation:** Water pollution from transport activities in Angola has been identified as a significant issue, with wastewater from transport infrastructure being discharged into the sea. The Ministry of the Environment and the Ministry of Transport have developed plans to address this problem by implementing measures to mitigate the impact of water pollution, particularly in areas where transport projects are concessioned. However, further efforts are needed to effectively address this issue and ensure the protection of water quality and marine ecosystems.

Soil and waste pollution

- **Disposal of wastes:** The disposal of residues and leftovers is a major issue on the soil pollution impact of the transport industry. Angola has no programme for tyres and engine disposal, used engine oil recycling, and treatment of polluted water from gas stations or car washers.



- **Regulations of dangerous goods transport and other regulations:** Enforcement of the regulations regarding transport of dangerous goods, fly-typing, and waste dumping is weak.

Assessing the transport of agricultural products and agribusiness

- **Limited road transport connection for agribusiness:** The agribusiness sector in Angola faces significant transport and logistical challenges. The qualitative assessment reveals that these challenges are having a profound impact on the sector. The poor quality of the transport infrastructure and low connectivity are a major concern. The unreliability of transport infrastructure, particularly the inadequacy of secondary and tertiary road transport networks, hampers the efficient movement of goods from remote agricultural areas to markets and increases costs. This, in turn, disrupts the supply chain of crucial agribusiness inputs such as seeds, fertilizers, and machinery, affecting production levels and market access for agribusinesses.
- **Delays by bureaucracy:** Some stakeholders also noted that despite good trade facilitation practices at ports, there are many burdens and delays due to bureaucracy, which contribute to delays in the movement of goods and increase the overall cost of trade transactions, including agricultural exports.
- **Lack of specialized logistics services:** The lack of specialized logistics services for the agribusiness sector contributes to inefficiencies. This includes inadequate

packaging and storage facilities, including cold storage, and limited enforcement of processing, packaging, and labelling regulations, in part due to a lack of knowledge about proper packaging. Inadequate provision of basic services such as electricity and fuel in rural areas also contributes to the lack of logistics services. The burden often falls on producers to manage multiple aspects, including transportation, export procedures, inspection, sanitation, storage, and finding buyers. This disjointed approach often leads to delays in getting products to market, resulting in waste, high transportation costs, and uncertainty for farmers and producers.

- **Impact on producers' revenues:** Due to the limited availability of transport services in rural areas, many farmers are forced to sell their products at lower prices, sometimes at a loss, to avoid the risk of their goods being damaged.

Summary of the qualitative assessment

The qualitative assessment confirmed the poor sustainability performance of the road and rail freight transport sectors compared to ports (Table 15). Generally, poor infrastructure and equipment conditions and lack of skilled labour are also contributing to other challenges such as low connectivity, high transport costs, frequent accidents, and limited accessibility. In social and environmental pillars, lack of regulations and insufficient penalties are identified as potential factors that could hamper current and future sustainability performance in these areas.





Table 15.
Key findings of the qualitative assessment

Sustainability pillar/ category	Identified challenges
Economic pillar	
Infrastructure and equipment capacity and quality	• Reliance on road freight transport • Poor condition of primary, secondary, and tertiary roads • Lack of clarity on maintenance responsibilities resulting in neglected roads • Inactive or non-existent weighbridges for truckload control • Lack of spare parts for truck maintenance • Parking slots and rest areas in shortage • Inadequate maintenance of railway infrastructure • Lack of fuels and spare parts for daily operations of railways • Lack of essential equipment in some port terminals • Logistics platforms affected by inefficiencies in rail and road transport • Lack of important hinterland connections to dry ports
Connectivity	• Inefficient cross-border road transport and trade • Insufficient regional rail connections • Lack of regional shipping lines • Limited road-rail integration • Lack of multimodal connectivity • Isolated production and consumption areas
Transport costs	• High maintenance costs and increased fuel consumption due to poor road conditions • Trucks carrying goods inland but returning empty • High indirect costs at ports (terminal charges, other surcharges, and fees including storage and demurrage fees) • Lack of transparent pricing mechanisms
Productivity	• Poor quality of road infrastructure as a constraint on productivity • Low average speeds and poor quality of rolling stock • Lack of smooth intermodal transit platforms
Transport service quality and reliability	• Poor condition of roads and bridges • Lack of insurance and emergency support for the informal sector • Unregulated informal operators • Fuel and spare part shortages and lack of maintenance for railways
Social pillar	
Safety and security	• Frequent road accidents • Non-compliance with regulations in the informal sector • Poor operating condition of most vehicles • Inadequate training for road transport drivers • Misattribution of road transport accidents • Frequent pedestrian accidents along railways • Theft of vital rail infrastructure components
Accessibility and affordability	• Unavailable and unaffordable transport services in rural areas • Only informal transport operators willing to serve rural areas



Sustainability pillar/ category	Identified challenges
Employment	• Lack of qualified personnel across all modes of transport • Skilled labour with machine maintenance and operation capacity in shortage particularly • Human resources shortages in the logistics platforms in rural areas • Lack of reliable and detailed statistics on employment in the transport sector
Gender	• Underrepresented women in technical and operational positions in the road and rail transport sectors
Noise pollution exposure	• Absence of data on noise level • Lack of incentives and supervision for noise reduction
Air pollution exposure	• Non-compliance with regulations about circulation restrictions • Lack of vehicle exhaust system inspections • Lack of air pollution monitoring mechanisms and investments • Absence of supporting legislation and supervision
Scenic beauty, cultural and natural preservation, and biodiversity	• Lack of consideration for landscape and biodiversity factors in transport infrastructure projects • Limited resources available for landscape and biodiversity protection
Environment pillar	
Climate change mitigation	• Significant contribution to GHG emissions from the transport sector • Poor road infrastructure resulting in more emissions • No legislation for fuel standards • Lack of knowledge in terms of efficient driving among truck drivers • Old, unelectrified, and fuel-inefficient rolling stocks
Climate change resilience and adaptation	• Challenges recognized by the NDC and the ENAC 2018-2030 • No major action or programme for resilience building and adaptation • Climate change adaptation initiatives underway in ports
Water pollution	• Direct sewage outfalls into environmental water bodies
Soil and waste pollution	• Improper disposal of residues (engine, used engine oil, etc.) • Weak enforcement of the regulations regarding the transport of dangerous goods, fly-typing, and waste dumping
Cross-cutting issue	
Transport of agricultural products	• Inefficient transport of goods from remote agricultural areas to markets • Increased transport costs for agribusiness • Disrupted supply chain of crucial agribusiness inputs • Lack of specialized logistics services and facilities for agribusiness • Inadequate provision of basic services in rural areas

Source: Compiled by the UNCTAD secretariat, 2024.



Chapter 5

Policy recommendations





This section sets out a number of measures, approaches, and steps to consider when addressing the freight transport sustainability challenges faced by Angola. A broad range of intervention measures and actions have been identified as being important.

The recommendations identified are organized and presented below according to eight action areas (i.e. investment and finance, technology and ICT, market structure and competition, regulation and institutional set-up, capacity building, training, and awareness building, coordination and partnership, data and monitoring, and gender mainstreaming) and one cross-cutting issue (i.e. first-mile transport for the agricultural sector). However, as several action areas are closely interconnected, the recommendations below sometimes need to deviate from the respective action areas (For example, coordination of government agencies will be discussed in relation to the government structure under the regulation and institutional setup section).

Investment and finance

Angola's transport sector holds a pivotal role in its infrastructure development, presenting significant opportunities for growth and connectivity enhancement. The country's strategic policy initiatives focus on expanding and improving its transport infrastructure, including ports, roads, railways, and airports, to foster trade and stimulate economic development.

The coastline of Angola offers vast opportunities for port expansion and maritime infrastructure development, aiming to enhance the country's maritime capabilities. These efforts are complemented by planned investments in road, rail, airport, and logistics platforms. Such comprehensive infrastructural enhancements are crucial for improving national and regional

connectivity, leveraging the opportunities presented by the AfCFTA, improving value chain integration, and enhancing access to global markets. The Lobito Corridor project exemplifies Angola's ambitious transport infrastructure initiatives.

Angola has invested in transport infrastructure with the support from multilateral development partners, including the AfDB and the World Bank, and bilateral partners, such as China and the EU¹²². Public expenditure on transport infrastructure in Angola has seen substantial investments, totalling over \$ 38 billion between 2002 and 2018, with a significant portion being financed through Chinese loans and credit lines. This investment has been directed at rehabilitating and expanding road, railway, seaport, and airport infrastructures, essential for Angola's economic growth and diversification efforts.¹²³

That said, financing transport projects is a key challenge, with Angola exploring various funding sources. Some foreign investment restrictions in air transport and port services have been abolished. Port and airport administration, railway transport services and domestic airways are classified as "relative reserve" activities, which are open to private investment but subject to concession, by Angola's Law on the Limitation of Sectors of Economic Activity (Law No. 25/21) passed in 2021.¹²⁴ The shift towards involving the private sector through PPPs and privatization efforts indicates a strategic move to diversify funding mechanisms. This approach not only alleviates the financial burden on the government but also invites foreign direct investment, bringing in capital, technology, and expertise.

The legal and regulatory frameworks established for PPPs and privatization are designed to encourage investment in transport and other critical sectors. The

¹²² UNCTAD, 2019a; European Commission, 2024; and Delegation of the European Union to Angola, 2024

¹²³ Benmaamar et al., 2020

¹²⁴ Diário da República, 2021c

legal framework for PPPs, established in 2019, alongside the privatisation programme launched the same year, marks a significant move towards reducing state intervention in the economy and encouraging private sector participation.¹²⁵ These frameworks aim to ensure transparency, efficiency, and effective management of infrastructure projects, contributing to Angola's economic development and regional integration.

Policy recommendations for investment and finance:

- **Enhance market readiness through improved project bankability and risk-return profiles:** While the government and the public sector continue to play a key financing role, particularly in ensuring the proper delivery of essential public services, there is greater scope for businesses and the private sector and other sources of innovative finance such as green and climate finance to engage in financing related infrastructures and services and help close the financing gap. The challenge, however, is how to mobilize these sources towards enhancing transport infrastructure and services. Despite the push towards privatization and PPPs, attracting private investment requires enhancing market readiness through improved project bankability and risk-return profiles.
- **Mechanism to ensure well-defined projects:** In addition to a clear policy framework and legal and regulatory system, building a mechanism that ensures projects are well-defined, structured, efficiently implemented, and monitored is key.

- **Long-term investment plan and a comprehensive operating framework:**

In addition, a long-term investment plan and a comprehensive operating framework are necessary within the government to manage this process effectively. Building the capacity of public institutions is also crucial for success.

- **Supportive initiatives for the development and implementation of viable and sustainable PPP projects:**

The EU-UNCTAD Joint Programme for Angola, Train for Trade II, has played a key role in enhancing the skills and knowledge of stakeholders within Angola's transport sector to promote the effective development of PPPs. It is recommended to continue providing such supportive initiatives to empower stakeholders to design, initiate, and implement feasible and sustainable PPP projects aimed at the development of transport infrastructure. This will pave the way for sustainable development in the freight transport sector.

- **Access to climate finance opportunities:** Given the growing emphasis on climate and green finance, it is imperative that Angola's transport projects align with environmental and sustainability criteria to access climate finance opportunities. Integrating energy efficiency, energy transition, and green technologies, as well as addressing climate risks and integrating resilience into infrastructure planning are essential steps toward this alignment.

¹²⁵ In October 2019, Presidential Decree No. 316/19 (Diário da República, 2019b) approved the Regulation on Public-Private Partnerships, applicable to all public and private partnerships established under the terms of Law No. 11/19 of 14 May (Diário da República, 2019a).

Road rehabilitation and maintenance

Challenges in road rehabilitation and maintenance:

1) Insufficient public spending on road maintenance and rehabilitation: One of the biggest challenges in Angola's freight transport sector is the insufficient maintenance of existing roads. Road maintenance is costly, but the availability of public finance is limited. In the National Transport Master Plan, the short-term to long-term estimated costs for road rehabilitation amount to \$5.4 billion for 2019-2038 (or \$274 million of annual average costs), while the general state budget on road transport sector was about \$89 million (Kz 74 billion) in 2023.¹²⁶

2) Relatively high road rehabilitation costs: In the National Transport Master Plan, the unit cost for road rehabilitation was about \$0.9 million per kilometre (i.e., \$5.4 billion/6,250 kilometres). However, the estimated cost is relatively high compared to other countries; for example, the median cost of selected African countries was \$84,400 per lane-kilometre for rehabilitation of paved roads and \$147,100 per lane-kilometre for construction and upgrading of paved roads.¹²⁷ The high average cost of road maintenance and development was also pointed out in another report.¹²⁸ The problem is linked to poor road sector governance.

3) Additional funding for road maintenance: Sustainable maintenance of road infrastructure and service requires additional funding sources. For main roads, the Ministry of Public Works, Urbanism and Housing plans to establish toll fees to finance road maintenance in

border areas (i.e., Noqui, Luvo, Luau, Santa Clara, Massabi, and Lema) where traffic is sufficient to support project viability. However, these toll projects were planned as short-term projects (2019-2023) in the National Transport Master Plan, and their implementation has been delayed. In addition, PPPs could not be a general solution for financing road maintenance, as road traffic is not always sufficient to justify private sector participation, particularly for secondary and rural roads.

Recommendations for road rehabilitation and maintenance:

- **Strengthen governance of road rehabilitation projects:** To address the high road rehabilitation costs, the government needs to ensure a fair and competitive procurement process for road rehabilitation projects and strengthen the monitoring of the project implementation to ensure efficiency and accountability.¹²⁹
- **Analyse the relatively high road rehabilitation costs:** The government may consider conducting a comprehensive study of costs associated with road rehabilitation, including an analysis of the market structure of the construction sector, government procurement processes for the road rehabilitation projects, and cost factors (e.g., labour costs and material costs) with those in comparison to neighbouring countries.
- **Encourage private sector involvement in road maintenance:** Insights from stakeholder interviews suggest tailoring solutions for private sector engagement, particularly in the agribusiness sphere, where mutual benefits can be identified and harnessed. The agribusiness private sector could play a role in supporting

¹²⁶ Ministry of Finance, Government of Angola, 2023

¹²⁷ African Development Bank, 2014

¹²⁸ Benmaamar et al., 2020

¹²⁹ 54 per cent of all public procurement activities used sole source method, and use of competitive bidding methods was proposed to support the development of a competitive road contractors' industry (Benmaamar et al., 2020).

infrastructure maintenance, such as roads in production/rural areas, through a cooperative arrangement and partnerships with government entities. This is a win-win situation as the private sector can benefit from improved infrastructure and logistics, which are key to their operations while contributing to the public good.

- **Road maintenance design:** The government might also consider a specialized study on optimal road maintenance designs that prioritize safety, efficient drainage, proper elevation, and noise reduction. For example, as floods after heavy rain can cause serious congestion and prevent passage of vehicles, better drainage design should be incorporated into future road maintenance work.

Road transport facilities, equipment, and vehicles

Challenges in road transport facilities, equipment, and vehicles:

1) Lack of weighbridges and parking slot/rest areas for truck drivers:

The assessment of the transport infrastructure and equipment section highlighted the lack of weighbridges and rest areas for truck drivers. As mentioned above, the Ministry of Public Works, Urbanism and Housing has a plan to install weighbridges with the tollbooths in border areas. However, implementation has been slow. Also, installing weighbridges only in border areas would not be sufficient to prevent damage to main roads. Regarding more parking lots/rest areas, it is not always feasible for the government to invest in due to lack of space and access to electricity along some roads.

2) High cost of truck maintenance and insufficient supply of spare parts:

Truck maintenance costs are high, even

for formal sector actors, due to the poor road conditions and frequent damage to trucks and tyres. In addition, the recent negative economic growth from 2016 to 2020 has constrained demand for road transport and compressed the transport prices to levels that prevent truck maintenance cost recovery.¹³⁰

The lack of domestic supply of spare parts also contributes to the high truck maintenance costs. The Government has a PPPs programme and a tax incentive programme to promote manufacturing of spare parts. The programme started with buses and will be extended to truck spare parts.

3) Harmonization with the SADC

axle load limit: As discussed in the assessment of transport infrastructure and equipment section, Angolan trucks, which are predominantly 2-axle, are at a competitive disadvantage to 3-axle trucks because they have to reduce their loads to operate in neighbouring countries in order to comply with the SADC axle load limit.

Recommendations for road transport facilities, equipment, and vehicles:

- **Weighbridges:** Expanding on existing plans, the Government of Angola should consider the possibility of installing weighbridges in additional areas and locations, including major highway access points, ports, rail freight terminals, and logistics platforms. It should be emphasized that the cost of installation of weighbridges can be recouped through the reduction of road maintenance costs, which would be a significant cost saving. This strategy not only aims to preserve infrastructure but also contributes to the efficient management of vehicular loads, enhancing overall transport safety and sustainability.
- **Parking slots and rest areas:** The government is encouraged to launch a

¹³⁰ The Ministry of Industry and Commerce is considering the setting up of a minimal transport price for the informal sector to ensure sufficient revenues for truck operators and to recover maintenance costs. Enforcing the minimal price on the informal sector would, however, be challenging.

dedicated project to expand the availability of vehicle parking slots and rest areas. This initiative requires local authorities to secure appropriate land parcels for development. Challenges identified, including the scarcity of land and lack of electricity, can be addressed by adopting innovative solutions from international best practices such as the construction of multistorey parking facilities equipped with solar panels, or integrating these parking and rest areas with the development of dry ports and logistics platforms. It is also advisable to leverage the strengths of both public and private sectors through PPPs. Private sector involvement can bring innovation, efficiency, and investment capital, while governments can provide regulatory oversight, land acquisition, and ensure adherence to safety standards. Such measures and collaboration could further optimize land use and enhance the efficiency of transport and logistics operations.

- **Truck spare parts:** The government programmes to promote the manufacturing of spare parts should be complemented by capacity building and training for local engineering skills, as indicated in the Capacity building, training, and awareness building subsection.
- **Truck upgrade:** Some truck operators will need to upgrade their trucks from 2-axle to 3-axle to comply with the SADC rule on axle load limit. Also, inside Angola, even though Angola has not ratified the SADC Tripartite Vehicle Load Management Agreement¹³¹, the private sector will need to prepare for Angola's accession to it in the future. To help achieve this goal, phased implementation of the SADC rule (e.g., applying it to newly imported trucks) should be considered.

Rail infrastructure and equipment

Challenges in rail infrastructure and equipment:

- 1) **Inadequate maintenance, poor services and insufficient funding:**
The SFT Assessment part highlighted challenges faced by railways, such as inadequate maintenance, poor services, and insufficient funding, including deficits in essential resources like fuel and spare parts necessary for daily operations. Stakeholders pointed out that revenues generated from freight transport and the available financing are insufficient to cover maintenance and operation costs, including the supply of fuel and spare parts. Rail freight transport prices are low due to the low speed of rail transport and competition from road transport placing rail services at a disadvantage in the market.
- 2) **Lack of railway connections:** Lack of connectivity between the CFL, CFB, and CFM is another challenge stressed by the low connectivity score of rail transport in the stakeholder survey result. The National Transport Master Plan included a short-term rail extension project in the coastal area, i.e., between Dondo (CFL) - Benguela (CFB) - Lubango (CFM), by 2023, but it is not finalized yet. In the long term, the Government has plans to connect the three lines in the central and eastern regions, i.e., Malanje (CFL) - Cuito (CFB) - Menongue (CFM) and Malanje - Saurimo (CFL)-Luena (CFB).¹³²
- 3) **Equitable Access in Railway Concession:** The government's move towards privatizing key railway lines illustrates a strategic approach to improving infrastructure by fostering partnerships that align the goals of both the public and private sectors. However, it is important to ensure fair and

¹³¹ Tripartite Transport & Transit Facilitation Programme (TTTFP), 2017

¹³² All-American Rail Group (AARG) will provide advisory services for connecting the CFL with Lubumbashi, the southern city of the DRC (Abraham, 2024).

transparent access to rail freight services and establishing non-discriminatory pricing within these concessions.

- 4) Frequent pedestrian accidents and theft of vital infrastructure components:** As discussed in the SFT Assessment part, rail transport safety is a major concern, with frequent pedestrian accidents primarily due to unauthorized railway crossings. Additionally, the theft of vital rail infrastructure components such as rail lines, electric cables, and signalling systems further exacerbates safety and security challenges.

Recommendations for rail infrastructure and equipment:

- **Rehabilitation and extension of railways, specifically the CFL:** The rehabilitation and extension of the CFL railway should also be given higher priority in terms of day-to-day maintenance and operations. The rehabilitation plan for the Zenza – Cacuso section has recently received external loan financing, but the extension of the railway will require further financing, including from the public sector.
- **Concession conditions and governance:** It is imperative that concession agreements are built on a foundation of viability, ensuring that they are not only economically sustainable but also inclusive, integrating a broad spectrum of interests. For example, fair provision of rail freight transport services to all customers should be a part of concession conditions. This approach underscores the need for a careful balance, one that secures the long-term success of the railway system while promoting equitable access and benefits for all stakeholders involved.
- **Railway safety design and equipment:** Railways need to invest in safety equipment such as building fences and pedestrian bridges or elevating the railway to prevent rail theft and fatal accidents.

It should be complemented by the installation of surveillance cameras and stricter enforcement of punishment.¹³³

Port infrastructure and equipment

Challenges in port infrastructure and equipment:

- 1) Lack of essential equipment:** Ports have generally robust infrastructure and equipment. However, as indicated in the SFT Assessment part, some terminals lack essential equipment such as scales. Also, some ports have been using diesel generators for power supply. The Port of Luanda has a plan to build a power station to supply clean energy (i.e., cleaner than diesel generators) to port facilities, terminals, and vessels. Also, they will make it mandatory for every terminal to have scales to prevent damage to cranes.
- 2) Insufficient equipment to mitigate environmental risk:** There is a risk that rapid growth of cargo volume can undermine the freight transport sustainability in the future, and the current port equipment would be insufficient to mitigate this risk. Particularly, as exports of minerals are expected to grow in the Port of Lobito, preserving the marine ecosystem and preventing water pollution are expected to become one of the major sustainability challenges.

Recommendations for port infrastructure and equipment:

- **Essential equipment:** The initiatives taken by the Port of Luanda (i.e., construction of a power station and mandatory installation of scales in terminals) should be followed by other ports and incorporated into future port expansion plans.

¹³³ The World Bank financed the construction of a number of pedestrian bridges in Luanda and some of them were installed. Some houses are close to rail lines and must be relocated, but it requires more finance.

- **Equipment for environmental risk mitigation:** Ports need to increase investment in equipment to improve social and environmental sustainability. It includes installing more green cranes and using structures to protect or coexist with the ocean environment and biodiversity. This equipment should be also incorporated into future port expansion plans.

Logistics platforms and facilities

The development of logistics platforms, managed by Angola Cargo and Logistics Certification Regulatory Agency (ARCCLA),¹³⁴ involves PPPs and concessions, and the private sector has the freedom to design the platforms as long as they meet the requirements. This is the right direction for the country as the stakeholder survey result highlighted the need for more availability and higher quality of logistics platforms.

Challenges in logistics platforms and facilities: The effectiveness of the logistics platforms can be hampered by the limited intermodal connections between road and rail transport networks, as well as the low first-mile transport connections. The benefits can also be undermined by the country's low export volumes.

Recommendations for logistics platforms and facilities: As the external factors will be responsible for possibly reduced effectiveness of the logistics platforms, remedial actions should be taken by stakeholders outside of the logistics platforms. Specifically, investment in the improvement of road and rail connections, as well as first-mile transport connections for the agribusiness sector is essential to realize the potential of the logistics platforms.

Technology and ICT

In the freight transport sector, investment in technology advancements is insufficient. Ports exhibit better performance in terms of digitalization and automation compared to the rail and road transport sectors. However, both ports and land transport are lagging behind expectations concerning technologies related to climate mitigation and adaptation.

Automation

Challenges affecting automation: In the rail and road freight transport sector, automation technologies, for instance autonomous driving technology, automated loading and unloading, and automated guided vehicles in warehouses, are not widely adopted. The high costs associated with these technologies, including sensors, software development, and vehicle hardware upgrades, may limit widespread adoption.

Recommendations for automation:

- **Financial incentives:** To alleviate the difficulties caused by substantial initial investments, the government should consider providing financial incentives such as tax breaks, subsidies, or grants to companies adopting new and autonomous freight technologies.

Digitalization and intelligent freight transport

Challenges affecting digitalization and intelligent freight transport: Angola has made progress in digitalization of freight transport management. For instance, Angola introduced the Single Window for Logistics (Janela Única da Logística, JUL; Presidential Decree No. 127/21).¹³⁵ Managed by ARCCLA, this intermodal logistics management initiative aims to streamline and expedite freight transport

¹³⁴ ARCCLA was established in 2020 to replace the National Council for Shippers (CNC) and the Cabinet for the Lobito Corridor (Presidential Decree No. 326/20). It is tasked with regulating, supervising, and overseeing the transport of goods by sea, land, and air, as well as managing logistics infrastructures (Diário da República, 2020).

¹³⁵ Diário da República, 2021b

by cutting logistics costs and simplifying administrative processes across various freight transport modes (by sea, cabotage, road, railways, and air).¹³⁶ In the maritime sector, the Port of Lobito has experienced notable benefits from its Maritime Single Window (MSW), a digital system established by IMO to foster efficient clearance of ships during port calls. However, the MSW has not been replicated in other ports across Angola. In the rail and road transport sectors, digitalization technologies such as tracking and tracing systems and route planning systems remain underutilized although it is observed that more vehicles are using GPS and other technologies to monitor cargo flows. The implementation of Intelligent Transport Systems (ITS) including dynamic traffic management, variable message signs, ramp metering, and other telematics applications are assessed to be the least satisfactory by the stakeholders.

Recommendations for digitalization and intelligent freight transport:

- **Fully adhere to the MSW platform:** It is necessary and urgent for ports in Angola to fully adhere to the MSW platform to standardize procedures and reduce human intervention in operational processes. This requires greater investments in technology and human capacity.
- **Strong partnerships:** To address the challenge of significant upfront investment, the government is recommended to establish strong partnerships with freight transport operators, technology providers, and research institutions. This collaboration should be fostered through joint initiatives, pilot projects, and the sharing of resources.

Green technology

Challenges in green technology:

The development of climate mitigation technologies in ports, as well as in the rail

and road freight transport sectors, faces significant hurdles. Alternative fuel usage remains limited as fossil fuels still prevail in all transport sectors. Electrification has great potential for climate mitigation as Angola has over 50 per cent of its energy supply sourced from renewable options, mainly biofuels and waste.¹³⁷ However, particularly in the road freight transport sector, economic factors, including the cost competitiveness of green technologies compared to traditional alternatives, play a crucial role. In addition to the higher price, electro-automobiles have a heavier weight than traditional trucks due to the use of heavy batteries. Truck operators would need to reduce load to comply with the axle load limit.

Recommendations for green technology:

- **Environmental regulations:** Policymakers should establish clear and consistent regulations that support the uptake of green technologies. This includes implementing emission standards, ensuring patent protection, supporting training programmes, and providing financial incentives to make sustainable options more economically attractive.
- **Phase-out from fuel subsidies:** The ongoing phase-out from fuel subsidies, which amounted to \$3.8 billion in 2022 (i.e., about 3.5 per cent of GDP or 20 per cent of the 2023 general budget),¹³⁸ can eliminate the disincentives hindering green technology adoption.
- **Implement pilot projects:** To drive acceptance of sustainable transport options, the government is advised to implement pilot projects and demonstration programmes to showcase the effectiveness and feasibility of green technologies. In this regard, the government is developing an

¹³⁶ World Trade Organization (WTO), 2024

¹³⁷ International Renewable Energy Agency (IRENA), 2023 and International Energy Agency (IEA), 2023

¹³⁸ Xinhua, 2023a

electro-automobile transport project for passengers and cargo transport.

- **Learn successful practices from leading countries:** This is also a learning process for the government, and it can benefit from studying successful practices implemented by leading countries in the electric vehicle industry (Table 16), e.g.,

starting from small vehicles in urban last-mile transport. The government of Angola could consider strategically integrating smart grid, battery technology, and renewable energy development into long-term planning as well as foster close collaboration between energy suppliers and freight transport stakeholders.



Table 16.
Some practices implemented by leading countries in the electric vehicle industry

The United Kingdom: Zero Emission HGV (heavy goods vehicle) and Infrastructure Demonstrator Programme	• Aims at boosting the adoption of zero-emission trucks and decarbonizing freight vehicles • Provides funding for 4 projects to support the rollout of zero-emission HGVs, the establishment of charging hubs, and the development of green technology
China: Pilot programme initiated in 2021 by the Chinese Ministry of Industry and Information Technology	• Aims to advance battery-swapping technology for trucks mainly used for short-haul operations at ports, mining sites, and urban logistics
China: City-level fiscal and non-fiscal incentives to promote the adoption of electric trucks	• These incentives encompass operational subsidies, preferential road access, restrictions on conventional fuel trucks during heavy-pollution days, and the gradual phasing out of certificates for conventional fuel commercial vehicles

Source: Government of the United Kingdom, 2023, Cui et al., 2023, and Jin and Chu, 2023

Market structure and competition

Inputs received from stakeholders through the survey and the interviews highlight the challenges faced by the freight transport market arising from inefficiencies and lack of competitiveness. In the maritime transport sector, recent legislation abolished the exclusivity requirement for Angolan nationals in various freight transport-related activities including loading and unloading of bulk carriers; stowage, unstowage, transshipment, and handling and stationing of merchandise; pilotage, towage, and mooring of the ship; waste collection; and water supply to vessels. In the road transport sector, freight transport charges are unregulated.¹³⁹ The challenge is to ensure a small business-friendly environment to boost small-scale services, which are more affordable and will benefit more freight transport users.

Market openness and competition

Challenges affecting the market

openness and competition: In the road transport sector, the levels of market competition vary depending on cargo types. The transport of dangerous and precious cargoes is monopolized by major players who benefit from long-term contracts. The cold-chain logistics market lacks sufficient operators. In the rail transport sector, there is a concern about the openness of rail freight services to all potential clients, and price discrimination against small businesses.

Recommendations to support market openness and competition:

- **Fair pricing:** A fair and transparent price setting should be enforced for transport operators, including rail and road freight transport operators who serve multiple customers.

¹³⁹ Diário da Republica, 2022

Informal sector

Challenges affecting the informal

sector: The informal sector poses a substantial challenge for the road freight transport sector. Drivers and operators active in the informal sector often circumvent regulations and gain advantages over well-behaved competitors by operating with lower costs, leading to an uneven playing field. This also poses a threat to the enforcement of safety and security regulations. Trucks operating informally often lack GPS tracking systems, insurance, and regular maintenance, causing prolonged traffic disruptions in the event of accidents. Some truck drivers working in the informal sector are more prone to drive recklessly or disappear with cargo which is an important risk from the cargo owners' perspective. Moreover, the informal sector presents a significant challenge as regards data collection and performance evaluation, impeding policymakers' efforts to effectively assess and address issues related to the informal freight transport sector.

Recommendations for the informal sector:

- **Advocating benefits of the formal sector to encourage formalization:**¹⁴⁰ The government should intensify efforts to formalize the informal freight transport sector, including through collaboration with relevant associations and organisations. Awareness-raising and persuasion campaigns are essential to formalization. It is recommended to advocate the benefits of being formal, including access to healthcare, insurance, labour protection, capacity building and training programmes, finance, and opportunities for business continuity and growth.

Regulation and institutional setup

Suboptimal regulatory frameworks and institutional setups contribute to amplifying

some of the important challenges faced by Angola's freight transport sector. Legislative gaps, exacerbated by bureaucratic processes including across relevant government agencies can impede efficient law enforcement and exacerbate the problems faced by the freight transport sector in Angola.

Institutional framework

Challenges affecting the ratification and implementation of government

regulations and agreements: There are multiple government entities overseeing transport and logistics (Table 17), which results in delays in the ratification and adoption of regional and international agreements. For instance, Angola has not yet ratified any of the seven priority UN road safety conventions,¹⁴¹ partly due to the intricate process of obtaining the consent and support of all relevant government agencies. Moreover, the implementation of some regulations is fragmented across different agencies, thus impairing effective implementation. For instance, certification of heavy-duty trucks falls within the mandate of the National Land Transport Agency (ANTT), but technical vehicle inspections are conducted by the police operating under the Ministry of the Interior. This situation increases the hurdles in the face of consistent inspection and certification processes. Angolan stakeholders participating in the survey and the interviews reported that significant bureaucratic delays are affecting the sector. Some of these hurdles are partly stemming from the inflexible legal system.

Recommendations for institutional framework:

- **Coordination among government agencies:** Government agencies are strongly encouraged to collaborate closely and leverage underlying synergies for more complementarity. This requires

¹⁴⁰ In addition, see section on Capacity building and training of the informal sector below.

¹⁴¹ United Nations Economic Commission for Europe (UNECE), 2020

concerted efforts from core leadership to coordinate the actions of different agencies, particularly in the ratification and adoption of new regulations. This will establish a common ground and help align all involved parties, hence facilitating more effective governance and implementation processes.

- **Coordinated distribution of responsibilities:** It is important to strategically consider the distribution of responsibilities among different entities to avoid inconsistencies and inefficiencies in freight transport, including for project planning and implementation. Building on best practices can support in this regard.

Table 17.

List of responsibilities of ministries and government agencies with a mandate in the road freight transport sector

Ministry of Transport	• Responsible for policy and strategies in relation to all modes of transport, as well as oversight of the ANTT
Ministry of Public Works, Urbanism and Housing (MINOPUH)	• Responsible for the development of strategies for the implementation of road infrastructure • In charge of INEA
Ministry of Finance	• Manages public finances and supervises the Road Fund administratively and financially, e.g. through the administration of annual vehicle licensing
Road Fund	• Manages the funds obtained from fuel levies (20-25 per cent), tolls (100 per cent), vehicle licences (50 per cent), spare parts sales (20-25 per cent), and road user charges in relation to foreign vehicles, as well as money appropriated by Parliament. The funds are paid into the central revenue fund and are channelled from there to the Road Fund. The central government contributes a percentage of the road maintenance budget. • The Road Fund reports to the Minister of Finance and the Minister of Public Works.
National Institute for Roads (INEA)	• An autonomous entity under the supervision of MINOPUH • Manages the road network in Angola, including planning, construction, and maintenance • Funding is received from the Road Fund. The road network strategy is determined by MINOPUH. INEA undertakes planning, construction, road rehabilitation, and the installation of related infrastructure such as weighbridges.
National Land Transport Agency (ANTT)	• Responsible for policy, strategy, and legislation for the development of road transport in Angola • It would take over the function of roadworthy inspections from the Ministry of the Interior. • It is involved in the approval of new vehicle models to be imported and the regulation of vehicle maintenance.
Ministry of the Interior	• The Directorate of Road Traffic and Safety (DTSER) under the National Police Authority reports to the Minister of the Interior and is responsible for traffic law enforcement (including inspections of imported vehicles prior to the first registration in Angola, as well as driver testing and the issuing of driving licences).
Ministry of Justice and Human Rights	• Responsible for the registration of property and assets, including the registration of vehicles
National Council for Road Traffic Planning	• An inter-ministerial body for the road sector • Fifteen government departments are represented in the National Council of CNVOT, and 15 provincial-level government organisations are represented in its Provincial Councils.
18 provincial governments	• Determine priorities for road improvements and maintenance, select companies for the execution of services, and supervise works on Class 2, Class 3, and unclassified roads.

Source: UNCTAD secretariat compilation based on information sourced from the Tripartite Transport & Transit Facilitation Programme (TTTFP), (2017) and Ministry of Transport and Ministry of Public Works, Urbanism and Housing, 2020.

Harmonization with regional rules and participation in international treaties

Challenges affecting harmonization with regional rules and participation in international treaties: The harmonization of regional rules is ongoing, facilitated by the Tripartite Transport and Transit Facilitation Programme (TTTFP). to align the regulations of key regional bodies such as the SADC, the East African Community (EAC), and the Common Market for Eastern and Southern Africa (COMESA) to facilitate transit and cross-border circulation in the region. A notable development is Angola's adoption of COMESA Yellow Charter for automobile insurance, which mandates that vehicles from non-compliant COMESA countries secure insurance at the border.¹⁴² Despite progress, the absence of synchronization between domestic regulations and regional rules is still an obstacle to the growth of Angola's freight transport sector, including standards for alcohol tests, excess load, and weighbridges. For example, as different standards are used for the axle load limit for trucks operating domestically and regionally, the share of trucks from Angola circulating in other SADC counties is less compared to counterparts such as Botswana and Malawi. Moreover, SADC has stringent requirements for safe operations, such as setting driving hour limits, which necessitate additional rest areas for drivers. However, as noted in the preceding sections, the expansion of rest areas in Angola is limited due to land availability and access to the electrical grid. On a global scale, Angola's participation in international treaties on sustainable transport is minimal.¹⁴³ These treaties encompass conventions, agreements, and protocols that aim to enhance the efficiency, safety, and environmental sustainability of various transport modes.¹⁴⁴

¹⁴² World Trade Organization (WTO), 2024

¹⁴³ For further information about Angola's participation in transport-related international treaties, please see United Nations Treaty Collection (United Nations (UN), 2024)

¹⁴⁴ Sustainable Mobility for All, 2018

¹⁴⁵ International Institute for the Unification of Private Law (UNIDROIT) and Intergovernmental Organisation for International Carriage by Rail (OTIF), 2007, and Intergovernmental Organisation for International Carriage by Rail (OTIF), 2024

Recommendations for harmonization with regional rules and participation in international treaties:

- **Domesticating regional conventions:** Angola should intensify efforts to align its national legislation with the TTTFP's recommendations- This involves harmonization of laws and policies by adopting the rules proven to be effective and adapting them to the domestic context.
- **Ratification of global treaties:** Angola's limited participation in global treaties underscores the necessity for enhanced integration with and commitment to international standards. It is therefore recommended to ratify and adopt applicable global treaties that benefit the development of the freight transport sector. For instance, to attract more private capital investment into the railway sector, Angola could consider ratifying the Luxembourg Rail Protocol to the Cape Town Convention on International Interests in Mobile Equipment, a global treaty for the secured financing and leasing of railway rolling stock, established by the International Institute for the Unification of Private Law (UNIDROIT) and the Intergovernmental Organisation for International Carriage by Rail (OTIF) and came into force on the 8th of March 2024.¹⁴⁵ Adopting this treaty, which provides a worldwide legal framework to recognise and regulate security interests of lenders, lessors and vendors, would reduce risks for rail equipment financiers and thereby attract more capital investment into Angola's railway and relevant manufacturing facilities.
- **Coordination of government agencies:** Effective implementation of regional conventions requires the coordinated

efforts of various government agencies. For example, compliance with the SADC's standards for weighbridges falls under the Ministry of Public Works, Urbanism and Housing. Meanwhile, the National Agency for Transportation and Traffic (ANTT) is responsible for aligning truck regulations with international norms, with enforcement carried out through police inspections. This would therefore require coordination to ensure that Angola meets its regional obligations efficiently. .

Environmental and social regulations

Challenges affecting the environmental and social regulations:

In general, environmental and social dimensions are not adequately taken into account in the regulations, particularly in the road freight transport sector. Although there is an age limit for the import of vehicles, there is no corresponding limit for vehicle circulation, undermining safety and energy efficiency objectives. Similarly, the absence of fuel standards further exacerbates the environmental concerns. As regards the social dimension of sustainability, stakeholders have identified gender equality as a key challenge within the freight transport sector.

Recommendations for environmental and social regulations:

- **Adopt regional norms:** Angola should consider adopting regional norms such as SADC fuel standards, vehicle emission standards, driving hours, and weighbridges.
- **Integrate environmental criteria in concessions:** Policymakers are advised to ensure the integration of environmental sustainability criteria into potential concessions.
- **Implement international standards:** Angola could also benefit from adopting or drawing inspiration from international

standards to make the freight transport sector more environmentally friendly and socially equitable, including the aforementioned seven priority UN road safety conventions.

Law enforcement

Challenges affecting law enforcement:

Several factors contribute to the relatively weak law enforcement in the freight transport sector. Main challenges arise in enforcing regulations related to weight limits and limits of driving hours due to insufficient availability of weighbridges and the prevalence of the informal sector. The inadequate capacity of regulators also hampers effective law enforcement. For example, a lack of training impedes regulators from carrying out valid inspections for trucks, particularly for imported trucks that need to meet higher standards and require stricter inspections. Furthermore, some trucks strategically avoid inspection centres to bypass food quality control, making it difficult for regulators to conduct proper quality control.

Recommendations for law enforcement:

- **Technologies to help law enforcement:** The government is recommended to employ more advanced technologies and enhance related infrastructure to address these challenges. The implementation of advanced speedometers, improved weighbridges, and inspection centres equipped with surveillance cameras and other sophisticated technologies can significantly lighten the burden on law enforcers.

Trade facilitation

Challenges affecting trade facilitation:

The introduction of UNCTAD's ASYCUDA programme in Angola has significantly enhanced customs efficiency. The amount of paperwork for goods clearance was reduced by 70 per cent, and the



number of steps for customs clearance was reduced from 30 to 7.¹⁴⁶ Also, the adoption of paperless payment for port taxes has streamlined processes for port authorities and shippers. Annual revenue collected by customs increased by 44 per cent in 2018, i.e., one year after the implementation of ASYCUDAWorld.¹⁴⁷ Moreover, the value of total merchandise trade increased by 41 per cent in 2022 in comparison with 2017.¹⁴⁸ Further, with UNCTAD support under the EU-UNCTAD Joint Programme for Angola: Train for Trade II (2017-2023), the Angola National Trade Facilitation Committee (NTFC) was capacitated through a series of in-person trainings under the six-module UNCTAD Empowerment Programme for National Trade Facilitation Committees, where 12 participants among the stakeholders from private and public sectors were also trained and certified as national trainers, able to take the knowledge forward in the country. The NTFC was also supported to draft a National Trade Facilitation Roadmap, presented and validated by the Government in 2023, and expected to further improve the fluidity and transparency of trade procedures. However, the effectiveness of customs and port operations is impeded by insufficient customs infrastructure, with only a few customs houses on the land border. On Angola's border with Zambia, the lack of customs facilities forces trucks to detour through Namibia to enter Angola.

Recommendations for trade facilitation:

- **Additional customs infrastructure:** To accommodate the growing volume of imports and exports, there is a crucial need to build additional customs infrastructure.
- **One Stop Border Posts:** Accelerating the development of One Stop Border Posts (OSBP) is also recommended to ease and speed up the movement of goods.

- **Intelligent control systems:** Intelligent control systems for goods movements and the implementation of paperless payment methods for dues and charges at ports stand out as viable strategies to improve overall freight transport and port performance.
- **National Trade Information Portal:** Trade Information Portal is an online platform that offers up-to-date information on legislation, regulations, procedures, forms, and tariff rates and fees related to the import, export and transit of goods. It has been recognized as a reliable tool that guarantees all traders, regardless of their size or location, have easy access to the necessary information. The establishment of National Trade Information Portal is a part of the priorities in the Angola's Trade Facilitation Roadmap.¹⁴⁹

Capacity building, training, and awareness raising

Inadequate capacity building and training specific to the freight transport sector is a critical challenge identified by Angolan stakeholders. The absence of a dedicated transport training school, coupled with limited resources allocated to transport-related training, exacerbates the issue. Capacity building programmes provided by government agencies and the private sector are in short supply and fail to address some of the most important issues.

Training of truck drivers

Challenges affecting training of truck drivers: A major challenge to providing training is to reach individual operators and small companies. Providers of training for truck drivers are mainly from the private sector or associations and

¹⁴⁶ UNCTAD, 2021

¹⁴⁷ Ibid

¹⁴⁸ UNCTAD, 2024a

¹⁴⁹ UNCTAD, 2023e

cooperatives. Truck associations provide training courses for fatigue management and some truck operators have training programmes for energy efficient driving. In the public sector, the ANTT signed a protocol with the corresponding agency in South Africa to provide training for driving instructors who will, then, have competencies to train a wider range of drivers in the future, for example, to build drivers' capacity in terms of eco-driving. These capacity building programmes are beneficial, but the efforts remain insufficient.

Recommendations for training truck drivers:

- **Training through truck associations and cooperatives:** To extend the reach of training programmes, the government could collaborate with truck associations and cooperatives. This approach would increase the number of beneficiaries by utilizing established networks within the transport community.
- **Enhanced training of driving instructors:** It is also advisable to scale up the ANTT's approach to providing training to driving instructors and to promote more training, while also emphasizing the importance of safety and eco-friendly driving practices. This would ensure that driving instructors are not just passing on technical skills but are also advocates for responsible and eco-driving behaviours.
- **Mandatory training:** To ensure widespread participation and enhance the overall impact, the government can consider integrating capacity building and training into the procedures of getting or renewing a certificate or license for drivers and freight transport operators. For example, the agency in charge of driving tests can evaluate truck drivers' level of knowledge and technique skills including in eco-driving and set a standard for them to pass the test.
- **Expanding training programmes scope:** In addition to reaching a larger audience, capacity building

programmes should cover broader driving aspects, such as familiarizing local road conditions and identifying potential hazards and navigating through challenging roads and bridges.

Capacity building and training for women

Challenges in training women: The challenge of reaching and engaging more potential participants in capacity building and training is significant when it comes to women. For road transport, there is a training centre in Luanda including for women which can further developed. For rail transport, a new programme aimed at training female train drivers, which could boost female participation in this sector. There is an agreement between Angola and South Africa to share their respective experiences to learn from each other, including how to attract and convince women to participate in the programme. Despite these efforts, there's a notable shortage of both training providers and female participants in these programmes.

Recommendations for capacity building and training for women:

- **Improve dissemination of information:** Major barrier to women's participation in training programmes is the lack of awareness about these opportunities. Considering women's comparatively limited access to public information, including on transport programmes and activities, more targeted efforts are needed to raise awareness about these training programmes and disseminate the relevant information.
- **Address the cost of participation:** It is equally important for capacity building program providers to convince women to participate in training, including overcoming barriers related to social norms, household responsibilities, and the costs associated with these trainings. These costs are not only financial but also include the time and support needed from their families. Hence, when



advocating their training programmes, the government and relevant agencies should highlight the benefits of such training and provide support to mitigate these costs, encouraging more women to participate.

Capacity building and training of the informal sector

Challenges affecting the provision of training for operators in the informal sector:

Despite the large number of freight transport operators active in the informal sector,¹⁵⁰ it is challenging to identify these actors and provide them with the necessary training. This is because transporters operating in the informal sector tend to be active only for a short period and to switch their occupations frequently. Some informal sector operators may stay away from capacity building and training for fear of being penalized for operating without a certificate or license.

Recommendations for providing training to informal sector operators:

- **Raising awareness:** It is recommended that the government and other training programme providers take steps to target the informal sector and raise awareness of the disadvantages of operating informally in this sector, such as the lack of support in the event of accidents and higher recovery costs. Informal operators should also be made aware of the benefits of becoming formal, including access to proper maintenance support, insurance, and opportunities for business growth.
- **Training programmes about formalization procedures to facilitate formalization:** It is recommended to provide dedicated capacity building programmes that guide the informal sector operators through the procedures and standards for formalization and registration. For instance, these formalization programmes may cover

topics like how to find the right agencies, how to prepare necessary paperwork, and how to pass vehicle inspections.

- **Practical skills required after**

formalization: Training for the informal sector may also cover practical skills required after the formalization, including investment and hiring decisions to grow their freight transport business, and regular accounting and reporting. One of the purposes is to build the confidence of informal sector participants in their future prospects after the formalization.

- **Access and support to training**

programmes: As for the training programmes not specifically provided for the informal sector, they will benefit more people if they provide support to access these programmes and provide non-discriminatory capacity building and training accessible without any threshold.

Capacity building and training of farmers

Challenges affecting the capacity

building of farmers: One of the obstacles to more efficient and affordable transport in the agribusiness sector is the absence of accurate forecasts on agricultural production, preventing the transporters from locating the production sites, preparing vehicles, and planning routes in a timely manner. A significant number of farmers are not literate and have limited knowledge about product packaging and storage, which is unfavourable to agricultural logistics, especially for perishable products. Farmers aspiring to export their products lack the capacity to meet international standards to get certification for food exports, such as prohibiting child labour, adhering to quality criteria, and ensuring safety standards including packaging.

Recommendations for building the capacity of farmers:

¹⁵⁰ If accommodation and communication sectors are included, 65.6 per cent of workers were employed in informal sector in 2022. See Overview of transport profile.

- **Production forecast:** The Ministry of Agriculture and Forestry should provide capacity-building and training programmes for farmers to forecast and report their agriculture production, which can be implemented with assistance from local governments and farmers association.
- **International food standards:** Training initiatives on international food standards such as Codex Alimentarius¹⁵¹ and export certification, conducted at the grassroots levels by experts using farmer-friendly language, are also crucial.
- **Coordination with farmers' associations:** Fragmentation in agribusiness makes it difficult for the government to reach the producers to support them with training. A viable approach for the government to reach out to farmers is to build close relations and enhance coordination with farmers' associations that can help identify smallholders and family farmers and work as intermediaries to facilitate the delivery of the relevant training.
- **Assistance from international organizations:** To leverage resources, the government is advised to seek guidance and assistance from international organizations. These include, for instance, the Food and Agriculture Organization (FAO) and their training programmes, as well as UNCTAD which since 2018 has been providing support to agriproduct value chain development in Angola under the EU-UNCTAD Joint Programme. This has included, among other things, support to producers of specific agriproducts through the Farming as a Business training package; support to agricultural extension services in the honey sector to improve the quality and safety of the final product; capacity building to upgrade the fisheries and aquaculture value chains; and support to assessing the gaps of the National Quality Infrastructure in the tropical fruits, coffee and fisheries sectors, and addressing these in Angola.

Capacity building and training of government inspection agencies

Challenges affecting the capacity building of government agencies:

Certain government agencies have a limited capacity to carry out efficient and effective inspections for freight transport vehicles, which is a barrier for law enforcement. Insufficient training in proper inspection procedures leads to inaccurate attributions of road accidents to factors like drunk driving and sleeplessness instead of addressing the underlying issues, such as inadequate vehicle maintenance. There are insufficient inspections from government agencies on imported trucks to ensure compliance with the SADC rule such as the length between axles.

Recommendations for building the capacity of government agencies:

- **Learning from other countries:** It is recommended that government agencies proactively learn from other countries about inspection and law enforcement schemes.
- **Training for law enforcing officers:** The government also needs to provide more training to their law enforcing officers and inspectors and equip them with proper technologies.

Awareness raising about social and environmental sustainability

Challenges affecting the awareness of social and environmental sustainability:

Many stakeholders in the freight transport sector prioritize economic development, with the assumption that social and environmental sustainability will naturally follow. However, the long lifespan of transport infrastructure means that retrofitting it with social and environmental considerations can prove more costly than incorporating these

¹⁵¹ Food and Agriculture Organization (FAO) and World Health Organization (WHO), 2023

aspects from the outset. In addition, a lack of consumer awareness can hinder the adoption of eco-friendly technologies.

Recommendations for raising awareness about social and environmental sustainability

- **Public awareness campaigns:** It is crucial to launch campaigns aimed at educating both public and private sector stakeholders on the potential adverse impacts of freight transport activities. This is particularly important in urban areas, which are expected to experience rapid population growth and urbanization.
- **Evaluation of social and environmental costs:** By assessing the social and environmental costs of freight transport activities and conducting cost-benefit analyses of sustainability building projects, policy makers can be encouraged to internalize the adverse impacts and put greater priority on social and environmental sustainability concerns. For instance, quantifying the impacts of traffic accidents and air pollution in terms of GDP loss can provide a clearer picture. Furthermore, conducting cost-benefit analyses for sustainability projects such as the construction of pedestrian bridges and truck driver rest areas can aid decision-making processes.

Coordination and partnerships

A major part of the freight transport users in Angola comprises small, informal sector, and relatively underfunded companies. Theoretically, third-party logistics (3PL) providing integrated services ranging from manufacturing operations to end customer service is more desirable for these companies operating on a shoestring budget. However, in Angola, the users seldom turn to 3PLs due to the lack of qualified and affordable logistic service providers, the fragmentation of the logistics sector, and insufficient coordination and partnerships among operators.

Intermodal transport

Challenges affecting intermodal transport:

Intermodal transport, which can harness the benefits of different modes of transport, offers a relatively economical, efficient, and environmentally friendly solution, especially for coastal or waterway-connected countries. The proposed ARCCLA logistics platforms are expected to promote more efficient modal switches between rail and road freight transport networks and facilitate cargo consolidation, potentially fostering coordination of different cargo owners. However, these benefits will be hampered by the limited connectivity of rail lines and the low cargo volumes carried from inland areas to the coast and ports.

Recommendations for intermodal transport:

- **Complementary projects for intermodal transport:** The intermodal transport initiatives should be complemented with transport infrastructure projects and other programmes that improve accessibility to transport and logistics services. This is particularly important for farmers given the strategic importance of the agribusiness sector for Angola.

Agricultural transport

Challenges affecting agricultural transport:

The agricultural sector in Angola faces significant challenges due to its fragmented nature, with 80 percent of farmers being smallholders. This fragmentation makes it difficult to organize and coordinate these producers and connect them with freight transport operators, who are also predominantly individuals and small-scale entities. Additionally, public infrastructure essential for producers and transporters, such as roads, is often inadequate and poorly maintained. Efforts to enhance cooperation, such as joint delivery initiatives by some producers, have had limited success.



Recommendations for agricultural transport:

- **Organize and empower smallholders and family farmers:** Local governments, cooperatives/associations, and NGOs should intensify efforts to organize smallholders and family farmers. The goal is to empower them collectively in several key areas, including, production forecasting and planning, provision of logistics services and facilities, and access to information and negotiation with transporters and purchasers.
- **Establish collaborative agricultural transport networks:** Encourage the formation of networks among agricultural transporters to pool resources, share logistical information, and optimize routes. This collective approach can lead to reduced transportation costs and improved service delivery.

Data and monitoring

Inadequate data and insufficient monitoring practices are not only preventing policymakers from being cognizant of the freight transport sector's state of play and making it more difficult for them to make informed policy decisions and ensure the effective implementation of policies and regulations. This also hinders freight transport operators and wider producers from leveraging data to enhance logistical efficiency and effectiveness.

Data collection

Challenges affecting data collection:

The first step and cornerstone of data utilization and monitoring is data collection, which poses significant challenges in Angola's freight transport sector. Data collection is especially challenging for the road transport operators active in the informal sector. As previously mentioned,

a substantial part of domestic road freight transport is informal. Transport statistics published by the Ministry of Transport mainly cover the formal sector as the statistics rely on administrative information. Data collection is further impeded by the absence of a structured data reporting system. For instance, although some truck operators are measuring emissions, there is no data reporting system so the gathered emissions data will not be used or analysed on a large scale.

Recommendations for data collection:

- **Sampling survey:** As it is impossible to collect transport information from all operators active in the informal road freight transport sector, the Ministry of Transport should consider introducing a sampling survey on the road freight transport sector, as used in other statistics.¹⁵² Additional sample surveys for other sustainability dimensions should be considered in the future, including fuel consumption.
- **Recording freight transport activities:** There is also a need to launch training programmes for the benefit of operators in the informal sector to record their freight transport activities.
- **More data collection in the formal sector:** In the formal sector, data should be collected not only for employment, cargo volume and freight transport prices, but also for distance and payload-distance (i.e., ton-kilometres) of freight transport, cargo types, number and total capacity of active fleets, number of drivers or pilots, and fuel consumption.

Information sharing and reporting

Challenges affecting information sharing and reporting: Taking full advantage of gathered data requires information sharing not only within

¹⁵² For example, the Employment Survey conducted by INE is a sample survey, using General Population and Housing Census as their target population. Target population of the sample survey in the freight road transport sector can be truck registration data (Employment Survey uses), assuming that truck registration is strictly enforced at the time of purchase and the government can track ownership changes.

the freight transport industry but also between the transport industry and other industries. For example, in agricultural logistics, transporters have limited access to information about the locations of production sites and volumes of products. The mismatch between agricultural producers and transporters impedes efficient logistics, causing losses to both industries.

Recommendations for information sharing and reporting:

- **Information sharing in freight transport and related sectors:** Collaboration should be expanded within the freight transport sector as well as between other transport-related sectors such as agriculture to enable logistical information sharing.
- **Data exchanges in government agencies:** Relevant government agencies are also expected to enhance cooperation and data exchanges to facilitate a more efficient information flow.

Data publication

Challenges affecting data publication:

Statistical information and reports are often not published online. Even if statistics are available online, the information is not displayed in a structured way, and users have difficulty locating specific statistics. Further, most statistics are published only in PDF format and not available in CSV, JSON, or other machine-readable formats, hampering further data processing and analysis. Insufficient granularity in data reporting amplifies the challenge. The level of data disaggregation, i.e. by gender, by age, by region, and by industry is limited, partly due to insufficient design of sample sizes, leading to inaccuracy of disaggregated data.¹⁵³

Recommendations for data publication:

- **One-stop portal site for statistics:** The country needs a one-stop portal site for statistical information to

ensure that users can easily access statistics that are collected by various ministries and agencies. This will also ensure that historical information is also retained in this portal.

- **Leadership for statistics publication:**

As the one-stop portal site requires coordination of all ministries and agencies, demanding robust leadership across the government. It could be incorporated into the ongoing eGovernance project, SIMPLIFICA, where the ultimate accountability lies with the Advisor to the President for Institutional Reform.

- **Improve statistics data collection and reporting standards:**

The government needs to improve standards of statistical data collection and reporting. To ensure the reliability of sufficiently disaggregated data, the government will need to increase the sample size of some sampling surveys (e.g., Employment Survey). To facilitate data processing and analysis, all statistics should be published not only in a PDF format but in a machine-readable format.

Monitoring

Challenges affecting the monitoring:

The deficiency in monitoring mechanisms leads to weak governance and inadequate implementation of policies and investments in the freight transport sector. For example, contractors of road rehabilitation projects are obliged to submit progress reports to the Ministry of Public Works, Urbanism and Housing, but there are frequent delays in this process. As a consequence, only a small per cent of infrastructure projects are steadily advancing according to our stakeholder interviews.

Recommendations for monitoring:

- **Regular updates of policies:** The government is advised to allocate the necessary resources for regular updates and revisions of policies and strategies to reflect the actual implementation

¹⁵³ This is demonstrated by the micro data processing result of Employment Survey by ILO. For example, many of disaggregated data entries by gender and 2-digit level industry include warning of inaccuracy.

pace and changes in the legislative framework and long-term plans.

- **Project follow-up:** Rigorous follow-up on the projects initiated earlier is critical to validate these policies and development strategies. To ensure compliance of the contractors and drive progress in transport infrastructure projects, the government needs to enact effective regulations for project progress reporting and enforce the applicable penalties.

Gender mainstreaming

Today, the freight transport sector remains a male-dominant sector with 99 per cent of the sector's employment being males. Even in ports, the most advanced subsector, 70-80 per cent of the workforce is accounted for by male workers.

Gender mainstreaming requires integrating a gender equality perspective at all stages and levels of policies, programmes, and projects. In this regard, some gender-related recommendations are already discussed in the previous subsections (i.e., Technology and ICT, Capacity building, training, and awareness building, Data and monitoring), but they are intentionally reproduced below to clarify and emphasize gender-related recommendations for Angola.

Female participation and representation

Challenges affecting female participation and representation:

Women are underrepresented in the freight transport sector. Female participation will require a multifaceted approach to improve visibility and accessibility.

Recommendations for increased female participation and representation:

- **Develop targeted promotional programmes:** Employers need

to acknowledge women's evident professional qualifications and competencies, which are readily evident among university graduates. To attract more women to the sector, employers could initiate promotional activities within universities, illustrating the industry's potential and opportunities for women. Also, organising a Women's Day as is already the case in the port sector can promote a sense of inclusion and achievement for women in the industry and advocate gender equality awareness and initiatives.

- **Improve working and labour conditions:** Improvement of working conditions is required to attract female workers to the freight transport sector. Offering flexible working arrangements is one way to support and encourage women's participation. Moreover, the adoption of new technologies and automation can alleviate the physical demands of certain roles. This may require further training to which women should be guaranteed equal access. Improvements in infrastructure, such as providing rest areas, also contribute to making the sector more accessible and appealing to women.
- **Promote training for women:** Overcome barriers to women's access to training by improving information dissemination and addressing social norms and cost concerns. This involves promoting strategies, including through government, associations and NGOs, to advocate the benefits of training, and provide support to reduce the cost of participation for women. The use of international cooperation, such as the Angola-South Africa exchange of experience, can also be considered.¹⁵⁴
- **Enhance gender-sensitive data collection:** Address the challenge of insufficient disaggregation in data

¹⁵⁴ See paragraph 133.

(by gender, age, region, industry) due to inadequate sample size design by improving statistical standards and integrating gender-related KPIs (e.g., female employment share, wage ratio) into freight transport sector policies to promote gender equality and diversity focus.

Cross-cutting issue: first-mile/rural freight transport for the agribusiness sector

First-mile/rural road maintenance and rehabilitation

Challenges in first-mile road maintenance and rehabilitation:

- 1) **Lack of rural road rehabilitation programmes:** As indicated in the above policy review section (strategies and planning), the National Transport Master Plan for Angola focuses on the rehabilitation of the fundamental road network and little attention was given to the roads serving the first-mile or the rural roads. Also, there is a lack of sustainable mechanisms for the continuous maintenance of first-mile roads.
- 2) **Lack of skilled labour for road maintenance:** Inadequate road maintenance is also partly due to a lack of skilled labour to properly operate and maintain machines for road maintenance.

Recommendations for first-mile road maintenance and rehabilitation:

- **Rural road rehabilitation programmes:** Given the importance of rural roads for the agribusiness sector, dedicated road rehabilitation programmes for provincial and municipal roads in rural areas should be developed.¹⁵⁵

Road management agencies at the provincial level: To coordinate the efforts of the central government, provinces, and municipalities, establishing road management agencies at the provincial level should be considered. This agency should bring together personnel from central government entities responsible for provincial and municipal roads, along with representatives of provincial and municipal authorities. Municipalities may delegate the management of parts of their road networks to this agency to enhance coordination and leverage economies of scale.

- **Private sector engagement:** As noted earlier in the report, the agribusiness private sector could play a role in infrastructure maintenance through a cooperative arrangement and partnerships with governmental entities to invest in roads maintenance, including villagers' participation in small-scale road maintenance activities such as trimming shrubs and cleaning road gullies. Increased private sector consultation in the planning of rural road maintenance should be at the core of the effort.
- **Proper operation of road maintenance machines:** Angola needs to train qualified trainers/instructors for proper operation of road maintenance machines and equipment because there are not enough schools and teachers.
- **Supply of fuel and spare parts:** The country also needs to address the issue of insufficient supply of spare parts and fuel for road maintenance machines by strengthening its supply chains.

Truck operators and vehicles serving the first-mile/rural freight transport

To facilitate the rural freight transport, the Ministry of Industry and Commerce provided 500 trucks to small operators with four-year credit and a 74 per cent subsidy during the

¹⁵⁵ The recommendations in this and next bullet points are based on recommendations proposed in Benmaamar et al., 2020.

pilot phase of the Integrated Rural Trade Development Programme (PIDCR). The programme will be scaled to 3,000 trucks. The PIDCR also involves the construction of rural storage facilities in major production centres. The facilities include cold storage, processing facilities (such as corn mills), and a marketplace to sell agriproducts. The rural facilities will be connected through rural roads to the logistics platforms implemented by ARCCLA.

Challenges related to the PIDCR programme:

1) Gap in data collection for PIDCR

Impact assessment: Truck movement are tracked through GPS but information about transport prices and cargo volumes is not well collected and shared. Limited reports on cargo volumes suggest coverage is restricted to a few provinces, leading to a lack of comprehensive statistics. This gap in information hampers the accurate evaluation of the PIDCR's influence on rural agriproduct transportation.

- 2) **Insufficient scale of the PIDCR:** A news report indicated that the PIDCR facilitated the distribution of 2,513 tons of agriproducts in four provinces while using 20 trucks in 2023 (i.e., 126 tons per truck).¹⁵⁶ If it is assumed that all 500 trucks provided under the PIDCR carried the same volume of agriproducts, the total amount of agriproducts carried under the PIDCR can be estimated at 62,825 tons (i.e., 126 tons per truck times 500 trucks) in 2023. Even if the programme is scaled to 3,000 trucks in the future, the expected impact would be 376,950 tons (i.e., 126 tons per truck times 3,000 trucks) per year. However, the total amount of food losses in Angola was estimated at 2.7 million tons (or 10 per cent of food production) in 2021.¹⁵⁷ This simple calculation implies that the scale of the PIDCR is not sufficient to

solve the agricultural transport and food wastage problem in Angola.

3) Insufficient maintenance of trucks:

Some agribusiness stakeholders indicated that the trucks provided under the PIDCR have not been well maintained.

4) Dissemination of matching software for truck operators and farmers:

The Ministry of Industry and Commerce developed a tracking and matching software. This software will match truck operators and farmers and facilitate the transport of agriproducts in rural areas. It will also track truck movement, cargo volume and transport prices. However, its dissemination to farmers is a challenge even though representatives of farmer's cooperatives have been trained to upload information.

Recommendations to support truck operators and vehicles serving the first-mile/agricultural transport:

- **Data collection and reporting about the impact of the government programmes:** To address concerns about the impact of the PIDCR, the government needs to measure the programme's impact through monitoring and data collection. The data collected by provinces should be regularly reported to the Ministry of Industry and Commerce and published on the Ministry's website in a timely and comprehensive manner.
- **Leverage government resources:** It is recommended that the Government leverages its resources by strengthening collaboration with agribusiness stakeholders such as farmers associations and enhancing their ability to serve smallholder farmers.
- **Truck maintenance programme:** The Ministry of Industry and Commerce is addressing insufficient truck maintenance by cooperating with a

¹⁵⁶ Angop, 2024. Also, Africa-Press, 2023 reported that 2,664.68 tons were carried by 31 trucks in Huila province from August to October in 2023.

¹⁵⁷ Food and Agriculture Organization (FAO), 2024

major vehicle supplier to provide the required maintenance. The government needs to increase efforts to disseminate information about the programme and raise awareness among the stakeholders.

- **Assistance to improve the matching software:** Some technical assistance is required for the government to improve the matching and tracking software.

Summary of key recommendations and priority action matrix

Recommendations to overcome SFT-related challenges and improve Angola's freight transport sustainability are summarized as a priority action matrix

in Table 18. This action matrix provides specific recommendations to address identified challenges in respective areas.

At the same time, the matrix indicates the following general directions for Angola's SFT building efforts: i) more private sector consultation and engagement, ii) a holistic approach to solving each challenge, iii) stronger and smoother coordination across government entities, iv) stronger governance of the freight transport sector, v) scale-up of capacity building efforts, vi) harmonization with international and regional rules, vii) enhanced emphasis on social and environmental sustainability in urban areas, viii) more comprehensive and reliable data collection, and ix) gender mainstreaming (see Summary and conclusion for further discussion).





Table 18.
Recommended Priority Actions and Response Measures

Action area	Challenges	Recommendations
Investment and finance		
Investment and finance	More investment and finance required for transport projects	- Enhance market readiness through improved project bankability and risk-return profiles - Mechanisms to ensure well-defined projects - Long-term investment plan and a comprehensive operating framework - Supportive initiatives for the development and implementation of viable and sustainable PPP projects - Access to climate finance opportunities
Road rehabilitation and maintenance	- Limited public budget dedicated to costly road maintenance - Relatively high road rehabilitation costs - Additional funding for road maintenance required	- Improve governance of road rehabilitation projects - Conduct a study on the relatively high road rehabilitation costs - Collaborate with the agribusiness stakeholders to maintain the rural roads - Optimize road maintenance design
Road transport facilities, equipment, and vehicles	- Limited number of weighbridges - Insufficient parking slots and rest areas with electricity supply - High cost of truck maintenance - Insufficient supply of spare parts for trucks - Uncompetitive 2-axle trucks	- Install weighbridges in logistics facilities (ports, cargo terminals of railways, logistics platforms, etc.) - Leverage resources from the private sector to expand parking slots and rest areas - Ensure a phased implementation of the SADC rules
Rail transport infrastructure and equipment	- Limited public funding for rail transport infrastructure maintenance, rehabilitation, and extension - Lack of connectivity between the three railways - Concerns about achieving transparent access and preventing discriminatory pricing practices within rail freight transport concessions - Prevalence of theft and fatal accidents along the railways	- CFL's railway rehabilitation and extension should be prioritized - Ensure fair and transparent concessions conditions and access to services - Invest in safety equipment - Install surveillance cameras in key areas along the railways
Port infrastructure and equipment	- Ports have robust infrastructure and equipment, but some terminals lack essential equipment such as scales. Some ports depend on diesel generators for power supply. - There is a risk that rapid growth of cargo volume (e.g., exports of minerals in the Port of Lobito) can undermine the freight transport sustainability in the future, and the current port equipment would be insufficient to mitigate this risk	- Initiatives taken by the Port of Luanda (i.e., construction of a power station and mandatory installation of scales in terminals) should be followed by other ports and incorporated into future port expansion plans - Increase investment in equipment to improve social and environmental sustainability (e.g., installing more green cranes and using structures to protect or coexist with the ocean environment and biodiversity)
Logistics platforms and facilities	Effectiveness of the logistics platforms can be hampered by the limited intermodal connections between road and rail transport networks, as well as the low first-mile transport connections	- Continue developing logistics platforms, using PPPs and concessions - Logistics platforms development should be complemented with the investment in the improvement of road and rail connections, as well as first-mile transport connections for the rural/agribusiness sector
Technology and ICT		
Freight transport automation	High costs of equipment and technologies including for automation	Provide financial incentives to companies adopting new and autonomous freight transport technologies
Digitalization and intelligence	- Inefficient clearance of ships during port calls - Limited spread of digitalization technologies and devices	- Implement Maritime Single Window platform at all ports and invest in the human capacity required - Establish joint initiatives and pilot projects and share resources among transport operators, technology providers, and research institutions



Action area	Challenges	Recommendations
Green technology	- Limited alternative fuel usage - Limited adoption of green vehicles	- Establish clear and consistent regulations that support the uptake of green technologies - Phase-out from fuel subsidies to promote green technologies - Implement pilot projects and demonstration programmes to promote green technologies - Collaborate with energy suppliers to meet energy demands - Integrate smart grid, battery technology, and renewable energy development into long-term planning - Learn successful practices from leading countries
Market structure and competition		
Market openness and competition	- Monopoly in freight transport of dangerous and precious cargo - Lack of sufficient operators in cold-chain logistics - Price discrimination in railways	Enforce fair and transparent price setting
Informal sector	- The uneven playing field for formal and informal sectors - Higher maintenance costs for the informal sector - Irresponsible and unregulated truck drivers in the informal sector - Prolonged traffic disruptions in the event of accidents - Difficulty in data collection and performance evaluation	- Formalize the informal freight transport sector - Launch awareness-raising and persuasion campaigns
Regulation and institutional setup		
Institutional framework	- Multiple government entities overseeing transport and logistics - Delay in ratification of regional and international agreements - Fragmented implementation of regulations - Burdens and delays due to bureaucracy	- Ensure coordination and concerted efforts from the core leadership - Avoid compartmentalization of responsibilities among government agencies
Harmonization with regional rules and participation of international treaties	- Unharmonized regional rules - Absence of synchronization between domestic regulations and regional rules - Non-compliance with regional and international standards - Minimal engagement in international treaties on sustainable transport	- Push for the alignment with new regional and international transport regulations - Ensure harmonization and coordination among government agencies - Ratify global treaties relevant with freight transport development such as Luxembourg Rail Protocol
Environmental and social regulations	- Inadequate consideration of environmental and social issues in concessions - No regulations or standards for fuel	- Adopt regional norms (e.g., SADC fuel standards, vehicle emission standards, driving hours...) - Ensure the integration of environmental and social elements into legislation formulation and concessions - Draw on successful measures implemented by leading countries
Law enforcement	- Unavailability of weighbridges - Prevalence of informal operations - Lack of training for regulators - Truck drivers bypassing inspections	- Employ more advanced technologies and equipment - Empower enforcers with efficient inspection techniques - Provide education for agricultural producers and transporters on adhering to regulations
Trade facilitation	Inadequate customs infrastructure	- Build additional customs infrastructure - Develop One-Stop Border Posts (OSBP) - Utilize intelligent control systems for goods movements at ports - Implement paperless payment methods for all dues and charges - Establish National Trade Information Portal

Action area	Challenges	Recommendations
Capacity building, training, and awareness raising		
Training drivers in road transport	Difficulty in reaching individual operators and small companies	- Deliver training through truck associations and labour unions - Provide training to driving instructors and require them to do further training - Integrate capacity building and training into driving tests and certification - Expand the coverage of training programmes (eco-driving, road conditions, etc.)
Training women	- Difficulty in reaching and engaging more female participants - Higher costs for women to participate in training programmes	- Ensure wide dissemination of information - Help females reduce/alleviate the economic and social costs of participation
Provision of training in the informal sector	- Difficulty in identifying and reaching stakeholders in the informal sector - Instability of the informal sector	- Advocate benefits of formalization - Provide training about the procedures to be formalized for informal operators - Ensure that capacity building and training programmes are inclusive and do not discriminate non-discriminatory and inclusive
Building capacity of farmers	- Absence of estimation on agricultural production - Limited knowledge of farmers about product packaging and storage - Lack of capacity to meet standards to get certification for food exports	- Provide capacity-building and training programmes for farmers to forecast and report their production - Collaborate with local governments and associations of farmers - Provide training on packaging and export certification delivered by experts using farmer-friendly language - Seek assistance from international organizations
Building capacity of government agencies	- Limited capacity to carry out efficient and effective inspections - Inaccurate attributions of road accidents	- Building upon existing sound systems and best practices observed in other countries - Provide more training to the law enforcing officers and inspectors
Raising awareness about social and environmental sustainability	- Economic development taking precedence over social and environmental sustainability - Inadequate consumer awareness of social and environmental responsibility	- Launch public awareness campaigns targeting both the public and private sectors - Quantify and internalize the social and environmental costs associated with freight transport activities - Conduct cost-benefit analyses of sustainability projects
Coordination and partnership		
Intermodal transport	- Limited connectivity of rail lines - Low cargo volumes transported from inland areas to the coast and ports	Initiate complementary projects for intermodal transport
Agricultural transport	- Fragmentation of the agricultural sector - Undersupplied and poorly maintained public goods for producers and transporters - Limited cooperation due to competition	- Organize smallholders and family farmers through local governments and NGOs - Establish collaborative agricultural transport networks to pool resources, share logistical information, and optimize routes
Data and monitoring		
Data collection	- Difficulty in collecting data in the informal sector - Absence of a structured data reporting system	- Introduce a sampling survey on the road freight transport sector to cover the informal sector - Launch training programmes for the informal sector to record freight transport activities - More data collection in the formal sector such as fuel consumption
Information sharing and reporting	- Inadequate information sharing between freight transport industry and other related industries - Lack of access for transporters to information about the locations of agricultural production sites and volumes of products	- Expand collaboration within the freight transport sector and among other freight-related sectors - Enhance data exchange among government agencies to facilitate more efficient information flow

Action area	Challenges	Recommendations
Data publication	- Statistical information and reports are often not published online - Information is not displayed in a structured way, and users have difficulty locating specific statistics - Most statistics are published only in PDF format and not available in machine-readable formats - Insufficient granularity in data publication (by gender, etc.)	- Establish a one-stop portal site for statistical information - Strong leadership with accountability for statistics publication to coordinate various ministries and agencies - Improve standards of statistical data collection and reporting, including sample size design to ensure sufficient disaggregation, as well as publication in a machine-readable format.
Monitoring	- Weak governance and inadequate implementation of policies and investments - Non-compliance among the companies	- Allocate resources for regular updates and revisions of policies and strategies aligned with legislative changes and long-term plans - Closely monitor the project execution progress - Enact effective regulations and enforce the punishment for non-compliance
Gender mainstreaming		
Female participation	Women are underrepresented in the freight transport sector	- Employers need to recognize that women have high qualifications, including female engineers with university degrees. - Employers should organize promotional events such as Women's Day - Leverage new technologies which creates new jobs opportunity and facilitate female participation by reducing the physical burden - Promote flexible working arrangement - Enhance training for women - Enhance gender-sensitive data collection by improving statistical standards and integrating gender-related KPIs
Cross-cutting issue: first-mile/rural transport for the agribusiness sector		
First-mile road maintenance and rehabilitation	- Little attention to the roads serving the first-mile or the rural roads in the National Transport Master Plan - Lack of sustainable mechanism for continuous maintenance of first-mile roads - Lack of skilled labour to properly operate and maintain machines for road maintenance	- Develop dedicated road rehabilitation programmes for provincial and municipal roads in rural areas - Consider establishing road management agencies at the provincial level - Enhance private sector engagement - Train qualified trainers for the proper operation of road maintenance machines - Address the issue of insufficient supply of spare parts and fuels for the road maintenance machine by strengthening its supply chains
Truck operators and vehicles serving the first-mile road transport	- Gap in data collection for PIDCR Impact assessment - Scale of the PIDCR is not sufficient to solve agriproducts transport and the food wastage problem in Angola - Trucks provided under the PIDCR have not been well-maintained - Difficulty in dissemination of matching and tracking software developed under the PIDCR to farmers	- Measure the impact of the PIDCR through monitoring and data collection - Ensure regular and timely data reporting and publishing - Strengthening collaboration with agribusiness stakeholders such as farmers' associations - Disseminate the information on the truck maintenance programme and raise awareness of the stakeholders - Technical assistance is required for the government to improve the matching and tracking software developed under the PIDCR

Source: Compiled by the UNCTAD secretariat, 2024



Chapter 6

Summary and conclusion



ATENÇÃO
20
HOMENS
A
TERRA FRIA

SFT Assessment results: The SFT Assessment in Angola revealed that the country's performance in the three pillars of sustainability (i.e. economic, social and environmental) is low compared to the average of African countries. This conclusion is summarized in Figure 10 based on publicly available and internationally comparable information sources and further confirmed by the stakeholder survey and interviews. Areas requiring particular attention include:

- **Transport infrastructure and equipment:** e.g., poor road network conditions mainly in rural areas, lack of weighbridges, and insufficient and isolated rail network;
- **Freight transport service quality and reliability:** poor reliability of road freight transport in the informal sector, low speed and lack of spare parts and fuel in the rail transport sector;
- **Safety and security:** e.g., high traffic deaths rate, frequent pedestrian accidents in rail, and theft of vital rail infrastructure components;
- **Accessibility and affordability:** e.g., low percentage of the rural population with access to all-seasoned roads within 2 kilometres, and high freight transport costs in rural areas;
- **Employment and labour conditions:** e.g., an insufficient supply of skilled labour (including lack of proper driving skills in the informal road freight sector and a deficiency incapacity for machine maintenance), and lack of reliable and detailed statistics on freight transport sector employment;
- **Climate change mitigation:** e.g., high GHG emission intensity from the transport sector, absence of fuel standards and vehicle emission standards, and lack of data collection on emissions.

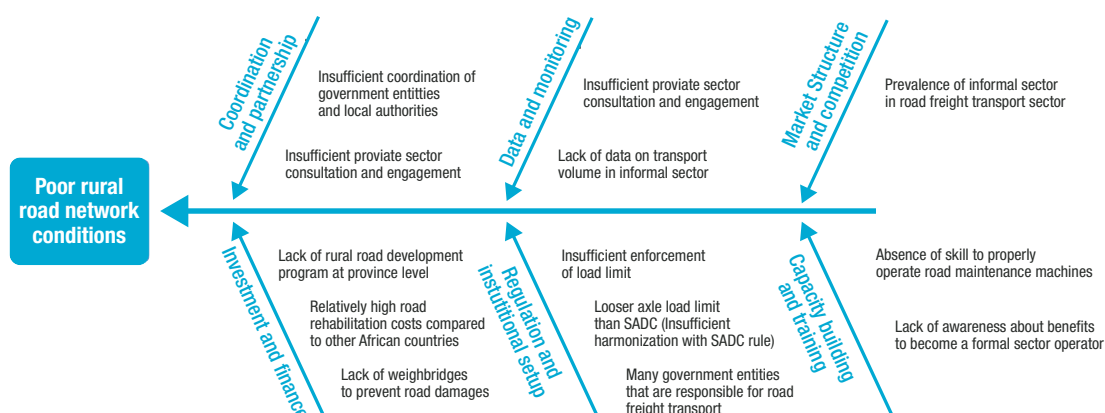
Despite government efforts to enhance the economic, social, and environmental facets of the freight transport sector (through for example investment in infrastructure and legislative efforts), further advancements are essential for achieving sustainable development,

especially in road and rail transport, when compared to maritime transport and ports. Significant disparities exist in the advancement of sustainable freight transport across different modes of transportation.: There are huge gaps in the progress of the freight transport sustainability development across transport modes. According to the stakeholders' perceptions, as summarized in Figure 11 (on page 39) based on quantitative scoring of the stakeholder responses to closed-ended questions in the stakeholder survey, ports are the most progressed mode in sustainable freight transport compared to road and rail. Rail is lagging behind the other two, particularly in economic dimensions (e.g., service quality and reliability and connectivity).

Need for more private sector consultation and engagement: A huge gap also exists in the perception of freight transport sustainability performance among public sector and private sector stakeholders, as indicated in Figure 12 (on page 40). On average, the public sector stakeholders were significantly more optimistic about the sustainability performance across all sustainability dimensions except noise pollution, compared to the private sector. It implies that more private sector consultation will bring diverse views on the performance of the freight transport sector and help improve freight transport policy design and planning. More private sector engagement in the policy formulation process was also suggested by several stakeholders in the stakeholder survey and during the interviews.

Need for a holistic approach: Improving Angola's freight transport sustainability requires a holistic and overarching approach because multifaceted factors are contributing to the sector's sustainability challenges. For example, based on the stakeholder survey and interviews, UNCTAD identified that the poor road network conditions in rural areas possibly stem from the following complex web of causation (Figure 13).

Figure 13.
Possible causes of poor rural road network conditions



Source: UNCTAD Secretariat

Way forward for Angola's SFT

development: Based on the above considerations and detailed examination of stakeholder views solicited from the survey and interviews, the country is recommended to move forward towards the following directions to improve freight transport sustainability performance:

- **Stronger and smoother coordination:**

- Government entities and agencies should strengthen coordination. It involves understanding and sharing challenges and difficulties across different types of entities, including entities for policy development (e.g., Ministry of Transport and Ministry), finance (e.g., Ministry of Finance and Road Fund), regulation (e.g., ANTT), and law enforcement (e.g., the police under the Ministry of the Interior).
- Particularly for the road freight transport sector, better coordination mechanisms between central government entities and local authorities, including 18 provinces and 164 municipalities, should be established. The coordination mechanism should help swiftly identify critical infrastructure challenges, particularly in municipal roads (such as broken bridges

in a vital route for a village) and reflect them in road rehabilitation planning and budget allocation.

- a coordinated and integrated approach among institutions to enhance infrastructure development, both hard (physical) and soft (regulatory and procedural), within multi-stakeholder corridor projects.
- Freight transport policy formulation should broaden and enhance private sector consultation and engagement, including not only freight transport operators but also freight transport service customers. As private sector stakeholders have different views and interests, the broadened consultation process will help identify tailored solutions for private sector engagement and mutually beneficial opportunities for freight transport sector development.
- **Stronger governance of the freight transport sector:**
 - Stricter enforcement of rules and regulations is required, particularly in the informal road freight transport sector.¹⁵⁸ Fines and penalties should be set at a level that can effectively deter the breach of regulations.

¹⁵⁸ These rules include load limit, traffic law, regulation on driving hours, mandatory vehicle insurance, and regular vehicle inspections.

- Governance and monitoring of transport infrastructure projects should be improved. This involves ensuring fair and transparent competition in the bidding or contract process of transport infrastructure projects, strictly requiring contractors to regularly report project progress,¹⁵⁹ and regularly updating the public on the project status to maintain transparency and accountability.
- **Scale up and extend capacity building efforts:**
 - The ongoing capacity building efforts should be scaled up to reach government employees including law enforcers and inspectors, freight transport operators including the informal sector.
 - The capacity building should be extended to cover broader skills such as safety and eco-friendly driving practices, engineering skills for proficient machine operation and maintenance, and expertise in project progress reporting to facilitate the timely reporting of statistics and project progress.
- **Enhanced coordination for compliance with international and regional standards**
 - Effective coordination is essential for adopting international and regional standards within the freight transport sector, ensuring alignment across various government entities and agencies. This harmonization presents a significant opportunity to simultaneously enhance multiple aspects of freight transport sustainability, including infrastructure quality, transport efficiency, safety, and climate impact mitigation.
- **Enhanced emphasis on social and environmental sustainability in urban areas:**
 - Efforts should be directed towards

preventing deterioration in social and environmental sustainability of freight transport performances in urban areas that are expected to experience rapid population growth and urbanization. This involves sensitization and awareness building among public and private sector stakeholders in freight transport about the anticipated rise in the adverse impact of freight transport activities on the urban population and the environment.

- **More comprehensive and reliable data collection:**
 - Statistics on freight transport volume and prices are essential for planning of transport infrastructure projects and adequate regulations. Particularly, coverage of the informal sector in the freight transport statistics should be improved to enable more effective government interventions in the sector.
- **Ensure gender mainstreaming:**
 - The gender dimension should be incorporated into all the aforementioned considerations. This will not only enhance female participation in the freight transport sector but also help tackle other challenges such as the supply of skilled labour and law enforcement.¹⁶⁰ Furthermore, it can serve as a catalyst for the improvement of labour conditions facilitated by the adoption of new and automation technologies and some infrastructure such as rest areas for truck drivers.

Building upon the above directions, more specific measures and actions have been identified through the assessment process, categorized for short (within around three years) and long-term (beyond three years) horizons.

Short-term specific measures and actions:

¹⁵⁹ If a contractor significantly misses reporting deadline, it should be considered as a negative factor in the future bidding or contract process.

¹⁶⁰ In transport, storage, accommodation, and communication sector, 94 per cent of informal sector employment was male in 2022.



- **Road infrastructure and equipment:**

- Conduct broader stakeholder consultations on road maintenance and rehabilitation to seek mutually beneficial solutions, such as villagers' participation in small road maintenance activities including trimming shrubs and cleaning road gullies.
- Develop dedicated road rehabilitation programmes for provincial and municipal roads in rural areas to complement the National Transport Master Plan's projects on fundamental road networks.¹⁶¹
- Conduct a comprehensive study on road rehabilitation costs, including analysing the market structure of the construction sector, government procurement processes for road rehabilitation projects, and cost factors (e.g., labour costs and material costs) in comparison to neighbouring countries.
- Initiate the first phase of the tollbooth and weighbridge installation programme and proceed with the second phase, ensuring the weighbridges adhere to SADC certification standards.
- Investigate additional optimal weighbridge locations, including highway entry points, ports, logistics platforms, and rail cargo terminals, to effectively minimize road damages.

- **Rail infrastructure, equipment, and freight service:**

- Implement the rehabilitation project for the CFL's Zenza - Cacuso section and speed up the extension plan of the CFL to enhance price competitiveness and improve freight transport efficiency.
- Proceed with the ongoing projects to install safety infrastructure and equipment, such as pedestrian bridges and fences, particularly in urban areas.
- Regularly monitor rail operators to

ensure fair provisions of freight transport services and transparent pricing to all stakeholders.

- **Port infrastructure and equipment:**

- Proceed with the plan to install scales in terminals and a power station in the Port of Luanda.
- Ensure that all other ports are also equipped with scales and maintain a stable and clean power supply.

- **Regional harmonization of regulations:**

- Harmonize domestic legislation with SADC rules and standards, including axle load limit, weighbridge certification, fuel standards and vessel emission standards, and driving hours, possibly with a phased approach. This requires capacity building for law enforcement officers and inspectors, as well as investment in equipment for detecting violations.

- **Regional connectivity:**

- Speed up the one stop border post construction plan in the Santa Clara – Oshikango (Angola – Namibia) border.¹⁶² It should be complemented with the road and railway connection projects.
- Establish a one stop border post in the Lobito corridor.

- **Statistical data collection and publication:**

- In the formal sector, data should be collected not only for employment, cargo volume and freight transport prices, but also for distance and payload-distance (i.e., ton-kilometres) of freight transport, cargo types, number and total capacity of active fleets, number of drivers or pilots, and fuel consumption.
- Improve the format of statistics publications. Statistics should be available on the website, not only in PDF

¹⁶¹ This is based on a recommendation proposed in Benmaamar et al., 2020.

¹⁶² Angula, 2022

reports but in machine-readable data formats such as CSV or JSON.

- **Female participation and gender mainstreaming:**

- Conduct a comprehensive study to identify challenges faced by female employees in the freight transport sector. The study should include interviews with female workers without the presence of male colleagues to ensure open and honest sharing of views about the workplace and employment environment.
- Share best practices in the freight transport sector, such as promotional events (e.g., Women's Day by the Port of Luanda).

Long-term specific measures and actions:

- **Road infrastructure management:**

- Establish a provincial-level road management agency to coordinate government efforts to develop, implement, and manage rural road maintenance and rehabilitation projects.¹⁶³ This agency should bring together personnel from central government entities responsible for provincial and municipal roads, along with representatives of provincial and municipal authorities. Municipalities may delegate the management of parts of their road networks to this agency to enhance coordination and leverage economies of scale.

- **Rail network connection:**

- Strengthen railway connections between the three railways, and their intermodal connection with ports and dry ports. This will not only facilitate rail transport but also promote multimodal transport, encouraging modal shifts to and from the road, thus optimizing the effectiveness of logistics platforms and dry ports.

- **Port sustainability:**

- Elevate the priority level on social and environmental sustainability, including mitigating noise and ocean pollution, particularly in Lobito Port where robust growth in mineral cargo is anticipated.

- **Data collection and publication:**

- Improve reliability of disaggregated results of sampling surveys, by increasing sample size (e.g., a larger sample size will be required to increase accuracy in disaggregated results of employment survey by transport subsector and gender).
- Start sampling survey on freight transport volume, distance, and freight transport work (ton-kilometres), particularly in the road freight transport sector to measure informal sector activities. This should be accompanied by training for selected informal sector operators to accurately record their freight transport activities.
- Utilize primary statistics (i.e., Ministry of Transport, Government of Angola, 2021) and sampling survey recommended above) to calculate a matrix of transport volume by origin and destination provinces, transport mode and cargo type. Publish the derived statistics in a table format.
- Additional sampling surveys should be considered in the road freight transport sector, for example, about fuel consumption and freight transport distance.
- Conduct a comprehensive survey about the movement of cargo every five or ten years. This survey should be administered to shippers (e.g., mining sector, manufacturing, wholesalers, and storages) to comprehensively measure cargo movement from the shipping side.
- One-stop statistical portal site should be developed, possibly led by INE, and

¹⁶³ This is based on a recommendation proposed in Benmaamar et al., 2020.

it should include all freight transport statistics conducted by the Ministry of Transport (as well as other surveys and statistics administered by other ministries). While ministries may continue posting statistics on their website, they should ensure the inclusion of a link to the portal site so the users can be instructed to the statistical portal for compiled information.

Implications for the Lobito corridor

development: The Lobito corridor, a key route in the SADC region, is attracting the attention of various stakeholders, including bilateral partners such as the EU and the US, development banks and the private sector. This corridor, which links the port of Lobito to the Copperbelt region in southern DRC and northern Zambia, is expected to see a significant increase in mineral freight traffic on the CFB rail line and at the port of Lobito. However, the expansion of traffic in the Lobito corridor raises concerns about the potential exacerbation of the social and environmental challenges identified in this assessment. Therefore, in order to address and mitigate these issues and improve the overall SFT performance during the development of the Lobito corridor, it is recommended to incorporate the applicable measures into the development plan, in particular:

- Strengthen the monitoring system to control the possible contamination of the water by the mineral cargo terminal in the port of Lobito.
- Collect accurate and comprehensive data on female workers, noise pollution, air pollution, and GHG emissions.
- Install equipment to prevent rail accidents and theft of rail infrastructure components (e.g. pedestrian bridges, fences, surveillance cameras).
- Monitor rail freight market activities, including the monitoring of transport prices by cargo and customer type, to ensure fair and equitable access to rail transportation services for all customers, including non-mineral cargo shippers.

- In addition, it is imperative to develop first-mile transportation to connect agricultural production zones to the Lobito Corridor (i.e., establish logistics platforms along the corridor) and extend the benefits of the corridor beyond the mining industry.

As such, advancing Angola's SFT requires a concerted effort from all stakeholders to integrate sustainability into the heart of freight transport policies and practices.

By adopting the recommended strategic directions, Angola can pave the way for a more sustainable, efficient, and inclusive freight transport and logistics system.

In conclusion, the Angola Sustainable Freight Transport (SFT) Assessment report presents a comprehensive analysis covering the country's economic landscape, the transport sector profile and a comprehensive SFT Assessment. It highlights the strategic importance of improving the sustainability of Angola's freight transport to support economic diversification, particularly in the agribusiness sector.

The assessment results show that Angola's sustainability performance (economic, social, environmental) is below the African average and requires attention in areas such as transport infrastructure, service quality, safety, regulatory harmonization, adoption of international standards, accessibility, gender, investment and finance, private sector cooperation, institutional and management framework for corridors, ICT and new technology application, green transition, and climate change mitigation and adaptation.

The report notes that Angola's transport and logistics system is at a pivotal point, with positive initiatives underway to modernize and make freight transport more sustainable. Angola has initiated several projects to improve its transport infrastructure, including the expansion of the Lobito Corridor to enhance regional connectivity. The government has also introduced policies to promote social and environmental sustainability in transport, such as incentives for the use of cleaner energy sources. However, significant gaps remain



in ensuring sustainability across transport modes, with maritime transport outpacing road and rail in terms of sustainable development. There are also significant opportunities for Angola to capitalize on its geographic location, abundant natural resources, and growing trade relations to develop into a regional transport hub.

The report concludes with a set of policy recommendations and a priority action matrix that addresses investment, finance, market structure, regulation, capacity building, and coordination. These recommendations are designed to guide decision-makers in creating a more resilient, efficient, and sustainable freight transport system that supports Angola's broader economic, social, and environmental goals.

Moving forward, it is essential for stakeholders, including government agencies, private sector participants, and regional and international partners, to collaborate closely to implement the recommended actions. Monitoring

and evaluation mechanisms must be strengthened to track progress, ensure accountability, and adapt strategies as needed to meet the evolving demands of Angola's freight transport sector.

UNCTAD's role and support: Based on its mandate and drawing on its extensive research and technical assistance programme focused on sustainable and reliable freight transport and finance, UNCTAD provides tailored capacity-building and training activities in specific areas of sustainable freight transport (SFT) and finance. In addition, through its cooperation with various international and regional organizations and institutions, UNCTAD is well placed to assist the Government of Angola in advancing its sustainable freight transport initiatives. This approach underscores UNCTAD's commitment to enhancing the sustainability and resilience of freight transport systems through specialized and collaborative efforts.¹⁶⁴

¹⁶⁴ UNCTAD, 2019b. See also: UNCTAD, 2024b.



References

- Abraham S (2024). Angola Inks MoU For Rail Expansion. Available at <https://www.constructafrica.com/news/angola-inks-mou-rail-expansion> (accessed 11 February 2024).
- African Development Bank (2014). Study on Road Infrastructure Costs: Analysis of Unit Costs and Cost Overruns of Road Infrastructure Projects in Africa. Available at <https://www.afdb.org/ar/documents/document/study-on-road-infrastructure-costs-analysis-of-unit-costs-and-cost-overruns-of-road-infrastructure-projects-in-africa-48695>.
- African Development Bank (2023a). Angola Economic Outlook. African Development Bank Group. Available at <https://www.afdb.org/en/countries/southern-africa/angola/angola-economic-outlook> (accessed 3 October 2023).
- African Development Bank (2023b). Multinational - Lobito Corridor Trade Facilitation Project. Available at <https://projectsportal.afdb.org/dataportal/VProject/show/P-Z1-KF0-027> (accessed 16 October 2023).
- Africa-Press (2023). Merchandise operators reimburse Kz 34.7 million. Available at <https://www.africa-press.net/angola/all-news/merchandise-operators-reimburse-kz-34-7-million> (accessed 1 February 2024).
- Airportcodes (2023). Largest airports in Angola. Available at <https://airportcodes.io/en/country/angola/> (accessed 3 October 2023).
- Angola Press Agency (2020). Angola: World Bank Provides USD 230 Million to Support Commercial Agriculture. Available at <https://allafrica.com/stories/202010300560.html> (accessed 23 April 2024).
- Angop (2024). Rural Commerce enables 2,513 tons of products flow in Angola. Available at <https://www.angop.ao/en/noticias/agricultura/operadores-transportam-mais-de-duas-mil-toneladas-da-producao-nacional/> (accessed 30 January 2024).
- Angula V (2022). Oshikango-Santa Clara border post to operate 24/7. Available at <https://omutumwa.com/2022/03/oshikango-santa-clara-border-post-to-operate-24-7/> (accessed 16 February 2024).
- Benmaamar M, Arroyo F and Tisso Eduardo N (2020). Angola Road Sector Public Expenditure Review. World Bank, Washington, DC. Available at <http://hdl.handle.net/10986/33804> (accessed 3 October 2023).
- Bocher E, Petit G, Picaut J, Fortin N and Guillaume G (2017). Collaborative noise data collected from smartphones. *Data in Brief*. 14498–503.
- Boechat G (2023). Presidents of Angola, Zambia and DRC get together to launch Lobito corridor. Available at <https://medafricatimes.com/31578-presidents-of-angola-zambia-and-drc-get-together-to-launch-lobito-corridor.html> (accessed 1 February 2024).
- Central Intelligence Agency (CIA), U.S. Government (2024). The World Factbook: Angola. Available at <https://www.cia.gov/the-world-factbook/countries/angola/#transportation> (accessed 26 March 2024).
- Concern Worldwide and Welthungerhilfe (2023). Global Hunger Index 2023: Angola. Available at <https://www.globalhungerindex.org/pdf/en/2023/Angola.pdf> (accessed 14 February 2024).
- Cross Border (2021). Angola: Country Profile Report. Available at <https://www.cbirta.co.za/uploads/files/Angola-Country-Profile-Report-March-2021.pdf> (accessed 3 October 2023).
- Cui H, Xie Y and Niu T (2023). China is propelling its electric truck market by embracing battery swapping. Available at <https://theicct.org/china-is-propelling-its-electric-truck-market-aug23/> (accessed 12 February 2024).
- Datawheel (2024). The Observatory of Economic Complexity (OEC) - Country Profile - Angola. Available at <https://oec.world/en/profile/country/ago> (accessed 8 February 2024).



Delegation of the European Union to Angola (2024). Global Gateway: European Union Strengthens partnership with Angola in its economic diversification. Available at https://www.eeas.europa.eu/delegations/angola/global-gateway-european-union-strengthens-partnership-angola-its-economic-diversification_en?s=83 (accessed 22 March 2024).

Deutsche Bank (2023). Deutsche Bank finances a major infrastructure project in Angola. Available at https://country.db.com/news/detail/20230622-deutsche-bank-finances-a-major-infrastructure-project-in-angola?language_id=1 (accessed 1 February 2024).

Diário da Republica (2018). Diário da Republica - ÓRGÃO OFICIAL DA REPÚBLICA DE ANGOLA (N144). Available at https://files.lex.ao/presidente-da-republica/2018/decreto-presidencial-n-o-220-18-de-25-de-setembro/download/decreto-presidencial-n-o-220-18-de-25-de-setembro_presidente-da-republica_lex-ao.pdf (accessed 19 April 2024).

Diário da Republica (2019a). Diário da Republica - ÓRGÃO OFICIAL DA REPÚBLICA DE ANGOLA (N64).

Diário da Republica (2019b). Diário da Republica - ÓRGÃO OFICIAL DA REPÚBLICA DE ANGOLA (N139).

Diário da Republica (2020). Diário da Republica - ÓRGÃO OFICIAL DA REPÚBLICA DE ANGOLA (N211). Available at <https://arccla.gov.ao/documentos/Decretos/Decreto%20Presidencial%20n.%20326.20,%20de%2029%20de%20Dezembro-Cria%20a%20ARCCLA.pdf> (accessed 18 April 2024).

Diário da Republica (2021a). Diário da Republica - ÓRGÃO OFICIAL DA REPÚBLICA DE ANGOLA (N111). Available at https://files.lex.ao/presidente-da-republica/2021/decreto-presidencial-n-o-157-21-de-16-de-junho/download/decreto-presidencial-n-o-157-21-de-16-de-junho_presidente-da-republica_lex-ao.pdf (accessed 18 April 2024).

Diário da Republica (2021b). Diário da Republica - ÓRGÃO OFICIAL DA REPÚBLICA DE ANGOLA (N95). Available at https://arccla.gov.ao/documentos/Decretos/DP%20127.21%20-%20Institui%C3%A7%C3%A3o%20da%20JUL_25%20Maio.pdf (accessed 18 April 2024).

Diário da Republica (2021c). Diário da Republica - ÓRGÃO OFICIAL DA REPÚBLICA DE ANGOLA (N197). Available at <https://faolex.fao.org/docs/pdf/ang205939.pdf> (accessed 22 April 2024).

Diário da Republica (2022). Diário da Republica - ÓRGÃO OFICIAL DA REPÚBLICA DE ANGOLA (N174). Available at <https://faolex.fao.org/docs/pdf/ang116896.pdf> (accessed 18 April 2024).

DP World (2021). DP World starts operations of multipurpose terminal at Port of Luanda. Available at <https://www.dpworld.com/news/releases/dp-world-starts-operations-of-multipurpose-terminal-at-port-of-luanda/> (accessed 3 October 2023).

Embaixada da República de Angola em Portugal (2022). País quer liderar a economia digital no continente. Available at <http://www.embaixadadeangola.pt/pais-quer-liderar-economia-digital-continente/> (accessed 3 October 2023).

Euronews (2021). The source of the Okavango wilderness: Angola's untapped territory teeming with biodiversity. Available at <https://www.euronews.com/business/2021/04/07/the-source-of-the-okavango-wilderness-angola-s-untapped-territory-teeming-with-biodiversit>.

European Commission (2024). Global Gateway in Sub-Saharan Africa. Available at https://international-partnerships.ec.europa.eu/policies/global-gateway/initiatives-region/initiatives-sub-saharan-africa_en (accessed 22 March 2024).

European Commission, Joint Research Centre (JRC) and International Energy Agency (IEA) (2022a). EDGAR (Emissions Database for Global Atmospheric Research) Community GHG Database (a collaboration between the European Commission, Joint Research Centre (JRC), the International Energy Agency (IEA), and comprising IEA-EDGAR CO₂, EDGAR CH₄, EDGAR N₂O, EDGAR F-GASES version 7.0. Available at https://edgar.jrc.ec.europa.eu/dataset_ghg70.

European Commission, Joint Research Centre (JRC) and International Energy Agency (IEA) (2022b). EDGAR (Emissions Database for Global Atmospheric Research) Community GHG Database (a collaboration between the European Commission, Joint Research Centre (JRC), the International Energy Agency (IEA), and comprising IEA-EDGAR CO₂, EDGAR CH₄, EDGAR N₂O, EDGAR F-GASES version 6.1 October. Available at https://edgar.jrc.ec.europa.eu/dataset_ap61.

- Food and Agriculture Organization (FAO) (2023a). Angola Investment Plans and Opportunities. Available at <https://www.fao.org/hand-in-hand/hih-IF-2023/angola/en> (accessed 14 February 2024).
- Food and Agriculture Organization (FAO) (2023b). Angola for Investment Forum. Available at https://www.fao.org/docs/handinhandlibraries/countries/angola/apresenta%C3%A7%C3%A3o-angola---26-09-2023.pdf?sfvrsn=e93753d9_1 (accessed 11 February 2024).
- Food and Agriculture Organization (FAO) (2024). Food Balances. Available at <https://www.fao.org/faostat/en/#data/FBS> (accessed 30 January 2024).
- Food and Agriculture Organization (FAO) and World Health Organization (WHO) (2023). Standards. Available at <https://www.fao.org/fao-who-codexalimentarius/codex-texts/list-standards/en/> (accessed 11 February 2024).
- Goosen M (2022). Port Infrastructure in Angola will Allow the Country to Capitalize on its Resource Wealth. Available at <https://www.insights-global.com/port-infrastructure-in-angola-will-allow-the-country-to-capitalize-on-its-resource-wealth/> (accessed 3 October 2023).
- Government of Angola (2023). Plano de Desenvolvimento Nacional 2023-2027. Available at [https://www.mep.gov.ao/assets/indicadores/angola2050/20231030\(3\)_layout_Final_Angola_PDN%202023-2027-1.pdf](https://www.mep.gov.ao/assets/indicadores/angola2050/20231030(3)_layout_Final_Angola_PDN%202023-2027-1.pdf).
- Government of Angola (2023). Angola - Dados sobre o país. Available at <https://governo.gov.ao/angola/dados-sobre-o-pa%C3%ADs> (accessed 3 October 2023).
- Government of the United Kingdom (2023). Government invests £200 million to drive innovation and get more zero emission trucks on our roads. Available at <https://www.gov.uk/government/news/government-invests-200-million-to-drive-innovation-and-get-more-zero-emission-trucks-on-our-roads> (accessed 12 February 2024).
- Hawilti (2021). Angola lays first stone for new Barra do Dande Ocean Terminal. Available at <https://hawilti.com/infrastructure/angola-lays-first-stone-for-new-barra-do-dande-ocean-terminal/> (accessed 3 October 2023).
- Institute for Health Metrics and Evaluation (IHME) (2020). Global Burden of Disease Study 2019 (GBD 2019). Available at <https://ghdx.healthdata.org/gbd-2019> (accessed 30 January 2024).
- Intergovernmental Organisation for International Carriage by Rail (OTIF) (2024). Luxembourg Rail Protocol. Available at https://otif.org/en/?page_id=116.
- International Air Transport Association (IATA) (2023). Cargo-XML Standards. Available at <https://www.iata.org/en/programs/cargo/e/cargo-xml/> (accessed 3 October 2023).
- International Energy Agency (IEA) (2023). Total energy supply (TES) by source, Angola 1990-2022. Available at <https://www.iea.org/countries/angola> (accessed 30 January 2024).
- International Fund for Agricultural Development (IFAD) (2024). Angola. Available at <https://www.ifad.org/en/web/operations/w/country/angola> (accessed 11 February 2024).
- International Institute for the Unification of Private Law (UNIDROIT) and Intergovernmental Organisation for International Carriage by Rail (OTIF) (2007). Luxembourg Rail Protocol to the Cape Town Convention on International Interests in Mobile Equipment. Available at <https://www.railworkinggroup.org/wp-content/uploads/docs/railprotocol.pdf>.
- International Labour Organization (ILO) (2023). Statistics in Africa - ILOSTAT. Available at <https://ilostat.ilo.org/data/africa/> (accessed 3 October 2023).
- International Labour Organization (ILO) (2024). ILOSTAT - Wages and Working Time Statistics (COND) January. Available at <https://ilostat.ilo.org/> (accessed 11 February 2024).
- International Maritime Organization (IMO) (2021). IMO-Singapore Maritime Single Window project picks Angola port. Available at <https://www.imo.org/en/MediaCentre/PressBriefings/pages/SwiftAngola.aspx> (accessed 3 October 2023).

- International Renewable Energy Agency (IRENA) (2023). Energy Profile - Angola. Available at https://www.irena.org/-/media/Files/IRENA/Agency/Statistics/Statistical_Profiles/Africa/Angola_Africa_RE_SP.pdf (accessed 30 January 2024).
- International Road Federation (IRF) (2023). IRF World Road Statistics. Available at <https://worldroadstatistics.org/> (accessed 30 January 2024).
- Japan International Cooperation Agency (JICA) (2010). Preparatory Survey for Southern Africa Integrated Transport Program. Available at https://openjicareport.jica.go.jp/pdf/11991007_02.pdf (accessed 16 October 2023).
- Jin L and Chu Y (2023). Accelerating new energy vehicle uptake in Chinese cities. Available at https://theicct.org/wp-content/uploads/2023/02/China-NEPC-city-policies_final.pdf.
- Leao I and Shetty S (2022). Towards improved water and food security: Angola's potential as a future agriculture powerhouse of Africa. Available at <https://blogs.worldbank.org/africacan/towards-improved-water-and-food-security-angolas-potential-future-agriculture-powerhouse> (accessed 30 January 2024).
- Logistics Cluster (2022). Angola Road Network. Available at <https://dlca.logcluster.org/23-angola-road-network> (accessed 11 February 2024).
- Luanda Airport (2023). New Angola International Airport - Planning and Construction, Map and Image Gallery. Available at <https://angolaairport.net/airport/new-luanda-airport.html> (accessed 3 October 2023).
- Ministry of Agriculture and Fisheries, Government of Angola (2020). Relatório de Resultados da Campanha Agrícola 2019/2020. Available at <https://rvaaatlas.sadc.int/media/352be47c-048c-40cc-8567-74d40ec147aa/5b3a7c6a-7572-4f3a-be0d-406bd7356e27/RCA%202019-2020-FINAL.pdf>.
- Ministry of Culture, Tourism, and Environment, Government of Angola (2021). Nationally Determined Contribution of Angola. Available at <https://unfccc.int/sites/default/files/NDC/2022-06/NDC%20Angola.pdf> (accessed 3 October 2023).
- Ministry of Finance, Government of Angola (2023). ORÇAMENTO GERAL DO ESTADO | 2023. Available at https://plataformacipra.gov.ao/public/ficheiros/arquivos/Gov_AngolaOGE561905230238301684503510.pdf.
- Ministry of Industry and Commerce, Government of Angola (2021). Plano de Desenvolvimento Industrial de Angola 2025. Available at https://www.ambassadeangola.ch/telechargements/Plano_de_Desenvolvimento_Industrial_Angola_2025_para_consulta.pdf.
- Ministry of the Environment, Government of Angola (2017). National Strategy for Climate Change (2018-2030). Available at <https://faolex.fao.org/docs/pdf/ang208868.pdf> (accessed 3 October 2023).
- Ministry of Transport, Government of Angola (2021). Anuário Estatístico do Sector dos Transportes 2021. Available at https://mintrans-tenders.ao/docs/MT_Anuario2021_08.pdf (accessed 2 February 2024).
- Ministry of Transport and Ministry of Public Works, Urbanism and Housing (2020). National Master Plan for the Transport Sector and Road Infrastructure.
- National Statistics Institute (INE), Government of Angola (2023a). Contas Nacionais Trimestrais IV Trimestre de 2022. Available at https://www.ine.gov.ao/Arquivos/arquivosCarregados//Carregados/Publicacao_638194861776729235.pdf (accessed 13 February 2024).
- National Statistics Institute (INE), Government of Angola (2023b). Inquérito ao Emprego em Angola - Indicadores sobre Emprego e Desemprego - Relatório Anual 2022. Available at https://www.ine.gov.ao/Arquivos/arquivosCarregados//Carregados/Publicacao_638253195047780891.pdf (accessed 2 February 2024).
- National Statistics Institute (INE), Government of Angola (2023c). Folha de Informacao rapida - Contas Nacionais Trimestrais - III Trimestre 2023. Available at https://www.ine.gov.ao/Arquivos/arquivosCarregados//Carregados/Publicacao_638342212385615149.pdf (accessed 11 February 2024).
- National Statistics Institute (INE), Government of Angola (2023d). Contas Nacionais Trimestrais III Trimestre de 2023. Available at https://www.ine.gov.ao/Arquivos/arquivosCarregados//Carregados/Publicacao_638342212385615149.pdf (accessed 5 February 2024).



- National Statistics Institute (INE), Government of Angola, United Nations Development Programme (UNDP) and Oxford Poverty and Human Development Initiative (OPHI) (2020). Multidimensional Poverty in Angola 2020. Available at https://ophi.org.uk/wp-content/uploads/Angola_PM_2020.pdf (accessed 3 October 2023).
- Nhede N (2023). Angola to Privatize 73 New Assets Under Extended Propriv Program. Available at <https://energycapitalpower.com/angola-privatization-assets-propriv-program/> (accessed 3 October 2023).
- Notre Dame Global Adaptation Initiative (ND-GAIN), University of Notre Dame (2023). Notre Dame Global Adaptation Initiative. Available at <https://gain.nd.edu/our-work/country-index/rankings/> (accessed 5 February 2024).
- Organization of the Petroleum Exporting Countries (OPEC) (2022). OPEC : Angola. Available at https://www.opec.org/opec_web/en/about_us/147.htm (accessed 3 October 2023).
- Pavement Tools Consortium (n/d). Equivalent Single Axle Load. Available at <https://pavementinteractive.org/reference-desk/design/design-parameters/equivalent-single-axle-load/> (accessed 11 February 2024).
- Population Division, United Nations Department of Economic and Social Affairs (UNDESA) (2018). World Urbanization Prospects 2018. Available at <https://population.un.org/wup/Download/> (accessed 5 February 2024).
- Population Division, United Nations Department of Economic and Social Affairs (UNDESA) (2022). World Population Prospects 2022. Available at <https://population.un.org/wpp/Download/Standard/CSV/> (accessed 5 February 2024).
- PwC (2013). Africa Gearing Up. Available at <https://www.pwc.com/gx/en/transportation-logistics/publications/africa-infrastructure-investment/assets/africa-gearing-up.pdf> (accessed 3 October 2023).
- PwC (2023). Angola and the Privatisation Program. Available at <https://www.pwc.com/ao/en/services/tax/privatisation-program.html> (accessed 3 October 2023).
- Railway Technology (2022). Trafigura consortium wins concession for Lobito Corridor project. Available at <https://www.railway-technology.com/news/trafigura-consortium-concession-lobito-corridor/> (accessed 16 October 2023).
- Serrat-Capdevila A, Limones N, Marzo-Artigas J, Marcus W and Petrucci B (2022). Water Security and Drought Resilience in the South of Angola. World Bank. Available at <https://doi.org/10.1596/37189> (accessed 1 February 2024).
- Southern African Development Community (SADC) (2024a). Lobito Corridor Transit Transport Facilitation Agency Agreement to accelerate cross-border trade through implementation of harmonised transport and trade facilitation instruments. Available at <https://www.sadc.int/latest-news/lobito-corridor-transit-transport-facilitation-agency-agreement-accelerate-cross-border> (accessed 28 March 2024).
- Southern African Development Community (SADC) (2024b). SADC facilitates meeting of the Committee of Ministers of the three (3) Lobito Corridor Member States to accelerating implementation of activities of the Lobito Corridor Transit Transport Facilitation Agency (LCTTFA). Available at <https://www.sadc.int/latest-news/sadc-facilitates-meeting-committee-ministers-three-3-lobito-corridor-member-states> (accessed 28 March 2024).
- Sustainable Development Report (2023). Sustainable Development Report 2023. Available at <https://dashboards.sdindex.org/> (accessed 12 February 2024).
- Sustainable Mobility for All (2018). A Review of International Agreements, Conventions and Other Instruments to Achieve Sustainable Mobility. Available at https://www.sum4all.org/data/files/1_a_review_of_international_agreements_and_other_instruments_to_achieve_sustainable_mobility.pdf (accessed 18 April 2024).
- Tripartite Transport & Transit Facilitation Programme (TTTFP) (2017). Angola Final Report. Available at <https://tttfp.org/wp-content/uploads/2019/06/Angola-Final-Report-1Feb17.pdf> (accessed 11 February 2024).
- Tripartite Transport & Transit Facilitation Programme (TTTFP) (2023). Trans-Cunene corridor. Available at <https://tttfp.org/corridors/trans-cunene-corridor-2/> (accessed 3 October 2023).



- UNCTAD (2017). UNCTAD Framework for Sustainable Freight Transport. Available at https://unctad.org/system/files/official-document/dtltlb2017d5_en.pdf (accessed 12 February 2024).
- UNCTAD (2019a). Investment Policy Review of Angola. Available at https://unctad.org/system/files/official-document/diaepcb2019d4_en.pdf (accessed 16 October 2023).
- UNCTAD (2019b). Development Account project 1415Q “Building capacities of developing countries to shift towards sustainable freight transport.” Available at https://unctad.org/system/files/official-document/osginf2019d5_en.pdf (accessed 16 February 2024).
- UNCTAD (2021). ASYCUDA Compendium 2020: ASYCUDA Partnerships for Sustainable Development. United Nations. Available at <https://www.un-ilibrary.org/content/books/9789216040147> (accessed 2 May 2024).
- UNCTAD (2023a). ASYCUDA - About. Available at <https://asycuda.org/en/about/> (accessed 3 October 2023).
- UNCTAD (2023b). Port liner shipping connectivity index, quarterly. Available at <https://unctadstat.unctad.org/datacentre/dataviewer/US.PLSCI> (accessed 3 October 2023).
- UNCTAD (2023c). Maritime Profile. Available at <https://unctadstat.unctad.org/CountryProfile/MaritimeProfile/en-GB/024/index.html>.
- UNCTAD (2023d). Liner shipping connectivity index, quarterly. Available at <https://unctadstat.unctad.org/datacentre/dataviewer/US.LSCI> (accessed 3 October 2023).
- UNCTAD (2023e). Launch of Angola’s National Trade Facilitation Roadmap. Available at <https://unctad.org/meeting/launch-angolas-national-trade-facilitation-roadmap> (accessed 27 March 2024).
- UNCTAD (2023f). Merchandise trade matrix, annual October. Available at <https://unctadstat.unctad.org/datacentre/dataviewer/US.TradeMatrix> (accessed 11 February 2024).
- UNCTAD (2023g). Maritime profile: Angola. Available at <https://unctadstat.unctad.org/CountryProfile/MaritimeProfile/en-GB/024/index.html> (accessed 12 February 2024).
- UNCTAD (2024a). Merchandise: Total trade and share, annual. Available at <https://unctadstat.unctad.org/datacentre/dataviewer/US.TradeMerchTotal> (accessed 3 May 2024).
- UNCTAD (2024b). Transport infrastructure and services. Available at <https://unctad.org/topic/transport-and-trade-logistics/infrastructure-and-services>.
- United Nations Department of Economic and Social Affairs (UNDESA) (2023). Least Developed Country Category: Angola Profile. Available at <https://www.un.org/development/desa/dpad/least-developed-country-category-angola.html> (accessed 3 October 2023).
- United Nations Development Programme (UNDP) (2023). Angola. Available at <https://climatepromise.undp.org/what-we-do/where-we-work/angola> (accessed 3 October 2023).
- United Nations Economic and Social Council (ECOSOC) (2023). Draft country programme document - Angola. Available at <https://www.unicef.org/executiveboard/media/17006/file/2023-PL19-Angola-draft-CPD-EN-2023-06-13.pdf> (accessed 3 October 2023).
- United Nations Economic Commission for Africa (UNECA) (2019). Improving Transport Connectivity for LLDCs and the Status of Implementation of the Vienna Programme of Action in the Africa Region. Available at https://www.un.org/ohrrls/sites/www.un.org.ohrrls/files/improving_transport_connectivity_for_lldcs_and_the_status_of_implementation_of_the_vpoa_in_the_africa_region_.pdf (accessed 3 October 2023).
- United Nations Economic Commission for Europe (UNECE) (2020). United Nations Road Safety Conventions. Available at https://unece.org/DAM/road_Safety/Publications/United_Nations_Road_Safety_Conventions_01.pdf (accessed 11 February 2024).
- United Nations General Assembly (2023). Deferral of the graduation of Angola from the least developed country category to a later date. Available at <https://documents.un.org/doc/undoc/ltd/n23/400/77/pdf/n2340077.pdf?token=2Aixw9ulyJ7UEmGIV&fe=true>.

- United Nations Population Fund (2023). World Population Dashboard. Available at <https://www.unfpa.org/data/world-population-dashboard> (accessed 5 February 2024).
- United Nations (UN) (2023). General Assembly Adopts Raft of Resolutions, Including on Synthetic Drugs, Intercultural Dialogue, in Effort to Complete Work by Year's End | Meetings Coverage and Press Releases. Available at <https://press.un.org/en/2023/ga12574.doc.htm> (accessed 22 March 2024).
- United Nations (UN) (2024). United Nations Treaty Collection - Status of Treaties. Available at https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XI-E-1&chapter=11&clang=_en (accessed 18 April 2024).
- Ver Angola (2022). TAAG privatization expected before 2025, says CEO. Available at <https://www.verangola.net/va/en/062022/Transports/31274/TAAG-privatization-expected-before-2025-says-CEO.htm> (accessed 3 October 2023).
- Ver Angola (2023a). Angola imported food worth more than two billion dollars in 2022. Available at <https://www.verangola.net/va/en/022023/Trade/34282/Angola-imported-food-worth-more-than-two-billion-dollars-in-2022.htm> (accessed 14 February 2024).
- Ver Angola (2023b). Odebrecht wins 1168 million dollars contract to build rail section between Luena and Saurimo. Available at <https://www.verangola.net/va/en/032023/Transports/35008/Odebrecht-wins-1168-million-dollars-contract-to-build-rail-section-between-Luena-and-Saurimo.htm> (accessed 22 March 2024).
- Ver Angola (2023c). Angola's accession to the Single Air Transport Market in Africa approved. Available at <https://www.verangola.net/va/en/072023/Transports/36535/Angola's-accession-to-the-Single-Air-Transport-Market-in-Africa-approved.htm> (accessed 3 October 2023).
- World Bank (2017). Subnational Population. Available at <https://databank.worldbank.org/source/subnational-population#> (accessed 11 February 2024).
- World Bank (2021). Air transport, freight (million ton-km) - Angola. Available at <https://data.worldbank.org> (accessed 3 October 2023).
- World Bank (2022a). Urban population - Angola. Available at <https://data.worldbank.org> (accessed 3 October 2023).
- World Bank (2022b). Poverty & Equity Brief - Africa Eastern & Southern - Angola. Available at https://databankfiles.worldbank.org/public/ddpext_download/poverty/987B9C90-CB9F-4D93-AE8C-750588BF00QA/previous/Global_POVEQ_AGO.pdf (accessed 26 January 2024).
- World Bank (2023a). GDP, PPP (current international \$) - Angola. Available at <https://data.worldbank.org> (accessed 8 February 2024).
- World Bank (2023b). The World Bank in Angola. Available at <https://www.worldbank.org/en/country/angola/overview> (accessed 3 October 2023).
- World Bank (2023c). Angola. Available at <https://data.worldbank.org> (accessed 3 October 2023).
- World Bank (2023d). Angola. Available at <https://documents1.worldbank.org/curated/en/099447504122318020/pdf/IDU019821ee903838041bf0ad550832ad29fb966.pdf> (accessed 3 October 2023).
- World Bank (2023e). Angola MPO. Available at <https://thedocs.worldbank.org/en/doc/bae48ff2fetc5a869546775b3f010735-0500062021/related/mpo-ago.pdf> (accessed 6 February 2024).
- World Food Programme (WFP) (2022). HungerMapLIVE: Angola Year in Review. Available at <https://docs.wfp.org/api/documents/WFP-0000137497/download/> (accessed 11 February 2024).
- World Trade Organization (WTO) (2023a). World Trade Statistical Review 2023. Available at https://www.wto.org/english/res_e/booksp_e/wtsr_2023_e.pdf.
- World Trade Organization (WTO) (2023b). Angola - Trade Profiles 2023. Available at https://www.wto.org/english/res_e/statis_e/daily_update_e/trade_profiles/AO_e.pdf.



World Trade Organization (WTO) (2024). Trade Policy Review. Available at https://www.wto.org/english/tratop_e/tpr_e/s452_e.pdf.

Xinhua (2023a). Roundup: Angola decides to remove fuel subsidies. Available at <https://english.news.cn/africa/20230602/e5bd4e70398f43d085d010003f19dbca/c.html> (accessed 11 February 2024).

Xinhua (2023b). Angola's agriculture grows by 5.6 pct in 2022. Available at <https://english.news.cn/20231122/bd74250f30ee4780856832c473a0ad27/c.html> (accessed 11 February 2024).



Annexes

UNCTAD SFT Assessment: scope and methodology

Assessment scope

UNCTAD SFT Assessment is carried out across the three pillars of sustainability (i.e., economic, social, and environmental pillars). Specifically, the SFT Assessment of Angola's freight transport sector as set out in this report focuses on the following sustainability categories, impacts on the agribusiness sector, and action areas:

- i. Economic pillar: Transport infrastructure, equipment, and fleet capacity and quality; transport infrastructure connectivity; transport costs; transport productivity; and service quality and reliability; and impacts of transport on the agribusiness sector;
- ii. Social pillar: safety and security; accessibility and affordability; employment; gender equality; noise pollution exposure; air pollution exposure; and scenic beauty, cultural and natural preservation, and biodiversity;
- iii. Environmental pillar: climate change mitigation; climate change resilience and adaptation; water pollution; and soil and waste pollution;
- iv. Impacts on the agribusiness sector;
- v. Action areas: investment and finance; technology and ICT; market structure and competition; regulation and institutional setup; capacity building, training, and awareness raising; coordination and partnership; data and monitoring; gender mainstreaming; and cross-cutting issues on first-mile transport for the agribusiness sector.

This SFT Assessment for Angola's freight transport sectors focuses on maritime, rail, and road transport, as they are the main modes of freight transport in Angola. The assessment also highlights impacts on the agribusiness sector because the government is strengthening its efforts to diversify the economy, and the agribusiness sector is one of the potential areas that can substantially increase its exports to global markets. As most of the agribusiness production is happening in rural areas, freight transport has a significant impact on the development of the sector.

Assessment methodology

Overview

The UNCTAD SFT Assessment is a tool that is articulated around quantitative and qualitative information sourced from online providers and outlets that publish data and make these available to the wider public. These include for example UNCTAD, the ILO, and the World Bank. These international sources include data on the various indicators that are being tracked under the SFT Assessment methodology and across the three pillars of sustainability.

In addition, to these top-down sources of data and information, the present SFT Assessment of Angola's freight transport leverages data and input received by a survey questionnaire administered by UNCTAD to a set of Angolan stakeholders from the freight transport sector.

Another layer of information and data is obtained through interviews conducted by UNCTAD with a list of stakeholders from Angola, identified by UNCTAD, the Government of Angola, and the consultant of UNCTAD. Other data and information sources include national official statistics from Angola, statistics from international



and regional organizations, and information from existing policy documents and studies.

Quantitative assessment: Internationally comparable scores

In the first part of the quantitative assessment, data from international sources are used to build internationally comparable scores (SFT Index) and assess Angola's performance by comparing Angola's scores with those achieved by other economies. In most cases, other African countries are selected as comparators because they share similar challenges, such as their economic features.

Twenty indicators are selected from international data sources to cover the three pillars of the SFT (Table 19). These indicators are aggregated into overall scores and three sustainability scores (i.e., economic, social, and environmental), using a similar methodology to the SDG Index.¹⁶⁵ This process involves the following six steps:

- 1) Remove economies that have data for less than or equal to 12 indicators (60 per cent of all indicators). After the removal, 165 economies are included in the calculation below.
- 2) Some indicators (e.g., labour productivity) are converted to a logarithmic scale. This conversion can be justified by the existence of diminishing returns to scale of these indicators for sustainability objectives.
- 3) For some indicators (e.g., time in ports), extreme values are censored, with lower and upper bounds determined by 5th and 95th percentiles. All values below the lower bound are replaced by the lower bound, and values above the upper bound are replaced by the upper bound.
- 4) As the twenty indicators have different units and scales, they are rescaled to ensure comparability across indicators, using min-max normalization, i.e., $\frac{x - \min}{\max - \min}$. The normalized indicators take values from 0 (i.e., the lowest value in the world) to 1 (i.e., the highest value in the world).
- 5) For some indicators (e.g., road injury death rate), the normalized indicators are inverted, i.e., $1 - \frac{x - \min}{\max - \min}$, to ensure that low values indicate poor performance and that high values mean good performance.
- 6) The normalized indicators are aggregated by the following three steps:
 - i. Normalized indicators are aggregated within SFT categories (e.g., infrastructure, transport productivity) with equal weight on each indicator. This gives scores at the SFT category level;
 - ii. The scores at the SFT category level are aggregated within the SFT three pillars (i.e., economic, social, and environmental) with equal weight on each SFT category. This gives scores at the SFT pillar level. Before the aggregation, if scores at the SFT category are missing for a particular country, the missing values are replaced by the regional average;
 - iii. The scores at the SFT pillar level are aggregated to the overall score.

¹⁶⁵ Sustainable Development Report, 2023

**Table 19.****List of indicators used for calculation of general SFT scores**

SFT categories	Indicators	Data source	Reference year	Transformation	Available economies
Economic pillar					
Infrastructure	Road density (km/km ² of land area)	International Road Federation, World Road Statistics Data Warehouse	Latest available year from 2015-2021	log	156
	Road paved ratio (%)				128
	LPI – Infrastructure score	World Bank, Logistics Performance Index	2023		139
Transport productivity	Labour productivity of the transport and storage sector (value added per employment)	UNSD, National Accounts Official Country Data; UNSD, National Accounts Main Aggregates Database; OECD, Detailed Tables of National Accounts; ILO, Labour Force Statistics Database;	Average over 2015-2021	log	118
	Labour productivity of road freight transport (ton-kilometres per employment)	UNSD, SDG Global Database – Indicator 9.1.2 Freight volume by mode of transport; ILO, Labour Force Statistics Database	Average over 2016-2019	log, censored	106
	Time in ports (all ships)	UNCTAD, Port call and performance statistics	2019	inverse, censored	180
Quality and reliability	LPI - Timeliness score				
	LPI – Logistics competence and quality score	World Bank, Logistics Performance Index	2023		139
Transport costs	Transport cost from warehouse to ports or land border	World Bank, Doing Business (legacy) - Trading across borders - Domestic transport	2020	log, inverse, censored	187
	Transport cost from ports or land border to warehouse				
	LPI – International shipments score	World Bank, Logistics Performance Index	2023		139
Connectivity	Liner Shipping Connectivity Index (LSCI)	UNCTAD, Liner Shipping Connectivity Index	2023	log, censored	176
Social pillar					
Safety	Road injury death rate	IHME, Global Health Data Exchange – Global Burden of Disease Study 2019	2019	log, inverse, censored	203
Accessibility	Rural access index (RAI)	World Bank, Rural access index	2019	censored	204
Employment	Average wage (i.e., monthly earnings of employees) in the transport and storage sector (purchasing power parity)	ILO, Wages and Working Time Statistics Database	Average over 2016-2019	log, censored	114



SFT categories	Indicators	Data source	Reference year	Transformation	Available economies
Gender equality	Female employment share in the transport and storage sector (female employment / total employment)	ILO, Labour Force Statistics Database	Average over 2016-2019	censored	152
	Female wage (i.e., monthly earnings of employees) ratio in the transport and storage sector (female wage / male wage)	ILO, Wages and Working Time Statistics Database	Average over 2016-2019	log, censored	106
Noise pollution	Noise level	Noise-Planet, NoiseCapture ¹⁶⁶	Average over 2016-2023	inverse, censored	211
Environmental pillar					
Climate mitigation	GHG emission intensity from the transport sector (GHG emission/value added)	Emissions Database for Global Atmospheric Research (EDGAR) v7.0 ¹⁶⁷ ; UNSD, National Accounts Main Aggregates Database	Average over 2016-2021	inverse, censored	193
Air pollution	PM2.5 emission intensity from the transport sector (PM 2.5 emission/value added)	Emissions Database for Global Atmospheric Research (EDGAR) v6.1, Global Air Pollutant Emissions ¹⁶⁸ ; UNSD, National Accounts Main Aggregates Database	Average over 2016-2018	inverse, censored	192

Source: UNCTAD Secretariat based on respective data sources indicated in the table.

Note: In the transformation column, “log” indicates log transformation on the original series and “censored” indicates censoring of extreme values. “Inverse” means rescaled scores are inverted.

When evaluating the underlying indicators for Angola, UNCTAD methodology compares Angola's values to median values of the world and African economies because the median is less influenced by skewed data and extreme values, making it a more reliable measure for this comparison. In contrast, average values are used for the comparison of the internationally comparable SFT scores, because the score calculation process addressed issues related to skewed distribution and extreme values. The censoring and log-transformation during the score calculation are supposed to address the skewness and extreme values.

As indicated by the list of indicators above, the coverage of the internationally

comparable indicators is relatively limited. Such indicators do not exist for many social and environmental pillars. Further, some indicators are only available for the entire transport sector (e.g., labour productivity in the transport and storage sector). Also, some other indicators only cover a specific transport mode (e.g., road injury death rate). To overcome these limitations, information from local sources such as existing policy documents and studies and stakeholder surveys and interviews have been relied upon to complement the international comparison and provide deeper insight into the sustainability performance of Angola's freight transport.

^{-F} Bocher et al., 2017 noise causes annoyance and fatigue, interferes with communication and sleep, damages hearing and entails cardiovascular problems (WHO, 2011)

^{-F} European Commission et al., 2022a

¹⁶⁸ European Commission et al., 2022b

Quantitative assessment: Scoring of stakeholder survey responses

Stakeholders from the public sector, private sector, and civil society were invited to participate in the UNCTAD survey questionnaire designed to evaluate the current situation, performance, opportunities, and challenges of Angola's freight transport sector. The survey questionnaire sought to investigate stakeholders' perceptions of Angola's maritime, rail, and road freight transport systems.

The main body of the questionnaire consists of 108 closed-ended questions and 22 open-ended questions. The questions are centred around four aspects of economic sustainability (i.e., infrastructure and equipment capacity and quality, service quality and reliability, transport costs, and connectivity), seven aspects of social

sustainability (i.e., safety and security, accessibility and affordability, employment, gender equality, and mainstreaming, exposure to noise pollution, exposure to air pollution, and scenic beauty and cultural preservation), and four aspects of environmental sustainability (i.e., climate mitigation, climate resilience and adaptation, water pollution, and waste pollution). The closed-ended questions are formatted as horizontal three-point Likert scales, with one to two Likert scales corresponding to each aspect. Following each Likert scale, there are follow-up open-ended questions to elicit more detailed explanations and suggestions from the stakeholders. Below is an example of the Likert scale (containing three closed-ended questions) and the open-ended question for the aspect of infrastructure and equipment capacity and quality in the economic pillar of SFT (Table 20).



Table 20.
Sample of the questions in the main body of the UNCTAD survey questionnaire

	Good	Average	Poor	Do Not Know / Inapplicable
Capacity/ quality of infrastructure in the ports (e.g., quays, warehouses, storage parks, cranes, straddle carriers, fork-lift trucks, low loaders, and IT system)				
Capacity/ quality of facilities and equipment to handle cargo in the ports (e.g., quays, warehouses, storage parks, cranes, straddle carriers, fork-lift trucks, low loaders, and IT system)				
Coverage of rail network				
(Several other closed-ended questions)...				
If you answered "average" or "poor" in the above questions (i.e., infrastructure quality and capacity section), please feel free to explain the reason and your suggestion to improve it.				

Source: UNCTAD Secretariat.

The questionnaire, available in English and Portuguese, was distributed to approximately 150 key stakeholders on 2 November 2023. These stakeholders were identified based on previous projects conducted by UNCTAD for Angola and consultation with Angola's transport experts. To get more credible data, stakeholders are allowed to skip questions that are not relevant to their specialization or experience.

UNCTAD received 43 responses from the stakeholders by 18 December 2023. The respondents are from 15 organizations in the public sector (including ministries, port authorities, railway authorities, and regulatory agencies), 20 organizations in the private sector (including freight transport infrastructure operators, freight transport service providers, and freight transport users, etc.), and 1 organization



civil society. Ambiguous answers were excluded from the assessment.

As a part of the quantitative assessment, survey-based SFT scores were calculated based on the 43 responses collected. Stakeholders' perceptions were transformed into values (0 for poor or equivalent, 50 for average, 100 for good or equivalent) and values for each closed-ended question were transformed into average values for each topic/aspect and each pillar to allow for analysis at different levels.

Qualitative assessment: Stakeholder opinions from survey and interviews

To complement the quantitative assessment, a qualitative assessment allowed for a more detailed analysis to be conducted. There are two aspects in the qualitative assessment, namely the stakeholders' responses to open-ended questions of the survey questionnaire and interviews conducted with key stakeholders from Angola's freight transport sector.

Stakeholders were encouraged to provide an elaborate explanation of their perceptions and their suggestions as well as action recommendations that they may have put forward as a means of improving the overall sustainability or a specific aspect of Angola's freight transport sector and its sustainability performance.

To solidify the qualitative assessment, UNCTAD conducted in-depth interviews with 14 major stakeholders (organizations) from the public sector (ministries, railway authorities, port authorities, and regulatory agencies), the private sector (freight transport service providers and freight transport users), and civil society (industry associations), to identify major challenges and thoroughly explore the factors underlying the identified challenges and problems with a view to making sound and informed policy recommendations.

The interviews, conducted subsequent to the receipt of the majority of questionnaire responses, took place in Luanda, Angola, from 17 November to 24 November 2023. The interviews were designed as semi-structured interviews, offering the flexibility to concentrate on key issues within Angola's freight transport sector while also providing opportunities to delve into specific, relevant topics that arose during the conversations. The interview questions were designed based on the results of the questionnaire filled in by the stakeholders from the respective organizations.

Additionally, key concerns highlighted by other stakeholders were taken into account during the question design process. The majority of the interviews were conducted face-to-face, fostering a direct and in-depth exchange of insights. For stakeholders based outside Luanda, online interviews were arranged to ensure their participation and contribution to the assessment.

UNCTAD maritime profile of Angola

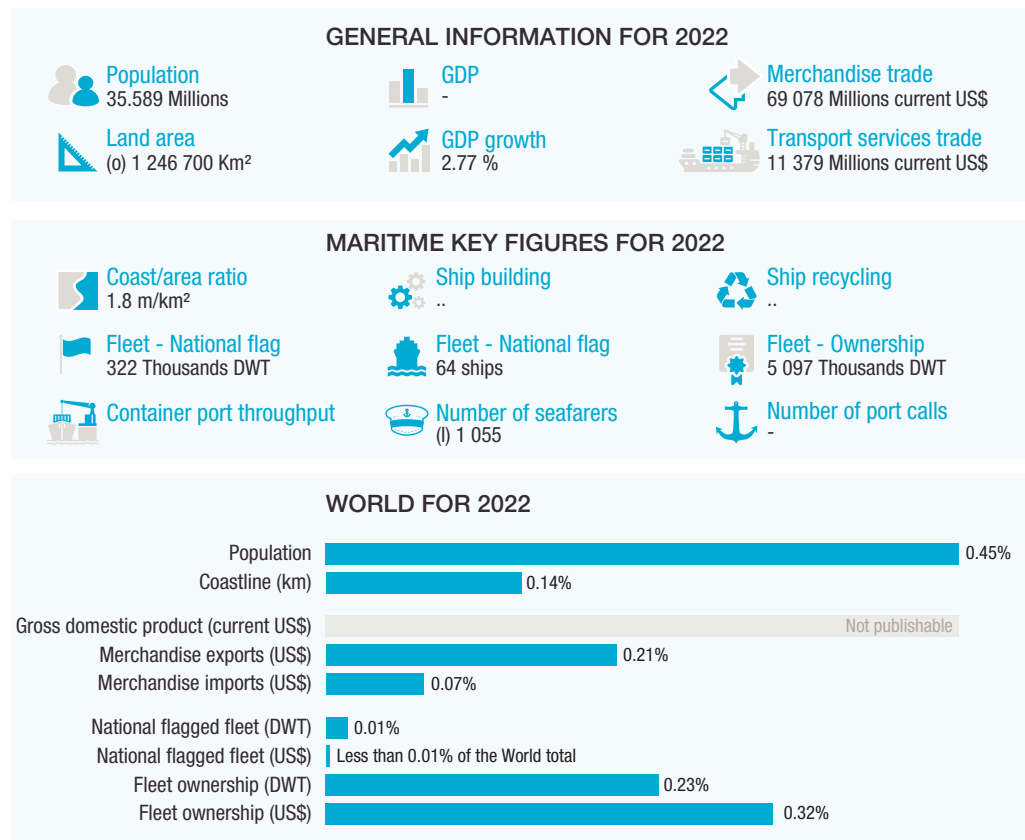
UNCTAD reports the maritime profiles of its member countries on the UNCTAD STAT website.¹⁶⁹ It shows general information such as population, GDP, merchandise trade, and maritime key figures, including capacity and the number of national flagged fleets. These are followed by the country's shares in the world.

In 2022, Angola's population was 0.45 per cent of the world population (Figure 14). However, its trade and maritime-related indicators had lower world shares than population, e.g., 0.21 per cent for merchandise exports and 0.23 per cent for Angola-owned fleet capacity, implying low trade and maritime transport activities compared to population size.

The website also provides more detailed information about the trade, national fleet, liner shipping connectivity, and port calls and performance.

¹⁶⁹ UNCTAD, 2023g

Figure 14.
UNCTAD maritime profile for Angola



Source: UNCTAD, 2023g



unctad.org