



**NORTHERN CORRIDOR
TRANSIT AND TRANSPORT
COORDINATION AUTHORITY**



**NORTHERN CORRIDOR
TRANSPORT
OBSERVATORY**
RELIABLE PERFORMANCE DATA



NORTHERN CORRIDOR TRANSPORT OBSERVATORY REPORT

16th Edition, June 2021



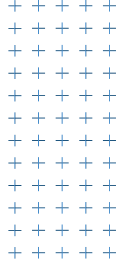
**NORTHERN CORRIDOR
TRANSIT AND TRANSPORT
COORDINATION AUTHORITY**

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Note

This report can also be found on the Internet, in all two official languages of the Northern Corridor Transit and Transport Coordination Authority, and the Northern Corridor Transport Observatory Portal, at: <http://ttcanc.org/reports.php> and <http://top.ttcanc.org/downloads.php>

Main text

The term “dollars” (USD) refers to United States dollars.

For Kenya, currency conversion rate used is 1 USD= 100 Kenya Shillings

The term “billion” signifies 1,000 million.

Annual rates of growth and changes refer to compound rates.

Use of a dash (–) between dates representing years or months, e.g. 2019–2020 or Jan-Dec, signifies the full period involved, including the initial and final years/months. A slash (/) between two years, e.g. 2019/20 or 2019/2020, signifies a fiscal year.

The terms “country” and “economy”, as appropriate, also refer to territories or areas.

Tables

A dash (–) indicates that the amount is nil or negligible.

Details and percentages do not necessarily add up to totals, because of rounding.

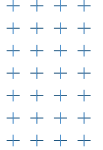
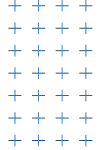


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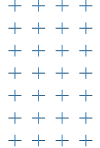
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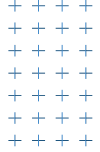


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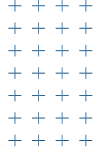
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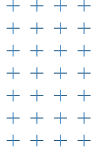
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Acronyms and Abbreviations

ACPLRWA	Rwanda Long Distance Truck Drivers Association
AfCFTA	African Continental Free Trade Area
ASYCUDA	Automated System for Customs Data
DPC	Document Processing Centre
DRC	Democratic Republic of Congo
GDP	Gross Domestic Product
HSWIM	High Speed Weigh-in-Motion
ICT	Information Communication Technology
KeNHA	Kenya National Highways Authority
KPA	Kenya Ports Authority
KPC	Kenya Pipeline Company
KRA	Kenya Revenue Authority
KTA	Kenya Transporters Association
NCTTA	Northern Corridor Transit and Transport Agreement
NCTTCA	Northern Corridor Transit and Transport Coordination Authority
OSBP	One Stop Border Post
RECTS	Regional Electronic Cargo Tracking System
RRA	Rwanda Revenue Authority
SGR	Standard Gauge Railway
SCT	Single Custom Territory
TEUs	Twenty Feet Container Equivalent Units
UNRA	Uganda National Roads Authority
URA	Uganda Revenue Authority
URC	Uganda Railways Corporation
WHO	World Health Organization



Foreword



Mr Omae Nyarandi
Executive Secretary-NCTTCA

It is with great pleasure that I present to you the 16th Edition of the “Northern Corridor Transport Observatory Report”. The report is an annual sequel to the 15th Edition and a series to the bi-annual Transport Observatory reports, which ended with the 14th Edition. This publication presents an in-depth analysis of indicators measuring trade and transport facilitation along the Northern Corridor for the year 2020. The Report has been prepared using raw data from Northern Corridor Stakeholders and qualitative data and information gathered through trade and transport logistics surveys.

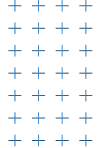
The Northern Corridor Transport Observatory monitors the Port of Mombasa and the entire Corridor’s performance. It helps identify key issues that must be addressed to improve efficiency and, as a result, trade and operations along the Corridor. The Northern Corridor’s

efficiency is critical for improving regional integration and economic growth in the Member States.

According to the World Economic Outlook 2020, world economic growth contracted by 3.5% in 2020 due to the COVID-19 pandemic. The Northern Corridor economies similarly witnessed the economic vulnerability shock, recording a low combined average growth of (-1.13%) compared to average growth of 4.78% in 2019. However, the economies are projected to recover by 2021, growing by 0.3%. Consistent with recovery in global activity, global trade volumes are forecast to grow about 8% in 2021 before moderating to 6% in 2022. The disruptive happenings due to COVID-19 brought the efficiency of the transport corridors into sharp focus and highlighted their level of resilience to disruptions.

Port productivity and efficiency are essential for an improved logistics environment that support trade facilitation and competitiveness initiatives.

The 16th Edition report shows a slight decline in total cargo throughput through the Port of Mombasa, recording 34.12 million MT in 2020 against 34.44 million MT in 2019. Similarly, the container traffic for the year 2020 registered a decrease of 4% compared to 2019 occasioned by the reduction in economic activities in all countries due to the COVID-19 pandemic. Despite the shrinking volumes, transit cargo volume in 2020 grew by 2% to achieve 1.360 million TEUs in 2020 compared to 1.417 million TEUs in 2019. The growth was attributed to tremendous transit traffic growth for Rwanda, South Sudan and DRC while Uganda and Burundi recorded a slight decline.



At the port, Average Dwell Time for containers cleared for rail was shorter than for containers evacuated by road. According to port throughput, 21% of containerized cargo was evacuated by rail, with the SGR transporting 19.12% of containerized cargo. Positive progress was also made at the Document Processing Centre and in terms of one-stop centre clearance time at the Port of Mombasa. All routes along the corridor recorded increased transit times, almost double the previous year's transit time and border crossing time.

On infrastructure, the proportion of quality roads has improved with few sections in poor condition. However, in the Member States of South Sudan and DRC, the proportion of bad roads is still high.

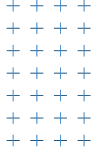
The overall drop in performance was occasioned by COVID-19 containment measures including lock-downs, curfews, social distancing measures, relay trucking, and mandatory testing for truckers, amongst other reasons. In the wake of COVID-19, the Northern Corridor Secretariat initiated a sustained Stakeholders engagement through Virtual Meetings for regular exchange of information and updates and timely solving of operational challenges at the transit nodes. The Authority also conducted a sensitization campaign against the spread of COVID-19 and stigma along the Northern Corridor.

As we advance, with lessons learnt in the past year, the region needs to upscale automation and investment in infrastructure and human resources to support the complete automation of critical services along the Corridor. Therefore, there is need to call upon all stakeholders to implement various action plans and reforms; as well as to propose further improvements required for enhancing the performance of the Corridor and boosting the monitoring mechanisms for better transport and logistics value chain.

Finally, I wish to appreciate and commend all stakeholders who provided data and information to enable preparation of the 16th issue of the Transport Observatory report. I wish to reiterate the commitment of the Northern Corridor Secretariat to coordinate and support stakeholders from all Member States towards providing an enabling environment for smooth trade and transport facilitation.

Omae Nyarandi

Executive Secretary



Acknowledgement

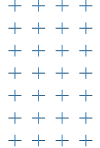
The development and publication of the 16th Edition of the Annual Northern Corridor Transport Observatory Report 2020 was made possible by participating institutions and key stakeholders involved in the transport and logistics chain for the corridor. The Northern Corridor Secretariat is deeply indebted to the Council of Ministers of the Northern Corridor Member States for their continued support to the Transport Observatory. Profound appreciation also goes to the Executive Committee, the various Specialized Technical Committees, Stakeholders Forums, and the Experts involved in the drafting and validation processes of this 16th issue of the Transport Observatory Report.

The preparation of this report was made possible through financial support from TradeMark East Africa (TMEA), to whom we are deeply indebted. As the success of developing the report primarily depended on data, the Secretariat would like to extend its sincere appreciation to all stakeholders who have gone out of their way to provide essential data and other information despite the challenges of the COVID-19 pandemic.

We appreciate the overall guidance of the Executive Secretary, Omae Nyarandi, for providing leadership and oversight during the preparation of this report. The report was prepared by the Northern Corridor Transport Observatory team. Therefore, we would like to thank the entire technical team comprising of Aloys Rusagara, Emmanuel Imaniranzi, Gideon Chikamai, Melap Sitati, Noah Kipyegon and James Mwangi for the development of this report. Special thanks to NCTTCA experts from all departments for their contributions to various chapters of the report, namely; Dr Elias Leju Leonardo, Fred Paul Babalanda, Emile Sinzumusi, John Deng, Alex Ruzindana, Ms Clarisse Biraronderwa, Prof. Lievin Chirhalwirwa, Denis Lewa, Ms Florence Katushabe, Cezzy Kanionga, David Abiero, Kennedy Njoroge, Jean Ndayisaba and Desire Buconyori are also acknowledged with appreciation.

Finally, our thanks go to all those who, in one way or another, support the development of the Northern Corridor infrastructure and indeed facilitation of trade in the region. With a common goal and purpose, our supports will go a long way in propelling the region to greater heights.

NCTTCA Secretariat



Executive Summary

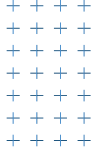
The 16th edition of the Northern Corridor Transport Observatory report presents the status of the indicators that gauge performance of the Corridor, including the seaport of Mombasa. The Port of Mombasa serves as a link for the landlocked Member States of the Northern Corridor: Burundi, Democratic Republic of Congo (DRC), Rwanda, South Sudan and Uganda to access the sea for import and export of their cargo. This report is a series of the various Transport Observatory reports since its inception in 2012. The report is developed from data analysis and information on key performance indicators on trade and transport facilitation collected from all the six Member States of the Northern Corridor. The indicators are informed by the Mombasa Port and Northern Corridor Community Charter and institutional and legal frameworks that govern operations and stakeholder engagement of the Northern Transport Corridor. Based on the available data, the indicators analysed are categorized into Volume and Capacity, Tariff and Rates, Time and Delays, Efficiency and Productivity, Intra-regional Trade and Road Safety. The 16th Edition contains a special feature on linkage between transport infrastructure and technology. The main objective of the Observatory is assessing performance and status of the Northern Corridor, identifying barriers to trade and transport facilitation and proposing policy recommendations for implementation.

Macroeconomic outlook and implication on trade in the region

Globally, the economy contracted by 3.5% in 2020 due to the COVID-19 pandemic net effects on trade. The economic growth for the Northern Corridor Member States witnessed a contraction of (-1.13%) in 2020 from 4.78% in 2019. Consistent with recovery in global activity, trade volumes are forecast to grow at about 8% globally in 2021. As economies look forward to recovery amidst a third wave of the pandemic, it remains imperative that countries must lay focus on mitigating the effects of the pandemic by safeguarding the health of their citizens, adopting technologies that facilitate safe business and implementing rescue packages for sectors that have been hard hit by the COVID-19 pandemic. On the other hand, the coming into effect of the AfCFTA has widened opportunities by providing a vast market for intra-regional trade in the region. Harnessing synergies to ensure the AfCFTA's success will help ameliorate the pandemic's economic effects on Northern Corridor Member States.

Technology and transport infrastructure

Transportation technologies are often employed to provide solutions, improve conditions and enhance efficiency with respect to the movement of people and goods. These technological advances apply to diverse areas of the transport logistics industry including, cargo handling, cargo tracking and monitoring, packaging, storage, distribution processing, warehousing, information processing, financial transactions and supply chain management. Integration of transport technologies raises productivity and efficiency in the logistics supply chain, minimizes costs and errors, enables sustainable and resilient economic growth, and promotes green and smart transport corridors. The use of technology has played an essential role in narrowing the global divide in trade. The success of open trade and free movement of goods, people and services in the AfCFTA will heavily rely on how African countries invest in and modernize their transport and logistics systems. Ensuring that Single Window Systems are well integrated will guarantee faster clearance of goods and efficiency in the transport system. Despite



these positive achievements, the adoption of efficient transport technologies is often limited due to a number of market barriers, including high costs of newer technologies and intellectual property rights. Limited investment in research and development and weak linkage between academia and the local transport industry has been a limiting factor for developing localized and potentially cheaper technologies. The Secretariat will continue to advocate for adopting technologies that enhance trade facilitation within the region and beyond.

Volume and Capacity

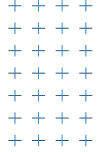
Total cargo throughput at the Port of Mombasa has been increasing steadily for the last five years, from 27 million tons in 2016 to 34 million tons in 2020 against a target of 35.90 million tons. The growth is attributable to a sustained trend of growth in containerized cargo and the liquid bulk. Compared to 2019, the Port of Mombasa recorded a marginal decline of 0.9% in total cargo throughput in 2020. The decrease was mainly attributed to disruptions to the supply chain because of global lockdowns imposed due to the raging COVID-19 pandemic. Imports take the lion's share of total cargo throughput, accounting for about 80%, leading to an unfavourable trade balance. This suggests that the countries using the Port of Mombasa are net importers. The container throughput declined in 2020 by 4% when compared to 2019. Cargo haulage by rail has been increasing steadily from 28% in 2018 to 40% in 2019. The proportion in 2020 decreased slightly to 37% due to a reduction in total throughput at the Port of Mombasa. Uganda took the largest part of transit traffic through the Port of Mombasa, accounting for approximately 76% of transit traffic, South Sudan stands at 10%, and DRC at about 7%.

Efficiency and Productivity

The analysis of efficiency and productivity on the Northern Transport Corridor considers various factors that affect maximization of outputs using the least possible cost and time. Port productivity and efficiency are essential for an improved logistics environment that support trade facilitation and competitiveness initiatives. Data shows a decrease in the number of ships that called in at the Port of Mombasa from 530 in 2019 to 526 in 2020. Twenty-five per cent of vessels recorded an average turnaround time of 53 hours in 2020; cumulatively, 50% of vessels recorded an average turnaround time of 80 hours against the set target of 81 hours. Further, the performance of vessel waiting time before berth indicator did not meet the set target of 0.3 days in 2020. The average dwell time increased from 88 hours in 2019 to 106 hours in 2020, which could be linked to the measures put in place during the pandemic period, including additional free period. About 60% of containers were evacuated within 4 days. The target is 78 hours. Dwell time for containers cleared for the rail were faster compared to the containers evacuated by road. Time for customs clearance at Document Processing Centre has been improving over the years. The positive achievement was also witnessed for one-stop centre clearance time at the Port of Mombasa and weighbridge performance.

Rates and Costs

Logistics companies connect firms to markets by providing various services, including multimodal transportation, freight forwarding, warehousing, and inventory management. Logistics firms involved in the movement, storage, and flow of goods, have been directly affected by the COVID-19 pandemic. Therefore, supply chain disruptions to the sector caused by the pandemic could impact transport and trade costs. The pandemic spread to the rest of the world, leading to lock-downs and border closures



that restricted the movement of goods. Additional protocols (such as social distancing at warehouses) introduced to ensure the safety of workers contributed to bottlenecks for freight. This culminated in to increase in transport costs along the corridor. Other factors that contributed to higher costs include road tolls, multiple border charges and poor road conditions.

Intraregional Trade







The total trade along the corridor summed to around **USD 3.17 billion**. Formal Trade between Kenya and Uganda was the leading, accounting for **32 %**, followed by trade between DRC and Rwanda at **19.1%** of the total trade value within the region. Kenya was the single largest exporter in the region. The trade indicators demonstrate that Northern Corridor Member States largely import from Asia and Africa, whereas the United States of America and Pakistan provides a market for their exports. It is also notable that the Northern Corridor Member States export also similar products.

Road Safety

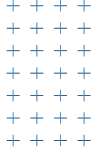
The burden of road traffic deaths is largely borne by pedestrians, passengers on Boda Bodas (motor cycles) and the riders themselves. Majority of these fatalities are caused by human-made problem which can be posing that these crashes can be prevented. Sustainable development goal 3; target 3.6 aims to reduce the number of global deaths and injuries from road traffic accidents by **50%**. Statistics show that most fatalities were the male gender accounting for over **80%** of the total fatalities. In Kenya, fatalities increased significantly by **64%** from **367** fatalities in 2019 to **601** fatalities in 2020.

In summary, the report reveals that transport operations, trade volumes and related interactions slowed down considerably in 2020. This was occasioned by the advent of the COVID-19 pandemic and the corresponding measures to contain its spread. However, performance in the last quarter of the year showed a rebound in activity, and this is expected to be sustained in 2021 as stakeholders adopt alternative and safe measures to ensure business continuity. The use of technology, in particular, ICT, to facilitate transactions and exchange of information has played a crucial role in keeping the transport sector a float at the height of the business pandemic. This provides an important lesson to the role of a modernized logistics chain and justified enhanced investment in these technologies.

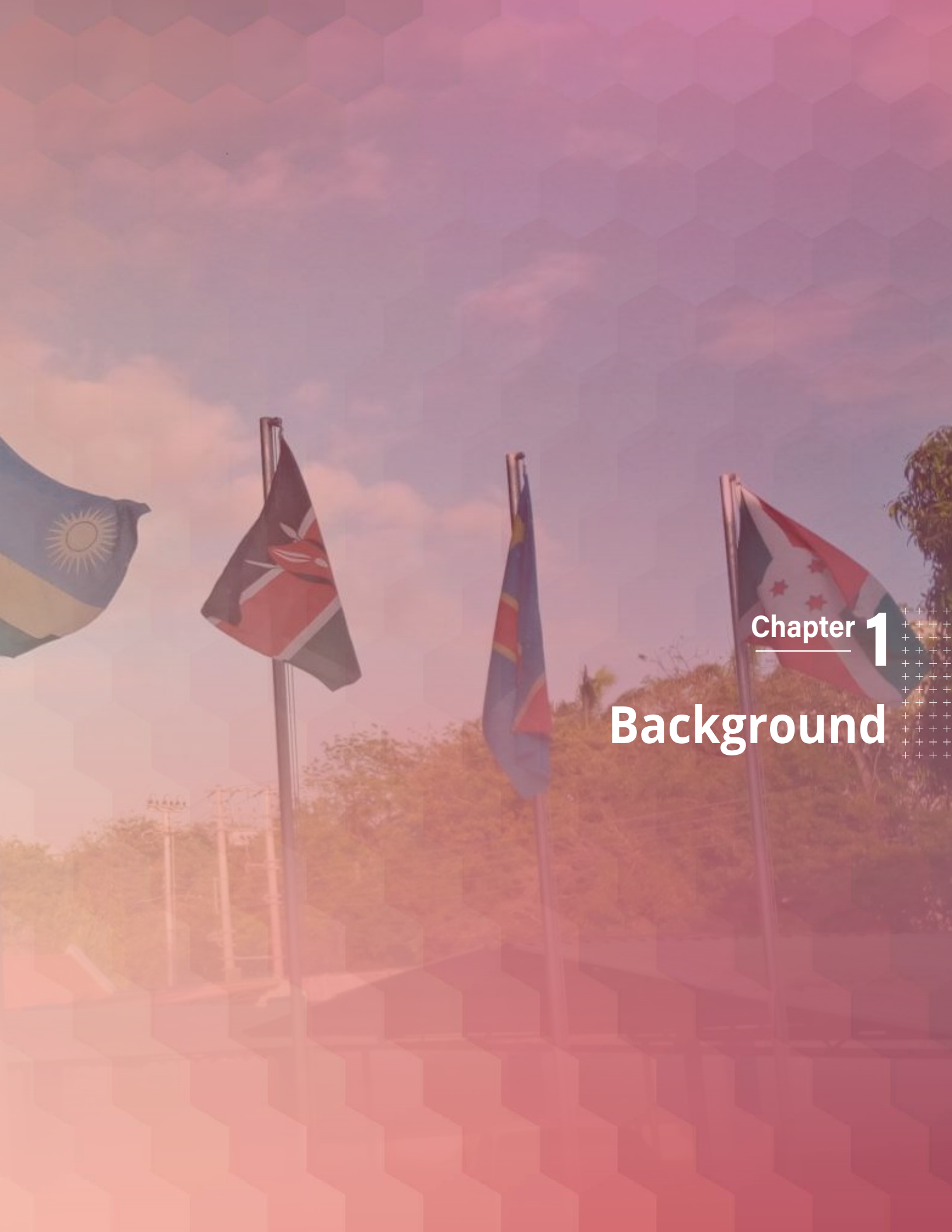
Outlook 2020: Summary Statistics

Performance Indicator	Unit of Measure	 Burundi	 DRC	 Kenya	 Rwanda	 South Sudan	 Uganda
Distance from the Mombasa seaport	Kms	1,957	1,840	481	1,680	1,662	1,169
Surface area	Square Km	27,834	2,344,860	580,370	26,340	644,330	241,550
Population	2020 in ('000')	11,890.78	89,561.40	53,771.30	12,952.21	11,193.73	45,741.00
Real GDP	(%)	-3.2	-2.2	1.05	2	-4.1	-0.3
Doing Business rank	Rank out of 190	166	183	56	38	185	116
Doing Business score	(0-100)	46.8	36.2	73.2	76.5	34.6	60
Mobile cellular subscriptions	(Per 100 people)	58	43	104	76	33	57
Individuals using the internet	(% of population)	3	9	23	22	8	24
Road Transport charge from the port to the capital city per Km per TEU	Rate per Km Per TEU in USD	3.07	3.53	1.77	2.08	2.29	1.88
Border Posts to cross (No)	Number	3	3	0	2	2	1
Weighbridges to cross (No)	Number	8	8	5	8	8	6
Transit time Mombasa to Capital Cities	Hours	N/A	200		234	151	154
Total Exports to Northern Corridor Member States	Value in USD	39,586,144	3,369,626,964	140,125,104,293	662,052,686	92,164,013	1,150,912,895
Total Imports from Northern Corridor Member States	Value in USD	103,408,132	14,606,124,722	29,162,427,991	226,591,411	406,540,918	907,736,011

Source: Northern Corridor transport Observatory Compilation
N/A – data not available

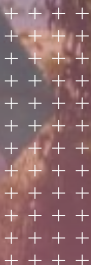


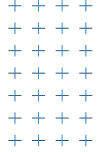




Chapter **1**

Background





1.1 Introduction

The 16th edition of the Northern Corridor Transport Observatory report analyses performance indicators tracked by the Northern Corridor Secretariat. The Transport Observatory is a web-based performance monitoring tool that assesses and measures various key performance indicators along the Corridor. The Northern Corridor is a vital trade route that facilitates regional trade by linking the Member States of Burundi, DR Congo, Rwanda, South Sudan and Uganda to the seaport of Mombasa.

The main objective of this report is to present the status and performance of the Northern Corridor, identify barriers to the facilitation of trade and transport, and propose policy recommendations for implementation. The report contains data gathered from all the six Member States of the Northern Corridor. The indicators are categorized into: Volume and capacity, Tariff and Rates, Time and delays, Efficiency and productivity, Intra-regional trade and Road safety. The report adopts descriptive methodology used by the Observatory to monitor the corridor's performance, which involves data collection, data processing and analysis, reporting, and dissemination. The findings of these reports are utilized to set strategic interventions and policy inferences to improve the efficiency of the Corridor.

1.2 Macroeconomic Context

Macroeconomic indicators provide insight into the economic status of a country, development challenges and policy recommendations for easing trade and transport along the Northern Corridor and beyond. The discussion below provides the indicators in the six Member States of the Northern Corridor.

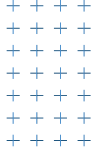
The economic growth for the Northern Corridor Member States witnessed a contraction of (1.13%) in 2020 from 4.78% growth in 2019. Globally the economy contracted by 3.5% in 2020. It is projected to grow 5.5% in 2021 and 4.2% in 2022. **Table 1** presents key macroeconomic indicators related to trade and transport facilitation among the Northern Corridor Member States. Available data shows that Africa has a low contribution to the total global trade accounting for only 2%.

The Northern Corridor Member States are heavily reliant on Agriculture ahead of industry and manufacturing. For instance, in 2019, agriculture, forestry and fishing (including coffee and tea cultivation) were the largest sector of the Kenyan economy and accounted for about 22%. Trade in the Northern Corridor partner states' market share is dominated by the export of raw and food-based goods and imports of finished goods from the rest of the world.

The region's economies are agriculture dominated and dependent on manufactured goods currently being met through imports from the rest of the world.



Globally the economy contracted by 3.5% in 2020. Northern Corridor economies witnessed a contraction of (1.13%) in 2020 from 4.78% growth in 2019.



The ease of doing business index is meant to measure regulations directly affecting businesses. Ease of doing business gathers detailed and objective data on eleven (11) areas/parameters of business regulation, including

commissions, including the COMESA, EAC and the Southern Africa Development Community (SADC), which have expanded the opportunity for trade in the region.



[Photos: unsplash.com]



opening a business, getting a location, assessing finance, dealing with day-to-day operation and operating in a secure business environment, helping governments to analyse economic outcomes and identify what reforms of business regulation have worked, where and why. The scores range from 0 (worst) to 100 (best). Data from the world bank indicate that Rwanda and Kenya economies witnessed the most notable improvement in ease of doing business, attributable to implementing business regulatory reforms across some of the parameters. Uganda reduced the time needed to export and import by further implementing the Single Customs Territory and developing the Uganda Electronic Single Window and the Centralized Document Processing Centre.

The volume of trade has been increasing for both imports and exports over the last decade. The Transport Observatory 2019 trade data shows that, on average, the countries had trade deficits rising occasioned by imports of manufactured goods and limited value addition of products in the region.

The Northern Corridor region is an important market commanding an internal market of about 225 million consumers. Supplementary, countries in the Northern Corridor are members of various regional economic

The Northern Corridor Member States population has been increasing over the years, with an annual population growth rate of about 3%. The high population growth could be attributed to high fertility, an increase in life expectancy and a reduction in mortality rate due to improved health facilities. This population structure puts huge demands on provision of food security and land for settlement. The Northern Corridor Member States have a youthful population with an estimated 78% being 34 years and below.

Such a young share of the population reflects the demographic realities of Sub-Saharan Africa in general. With a youth population that exceeds 70%, Northern Corridor Member States must invest in human capital to capitalize on the demographic dividend of this growing

youthful population. The region's economic strategy necessitates investments in youth, economic skills, and the market. Thus, a huge population of young people offer the potential to be a force for a positive economic future of the region and market for goods and services.

Table 1: Key Macroeconomic Indicators

Economy	Land Area	Surface area	Population	Real GDP		Ease of Doing Business	
	Square Km	Square Km	2020 in ('000')	2019 (%)	2020 (%)	Rank out of 190	Doing Business score (0-100)
Burundi	25,680	27,830	11,890.78	1.80	-3.20	166	46.8
DRC.	2,267,050	2,344,860	89,561.40	4.40	-2.20	183	36.2
Kenya	569,140	580,370	53,771.30	5.40	1.05	56	73.2
Rwanda	24,670.	26,340	12,952.21	9.40	2.00	38	76.5
South Sudan	619,745	644330	11,193.73	0.90	-4.10	185	34.6
Uganda	200,520	241,550	45,741.00	6.80	-0.30	116	60
Total/ Average	3,706,805	3,865,280	225,110.42	4.78%	-1.13%		

Source: World Bank, UNCTAD statistics 2019/20 and World Economic Outlook

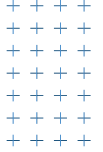
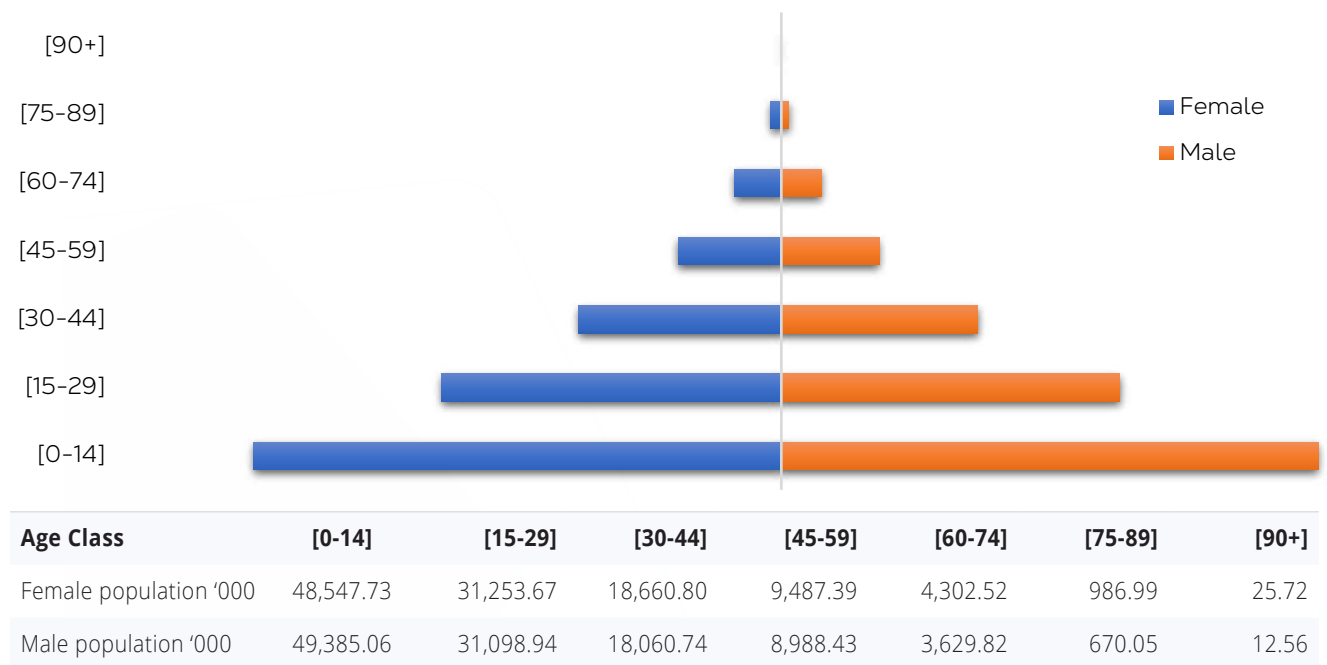


Figure 1: Combined population structure for Northern Corridor Member States 2020

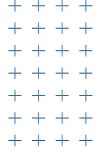


Source: UNCTAD statistics

1.3 Policy and Legal Environment

The World Trade Organization (WTO) provides frameworks for expediting the movement, release and clearance of goods. The recently created African Continental Free Trade Area (AfCFTA) aims to create a single market and allow free access to commodities, goods, and services across the African continent for sustainable economic growth. The Common Market for Eastern and Southern Africa (COMESA) is a free trade area with twenty-one African Member States that came together to promote regional integration through trade and the development of natural and human resources for the mutual benefit of all people in the region. The institutional policies and legal frameworks also set out measures for practical cooperation between customs and other appropriate authorities on trade facilitation and customs compliance issues.

The East African Community (EAC) allows Northern Corridor Partner States to harmonize these policies for the region, exchange good practices, and track their progress towards facilitation goals set at the regional and national levels in the application of the WTO Trade Facilitation Agreement. The policies are avenues for reaping the full development-related benefits from trade facilitation reforms. Therefore, African countries must pursue and implement harmonized policies and regulations for seamless flow of people, goods, and services. Towards this end, there have been numerous efforts by EAC to achieve this objective. For instance, the East Africa Community Vehicle Load Control Act, 2016 (EAC-VLC Act 2016) aims to protect roads by curbing overloading. Member States of the Northern Corridor, except DRC, have assented to implementing the Act.



In 2016, the East African Community enacted the East African Community One-Stop Border Posts Act to establish and implement One-Stop Border Posts in the EAC for efficient movement of goods and people. Besides, there are eight Economic Blocs, preferential trade areas in Africa, with some African Countries having multiple memberships to more than one regional trading bloc. However, the EAC implements policies for the EAC members with a common market for labour, capital, and goods, but they lack a Monetary Union.

Burundi, the Democratic Republic of Congo, Kenya, Rwanda, South Sudan and Uganda are the Member States of the Northern Corridor. These countries ratified the Northern Corridor Transit and Transport Agreement (NCTTA) to facilitate trade and transport. The Agreement is a multilateral treaty with eleven protocols to facilitate transit cargo between the Kenyan Port of Mombasa and the hinterland. The eleven protocols are; Maritime Port Facilities; Routes and Facilities; Customs Control and Operations; Documentation and Procedures; Transport of Goods by Rail; Transport of Goods by Road; Inland Waterways Transport; Transport by Pipeline; Multimodal Transport of Goods; Handling of Dangerous Goods and Measures of Facilitation for Transit Agencies, Traders and Employees.

The Agreement is anchored on three pillars: economic pillar aiming at promoting efficient and competitive transport; social pillar with the view to fostering an inclusive transport and the environmental pillar for green freight transport. The Northern Corridor Transit and Transport Coordination Authority (NCTTCA) is mandated to oversee the Agreement's implementation, monitor its performance, and transform the Northern Corridor trade route into an economic development corridor, making it a seamless, efficient, smart and green Corridor.

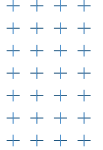
Mombasa Port and Northern Corridor Community Charter provides for a critical framework for cooperation among key agencies in the Northern Corridor Member States is the Mombasa Port and Northern Corridor Community Charter. The Charter establishes a permanent framework of collaboration, binding Port Community stakeholders to specific actions, collective obligations, service delivery targets and timelines to realize the full trade facilitation. The Charter aims to attain four goals, including the provision of quality primary infrastructure and its related ICT; develop and implement efficient and effective cargo storage and clearance processes; build the capacity of service providers to offer globally competitive logistics services and enhance effective stakeholder engagement mechanisms.

1.4 Special Feature on Linkage between Transport Infrastructure and Technology

Transportation technology refers to tools, machines, and innovative ideas employed to provide solutions, improve conditions and enhance efficiency in respect to the movement of people and goods. These technological advances apply to diverse areas of the transport logistics industry including, cargo handling, cargo tracking and monitoring, packaging, storage, distribution processing, warehousing, information processing, financial transactions and supply chain management. Integration of transport technologies raises productivity and efficiency in the logistics supply chain, minimizes costs and errors, enables sustainable and resilient economic

growth, and promotes green and smart transport corridors. The use of technology has played an essential role in narrowing the global divide in trade. Harnessing technology is the surest path for the global economies to deliver on the 2030 Agenda for people, peace and prosperity (Agenda 2030).

Transportation technologies are anchored on efficiency, ease and safety. Some examples of the types of technology utilized in the logistics chain include: mechanical, electronic, industrial and manufacturing, Information and Communication Technology (ICT), Energy and Power Technology, among others.



1.4.1 Single Window System

The Electronic Single Window Systems aim at facilitating international trade by speeding up and simplifying information flow between traders and government institutions in the Member States. The Republic of Kenya and the Republic of Rwanda have operationalised their Single Window Systems, leading to reduced delays and lowering costs associated with clearance of goods.

The Single Window Systems follow the Centre for Trade Facilitation and Electronic Business (UN/CEFACT) recommendation 33 on establishing a Single Window to enhance the efficient exchange of information between trade and government.

The region is set to reap more benefits if the existing Single Window Systems are integrated for seamless clearing processes.

1.4.2 Technology in Logistics Chain

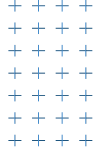
Shipping lies at the onset of the global trade logistic chain. According to UNCTAD 2018, about 80% of global trade by volume and over 70% of global trade by value are carried by sea and are handled by ports worldwide. The shipping industry is vital and has enjoyed a period of intense technical development, which is still advancing. Also, it has been subjected to important structural changes that affect ships' usage, the types of vessel that are being developed, and the prospects for further growth.

Enhancement of energy efficiency and reduction of emissions has been at the forefront of driving technologies in the shipping industry. The International Transport Forum has identified International Maritime Organization's (IMO) Energy Efficiency Design Index (EEDI) and Ship Energy Efficiency Management Plan (SEEMP) as crucial policy instruments that are guiding initiative towards a more energy-efficient industry. The EEDI aims to stimulate technical efficiency measures by establishing energy efficiency requirements of individual vessels, while SEEMP aims to improve energy

efficiencies via operational measures such as optimizing routes and speeds for both new and older ships. The efficiency improvements that result from energy-saving technologies are estimated to result in savings that have short payback periods for the shipping industry.

Besides, energy efficiency and changes in shipping technology have greatly increased the productivity of ships. This has enabled development of bigger ship size with high carrying capacity benefiting from the large-scale economies in the realms of technology. Indeed, since 2018, large vessels have been docking at the seaport of Mombasa. In October 2018, the Mediterranean Shipping Company (MSC) container vessel MSC Maxine made her maiden call at the Port of Mombasa with a container capacity of 9,411 Twenty-foot Equivalent Units (TEU). Whereas this has boosted the cargo volumes, it has triggered the need for enhancing the capacity of ports in the region to handle larger vessels.

The Kenya Ports Authority (KPA) has made a massive investment in technology at the port where a labour-intensive operation has been replaced by a complex, sophisticated and capital-intensive form of cargo handling in line with evolving technological changes. KPA has kept pace with its modernization of its cargo and ship handling equipment. The Authority has acquired additional Ship-to-Shore Gantry Cranes (STS), Rubber Tyred Gantry (RTG) Cranes, Tug boats, Eco Hoppers and rail-mounted Gantry Cranes. In addition, the Mombasa seaport has had to be dredged to accommodate the larger and more modern ships. Further, the container terminals are equipped with modern gantry cranes and fleets of ground handling equipment. Computer systems for the storage, stowage and documentation of containerized cargo have been put in place. The recent introduction of double-deck wagons on the Standard Gauge Railway (SGR) has significantly contributed to increased deliveries to the Nairobi Inland Container Depot. The use of double-deck wagons has significantly increased the number of containers evacuated, but it has also created difficulties in scanning double-stacked containers due to the scanners' limitations in scanning double-stacked containers.



Source: KPA

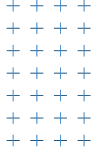
1.4.3 Information and Communication Technology

ICT provides the reach to high-speed internet, mobile broad band, and computing, which collectively can catalyse economic growth and development. The Northern Corridor Member States have made tremendous improvements in ICT development improved access to ICT devices and equipment by majority of the population.

Table 2 below presents statistics on mobile cellular subscriptions (per 100 people) and the proportion of individuals using the internet for the Northern Corridor Member States. The Internet can be used via a computer, mobile phone, personal digital assistant, games machine, digital TV, among others. Mobile cellular subscriptions (per 100 people) are favourable for all Northern Corridor Member States except for South Sudan and

DR Congo. Mobile cellular telephone subscriptions are subscriptions to a public mobile telephone service that provides access to the Public Switch Telephone Network (PSTN) using cellular technology .

Access to ICTs presents a huge opportunity for the overall transport and logistics chain. The leading area for shipping-related information technology is in ports, particularly in Terminal Operating Systems and intra-port communications. Data communication systems can handle customs filings, transmittal of manifests, and processing of Bills of Lading and other documents. The growing power and speed of information processing is reshaping the shipping and port industry. Any delays to the ship and its cargo are costly to everyone in the supply chain. Information technology, especially Internet-based

**Table 2:** Mobile Cellular Subscriptions in 2019

Selected Economic Development Indicators	Burundi	DRC	Kenya	Rwanda	South Sudan	Uganda
Mobile cellular subscriptions (per 100 people)	58	43	104	76	33	57
Individuals using the internet (% of population)	3	9	23	22	8	24

Source: World bank open data source: <https://data.worldbank.org/indicator/IT.CEL.SETS.P2?view=chart>; accessed March 2021

systems, is increasingly being employed in all transport services. Electronic commerce has increased demand for shipping services by increasing trade volume in general. The Port of Mombasa has adopted technology in automated gates at Inland Container Depots, cargo booking, tracking, clearance and delivery by major shipping lines, and customs clearance.

The region has, over the years, improved the quality of customs services, transport and communications infrastructure to reap the benefits of technology. A significant step has been implementing initiatives such as the Regional Electronic Cargo Tracking System (RECTs), Single Customs Territory (SCT) and upgrading

of Customs Management Systems, thus removing unnecessary checkpoints along the corridor.

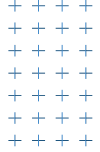
The use of Information and Technology is a critical component in the efficiency of transport and distribution of petroleum products. Technology can be used to detect leakages through pressure analysis, cleaning of the pipelines, measuring pressure in the oil tankers, detecting changes in fuel level in the oil tanker through a fuel sensor, monitoring the actual location of the tanker, among others.

1.4.4 Transport Infrastructure

The world has seen a surge in new technologies that have transformed many industries in the last decade. Industries ranging from telecommunications to trade facilitation have been transformed completely. Modern infrastructure is a prerequisite in creating and supporting a business environment that facilitates investment, growth, and job creation. Infrastructure can also benefit from some of these technological advancements. They include technologies that can impact infrastructure development at the design and planning stage, technologies that relate to the construction of the infrastructure assets and technologies related to data analytics, making operation and maintenance

of infrastructure much more efficient. The Northern Corridor encompasses both physical infrastructure (i.e., roads, railways, border posts, seaports, and inter-modal facilities, among others) and soft infrastructure such as institutional frameworks built on agreements between governments.

With more liberal trade arrangements between Northern Corridor Member States, intraregional trade is expected to continue its rapid growth, making these economies more interdependent. The creation of a larger, more deeply integrated, 'Single Digital Market' across Africa through the African Continental Free Trade Area (AfCFTA)



would provide a globally expansive market base for Northern Corridor Member States. The success of open trade and free movement of goods, people and services in the AfCFTA will heavily rely on how African countries invest in and modernize their transport and logistics systems. Investment in modern infrastructure in all the modes of transportation focusing on the missing links to the trans-African Highway system will boost the opening of trade between countries.

One-Stop Border Posts (OSBPs) play a crucial role in facilitating transboundary trade by enhancing border crossing efficiency, enabling cross-border trade, including informal trade in the Northern Corridor region. The use of technology at OSBPs has improved sharing and exchange of information among agencies; enhanced border security; reduced processing times at the border; reduced transit times for traders and transporters; and enhanced the reliability of the supply chain through streamlined and harmonized procedures. Empirical evidence from Northern Corridor shows that OSBPs have played a catalytic role towards minimizing the obstacles to the free movement of goods and people.

The Kenya National Highways Authority (KeNHA) has installed High Speed Weigh in Motion (HSWIM) and multi deck scales fully automated weighbridges. Further, ten (10) virtual weighbridge stations have been installed and integrated at selected locations along with the Kenya National Highways Road Network. The Multiplatform

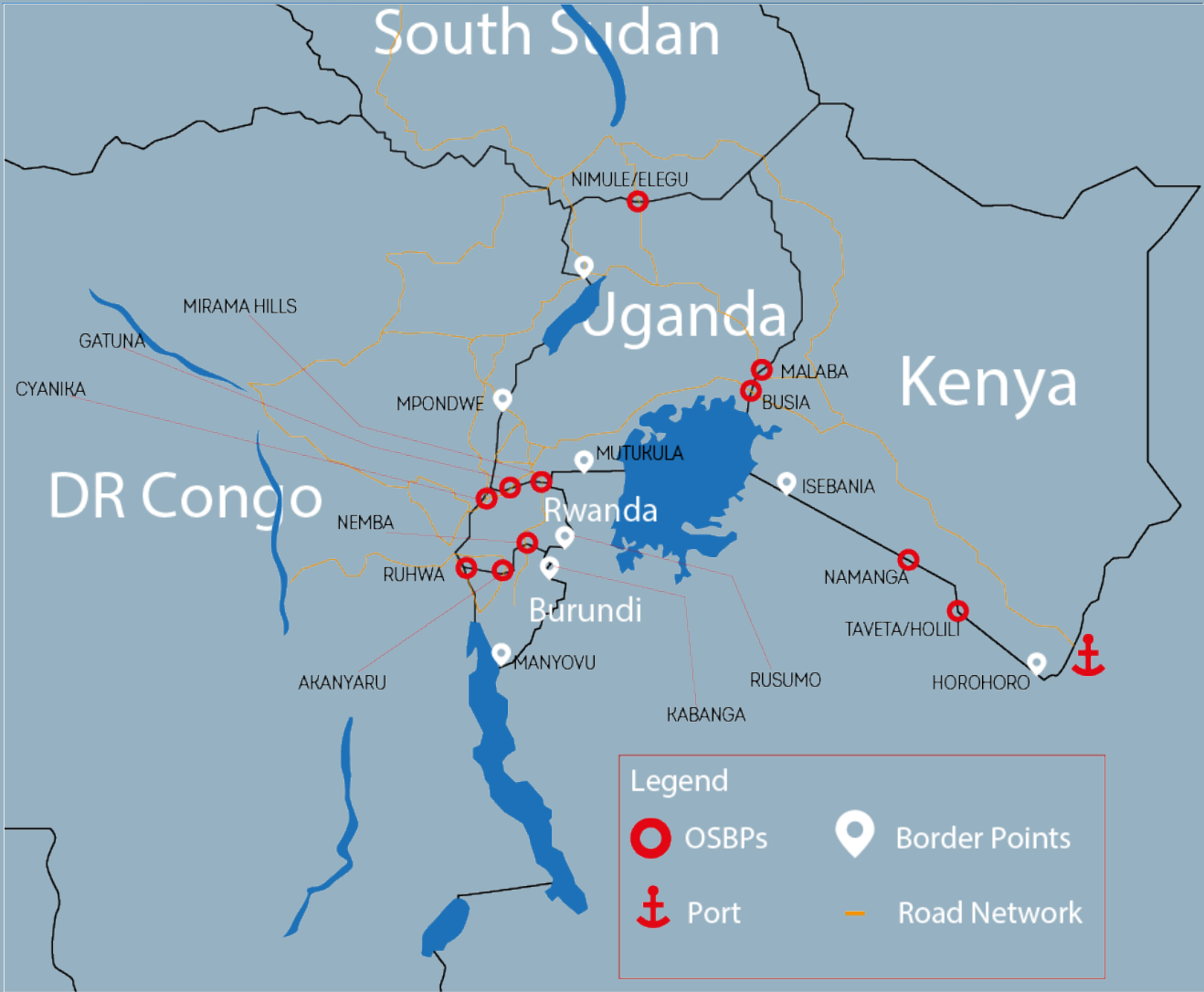
(Multi Deck Weighbridge) Axle Weighbridge consists of modules that can act either together as a standard, dependable weighbridge for total weighing or separately as smaller weighing platforms for weighing per truck axle. The Multiplatform Axle Weighbridge ability can prevent the over-weighing of truck axles, especially on long vehicles. The benefits of this technology include; ideal for large multi-axle and articulated vehicles, eliminates the risk of fines, improves safety, road condition and operational life of vehicles by correcting the load (corrects load per axle, corrects distribution of load on left and right side of the truck among others).

The East African Regional Cooperation Initiatives (EARCI) have mainly focused on joint efforts to modernize railway and highway networks. The East African Railway Master Plan provides for the Mombasa-Nairobi SGR to be linked with other SGRs being built in the East African Community. On the environmental sustainability front, the adoption of newer technologies is critical for developing a greener transport corridor environment. As the Freight Transport sector continues to grow, its logistics costs and environmental impact also increase in parallel, calling for environmental sustainability. The Northern Corridor Transit and Transport Coordination Authority undertook a road technology assessment to identify existing processes to ensure performance and effectiveness of investments in fuel savings and emission reduction technologies.

The Member States of the Northern Corridor have adopted technologies and innovations that have improved the efficiency of the transport system's These have seen enhanced mobility of people, goods and services due to diffused technology. However, there is room for the intensified application of technologies in the transport and logistics system. Also, investment in home-grown research and innovation will ultimately boost competitiveness.



Figure 2: Map Showing OSBP locations



Source: Northern Corridor Transport Observatory

1.4.5 Challenges

1. The adoption of energy-efficient transport technologies is often limited due to a number of market barriers, including high costs of newer technologies and intellectual property rights.
2. Limited investment in research and development, lack of a strong linkage between academia and the local transport industry are the limiting factors to developing localized and potentially cheaper technologies.
3. Insufficient use of information and communication technology (ICT) and lack of an appropriate legal framework supporting paperless transactions lead to lengthy documentation and cumbersome procedures for cargo clearance.
4. Poorly coordinated framework between/among institutions. A harmonized regional approach and integration of systems is the most appropriate

1.5 Policy Recommendations

Synergies among the Northern Corridor Member States is needed to:

- ★ Upscale automation and investment in infrastructure and human resources to support the complete automation of critical services along the Corridor.

- ★ Enhance the green channel to support identification and prioritization of logistics that support the delivery of medicines and other health products. Countries must also cooperate in implementing their climate change mitigation commitments

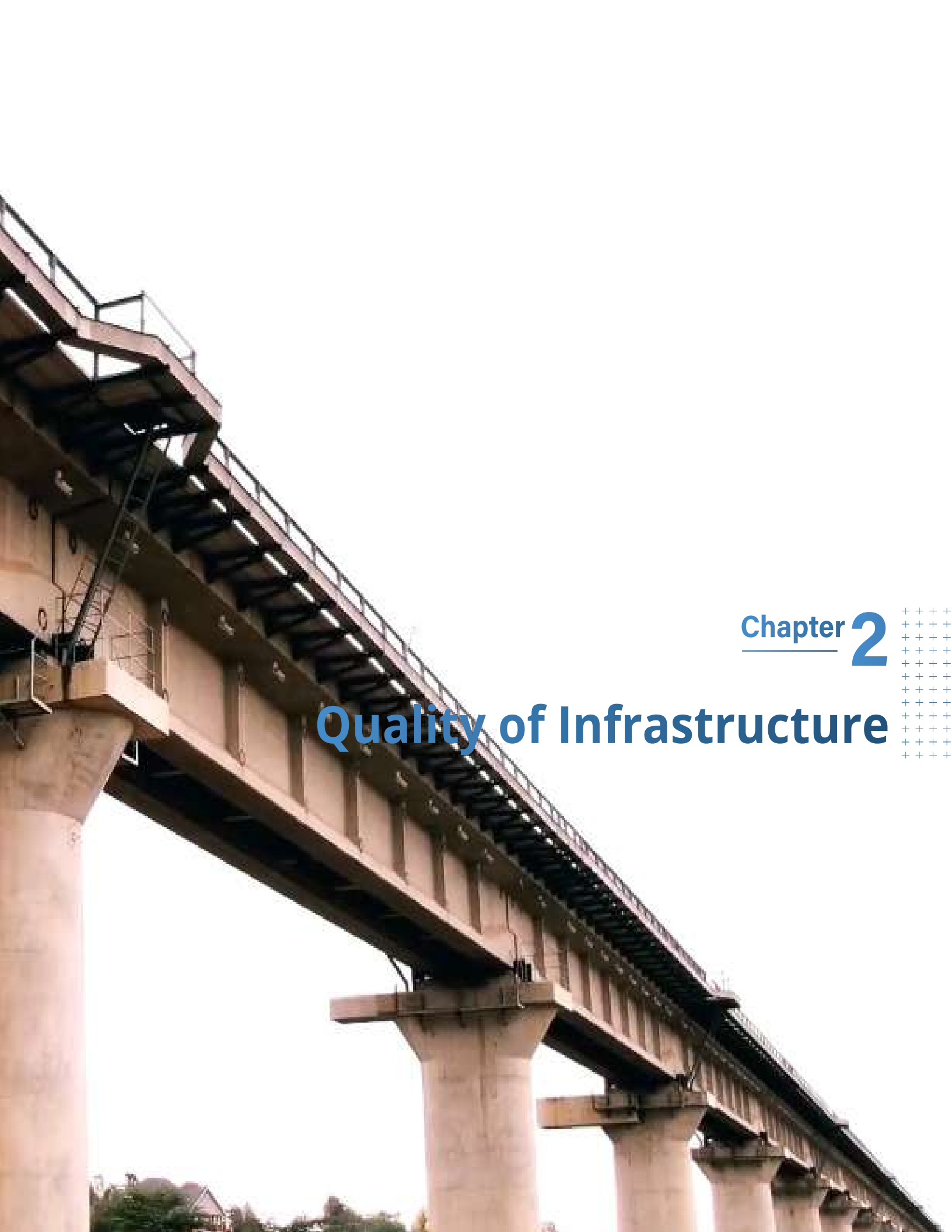
- ★ Provide ICT infrastructure and equipment and access to adequate broadband to increase capacity to handle large electronic transaction and data storage;

- ★ Creation of full ICT coverage within the length of the corridor to allow for electronic inspections and monitoring of traffic, integrated cargo tracking systems and uninhibited data and telecommunication services in the context of the smart corridor concept.

- ★ Enhancement of corridor risk management systems and measures through risk accreditation and streamlining the work practices of transporters, freight forwarders and clearing agents.

- ★ In the wake of automation, there is need for policy review. Solely relying on electronic documents, which is the best practice, faces legal challenges since customs regulations require original physical copies.





Chapter **2**

Quality of Infrastructure

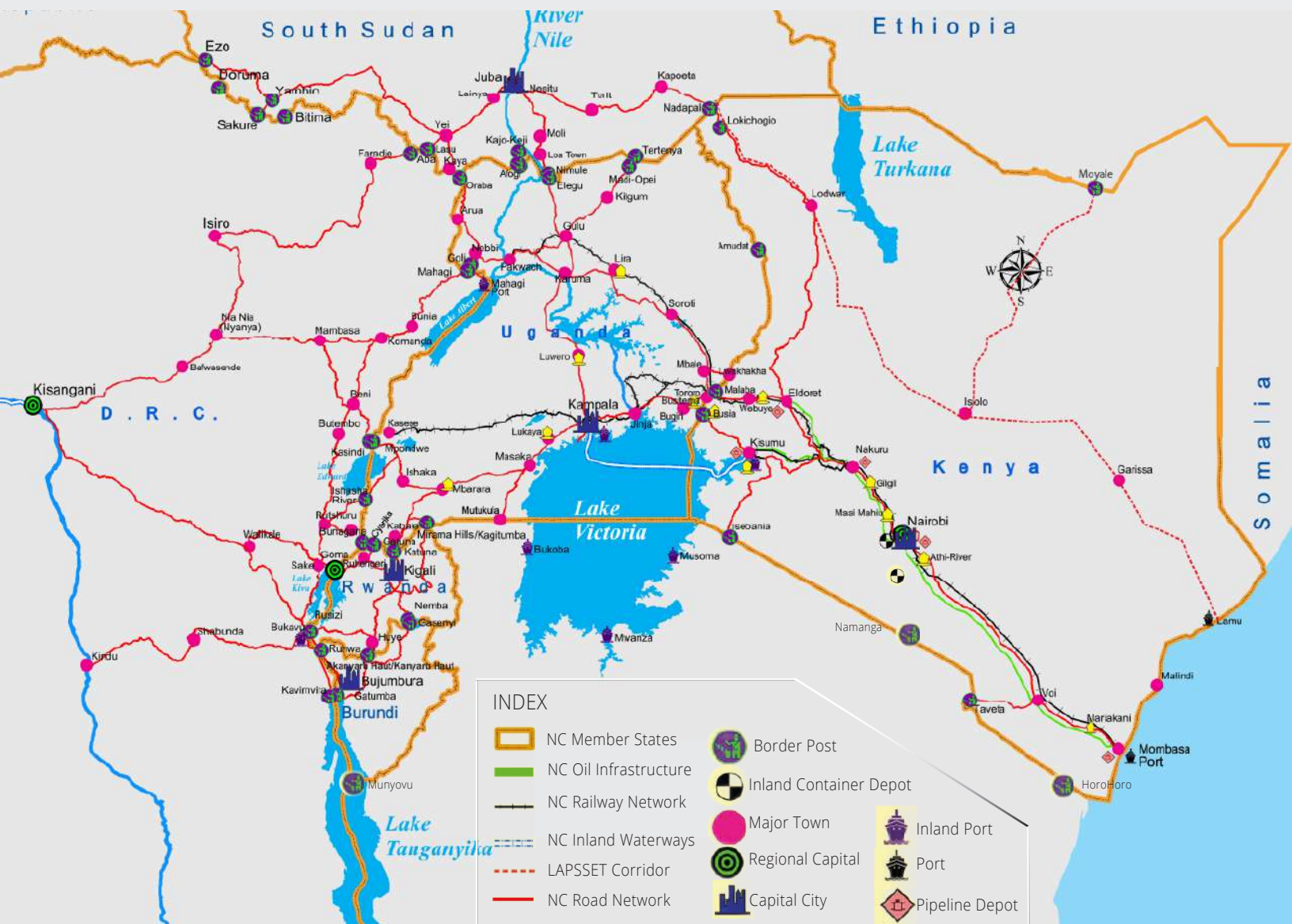


2.1 Introduction

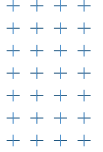
The Northern Corridor Transport network consists of modes of surface transport route linking the landlocked Countries to the Port of Mombasa. These surface modes include road, rail, pipeline and inland waterways. The existing infrastructure along the Northern Corridor consists of physical transport infrastructure crucial for trade facilitation and provides logistics services that reduce the trade costs and soft infrastructure to

facilitate faster clearance and processing of goods. In essence, provision of adequate quality infrastructure is vital in reducing trade costs, enhancing competitiveness, and facilitating regional economic integration. The scope of this report is limited to physical transport infrastructure, including the Seaport of Mombasa, road network, weighbridges, one-stop border points, railway, pipeline, inland waterways and inland container depots.

Figure 3: Northern Corridor Infrastructure



Source: Northern Corridor Transport Observatory



2.2 The Mombasa Seaport

The Port of Mombasa is the key entry and exit point for cargo belonging to a vast hinterland that includes Burundi, DR Congo, Kenya, Rwanda, South Sudan and Uganda. The Port of Mombasa also serves Tanzania, Somalia and Ethiopia. The Port of Mombasa comprises Kilindini Harbour, Port Reitz, the Old Port, Port Tudor, and the tidal waters encircling Mombasa Island. The port has a capacity of 2.65 million TEUs¹⁾. Kilindini Harbour is a large, natural deep-water inlet with a depth of 45–55 Metres at its deepest centre (continental draught), although the defining depth is the entrance channel into the port and the depth at the berths, with have a dredged depth of -15 Metres.



The port of Mombasa is planned to be dredged further to about -16 Metres because of the new Kipevu Oil Terminal (KOT) that is still under construction.

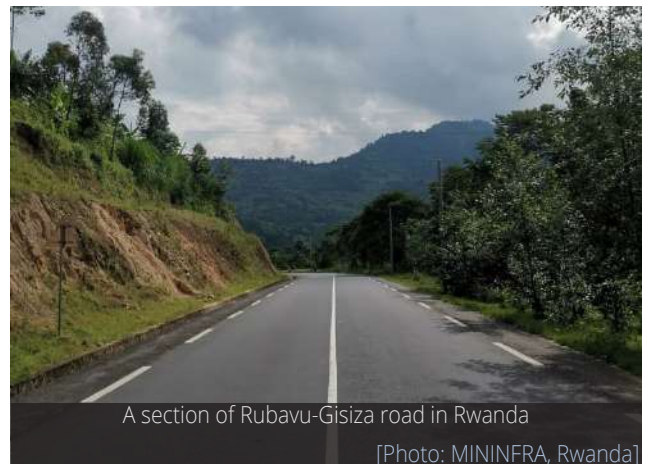
The port is equipped with two container terminals, 1 and 2. Terminal 1 has three berths (No. 16, 17 and 18) whereas, Terminal 2 has two berths (No. 20 and 21). The 2nd container terminal is 15 Metres deep, with berth 20 having a width of 210 Metres; berth 21 having a width of 300 Metres wide. On the other hand, berths 16-19 are about 840 Metres in total. Other facilities and equipment include; 2 bulk oil jetties, 2 bulk cement berths with 3 silos and 10 Conventional Cargo berth. Further, it is the busiest port in East and Central Africa with an annual growth cargo throughput growth of about 10%, and it

is among the top ten fastest-growing container ports in Africa.

2.3 Road Network along the Northern Corridor

The Northern Transport Corridor has thousands of kilometres of road network that runs from the coastal city of Mombasa to the East and further to Kinshasa in DRC to the west. The road network covers approximately 516 Km in Burundi; 4,172 Km in DRC; 1,177 Km in Kenya; 1,353 Km in Rwanda; 3,543 Km in South Sudan; and 2,080 Km in Uganda. It, therefore, transcends diverse geographical, climatic, socio-economic and political zones that hold different factors that impinge on the vulnerability of the road infrastructure. Assessing the status and road conditions is crucial not only for seamless movement of goods, services and people but also for safety, road service life, fuel consumption and maintenance costs, among others.

There are various parameters that are widely used to assess road surface conditions among them International Roughness Index (IRI). IRI is a standardized and widely used parameter to quantify road roughness. IRI is the most commonly used worldwide index describing road roughness and is used for evaluating and managing road systems. A low IRI value indicates



A section of Rubavu-Gisiza road in Rwanda

[Photo: MININFRA, Rwanda]

1 KPA Strategic Plan 2018-2022

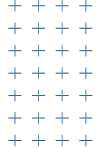


Table 3: International Roughness Index (IRI).

IRI Scale	Road Condition Description
1 to 1.5	Excellent
1.6 to 3	V. Good
3.1 to 4	Good
4.1 to 6	Fair
6.1 to 8	Poor

Source: Northern Corridor Transport Observatory

a smooth road (excellent condition) and a high value indicates that the road has distresses, such as potholes or deep depressions (poor condition).

The IRI is based on simulation of the roughness response of a car traveling at 80 Km/h and it is the reference average rectified slope, which expresses a ratio of the accumulated suspension vertical motion of a vehicle, divided by the distance travelled during the test. The IRI is a numeric that summarizes roughness qualities impacting vehicle response and the dimensionless measure with units (mm=M).

2.3.1 Status of Road condition in Kenya along the Northern Corridor

As observed in the Mombasa Port and Northern Corridor Community Charter, the Kenyan road serves as an inevitable link because it is the main pathway linking landlocked countries to the Port of Mombasa. Kenyan roads are classified into three categories: Super Highways (Class S); International Trunk Roads (Class A), and National Trunk Roads (Class B), as shown in **Table 4** below;



[Photo: Freight Logistics, Twitter]

Table 4: Classification of Kenya Roads under Kenya National Highways Authority (KeNHA)

Road Class	Paved	Unpaved	Total (Km)	Description
Super Highway (S)	40	0	40	Highways connecting two or more cities meant to carry a large volume of traffic safely at the highest speed of operation
International Trunk Roads (A)	4,609	2,221	6,830	Link centres of international importance and crossing international boundaries or terminating at international ports
National Trunk Roads (B)	8,463	6,216	14,679	Link nationally important centres
Total (Km)	13,112	8,437	21,549	

Source: KeNHA data 2020



Protocol Number 2, Section 1 (Article 4 a) of the Northern Corridor Transit and Transport Agreement provides designated road traffic routes in Kenya to facilitate interstate trade along the Corridor. From **Table 5** below, the total cumulative length from Mombasa to Malaba, Kisumu and Busia covers 1,176.93 kilometres. About 91% is in

good condition, paved and tarmac with an average IRI of below 2.9 mm/M. Only 9% (about 111.86 Km) is in bad condition. The ongoing roads infrastructure upgrading is expected to bring more improvements. Furthermore, there are ongoing plans to expand Nairobi- Mombasa Highway.

Table 5: Road condition in Kenya along the Northern Corridor from the Port of Mombasa

Route	Section	Length (Km)	IRI (mm/M)	Condition
Mombasa-Eldoret-Malaba	Mombasa Town-Kwa Jomvu	8.93	1.65	V. Good
	Kwa Jomvu-Maji ya Chumvi	41.90	2.82	V. Good
	Maji ya Chumvi-Voi	107.10	1.71	V. Good
	Voi-Mtito Andei	96.86	3.88	V. Good
	Mtito Andei-Emali	106.65	1.32	Excellent
	Emali-Athi River Interchange	98.71	1.78	V. Good
	Athi River Interchange-James Gichuru	31.76	1.92	V. Good
	Rironi-Naivasha	60.20	2.28	V. Good
	Naivasha-Nakuru	70.90	2.22	V. Good
	Nakuru-Mau Summit	61.10	2.88	V. Good
	Mau Summit-Timboroa	51.16	2.71	V. Good
	Timboroa-Eldoret	61.83	2.33	V. Good
	Eldoret-Webuye	77.12	2.56	V. Good
	Webuye-Malaba	60.80	2.23	V. Good
Mau Summit-Busia	Mau Summit-Kericho	45.9	1.88	V. Good
	Kericho-Kisumu	84.15	2.36	V. Good
	Kisumu-Busia	111.86	6.9	Poor
Total		1,176.93		

Source: KeNHA, 2020

Another vital link for use from Mombasa to South Sudan is through Lokichogio. There is also a link with the central corridor through Namanga/Taita Taveta Lungalunga and Isebania borders. Uganda can also be accessed through the Lwakhakha border point by branching off from Webuye along the Nairobi -Malaba section. These routes can serve as alternative links to integrate seamlessly with the Port of Mombasa. Burundi transporters prefer Voi/Holili route due to the shorter distance, low costs and fewer non-tariff barriers. Voi/Holili route road is in good condition.



Road Infrastructure in Kenya

Table 6: Other Road Sections linking Kenya to Tanzania and South Sudan Borders

Route	Length (Km)	GOOD	FAIR	POOR
Taveta - Voi	121.2	121.2	0	0
Emali - Loitoktok	113.6	113.6	0	0
Athi river - Namanga	136	136	0	0
Kitale - Kapenguria	32	32	0	0
Kapenguria - Lokichar	173	143	30	0
Lokichar - Lodwar - Lokichoggio- Nakodok ^[1]	358	0	0	358
Maili Tisa - Moi's Bridge - Kitale	57.3	27.3	30	0
Kitale - Kachibora	27.6	27.6	0	0
Kachibora - Tot	90.2	15	75.2	0
Lodwar - Kalokol	60	10	5	45
Cheptongei - Chebiemit	16	16	0	0

Source: Kenya National Highways Authority (KeNHA) March 2019

1 Rehabilitation in progress-Funded by World Bank



Road Infrastructure in Uganda

2.3.2 Status of Road Condition in Uganda along the Northern Corridor

The Northern Corridor road network in Uganda is approximately 2,079.78 Km long, out of which about 44% of roads are paved and in good condition, 43% in fair condition, and 13% in bad condition, as shown in **Table 7**. The majority of road sections in Uganda are bituminous, with an average traffic volume of above seven thousand. Cases of heavy traffic congestion were experienced along the Malaba – Kampala- Katuna route.

The Jinja – Kampala express route helps to ease congestion, and thus periodic maintenance is carried out. Further, most of the roads are two lanes with a road width of at least 3.5 Metres.

Table 7: Condition of Road Sections in Uganda along the Northern Corridor in 2019

Route	Total Length (Km)	Good	Fair	Bad	Traffic Projection
Malaba -Katuna	633.45	537.61	95.83	0.00	13,460
Busega - Ishasha	482.48	94.71	300.74	87.03	5,019
Busia -Namutere	16.91	16.91	0.00	0.00	4,130
Ishaka - Kakitumba	86.85	71.62	15.23	0.00	1,854
Kikorongo - Mpondwe	38.25	38.25	0.00	0.00	3,971
Mbarara - Ishasha	113.18	87.01	26.17	0.00	5,001
Namutere - Tororo	28.29	28.29	0.00	0.00	6,230
Nebbi - Arua	151.34	18.85	49.90	82.59	2,860
Tororo - Goli	529.04	27.30	403.15	98.59	4,740
Grand Total/Average	2,079.78	920.55	891.03	268.21	7,283

Source: UNRA, data 2020

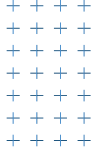
2.3.3 Status of Road condition in Rwanda along the Northern Corridor



Table 8 shows that about 18% of roads along the Northern Corridor in Rwanda are excellent, 64% very good and 9% good quality condition with a standard width of 3.5 Metres. Periodic maintenance is carried out to ensure the roads remain in good condition. For the remaining 9%, roads are under rehabilitation and widening of lanes from two to four lanes to reduce traffic congestion. These road sections include; Kigali-Remera NR4 (8.267Km) road under the financing by the Government of Rwanda and China EXIM Bank. Construction works for the Kigali-Remera section are substantially completed while waiting for other road sections to be completed for the whole project provisionally handed over. Kicukiro-Nyanza-Mugendo NR5 (12.23Km) road under the Bugesera International Expressway project is under financing by the Government of Rwanda and China EXIM Bank. Works are in progress at 40%, and the project expected completion time is December 2021. Rukomo - Nyagatare NR19 (73.3Km) road upgrading works are ongoing at 60%. The project is under the financing of the Government of Rwanda, Arab Bank for Economic Development in Africa (BADEA), OPEC Fund for International Development (OFID), Saudi Fund for Development (SFD) and Kuwait Fund for Arab Economic Development (KFAED).

Table 8: Road condition in Rwanda December 2019

Road Section	Length (Km)	IRI	Current road Condition (%)	No of lanes	Lane width (M)	Condition
Kigali-Muhanga-Huye-Akanyaru Haut (NR1)	157.84	1.91	97	2	3.5	Good
Kigali-Musanze-Rubavu (NR2)	150.02	1.66	100	2	3.5	Good
Kigali-Rukomo-Gatuna (NR3)	78.01	1.11	100	2	3.5	Good
Kigali-Remera (NR4)	8.27	2.00	100	4	3.5	Good
Kigali (Remera)-Kayonza (NR4)	69.29	1.53	99	2	3.5	Good
Kicukiro (Sonatube)-Nyanza-Akagera (NR5)	12.23	Under rehabilitation and widening into four lanes				
Akagera-Nyamata-Nemba (NR5)	49.751	1.31	100	2	3.5	Good

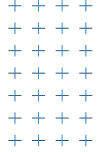


Road Section	Length (Km)	IRI	Current road Condition (%)	No of lanes	Lane width (M)	Condition
Huye (Karubanda)-Nyamagabe-Kitabi-Pindura-Buhinga (NR10)	115.272	1.91	99	2	3.5	Good
Ruhwa-Kamembe-Buhinga-Tyazo-Bwishura-Rubengera-Rutsiro-Nkomero-Kivumu-Pfunda-Rubavu (NR11)	256.2	1.97	98	2	3.5	Good
Muhanga (Nyamabuye)-Meru-Nyange (NR15)	29.21	3.29	77	2	3.5	Good
Nyange-Rambura-Rubengera-(NR15)	32.24	Under rehabilitation and widening into four lanes				
Muhanga (Meru)-Ngororero-Kabaya-Gasiza-Mukamira (NR16)	98.764	1.78	99	2	3.5	Good
Musanze-Kidaho-Cyanika (NR17)	25.1			2	3.5	Good
Musanze (Camp Muhoza)-Kinigi (NR18)	15.4	2.15	100	2	3.5	Good
Majengu-Gisenyi (NR 18)	2.6	2.15	100	2	3.5	Good
Majengu-Petite Barriere (NR 18)	1.8	2.15	100	2	3.5	Good
Base-Gicumbi-Rukomo (NR19)	51.5	2.88	84	2	3.5	Good
Nyagatare-Ryabega (NR 19)	10.7	2.88	84	2	3.5	Good
Rukomo-Nyagatare (NR 19)	73			Under upgrading		
Kayonza-Gabiro-Ryabega-Kagitumba (24)	116.3	1.39	100	2	3.5	Good

Source: RTDA, December 2020



A road section of Base-Gicumbi-Rukomo road in Rwanda



2.3.4 Status of Road condition in Burundi along the Northern Corridor

A majority of the roads in Burundi are two lanes with a road width of 3 Metres except for Namitanga- Bujumbura route and Ngozi-Gitega route, which have a road width of 3.5 Metres. Further, most of the road surface is paved and asphalt concrete. As presented in **Table 9** below, 41% of the roads in Burundi are in good condition, 41% in fair condition and 18% (93 Kilometres) of the roads are still under bad condition. Construction of Gatumba - Frontière RDC (Rusizi II) bridge was finalized. Works for improvement and repair of crucial points are ongoing, completed on some trunks, and ongoing works on other sections.



[Photo: Infrastructure Burundi]

Table 9: Status of road sections in Burundi

Route/ Road section	Total Length (Km)	Good	Fair	Bad
Kanyaru Haut- Kayanza- Bugarama- Gatumba	125	16	109	0
Kanyaru Haut- Kayanza	15		15	
Kayanza- Bugarama	59	0	59	0
Bugarama-Bujumbura	35	0	35	0
Bujumbura - Gatumba	13	13	0	0
Gatumba - Frontière RDC (Rusizi II)	3	3	0	0
Gasenyi -Kirundo-Ngozi- Kayanza	139	35	104	0
Gasenyi - Kirundo	35	35	0	0
Kirundo - Gashoho	32	0	32	0
Gashoho - Ngozi	40	0	40	0
Ngozi - Kayanza	32	0	32	0
Ruhwa- Rugombo-Nyamitanga to Bujumbura	80	75	0	5
Ruhwa - Nyamitanga	50	50	0	0



Route/ Road section	Total Length (Km)	Good	Fair	Bad
Nyamitanga - Bujumbura	30	25	0	5
Kanyaru bas - Ngozi-Nyangungu to Gitega	172	84	0	88
Kanyaru bas - Ngozi	23	0	0	23
Ngozi - Gitega	84	84	0	0
Gitega - Bujumbura	65	0	0	65
Total Length in Km	516	210	213	93

Source: Office De Routes, December 2020

2.3.5 Status of Road condition along the Northern Corridor in DRC

From **Table 10** below approximately 42% (1,752 Km) of the road condition in DRC is in a good state, 29% (1,213 Km) in fair condition and 29% an equivalent of 1,207 Km is in bad state. Majority of the roads in DRC are two lanes with road width of 3 to 3.5 Metres. However, most of the sections under bad state were reported to be under partial rehabilitation and will be better when the upgrade is completed.

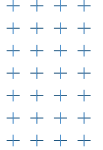


[Photo: Twenty20.com]

Table 10: Status of road sections in DRC

ROUTE	Road	Pavement type	Length (Km)	Road condition (Km)		
	Classification			Good	Fair	Bad
1. AXE BUKAVU-KINDU-KISANGANI						
BUKAVU -BURHALE	RN2	RT	55	30	0	25
BURHALE - SHABUNDA - LUBILE	RP503	RT	363	42	64	257
LUBILE - KALIMA - MALI	RN32	RR	117	76	38	3
MALI - KINDU	RN31	RR	36	16	20	0

ROUTE	Road	Pavement type	Length (Km)	Road condition (Km)		
	Classification			Good	Fair	Bad
MALI - LUBUTU	RN31	RT	318	62	52	204
LUBUTU - KISANGANI	RN3	RR	297	141	111	45
LUBUTU - OSOKARI - WALIKALE	RN3	RR	219	192	27	0
WALIKALE - HOMBO	RN3	RT	107	0	0	107
HOMBO - MITI	RN3	RR	93	46	0	47
2. AXE BUKAVU-UVIRA						
BUKAVU - KAMANYOLA	RN5	RR/RT	55	35	9	11
KAMANYOLA - UVIRA	RN5	RR	86	56	14	16
UVIRA - KAMVIVIRA - FRONT BURUNDI	RN30	RR	17	10	7	0
3. AXE KISANGANI - BENI -KASINDI						
KISANGANI - NIANIA - KOMANDA	RN4	RT	650	254	163	253
KOMANDA - LUNA	RN4	RT	65	2	29	34
LUNA - BENI	RN4	RR	60	60	0	0
BENI - KASINDI	RN4	RT	80	45	35	0
4. AXE KOMANDA - BUNIA - MAHAGI						
KOMANDA - BUNIA	RN27	RT	71	36	31	4
BUNIA - MAHAGI - GOLI - FR OUGANDA	RN27	RT	190	35	69	86
5. AXE KISANGANI - ISIRO - ARU						
KISANGANI - NIANIA	RN4	RT	PM			
NIANIA - ISIRO	RN26	RT	232	139	93	0
ISIRO - WATSA - ARU	RN26/RP434	RT	422	208	153	61
6. AXE BENI - BUTEMBO - GOMA - BUKAVU						
BENI - NDOLUMA	RN2	RT	132	50	72	0
NDOLUMA - RUTSHURU - GOMA	RN2	RR	199	134	65	0
GOMA - SAKE - MINOVA	RN2	RR/RT	58	23	23	12
MINOVA - KAVUMU - BUKAVU	RN2	RR/RT	150	23	85	42



ROUTE	Road	Pavement type	Length (Km)	Road condition (Km)		
	Classification			Good	Fair	Bad
RUTSHURU - BUNAGANA	RN28	RT	27	19	8	0
RUTSHURU - ISHASHA	RP1035	RT	63	18	45	0
TOTAL			4,162	1,752	1,213	1,207
PERCENTAGE			100%	42%	29%	29%

RN: National road |RR: Asphalt road |RP: Regional roads | RT : earth-surfaced road

Source: Office De Routes, DRC 2020

2.3.6 Status of Road condition in South Sudan along the Northern Corridor

South Sudan is facing grave infrastructure challenges related to repairing ageing roads with limited resource allocation. **Table 11** shows that 95% of the corridor roads in South Sudan is in bad condition, and 5% is in fair condition. On the Nadapal - Kapoeta - Torit - Juba route, bush clearance and road maintenance activities have been completed, and design of 45 Km is under review before issuing substantial approval to proceed for earthwork.

Other key infrastructure development projects going on presently along the Northern Corridor route are:

- The New Juba Bridge is substantially completed, with all the piers fully installed and decks almost completed. The construction works of approach roads, guardrails and langrands have started and are expected to be completed before the end of the year. The bridge is slated for opening in the year 2021.
- The old bridge is undergoing overhauling, repairing of the broken decks and piers. The roads Juba-Bor(193Km), Kaya-Yei-Juba (225Km) and Juba-Yirol-Rumbek (412 Km) are currently being upgraded to asphalt roads. Nevertheless, the country is yet to get enough support from international partners to help improve its roads, as is seen in other member countries.

Ongoing Construction of the new Juba Bridge across River Nile in South Sudan



Table 11: Condition of Road Sections in South Sudan as of March 2019

Route / Road	Pavement type	Configuration	Length (Km)	Works Status	Planned	Road condition (Km)/IRI		
						Good	Fair	Bad
Nimule - Nesitu - Juba	Paved	Two lane	192	Constructed	Maintenance		192	
Nadapal - Kapoeta - Torit - Nesitu	Gravel	Two lane	335	Designed	Awaiting construction			335
Juba - Lainya - Yei - Kaya	Gravel	Two lane	225	N/A	N/A			225
Yei - Maridi	Gravel	Two lane	180	N/A	N/A			180
Juba - Mundri - Maridi - Yambio - Nabiapai	Gravel	Two lane	427	N/A	N/A			427
Yambio - Tambura - Wau - Aweil	Gravel	Two lane	591	N/A	N/A			591
Wau - Kwacjok - Agok - Mayom - Bentiu	Gravel	Two lane	520	N/A	N/A			520
Juba - Bor - Ayod - Malakal	Gravel	Two lane	614	N/A	N/A			614
Mundri - Rumbek - Wau	Gravel	Two Lane	459	N/A	N/A			459
TOTAL (Length) in Km			3,543	0	0	0	192	3,351

Source: Ministry of Infrastructure 2020

2.4 Pipeline Network in the Northern Corridor

Pipeline transport in Kenya is managed by the Kenya Pipeline Company (KPC), incorporated in 1973, and began commercial operations in 1978. KPC is mandated to transport, store and handle petroleum products through the pipeline network. The line runs from the oil refinery in Mombasa through Nairobi, Eldoret and Kisumu and serves Member States of Uganda, Rwanda, Burundi and the Eastern DRC through transshipment in tankers on the Northern Corridor roads.

The installed pipeline system in Kenya consisted of 1,792 kilometres of pipeline with capacity to handle about 6.9 billion litres of petroleum products annually. There are 7 loading depots on the network, namely,

Moi International Airport, Nairobi Terminal Station, Jomo Kenyatta International Airport, Kipevu Oil Storage Terminal, Nakuru Terminal Station, Eldoret Terminal Station and the Kisumu Terminal Station. The line is also installed with 14 pumping station. **Table 12** shows the storage capacity of the pipeline.

The pipeline's capacity has been limited in addressing the increasing petroleum products demand in the country and other landlocked countries dependent on Kenya for their products. This has necessitated the need to build a 20-inch line from Mombasa to Nairobi with a higher flow rate of 1.9 million litres per hour by the year 2023.



Kisumu Oil Jetty

[Photo: KPC]

Table 12: Pipeline Storage

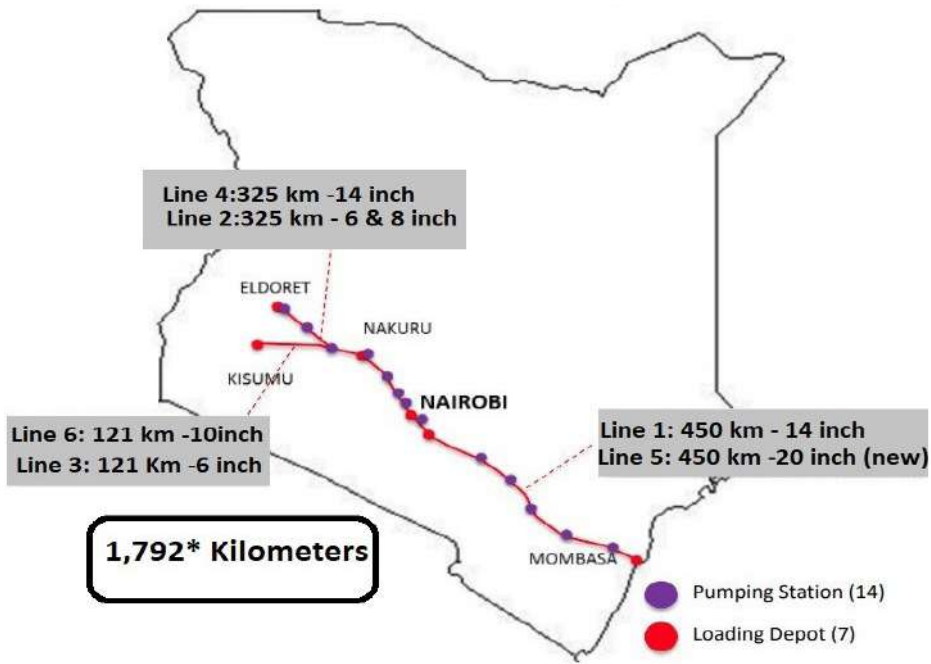
Facility	Storage (M litres)
Kipevu (Mombasa)	326
Moi Airport (Mombasa)	7
KPRL (Changamwe) additional July 2017	140
Nairobi Terminal	233
JKIA (Nairobi)	54
Nakuru	31
Eldoret	48
Kisumu	45
TOTAL	884

Source: <https://www.kpc.co.ke/pipelinenetwork>



[Photo: KPC]

Figure 4: Pipeline Network in Kenya

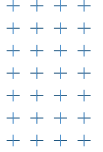


Source: <https://www.kpc.co.ke/pipelinenetwork>

Table 13: Pipeline Network in Kenya

Line Section	Length (Km)	Pipe Diameter (Inches)	Installed Flow Rate (M ³ /Hr)	No. of Pumping Stations
Mombasa-Nairobi (Line I)	450	14	830	8
Nairobi-Nakuru-Eldoret (Line II)	325	8/6	220	4
Sinendet-Kisumu (Line III)	121	6	100	-
Nairobi-Eldoret (Line IV)	325	14	311	2
Mombasa-Nairobi (Line V) new	450	20		
Sinendet-Kisumu (Line VI)	121	10	350	-
Spur Line from KOSF to Shimanzi Oil Terminal	2.8	12	450	1
Changamwe - Moi International Airport	3.8	6	120	1

Source: <https://www.kpc.co.ke/pipelinenetwork>



2.5 Railway Network in the Northern Corridor

The Standard Gauge Railway (SGR) connects Mombasa to Nairobi, a distance of 480 Km-long and Nairobi to Naivasha (120Km). Meter Gauge Railway line covers a distance of 1,083 Km from Mombasa to Malaba, 217 Km from Nakuru to Kisumu. In Uganda, the MGR line covers from Tororo and branches westward to Jinja, Kampala, and Kasese and northward to Mbale, Soroti, Lira, Gulu, and Pakwach.



The Kenya Railways Cooperation is linking the Standard Gauge (SGR) Railway and the Metre Gauge Railway (MGR) for first and last-mile connectivity. The construction of the 23.35Km MGR link between Naivasha ICD and Longonot Station is ongoing. Rehabilitation works of

Nakuru - Kisumu MGR Line (217Km) to facilitate cargo haulage to Port- Bell, Uganda, via Lake Victoria and Longonot - Malaba MGR line Section (465Km) is also ongoing.

Table 14: Current SGR Capacity

LOCOMOTIVES			
Type	Capacity /type	No.	Trailing load on different gradients
Freight	DF8-B Model CCD5B1	43	2600
Shunting	DF7-G Model CCD5D1	8	2600
Passenger	DF11 Model CCD5C1	5	
WAGONS			
S/No.	Description	Model	Quantity
1	Open Top Wagons	C70	490
2	General Purpose Flat Wagons	X70	820
3	Flat Wagons – Long	NX70	150
4	Covered Wagons	P70	80
5	Double Stack Container Wagons	X2K	80
Total number			1620

Source: Kenya Railways

Table 15: Condition and capacity of railway sections for MGR in Kenya and Uganda

Railway Line	Gauge	Axle load limits (Tonnes)	Length in Km	Status
Mombasa – Malaba	Metre Gauge	18	1083.32	Operational
Nakuru – Kisumu	Metre Gauge	13	217.074	Under rehabilitation
Mombasa- Nairobi	SGR	25	480	Operational
Nairobi- Naivasha	SGR	25	120	Operational
Malaba-Tororo	Metre Gauge			Operational
Tororo-Gulu	Metre Gauge		342	Under rehabilitation
Tororo-Kampala	Metre Gauge			
Kampala-Kasese	Metre Gauge		333	Under rehabilitation
Kisumu – Butere	Metre Gauge	12.5	71.2	Under rehabilitation
Leseru – Kitale	Metre Gauge	12.5	65.123	Not operational
Rongai – Solai	Metre Gauge	12.5	42.464	Not operational
Gilgil – Nyahururu	Metre Gauge	12.5	76.8	Under rehabilitation
Nairobi – Thika	Metre Gauge	18	58.5	Operational
Thika – Nanyuki	Metre Gauge	12.5	177.2	Operational
Konza – Magadi	Metre Gauge	18	144	Operational
Voi – Taveta	Metre Gauge	12.5	120	Not operational

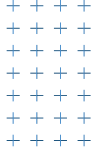
Source: Kenya Railways

2.6 Inland Container Depots

In Kenya, Inland Container Depots (ICDs) are managed by the Kenya Ports Authority (KPA) and are located in Nairobi, Naivasha, Kisumu, and Eldoret. These depots are linked to the Mombasa Port container terminal by rail connections and services. The Nairobi ICD is the largest and most active ICD in Kenya and is equipped with four (4) Railway Mounted Gantry cranes, eight (8) Rubber Tyred Gantry cranes, ten (10) Reach Stackers, thirty (30) Terminal Tractors, sixty-seven (67) Trailers, and sixteen (16) Forklifts to support loading and offloading operations at the ICD.

Naivasha ICD is similarly linked to the port through the SGR line. The ICD commenced commercial freight operations in May 2020. Naivasha ICD is equipped with four (4) reach stackers and seven (7) terminal tractors. The current truck holding area at the ICD has a capacity of about one hundred and fifty (150) trucks, but it is not yet paved. However, the ICD lacks a verification bay, warehouse, scanner and weighbridge. Further, there is inadequate space for regulatory agencies as well as service providers such as freight forwarders and financial service providers, inadequate sanitary facilities and restaurants, transport services to the nearest towns are also a challenge.

Rwanda has two main ICDs, namely MAGERWA Inland Depot and the Kigali logistic Platform. Uganda has Multiple ICD that handles 50,000 TEU's per year.

**Table 16:** ICDs along the Northern Corridor

Country	Name of ICD	Total Available Capacity (TEUs)	Comments
Kenya	Nairobi	450,000	Operating at optimal level. 2019 utilized about 93%
Kenya	Kisumu	15,000	Plans are underway to transform the Kisumu dry port to become a transshipment point
Kenya	Taita Taveta	*	Feasibility study completed. Land allocated for construction.
Kenya	Naivasha	4,000	Operational. Occupancy presently at about 14%. 1,000 acres of land adjacent to the ICD has been designated for development of an economic zone/industrial park and 50 acres designated to the transit countries for development of freight stations.
Rwanda	Magerwa	*	-
Rwanda	Kigali Logistics Platform	50,000	Operational since September 2018 in test mode
Uganda	Multiple ICD	50,000	Completed in 2015. ICD does not have provision for empty container storage
Uganda	Multiple ICD	50,000	Completed in 2015. ICD does not have provision for empty container storage

Source: Northern Corridor Transport Observatory

2.6.1 Nairobi Inland Container Depot

The depot handled 393,152 TEUs in 2020 as compared to 418,830 TEUs the previous year. This reflected a decrease of 25,228 TEUs or 6%

- Imports registered 234,676 TEUs during the year under review compared to 262,445 TEUs realized during the year 2019. This translated to a decrease of 27,769 TEUs or 10.6%.
- Exports registered 15,200 TEUs during the year 2020 compared to 13,777 TEUs realized during the year 2019. This translated to an increase of 1,423 TEUs or 10.3%.
- Export (Empty) traffic registered 143,276 TEUs in 2020 compared to 142,148 TEUs realized in 2019, i.e., an increase by 1,128 TEUs or 0.8 % was observed.
- In 2020, imports accounted for 59.7%, exports 3.9 and empty 36.4% of the total traffic compared to 62.8%, 3.3% and 33.9% respectively in 2019.



Table 17: Traffic at Nairobi Inland Container Depot

MONTH	IMPORTS		EXPORTS		EXPORT (EMPTY)		TOTAL TEUS	
	2019	2020	2019	2020	2019	2020	2019	2020
JAN	23,386	23,946	1,077	844	11,895	14,530	36,358	39,320
FEB	19,030	18,202	1,188	811	11,298	12,424	31,516	31,437
MAR	19,200	15,444	1,199	1,244	10,559	9,482	30,958	26,170
APR	22,323	18,994	1,071	997	9,993	9,046	33,387	29,037
MAY	22,066	17,846	1,065	1,283	10,706	12,245	33,837	31,374
JUN	21,315	17,862	1,104	1,188	11,654	12,398	34,073	31,448
JUL	24,236	19,922	1,367	1,504	14,214	12,628	39,817	34,054
AUG	23,150	21,744	1,302	1,916	12,499	12,697	36,951	36,357
SEP	21,975	20,548	1,297	1,526	13,285	12,476	36,557	34,550
OCT	22,294	20,506	1,094	1,214	12,064	11,820	35,452	33,540
NOV	22,364	20,000	1,014	1,314	12,630	10,826	36,008	32,140
DEC	21,106	19,662	999	1,359	11,361	12,704	33,466	33,725
TOTAL	262,445	234,676	13,777	15,200	142,158	143,276	418,380	393,152

Source: ICDN

2.6.2 Truck Turnaround Time at ICDN

During the period Jan-Dec 2020, it took an average of 330 minutes to turnaround a truck compared to 300 minutes observed in 2019.

Table 18: Truck turnaround (Minutes) analysis Jan-Dec 2020

Year	Jan- 20	Feb-20	Mar- 20	Apr- 20	May- 20	Jun- 20	Jul- 20	Aug- 20	Sep- 20	Oct- 20	Nov- 20	Dec- 20
Imports	393	317	264	602	417	313	283	287	277	287	290	493
Empties / Exports	379	246	193	477	500	221	270	237	264	233	251	421
Ave Time (Minutes)	386	282	229	540	459	267	277	262	271	260	271	457

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Chapter **3**

Volume and Capacity



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3.1 Introduction

This chapter presents an analysis of the volume and capacity of cargo handled at the Port of Mombasa and along the Northern Corridor through surface inter-modal transport. The section looks at the following indicators:

- i. Cargo throughput through Mombasa Port
- ii. Transit volume through the Port of Mombasa
- iii. Container traffic through Mombasa Port in TEUs
- iv. The volume of cargo haulage by railways
- v. Volume of products through Pipeline
- vi. Inland container depot performance

3.2 Cargo throughput through the Port of Mombasa

Cargo throughput measures the total volume of cargo discharged and loaded at the port. It includes break-bulk, liquid bulk, dry bulk, containerized cargo, transit cargo, and transshipment.

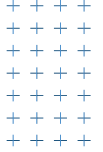
As shown in **Table 19**, throughput has been increasing steadily annually from 27 million tons in 2016 to 34 million tons in 2020. The growth is attributable to the sustained trend of growth in containerized cargo and liquid throughput. The Mombasa Port and Northern Corridor Community Charter had set to attain total throughput of 35.90 million tons by December 2020. A total of 34.13 million tons of cargo were handled in 2020, which is 1.8 million tons shy of the target of 35.90 million tons. It is worth noting that the pandemic and containment measures stifled domestic activity and disrupted global trade. Compared to 2019, the Port of Mombasa recorded a marginal decline of 0.9% in total cargo throughput in 2020. The decrease was mainly attributed to disruptions to the supply chain because of global lockdowns imposed due to the raging COVID-19 pandemic. There were disruptions in the supply value chains and trading patterns, reducing activities, particularly in the

manufacturing and transport sector, among others. The importation of refined petroleum products and goods from China was greatly affected, leading to the overall marginal decline in Port Throughput. Also, Shipping lines needed to adjust operations to cater for the suppressed demand across the globe leading to a decline in Transshipment and subsequently Containerized cargo. Further analysis shows that imports take the lion's share of total cargo throughput, accounting for about 80% of total throughput leading to an unfavourable trade balance. This suggests that the countries using the Port of Mombasa are net importers. Statistics show that petroleum oil and lubricants, clinker, wheat, iron & steel, palm/vegetable oil, fertilizers, coal, rice, plastic and sugar were among the leading import commodities through the Port of Mombasa, with Asia serving as the major import partners. From the export front, agricultural sector, raw materials, ores and metals were the top export sectors. Exports have had an adverse effect on earnings due to weak demand in these markets.

Table 19: Annual Mombasa port throughput '000' in MT

Type of Cargo	2016	2017	2018	2019	2020
Imports	23,116	25,604	25,475	27,558	27,803
Exports	3,659	3,794	4,125	4,277	4,187
Transshipment	589	874	1,247	2,495	2,031
Restows	-	73	76	110	109
Throughput '000' MT	27,364	30,345	30,923	34,440	34,130
Annual % change	2.4	10.9	1.9	11.4	-0.9

Source: Kenya Ports Authority (KPA), 2016- 2020



3.3 Transit Volume through the Port of Mombasa

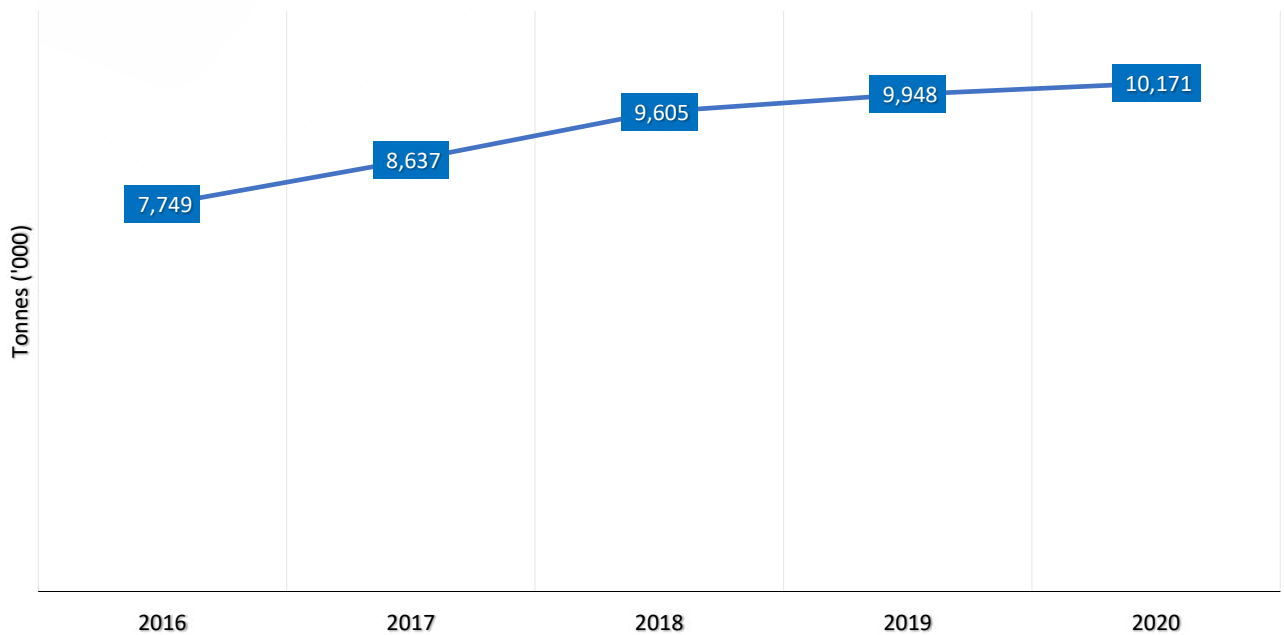
Transit volume is the quantity of cargo discharged and destined to countries outside the port of loading or discharge. In the case of this report, the port of concern is Mombasa. The methodology applied in determining the transit volume is by summation of all cargo's weight in metric tonnes handled at the Port of Mombasa per Country of destination.

Transit countries include Uganda, South Sudan, DRC, Tanzania, Rwanda, Burundi, Somalia and Ethiopia. Further analysis reveals that Uganda took the largest part of transit traffic through the Port of Mombasa, accounting for approximately 76% of transit traffic,

From **Figure 5**, the share of transit cargo through the Port of Mombasa has been increasing annually. As aforementioned, countries trading through the Port of Mombasa are net importers. Trade imbalances have been a major reason for the rapid increase in empty containers in various ports worldwide. Based on the preceding, exports took the least share of the throughput, less than 20%, while imports accounted for the vast majority of transit throughput slightly above 80% during the same period.



Figure 5: Transit Volume through the port of Mombasa in ('000) MT



Source: Kenya Ports Authority (KPA), 2015- 2020

South Sudan stands at 10%, and DRC at about 7% as evident in **Table 20** below.

In 2020, total transit cargo volume grew by 2% to realize 10.171 million tonnes against 9.947 million tonnes handled in 2019. Transit traffic for Rwanda, South Sudan and DRC registered tremendous growth by 85%, 37% and 34%, respectively, while Uganda recorded a 5% decline and Burundi 1%.

Democratic Republic of Congo, Kenya and Rwanda.

- b) A sustained Multi-Agency Stakeholders and Rwanda Business Community concerted efforts to enhance the efficiency at the Mombasa port and Northern Corridor Transit nodes aimed to complement Kenya Ports Authority's day to day interactions with the Rwandan business community through KPA Kigali Liaison Office since

Table 20: Transit Market Share through the Port of Mombasa ('000'MT)

Transit Market Share ('000'MT)						Change 2019 to 2020	
	2016	2017	2018	2019	2020	Volume	% Change
Uganda	6,347	7,113	7,889	8,133	7,698	-435	▼ 5%
S. Sudan	598	674	734	770	1056	286	▲ 37%
D.R. Congo	377	360	471	547	732	185	▲ 34%
Rwanda	194	180	231	231	427	196	▲ 85%
Tanzania	183	272	248	255	253	-2	▼ 1%
Burundi	36	22	22	2	1	-1	▼ 50%
Others	15	17	9	9	4	-5	▼ 56%
Total	7,750	8,638	9,604	9,947	10,171	224	▲ 2%

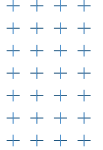
Source: Kenya Ports Authority (KPA), 2016- 2020

The increase of transit cargo in 2020 could be partly attributed to the following reasons;

- a) An intensive multi-agency sensitisation campaign to promote the use of the new and shorter transit routes from Burundi, DRC and Rwanda to the port of Mombasa, including the use of the SGR Cargo from Mombasa to the Naivasha Inland Container Depot carried out in mid-December 2019 by the Northern Corridor Secretariat enjoining the Public and Private Sector Stakeholders from the Northern Corridor Member States of Burundi,

2013. The Business community get personalised, real-time and immediate support to services and queries within Rwanda without necessarily having to come to Mombasa, reducing the cost and time of doing business.

- c) The impact of SGR Cargo from Mombasa to Naivasha and economic growth before the outbreak of the COVID-19 pandemic also encouraged Rwanda Business Community to commit to increased use of the Port of Mombasa, translating to increased transit cargo in 2020 compared to the previous years.



3.4 Rate of Containerization

Containerization of cargo enhances standardization for efficient shipping and handling of cargo. Containerized shipment ensures cargo safety; reduces transit time; and minimizes financial expenses during loading, discharging and trans-shipment. Data on containerized cargo is provided in Twenty-Foot Equivalent Units (TEUs). TEU is a standard measure used throughout the world to measure container movements and the capacity of container ships. Containerized cargo has been growing over time hence putting much pressure on the demand of container freights internationally.



Table 21 presents top ten Africa ports with the highest port container throughput in 2019. According to UNCTAD statistics, in the year 2019, a total of 811 million TEUs were recorded as annual container port throughput in the world, out of which only 4% was for African ports. As presented in the table below, container traffic declined in some ports, including Egypt, South Africa, Nigeria and cote d'Ivoire.

In the analysis of the container throughput trend, Kenya's container throughput grew significantly from 1.1 million TEUs in 2016 to 1.42 million TEUs in 2019, maintaining a

Table 21: Annual Container Port Throughput for Ports in Africa, 2018 and 2019

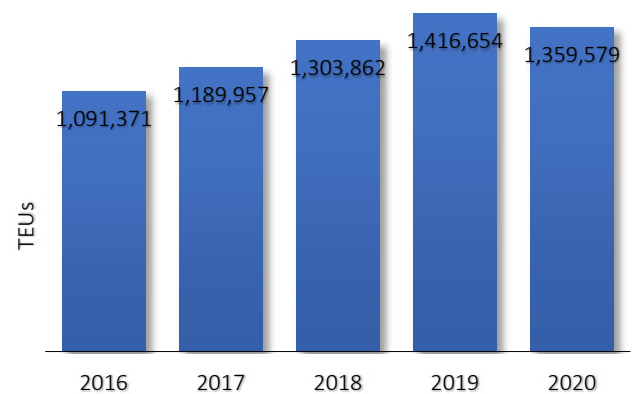
Container port throughput, annual	2018	2019
Egypt	6,369,600	6,306,866
Morocco	4,711,200	6,040,400
South Africa	4,892,400	4,769,700
Togo	1,395,700	1,503,169
Nigeria	1,560,000	1,484,000
Kenya	1,328,100	1,425,000
Ghana	1,063,000	1,100,205
Algeria	1,032,000	1,080,000
Djibouti	859,000	932,000
Côte d'Ivoire	919,000	913,300

Source: UNCTADSTAT data centre

<https://unctadstat.unctad.org/lwds/TableViewer/tableView.aspx> accessed March 2021

steady annual growth of 37% throughout the four years. However, container throughput declined in 2020 by 4%. The decrease was mainly attributed to disruptions to the supply chain because of global lock-downs imposed due to the raging COVID-19 pandemic.

Figure 6: Total Annual Container Traffic (TEUs)



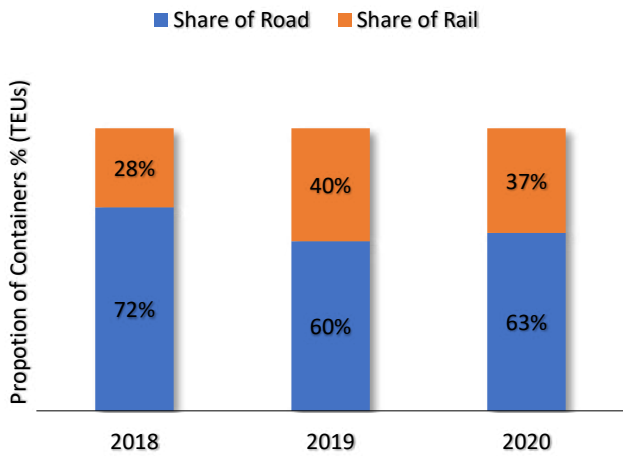
Source: Kenya Ports Authority (KPA), 2016- 2020

3.5 Railway Throughput

The total haulage by rail has witnessed a tremendous increase registering a 20% share of the total throughput since the launch of SGR freight services in January 2018. The Railway industry currently evacuates 21% of containerized cargo based on the port throughput, with the SGR hauling approximately 19.12% of the containerized cargo. The Mombasa Port and Northern Corridor Community Charter target to attain cargo off-take by rail of 40% by the year 2022.



Figure 7: Share of Containerized Cargo Off-Take by Rail and Road



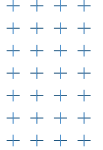
Source: KPA data 2018 to 2020

Total volume haulage in tonnage (net) by MGR for 2020 was recorded as 623,916 net tonnes, as shown in **Table 22**. Kilindini and Mombasa accounted for the largest share. The main commodities hauled by rail included; Wheat, vegetable oil, steel, furnace oil, soda bulk, diesel, fertilizer, lubricants, petrol, rubber tires and salt, among others.

Table 22: Volume of Cargo Transported by Metre Gauge Rail from April to September 2020

Origin	Net Tonnes
Jinja	474
Embakasi	605
Makadara	841
Namanve	1,519
Athi River	1,838
Mukono	3,649
Malaba	4,460
Changamwe	4,778
Kampala	9,693
Eldoret	11,700
Kisumu	25,596
Thika	25,818
Konza	96,503
Mombasa	97,060
Kilindini	339,382
Grand Total	623,916

Source: Kenya Railways Corporation (KRC) 2020

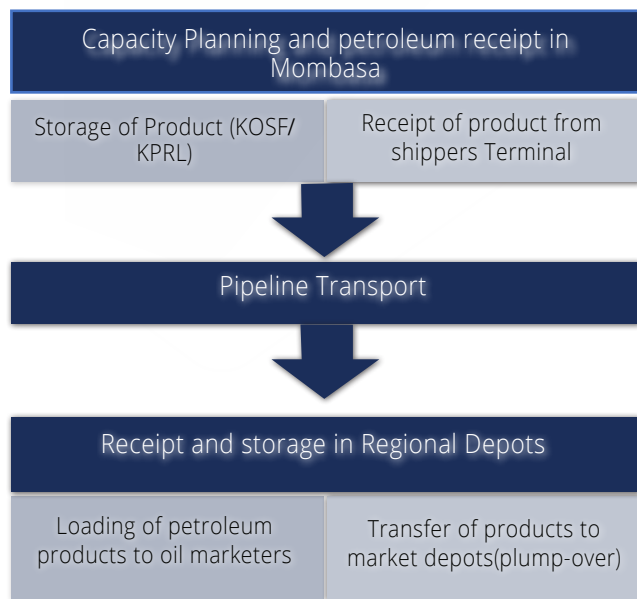


3.6 Pipeline Throughput

The world depends on petroleum products for energy provision for various domestic and industrial applications in diverse sectors. The main products moved along the pipeline are automotive gas oil (AGO), Motor Spirit Premium (MSP), Illuminating Kerosene (IK), Dual Purpose Kerosene (DPK) and SLOP. SLOP refers to oil sludge from refineries, tank terminals, pipelines and petrochemical plants. Liquid goods transported in bulk are essentially crude oil or oil distillation products or liquid gases transported at very low temperatures (-160° for natural gas and -80° for liquid petroleum gas).

Figure 8 below illustrates the process undertaken for the pipeline transport from Mombasa.

Figure 8: Process undertaken for the Pipeline Transport from Mombasa.



Source: KPC 2020

In 2020, the Kenya pipeline transported 3,277,959 M3 of oil products to various destinations. **Table 23** shows the volumes of various oil products shipped to various countries of destination. Uganda exported the most oil products, totalling 1,739,804 cubic Metres, followed by Kenya, which exported 924,964 cubic Metres. During this period, the Central African Republic, Burundi, and Tanzania received the least oil products.

Table 23: Volume discharged from Depots serving western Kenya and Export Market in 2020

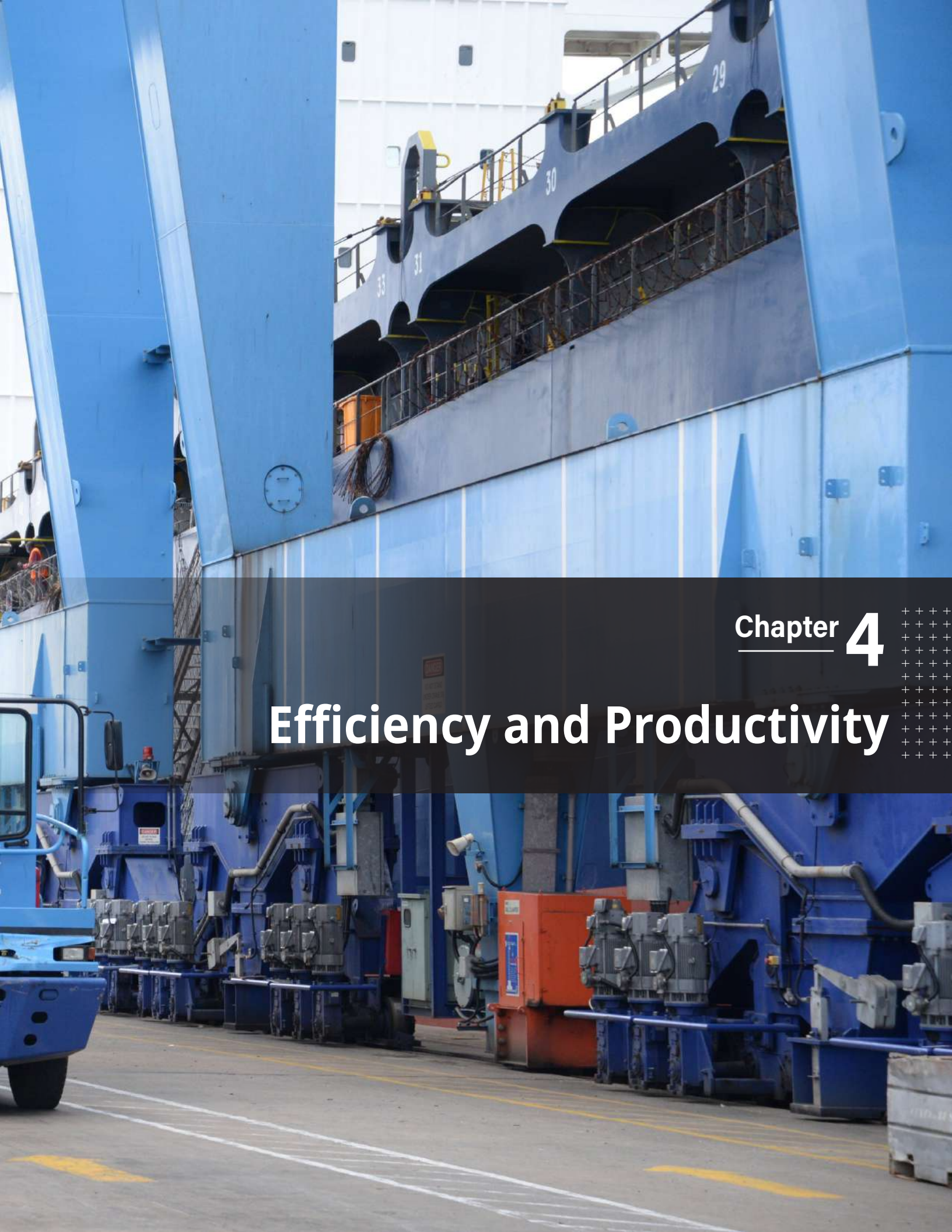
ECONOMY	TOTAL EXPORTS (NET IN M ³)
Tanzania	33
Burundi	66
Central Africa Republic	219
Rwanda	11,940
Sudan	354,875
DRC	246,059
Kenya	924,964
Uganda	1,739,804
Total	3,277,959

Source: KPC 2020

The total pipeline storage capacity is 645,637,000 litres distributed across depots located in Mombasa at Kipevu Oil Storage and Moi International Airport; depots located in Nairobi at JKIA and Nairobi Terminal; depots located in Nakuru, Eldoret, Kisumu and Konza.

The total pipeline storage capacity is 645,637,000 litres distributed across depots located in Mombasa at Kipevu Oil Storage and Moi International Airport; depots located in Nairobi at JKIA and Nairobi Terminal; depots located in Nakuru, Eldoret, Kisumu and Konza.





Chapter **4**

Efficiency and Productivity



4.1 Introduction

The analysis of efficiency and productivity on the Northern Transport Corridor considers various factors that affect maximization of outputs using the least possible inputs, cost and time. Some of the indicators include duration a ship stays at the port, cargo evacuation process, duration and procedures. Port productivity and efficiency are essential for an improved logistics environment that will support trade facilitation and competitiveness initiatives. This chapter gives an in-depth analysis of efficiency and productivity indicators at the Port of Mombasa and the Northern Corridor at large.

4.2 Ship Turnaround Time

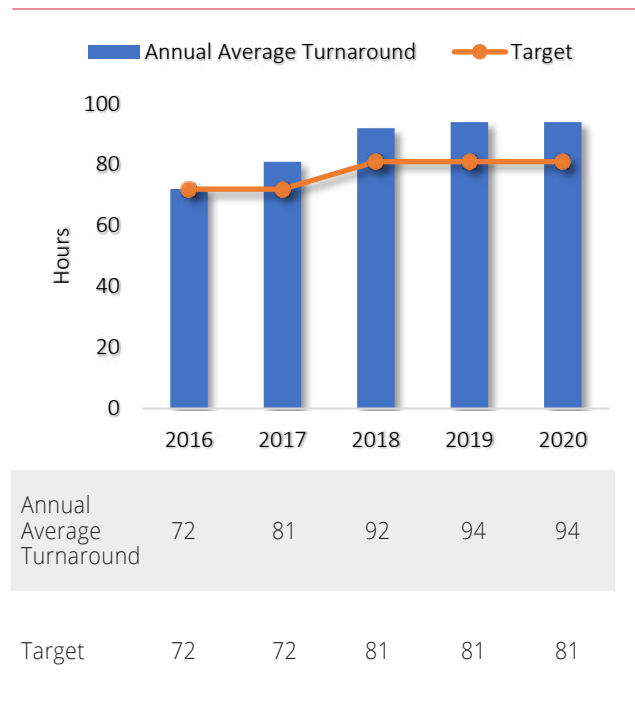
This indicator is measured from the time the vessel arrives at the Port area (Fairway Buoy) to the time it leaves the port area demarcated by the fairway buoy.

The ship turn-around time is an accumulation of the two critical times, ship service time at berth and waiting time. The Mombasa Port and Northern Corridor Community Charter aims to attain the target for ship turnaround time of **81 hours** by December 2020, **75 hours** by December 2022 and **67 hours** by December 2024. Globally, the ultimate goal is to attain the **24 hours** (1 day) ship turnaround global benchmark time.

Figure 9 presents a five-year annual performance for ship turnaround at the Port of Mombasa from 2016 to 2020. The number of ships that called at the Port of Mombasa decreased marginally from 530 in 2019 to 526 in 2020. Larger vessels have been docking at the seaport of Mombasa. Statistics indicate that **25%** of vessels recorded an average turnaround time of **53 hours** in 2020; cumulatively, **50%** of vessels recorded an average turnaround time of **80 hours** (see annex table).

Further, data shows a steady performance for ship

Figure 9: Average Ship Turnaround Time at the Port of Mombasa in hours; 2016 to 2020



Source: KPA 2016-2020 data

turnaround time over the past three years. The average turnaround time performance falls short of the **81 hours'** target. This could be partly attributed to delays encountered by transporters to meet the COVID-19 health protocols.



[Photo: KPA]]



[Photo: KPA]

4.3 Vessel Waiting Time before Berthing at the Port of Mombasa

Waiting time before berth is the average of the time difference in hours from when the ship enters the port area to the time of berthing.

This indicator forms part of the ship or vessel turnaround time. By December 2020, the Mombasa Port and Northern Corridor Community Charter established a target of **0.3 days**. **Figure 10** depicts the average vessel waiting time at Mombasa's seaport since 2016. Over the last three years, this target's performance has fallen short of the set target of **0.3 days**. The poor performance could be partly attributed to delays encountered by port players to meet the COVID-19 health protocols. In the year 2020, about **50%** of the vessels spent time not exceeding **0.4 days** cumulatively. A slight resurgence in the Chinese and global economy late in the year led to

increased vessel traffic, subsequent queuing and poor ship waiting time. Scarce labour on hand and lengthy vessel clearance procedures introduced before working to curb the spread of the virus led to a decline in Ship turnaround time.

However, it is worth noting that KPA has made tremendous initiatives at the Port of Mombasa over the years, including; the implementation of a fixed Berthing Window to allow shipping lines to plan their time, improved crane productivity and enough terminal capacity. Furthermore, there has been increased investment in offshore and offshore equipment, which includes the acquisition of modern tugboats and pilot boats that boost berthing operations.

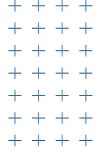
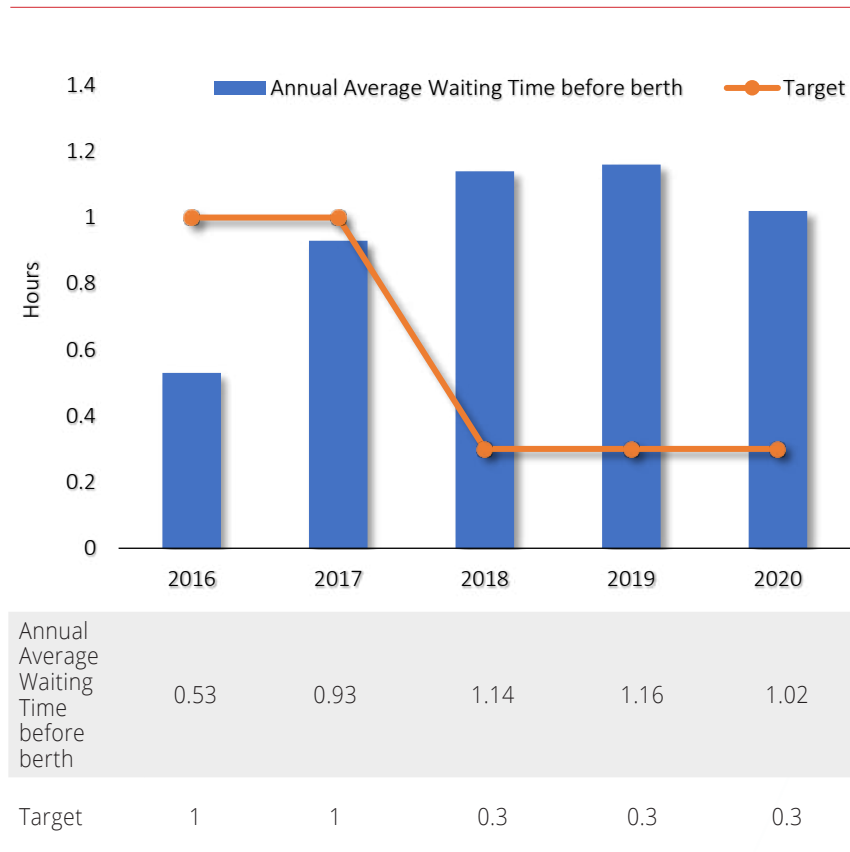


Figure 10: Median Vessel Waiting Time before Berth at the Port of Mombasa in hours



Source: KPA data 2016-2020



4.4 Containerized Cargo Dwell Time at the Port of Mombasa

Dwell time is the measure of the time elapsed from the time the cargo arrives in the port to the time the goods leave the port premises after all permits and clearances have been obtained.

The scope of this report is based on containerized cargo dwell time for import containers. The methodology applied in dwell time analysis is the cargo that has arrived during a calendar month (i.e., based on the date of entry inward). For the analysis, outlier cases of consignments held from clearance for more than 21 days due to non-compliance issues, court matters, among others, are excluded. The report uses the 'out date' to group the

data on a monthly basis, with the last day of the month being the cut-off day (at midnight); 21 days' grace period is applied to filter out outliers.

Figure 11 provides a comparative analysis of the average import containerized cargo dwell time at the Port of Mombasa from 2018 to 2020. In the Port of Mombasa, the average dwell time improved significantly from 100 hours in 2018 to 88 hours in 2019. This time worsened to 106 hours in 2020, which could be linked to the longer ship turnaround time in the same year. Performance of this indicator was short of the Charter set a target of 78 hours. The poor performance could be attributable to

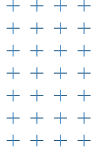
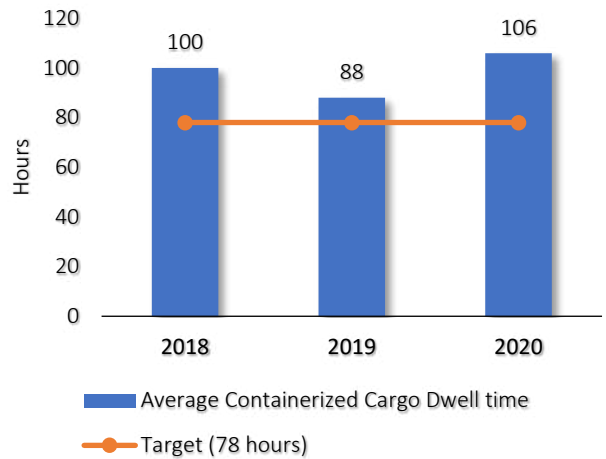


Figure 11: Annual Average Containerized Import Dwell Time in hours



Source: KPA data 2018 to 2020

Table 24: Percentage of Annual Average Containerized Import Dwell Time in Hours

Average Containerized Cargo Dwell time	2018	2019	2020
0-4 days	60.3%	61.9%	59.4%
4-10 days	27.4%	28.1%	25.3%
10-20 days	9.4%	9.7%	12.0%
Above 20 days	2.9%	0.3%	3.3%

Source: KPA data 2018 to 2020

the longer time to complete cargo clearance formalities and temporary storage time. Kenya Ports Authority increased the free storage period since the 18th of May 2020 in line with continuous and deliberate efforts of cushioning customers on effects of the COVID-19, which has impacted the whole transport logistics chain. Stringent measures introduced to protect the spread, such as curfew and social-distancing and a rising number of infections, directly impacted labour availability at the Port. Also, the challenges of clearing transit cargo due to changes instituted by transit countries as a result of the pandemic affected the fluidity of cargo getting out of the Port. Equipment lacked operators at times, leading to container transfer delays leading to higher Dwell time within the Port of Mombasa.

Majority of containers (over 60%) were evacuated within 4 days. Cumulatively over, 80% of containers recorded dwell time of 4 to 10 days to leave the port premises after all permits and clearances have been obtained. The downward trend was attributable to improved cargo clearance procedures, increased storage tariffs, and improvement in inland transportation, which allowed cargo to move more easily through and out of the port.

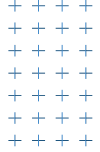
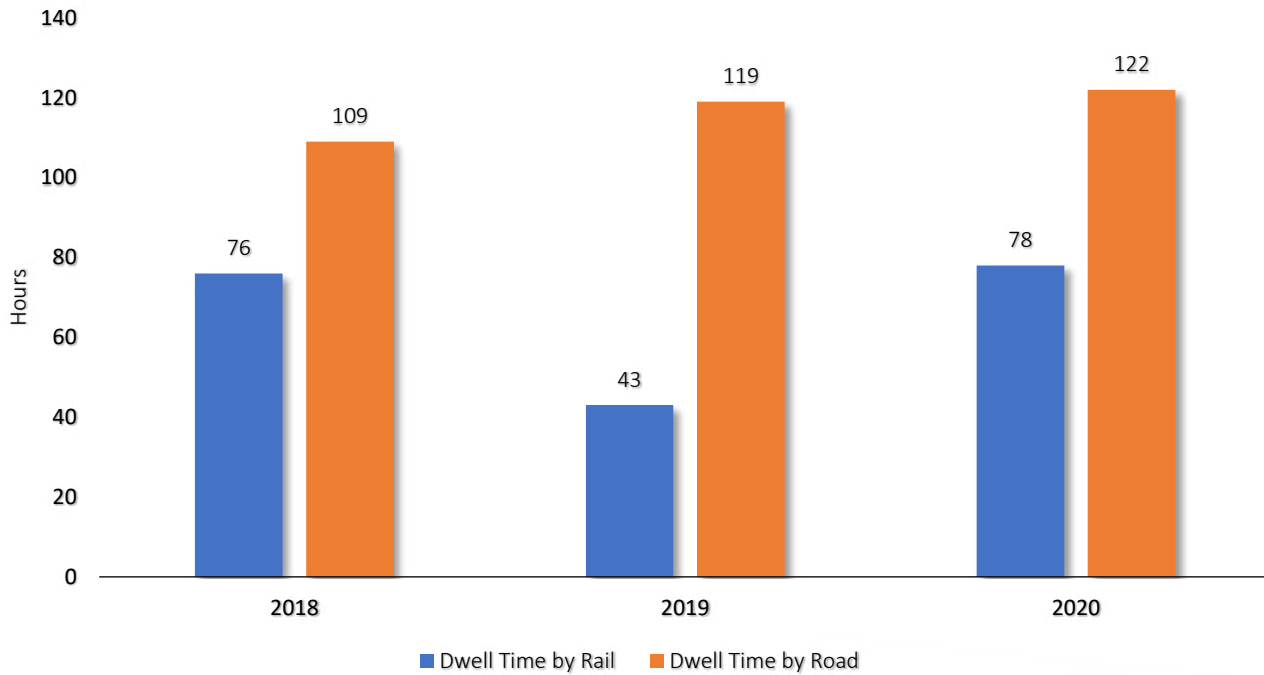


Figure 12: Dwell time for Rail-bound cargo and Dwell time for road-bound Cargo



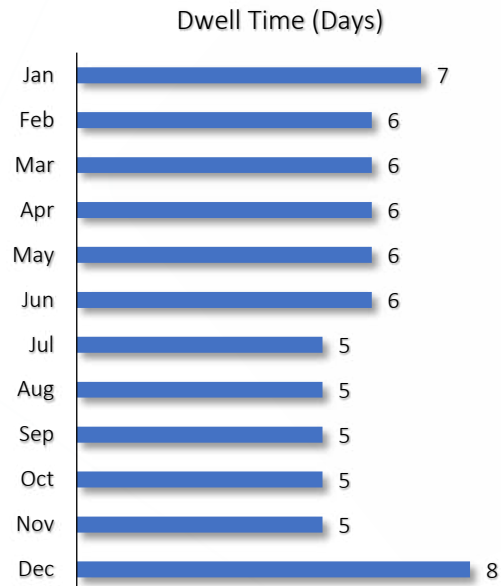
Source: KPA data 2018 to 2020

An in-depth analysis of containerized cargo dwell time by mode of cargo evacuation is presented in **Figure 12**. Results show that dwell time for containers cleared by rail was faster than the containers evacuated by road.

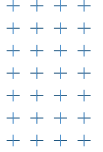
Shortages of RECTS affixed on transit containers impacted Container Dwell Time at the Port and ICDN. It is recommended that;

- Revenue Authorities and the Port Authority, and the shipping lines to realise shipping pre-arrival clearance to reduce delays in cargo clearance time.
- Stakeholders to Consider payments of port charges for import and exports in advance to make the Pre-arrival Processing successful which ultimately will help reduce cargo dwell time.

Figure 13: Dwell Time at ICDN in Days



Source: KPA data 2020



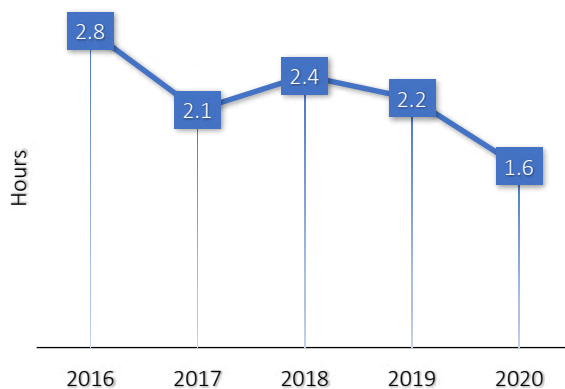
4.5 Time for Customs Clearance at the Document Processing Centre (DPC)

This refers to the time taken by Customs to pass an entry lodged by a clearing agent. This time bears a proportion to the total port dwell time.

The Mombasa Port and Northern Corridor Community Charter established a baseline of 2.3 hours in December 2018 as the average time taken at the DPC target and aims for this target to be real-time/instant by December 2020.

The performance of this target for the five years ending 2020 is illustrated in **Figure 14** below. From the analysis, DPC time has been improving over the years. The entries lodged and cleared improved from 2.4 hours in 2018 to 2.2 hours in 2019 and further to 1.6 hours in 2020. Delay in the full implementation of the iCMS system has delayed the realization of instant passing of entries based automate on risk profiling.

Figure 14: Average Time taken at the Document Processing Centre



Source: KRA 2016 to 2020 data

4.6 One-Stop Centre Clearance Time at the Port of Mombasa

One-Stop Centre Clearance Time is measured as the average time between registration, passing, and issuance of release order on a customs entry.

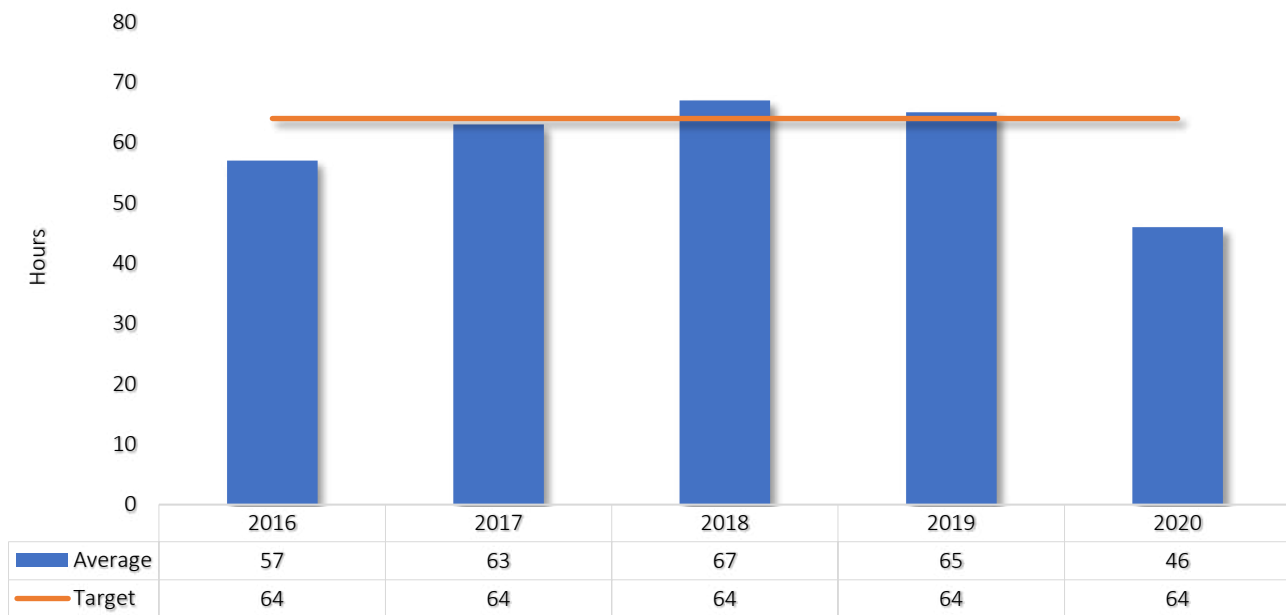
The Mombasa Port and Northern Corridor Community Charter targeted 64 hours as the average time taken at one-stop centre clearance by December 2020.

Figure 15 shows the annual performance of customs one-stop clearance time at the Port of Mombasa from 2016 to 2020. Performance over the last two years recorded positive achievement within the set target of 64 hours.

Some of the commitments aimed at improving performance for this target include joint verification and inspection and ensuring 24-hour operations. However, there is a need to reconcile the 5 days key performance duration for local inspection under the Kenya National Bureau of Standards and Kenya Revenue Authority's service level agreement of 36 hours on release cargo.



Figure 15: Customs One-Stop Clearance Time at the Port of Mombasa



Source: KRA 2016 to 2020 data

4.7 Delay after Customs Release at the Port of Mombasa

Delay after customs release refers to the period it takes to evacuate the cargo from the port after Customs officially release it.

Results presented in **Figure 16** show the time taken after customs have issued the transporter with a release order to actual exit from the Port for 2016 to 2020. Performance improved over the years from **51 hours** in 2016 to **42 hours** in 2019. However, in 2020 performance worsened slightly to **46 hours** against the set target of **36 hours** occasioned by the delays encountered by transporters to meet the COVID-19 health protocols. The time after customs release has a significant bearing on the port dwell time. Some of the commitments aimed at improving performance for this target include:

automating gate clearance procedures and ensuring 24-hour operations which have been fully implemented. In addition, there have been significant improvements in road infrastructure around the seaport and the corridor at large and the implementation of Standard Gauge Rail, which are bearing the desired outcomes to improve this indicator. Some of the commitments aimed at improving performance for this target include: automating gate clearance procedures and ensuring 24-hour operations. Transporters/Private Sector should resolve the concerns around non-finalized documentation by clearing agents and timely receiving cargo pick up notification which leads to delay or failure by cargo owners to pick their cargo after customs released cargo.

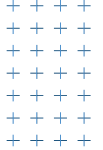
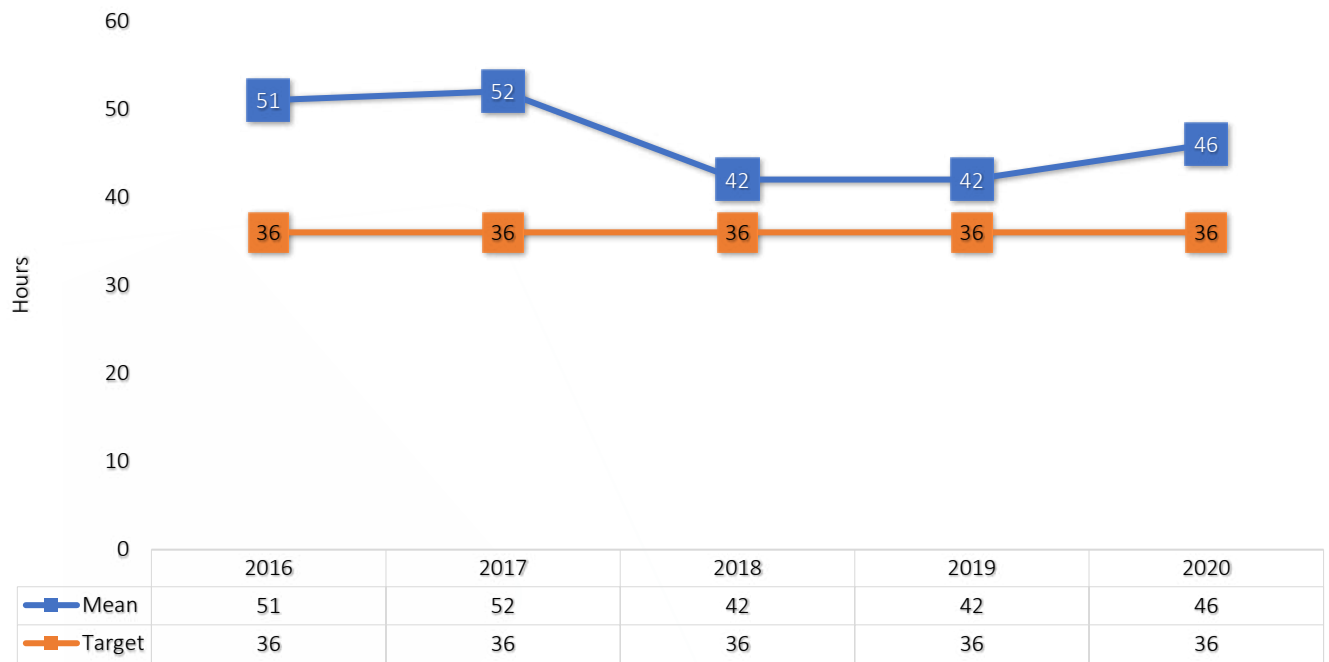


Figure 16: Time Taken after Customs Release at the Port of Mombasa



Source: KRA 2016 to 2020 data



4.8 Rwanda Revenue Authority (RRA) Customs Time and Delays

The Mombasa Port and Northern Corridor Community Charter commits the Rwanda Revenue Authority to facilitate the fast-processing release of transit cargo and reduce clearance times for transit cargo. **Table 25** presents the time taken for Single Customs Territory

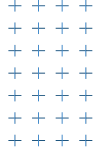
(SCT) procedures for the year 2020 from the ASYCUDA system. The indicators analysed include; customs release time, delay processing time, and after release time.

Customs release time: Is defined as the average time in Hours between passing/Acceptance of customs entry registration and issuance of customs release order.

Document passing: This is the average time between customs entry declaration/registration and Payment is made by Agent.

After Release Time: This is the average time between issuance of customs release order and exit time

As shown, the average time between passing/ acceptance of customs entry registration and issuance of customs release order was recorded as 25 hours in 2020 with a median of 3 hours. The average time between custom release order to the exit, i.e., evacuate the cargo from the port after Customs officially release it for the year, was registered as 43 hours. Performance for delay processing time was 29 hours during the year under review. Overall, there is still a challenge of



automated exchange of data among the Member States participating in the SCT framework of clearing goods, pointing to prevailing inefficiencies. Compounded to this challenge, the requirements for social distancing and enhanced sanitation have undoubtedly resulted in slowing traffic at cargo collection points, as transport

providers struggle to comply with the new regulations. The report recommends adopting a single transit system for the Northern Corridor for clearance of internationally traded goods as recommended by earlier studies to address this problem.

Table 25: RRA SCT Release at the Port of Mombasa

2020	Count	Mean	25%	50%	75%
RRA After Release	39,802	25	1	3	17
Customs release	43,588	43	3	22	50
Delay Processing time	43,511	29	2	16	27

Source: RRA data 2020

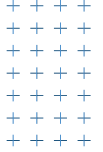
4.9 Weighbridge Performance in terms of Traffic along the Northern Corridor

The indicator measures the average number of trucks weighed per day at the various weighbridges in respective countries of the Northern Corridor.

Athi-River weighbridge recorded the highest annual average of weighbridge traffic while Webuye and Busia Weighbridges recorded low traffic, which majorly comprises transit cargo heading to Malaba and Busia's border points.

Table 26 illustrates average daily traffic at five weighbridges for both inbound and outbound trucks.



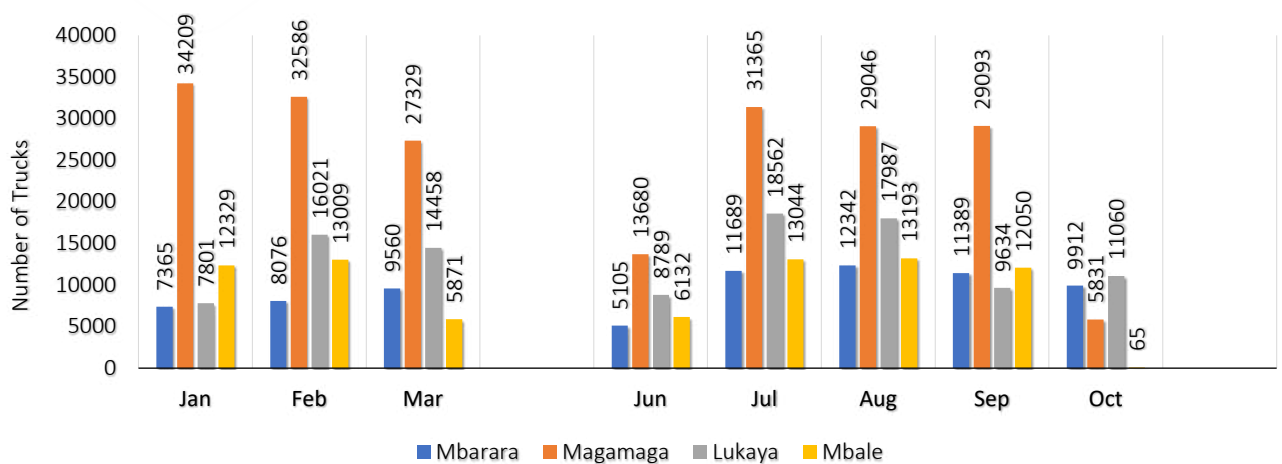
**Table 26:** Daily average Monthly Traffic through Kenyan Weighbridges

Month	Mariakani		Athi River		Gilgil		Webuye		Busia	
	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020
Jan	2,445	2,321	9,356	7,093	4,479	5,942	2,412	1,721	535	601
Feb	1,811	2,039	11,789	9,563	4,206	3,921	1,664	941	406	408
Mar	2,093	2,321	9,528	7,754		4,112	2,519	894	422	391
Apr	5,329	1,984	8,284	5,937	2,604	3,395	1,830	1,033	696	737
May	5,641	2,014	9,387	8,084	2,810	6,103	1,160	1,643	694	541
Jun	5,540	5,842	8,028	10,562	2,599	4,928	1,113	1,875	677	756
Jul	2,739	3,827	10,709	9,531	4,396	7,307	1,444	1,881	611	702
Aug	2,327	3,083	5,880	8,041	6,697	7,403	1,555	1,643	454	654
Sep	2,007	2,921	3,548	7,039	6,285	6,992	1,545	1,503	646	594
Oct	2,687	6,092	10,228	8,464	6,537	3,063	1,774	951	680	593
Nov	2,539	4,102	10,805	8,754	6,102	3,108	1,613	1,002	576	583
Dec	2,259	5,987	11,755	9,042	6,102	2,901	1,817	1,103	471	677

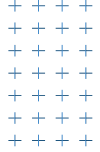
Source: KeNHA, 2019-2020

Figure 17 illustrates average weighed traffic for Uganda weighbridges along the Northern Corridor for January to October 2020. Analysis reveals that Magamaga and Busitema weighbridge recorded the highest traffic

(number of trucks crossing the weighbridge) of 379,961 and 310,249 respectively over the period, and Elegu weighbridge recorded the least traffic.

Figure 17: Monthly average Traffic through Ugandan Weighbridges

Source: UNRA, data 2020



4.10 Weighbridge Performance in terms of Compliance along the Northern Corridor

The indicator measures the percentage of trucks that comply with the gross vehicle weight and the vehicle axle load limits before and after redistribution of cargo as stipulated in the EAC Vehicle Load Control Act.

The law EAC Vehicle Load Control Act, which was gazetted in 2016, limits weights on the roads with tough penalties prescribed against those found guilty of contravening the laid down regulations. Vehicles with a gross weight of 3.5 tonnes and over have to be weighed at weighbridges they pass through, and any transporter who bypasses, absconds, or evades a weighing station is liable for prosecution. The weight in the axle of super single tyres has been lowered to 8.5 tonnes, from 10 tonnes. According to the third Schedule of the East African Community Vehicle Load Control Act, 2016, the maximum allowable Gross Vehicle Weight (GVW)¹ at 56 tonnes subject to the following conditions:

- The vehicle have a maximum of seven (7) axles; and
- The Gross Vehicle Weight shall be limited in relation to the vehicle spatial axle load distribution of using the bridge formula

The Act allows for redistribution of cargo to within tolerance before being re-weighed for any vehicle established to be overloaded on the Axle or Axle Group but is within the prescribed Gross Vehicle Weight as per the Axle configuration. Such vehicles will not be charged. However, a vehicle that is overloaded on the Axle and Axle Group and cannot redistribute its cargo to within allowable tolerance shall be charged. That an allowance of 5% has been granted on the Legal Axle and

Table 27: EAC Vehicle Load Control Act Legal Allowable Weight

Vehicle and Axle Load Configuration	Max. Gross Vehicle Weight (kg)
Vehicle with 2 axles	18,000
Vehicle with 3 axles	26,000
Vehicle and semi-trailer with total of 3 axles	28,000
Vehicle with 4 axles	30,000
Vehicle and semi-trailer with a total of 4 axles	36,000
Vehicle and draw-bar-trailer with a total of 4 axles	36,000
Vehicle and semi-trailer with a total of 5 axles	44,000
Vehicle and draw-bar-trailer with a total of 5 axles	44,000
Vehicle and semi-trailer with a total of 6 axles	50,000
Vehicle and draw-bar-trailer with a total of 6 axles	52,000

Source: KeNHA

Axle Group Weights Limits to take care of the possible movement of cargo based on the legal allowable weight.

The table below provides the Permissible Maximum Axle Load Limits for EAC Member States as per the second schedule of the EACVLC Act 2016. A tolerance of 5% of the permissible maximum axle load limit shall be allowed on the axle load limits. Further, the Act limits the maximum number of axles in any axle groups to 3 axles.

1 "Axle load" means the sum of the wheel weight loads of all wheels on any axle;

**Table 28:** Permissible Maximum Axle Load Limits

Axle Type	Number of tyres on the axle	Type of Tyre	Permissible limit (metric tonnes)
Single	2	Conventional	8
Single	4	Conventional	10
Tandem	8	Conventional	18
	4	Super Single	16
Tridem	12	Conventional	24
	6	Super Single	22.4
Liftable Single	4	Conventional	10
Liftable Single	2	Super Single	8.5

Table 29 presents the level of compliance at Kenyan weighbridges along the Northern Corridor for both inbound and outbound trucks for the year 2020. Kenya

Table 29: Compliance at the Kenyan Weighbridges

Month	Mariakani	Athi River	Gilgil	Webuye	Busia
Jan	96	99	95	91	82
Feb	97	98	94	96	78
Mar	98	99	95	97	77
Apr	97	97	93	93	87
May	97	98	95	92	79
Jun	99	98	97	92	82
Jul	99	99	95	96	84
Aug	99	98	98	97	90
Sep	96	98	98	95	89
Oct	97	98	96	96	88
Nov	99	98	96	91	90
Dec	99	98	94	97	81

Source: KeNHA, data 2020

National Highway Authority (KeNHA) has installed High Speed Weigh in Motion (HSWIM) and multi deck scales at Mariakani, Athi River, Gilgil, and Webuye, which are fully automated. In the analysis, weighbridges recorded a steady performance in terms of compliance levels of over 95% performance except for Busia weighbridge, whose compliance level was steady at an average of 84% in 2020. Low compliance at the Busia weighbridge could be attributed to enforcing compliance with individual axles while the rest of the weighbridges focus on group axles. Besides, there is a possibility that the Busia weighbridge handles cargo that originates from the region and has not been weighed elsewhere. The target of 100% compliance has not yet been attained.

Uganda has its Gross Vehicle Weight limit at 56 tons. Enforcement is based on both Gross and Axle load limits. **Table 30** presents the level of compliance at the Ugandan weighbridges along the Northern Corridor. Data shows that all the weighbridges reported recorded poor performance in terms of compliance levels of above 90% performance. The target of 100% compliance has not yet been attained. However, compliance on Axle Load Limits is still low (varying between 12% to 23% at all weighbridges).

Table 30: Percentage Gross Vehicle Compliance Level at weighbridges in Uganda in 2020

	Mbarara	Magamaga	Lukaya	Mbale
Jan	99.7	99.7	99.7	99.4
Feb	98.8	99.7	99.6	99.2
Mar	97.0	99.8	99.7	99.0
Jun	96.6	99.5	99.6	98.8
Jul	97.4	99.6	99.7	99.2
Aug	97.9	99.6	99.7	99.3
Sep	98.0	99.6	99.8	98.1
Oct	96.9	99.4	98.7	95.4

Source: UNRA, Jan to Oct 2020





Chapter **5**

Rates and Costs



5.1 Introduction

Freight transportation cost is a key economic indicator of supply chain efficiency. Transport costs are the summation of various costs incurred in moving a passenger or a unit of freight between a specific origin and destination. These costs are classified broadly as;

Operational costs: these include expenses incurred in the daily running of a business. These are internal to the carriers and include both fixed and variable costs. Some examples of these costs are labour, fuel, vehicle maintenance, insurance, initial purchase of vehicles/rolling stock, handling costs, and a range of government taxes and charges, including fuel excise and vehicle registration

Value of time: these factors are the value of non-monetary costs such as transit time and service quality costs. Some examples of the value of time factors are reliability and travel time will impact shipping company selection and transportation modal choice.

External costs: These costs are not directly borne by the exporter and can cause a divergence between the costs imposed on society and the exporter's decision. Environmental, congestion, and accident costs are external costs examples.

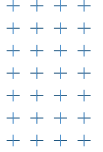
These costs are often passed on to consumers through the total cost of goods and vary widely across countries. The total cost of transport can be inferred from the full costs associated with the logistics chain.

This chapter analyses some of the charges incurred by traders, shippers, and transporters along the Northern Corridor using the surface mode of transport. The discussion will be guided by data obtained from various stakeholders, including port, railway, and pipeline agencies, trucking and transport companies in the respective Member States of the Northern Corridor, and relevant secondary data sources on surface modal transport.

5.2 Port and Marine Charges- Mombasa Seaport

The Port of Mombasa serves as an interchange point between land and sea transport. The provision of the services, maintenance, and use of the facilities and services create a flow of costs and benefits for the port entity and users. There are three categories of associated costs: port-calling costs, terminal-handling costs, and concession pricing. Port-calling costs encompass all ship-handling costs, such as costs of all services offered to the vessel, ranging from access to quay or terminal to pilotage to the supply of water and bunkering. Terminal handling costs cover all services required for moving the cargo onwards through the port and down the supply chain. They comprise costs for loading or unloading, storage, customs clearance, repacking, and forwarding. Whereas terminal concession costs entail the cost of acquiring a dedicated terminal, Port charges mean all sums received or receivable, charged or chargeable for or in respect of Ship or Cargo or any other services performed or for facilities provided by KPA. KPA is responsible for the following services; Aids to navigation, Pilotage, Towage, Berthing/unberthing, Cargo-handling on the quay, Storage, Weighing, Tallying of goods, construction, and maintenance, among others. Some of the port charges at the seaport of Mombasa are discussed below.

Pilotage fees are charged on all vessels, including barges and bunkering vessels. Charges per operation are subject to a minimum charge of **USD 150**. Pilotage fees include Inward, Outward and Internal vessel movements, RORO, Dead ship movement, Cancelled Inward, Outward, and Internal vessel movement or pilot detention. Where exemption from pilotage has been granted to a vessel, a one-year validity certificate of exemption shall be issued to The Master of the vessel. A rate of **USD 2,000** is charged for the Pilotage exemption license for Inward, Outward, and Internal vessel movements.



Tug services: Mooring Services- All vessels, including barges and bunkering vessels, shall be obliged to accept the services of a Tug (s) at the discretion of the Port. Service shall be deemed to have been provided whether the Tug (s) are on standby or used. Charges per Tug per operation are as follows, subject to a minimum of USD 300 per Tug. The tug services encompass Berthing/unberthing vessels, internal movements within 2 nautical miles, RORO, Dead ship movements, movements between Harbour limits and a point beyond 2 nautical miles of Harbour limits, Tugs ordered and present at the time of service but not used by the vessel within 30 minutes through no fault of the Authority, Towing of lighters, floating crane, pontoons or small crafts of less than 500 GT per Tug (when available). Every mooring or un-mooring of any vessel, including barges, will constitute a separate operation.

Light dues shall be charged on all vessels per call at a minimum rate of USD 5.50 per 100GT or part thereof or paying an annual fee minimum of USD 150. However, Vessels which are resident in Kenyan port shall pay an annual fee of USD 600 payable annually in advance. Port and Harbour dues are charged on all vessels, including barges and bunkering vessels, per call. Dockage dues shall be charged on all vessels, including barges and bunkering vessels, whether berthed or double-banked per metre per hour or part thereof. Further, vessels laid up shall be charged per week of seven (7) calendar days or part thereof. Security dues shall be raised on all vessels per call at a rate of USD 3.30 or a minimum of USD 100 rate per 100 GT or part thereof for vessels other than those paying an annual fee. Vessels that are residing in a Kenyan Port may request to pay an annual fee.

Wharfage charges^[1] shall be raised on all cargo, including empty containers passing over the quays, wharves, jetties and buoys. Transshipment cargo which the Authority exclusively handles, is exempted from this charge. Shore-handling means handling, transferring, or removing cargo to or from the quay or jetty and the transit sheds, warehouses, or stacking yards. Empty containers for repatriation are exempt from payment of Shore-handling charges. Storage is a charge levied on cargo remaining in the Port Area after the expiry of the allowed Free Period.

Stevedoring means transferring or moving cargo within the vessel and/or between the vessel and the quay or the next mode of transportation. Stevedoring charges shall be levied on Dry General, Dry Bulk and Liquid Bulk cargo per Harbour Tonne.



[Photo: KPA]]

1 Refer to KPA tariff handbook for the detailed cost charges

5.3 Railway Tariff/Charges

Railway services in Kenya are provided via Standard Gauge Railway (SGR) and the Metre Gauge Railway (MGR). The single-track standard gauge railway between Mombasa and Nairobi has a route length of around 480Km and a total length of 609Km. The line stretching from Nairobi to Naivasha is about 120 kilometres. Metre Gauge Railway line covers a distance of 1,083 Km from Mombasa to Malaba, 217 Km from Nakuru to Kisumu and 165 Km of commuter network in Nairobi.

Table 31 refers to the standard charges for cargo haulage by SGR to and from Kilindini (Port Reitz) – ICD Nairobi/Nairobi Freight Terminus. Rates are not inclusive of last-mile cost. Statistics show that those transporting cargo from Nairobi to Mombasa costs **USD 250** for a 20-foot container, while a 40-foot container weighing up to 20 tonnes cost **USD 350** and **USD 375** for those weighing between 21-30 tonnes. On the other hand, hauling the twenty-foot container from Mombasa to Nairobi costs **USD 500**, while a larger forty-foot container will cost up to **USD 700**. For volume discounts in the up direction, the maximum allowed is **20%** of the cumulative payable based on the standard authorized tariff per unit and is only applicable for Kilindini as the origin to ICD Nairobi/ Nairobi Freight Terminus as the destination.



The conventional cargo is charged at the rate of **USD 0.044** per ton/Km.

During the pandemic, Kenya Railways reduced freight charges from **USD 510** to **USD 480** for a 20-foot container and from **USD 725** to **USD 680** for a 40-foot container from Mombasa to Naivasha ICD with effect from 2nd June 2020. This promotional cost was to attract cargo importers as well as make the Naivasha dry port economically viable.

Table 32 below summarizes the stimulus rates from Mombasa to Naivasha ICD.

Table 31: SGR Standard Tariff Rates

Mombasa- Nairobi ICD Containerized Cargo					
Size	Weight Range in Tonnes	Rate- Loaded Container (USD)		Rate – Empty Container Return (USD)	
		Up direction	Down Direction	Ex Movement by Rail	Ex Movement by Road
20 -foot container	Full range	500	250	100	150
40-foot container	Up to 20 Tonnes	700	350	100	150
	21- 30 Tonnes	750	375	100	150
Mombasa- Naivasha ICD Containerized cargo					
20 -foot container	Full range	510	255	120	180
40-foot container	Up to 20 Tonnes	725	360	120	180
	21- 30 Tonnes	775	390	120	180

Source: Kenya Railways Corporation (KRC).

Table 32: SGR standard tariff rates Mombasa- Naivasha ICD Containerized Cargo (Stimulus rate)

Size	Weight Range in Tonnes	Rate- Loaded Container (USD)		Empty Containers (USD)
		Mombasa – Naivasha ICD	Naivasha ICD- Mombasa	Naivasha ICD- Mombasa
20 -foot container	Full range	480	240	120
40-foot container	Up to 20 Tonnes	680	340	120
	21- 30 Tonnes	728	364	120

Source: Kenya Railways Corporation (KRC).

5.4 Pipeline Tariff/Charges

Pipeline transport provides a complementary mode of transport for the transportation of petroleum products. Efficiency in the transport and distribution of the petroleum products ensures that the right volumes of the products are delivered, at the right price, and in a sustainable manner. At the Port of Mombasa, liquid goods comprise of crude oil, oil distillation products/ liquid gases transported at very low temperatures (-160° for natural gas and -80° for liquid petroleum gas). Global purchases of imported crude oil totaled **USD 1.056 trillion** in 2019 reflecting strong demand for this product. Pipeline transport in Kenya is managed by the Kenya Pipeline Company (KPC). The Kenya Pipeline Company is mandated with transporting petroleum products from Mombasa to the hinterland.

In Kenya, pipeline transportation rates are as published by the Energy and Petroleum Regulatory Authority (EPRA) from time to time as per the Section 11 (b) of the Energy Act, 2019. The **Table 33** provides tariff charged by KPC for storage and dispensing refined petroleum products. The transport cost indicates lower costs over time for instance, the tariff per Km per cubic Metre for the year 2020/2021 was **USD 0.0481** compared to **USD 0.0507** charged for the period 2019/2020. The reduction in costs is attributable to the pipeline infrastructure improvement and expansion.

Transportation tariffs at Kipevu Oil Terminal in USD per M³ varied widely depending on the service product for the financial year 2019/2020, as presented in **Table 34**. For instance, primary storage was charged higher at **4.19 USD/ M³**, whereas jetty handling was charged at **0.99 USD/ M³** during the same period.



[Photo: KPC]

Table 33: Tariff (USD/M³/Km)

Category	2019/2020	2020/2021	2021/2022
Transport storage and dispensing refined petroleum products	0.0507	0.0481	0.0461

Source: KPC 2020



Kipevu Oil Terminal at the Port of Mombasa

[Photo: AP]

Table 34: Kipevu Oil Terminal Tariff (USD/ M³) (2019/2020)

Service products	Tariff in USD/M ³
Jetty handling	0.99
Primary Storage	4.19
Line Lease Charge for Liquid products	3
Pump over charge to Mombasa Terminals	1
Truck loading facilities	1

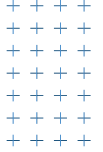
Source: KPC 2020

Note: Charges exclusive of VAT

Table 35: Export Tariff (USD/M³), exclusive of VAT per loading depot

Loading Depot	2019/2020	2020/2021
Nakuru	30.98	29.39
Eldoret	39.84	37
Kisumu	39.79	80
Moi International Airport	22.52	37.75
Jomo Kenyatta Airport	22.52	21.37
Shimanzi Oil Terminal	1	1

Source: KPC 2020



5.5 Road Tariff/Charges

Road transport invariably plays a crucial role in the economy, freighting significant cargo volumes along the Northern Corridor. The report's scope features the average rates charged by various transporters across the Northern Corridor Member States road routes. High transport charges are an impediment to trade; it is incumbent upon policymakers on routes that return high costs to work on eliminating the logistical and infrastructural bottlenecks that may exist. The transport cost is determined by factors such as distance, location, infrastructure status, administrative barriers, energy choice of supply chain and mode of transport and other indirect (hidden) costs.

5.5.1 Transport Charges/Rates by Truck Transporters in Kenya

Table 36 compares road freight charges in Kenya to different destinations along the corridor in US dollars. Transport freight rates from Mombasa to the Member States increased in 2020 when compared to previous years. The increase in the average transport rates from Mombasa to these destinations was attributed to the novel Coronavirus (COVID-19) outbreak. The pandemic constrained logistics operations which led to delivery delays, congestion, and higher freight rates. Further analysis revealed that cross border logistics bottlenecks hurt the cost of cargo transportation to different destinations. Other factors that led to cost escalations include cost related to driver testing for the COVID-19, including quarantine, multiple border charges and road condition.

As the pandemic spreads, Member States restricted the transportation of goods across borders or banned it. The lockdown created a shortage of truck drivers combined with reduced employee availability (due to COVID-19-related restrictions), which resulted in a reduced number of trips, as presented in the table below. Border post procedures and documentation are the biggest hindrances to high turnaround time.

The Mombasa Port and Northern Corridor Community Charter target between 120,000 to 150,000 Km per year per truck as the annual distance trucks have to achieve as a benchmark to international standards. The average distance (Km) covered per truck in 2020 varied widely for different transporters ranging as low as 60,000 Km to a high of 72,000 Km which is still below the target of 120,000 Km. COVID-19 was also ranked as a key contributor to the average distance covered by trucks.



[Photo: unsplash.com]

Table 36: Average Transport Rates (USD) to various destinations from Mombasa Port

From	To	Distance (Km)	Tariff Per Container/Km in USD			Number of trips	
			2016	2018	2020	2019	2020
Mombasa	Nairobi	481	1.78	1.62	1.77	8	6
Mombasa	Kampala	1,169	1.86	1.79	1.88	4	2
Mombasa	Kigali	1,682	2.16	2.23	2.08	2	2
Mombasa	Bujumbura	1,957	2.55	3.07	3.07	1	1
Mombasa	Goma	1,840	3.33	3.13	3.53	1	1
Mombasa	Juba	1,662	2.86	3.01	2.29	2	2

Source: KTA, data 2016-2020



5.5.2 Transport Charges/Rates by Truck Transporters to and from Uganda

The results in **Table 37** indicate the transport rates in Uganda in USD for the twenty-foot equivalent container. Statistics show that the cost of transporting exports is higher compared to imports. Similarly, transport rates increased in 2020 compared to 2018 partly due to the measures to contain the spread of the COVID-19 pandemic. It is indicative that transporters from Kampala make more trips to Kigali and Nairobi in a

month compared to other destinations. From the data, the target of 120,000 Km for average truck kilometres was not met for the Kampala - Mombasa route, which registered an annual truck distance of 57,000 Km. Challenges and delays associated with COVID-19 tests and charges were a contributor to higher transport charges. Other challenges highlighted were increased roadblocks during the pandemic period.

**Table 37:** Transport Charges/Rates by Truck Transporters to and from Uganda

From	To	Distance (Km)	Tariff Per Container/Km in USD		Number of trips	
			2018	2020	2018	2020
Mombasa	Kampala	1,169	1.97	1.97	-	-
Nairobi	Kampala	688	2.33	2.62	-	-
Juba	Kampala	653	2.3	1.53	-	-
Bujumbura	Kampala	788	2.03	1.27	-	-
Kigali	Kampala	513	1.95	1.95	-	-
Goma	Kampala	669	2.24	1.49	-	-
Kampala	Bunia	718	0.42	4.87	3	2
Kampala	Butembo	577	7.8	5.20	3	2
Kampala	Goma	669	2.99	3.74	4	2
Kampala	Kigali	513	3.31	3.12	6	4
Kampala	Bujumbura	788	3.93	3.81	4	2
Kampala	Juba	653	3.22	2.76	3	3
Kampala	Nairobi	688	1.16	1.16	5	4
Kampala	Mombasa	1,169	0.86	0.86	4	4

Source: UNTA data 2020



5.5.3 Transport Charges/Rates by Truck Transporters to and from Rwanda

Table 38 presents the transport tariffs for transporting containers in Rwanda in USD per kilometre. The highest costs were recorded on the Kigali–Bujumbura, Goma, and Juba routes, with transporters charging **USD 6.55**, **USD 6.41**, and **USD 6.43**, respectively per kilometre. The lowest cost was on the Kigali-Nairobi and Mombasa routes which had the fairest cost on both import and export journeys. Transporters charged **USD 2.38** per container per kilometre from Mombasa and **USD 2.50** from Nairobi. The return cost on these routes were **USD 1.78** and **USD 1.67**, respectively. Generally, like in the other Member States, the cost of moving container destined for export are cheaper when compared to imports.

In the year 2020, the average distance covered per truck was low at approximately 60,000 kilometres per year due to cross border COVID-19 procedures that were put in place, affecting the average annual distance(Km) covered per truck. The Kigali – Kampala registered the highest number of round trips with an average of 6 round trips, followed closely with Kigali-Goma registering 5 round trips, 4 for Bujumbura, 3.5 for Nairobi, and 2.5 for Mombasa over the same period. It is evident that despite the higher freight costs alluded to earlier, Goma remains among the major cargo destination for Kigali. Further, the number of Round trips done in a month reduced due to cross-border COVID-19 procedures.

Table 38: The current Transport Tariff by Truck Transporters to and from Rwanda in USD

From	To	Distance (Km)	Rate/ Container (USD)	Rates Per container/Km USD)	Number of Round Trips 2019	Number of Round Trips 2020
Mombasa	Kigali	1,682	4,000	2.38	-	-
Nairobi	Kigali	1,201	3,000	2.50	-	-
Bujumbura	Kigali	275	1,500	5.45	-	-
Kampala	Kigali	513	2,000	3.90	-	-
Goma	Kigali	156	1,000	6.41	-	-
Kigali	Goma	156	1,000	6.41	6	5
Kigali	Kampala	513	2,000	3.90	7	6
Kigali	Bujumbura	275	1,800	6.55	5	4
Kigali	Juba	1,166	7,500	6.43	1	1
Kigali	Nairobi	1,201	2,000	1.67	4	3.5
Kigali	Mombasa	1,682	3,000	1.78	2.5	2.5

Source: ACPLRWA December 2020



The data from Rwanda also shows the transport rates charged for tankers per cubic Metre per kilometre. The cost of transporting a tanker from Mombasa and Dar-es-salaam stood at USD 130 per M³. The cost of transporting tankers from Eldoret and Kisumu was USD 60 per M³, USD 70 from Nakuru and USD 90 from Nairobi. The major factor in the transportation by tankers is the distance covered.

Table 39: Transport Rates by Fuel Tankers to Rwanda

From/To	Kigali
Mombasa	130 USD / M ³
Nairobi	90 USD / M ³
Nakuru	70 USD / M ³
Kisumu	60 USD / M ³
Eldoret	60 USD / M ³
Dar-es salaam	130 USD / M ³

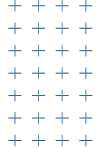
5.5.4 Transport Charges/Rates by Truck Transporters to and from South Sudan

Table 40 shows the road transport rates from or to Juba and other towns in the Northern Corridor Member States in US dollars per kilometre. South Sudan is vast and has some of the longest distances covered by transporters. The transport rate varied across the Member States, with exports from Juba to Mombasa attracting a lower charge of USD 2.11 per TEU per kilometre compared to others irrespective of the long distance. Imports from Nairobi to Juba attracted USD 2.18 for a TEU per Km, while from Mombasa, the cost stood at USD 2.71. The Juba – Kigali route recorded the highest cost per kilometre, standing at USD 5.15 per TEU per kilometre, implying that cross-border logistics and other concerns, including security, impact the cost of cargo transportation to different destinations.

Table 40: Current Transport Tariff in USD by Transporters to and from South Sudan in 2020

From	To	Distance (Km)	Rate per TEU per Km in USD 2020
Mombasa	Juba	1,662	2.71
Nairobi	Juba	1,145	2.18
Kampala	Juba	653	3.83
Kigali	Juba	1,166	
Juba	Mombasa	1,662	2.11
Juba	Nairobi	1,145	2.62
Juba	Kampala	653	3.06
Juba	Kigali	1,166	5.15





5.5.5 Transport Charges/Rates by Truck Transporters to and from Burundi

Table 41 summarizes transport charges per kilometre per ton to and from Bujumbura in USD for 20-foot containers as of 2020. The tariffs for imports from Kampala and Kigali to Bujumbura were much higher at **USD 0.13** per kilometre per tonne and **USD 0.15**, respectively. Tariff costs from Mombasa and Nairobi cost the lowest at **USD 0.08** and **USD 0.09** per kilometre per ton.

There are three alternative routes from Kenya to Bujumbura. Taita Taveta road and Namanga road through Tanzania provides alternative routes that are shorter and cheaper and with fewer non-tariff barriers than the traditional corridor route that goes through Uganda and Rwanda. Furthermore, the road condition on these routes is good and paved. Namanga route has only one mobile weighbridge and a road toll with a charge of approximately **USD 30**. The transport rates from Nairobi and Mombasa to Bujumbura through Taveta/ Holili route are **USD 2.6** per ton and **USD 2.9**, respectively.

Table 41: Current Transport Tariff in USD by Transporters to and from Burundi in 2020

From	To	Distance (Km)	Rate per TEU per Km in USD 2020
Mombasa	Bujumbura	1,957	0.08
Nairobi	Bujumbura	1,476	0.09
Kampala	Bujumbura	788	0.13
Kigali	Bujumbura	275	0.15
Bujumbura	Mombasa	1,957	0.08
Bujumbura	Nairobi	1,476	0.09
Bujumbura	Kampala	275	0.08

Source : “Association des Transporteurs Internationaux du Burundi”, December 2020

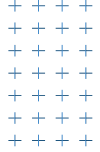




Chapter **6**

Transit Time and Delays





6.1 Introduction

Transit time is a key indicator of efficiency on the Corridor and directly affects the costs of goods. The discussion presented in this chapter examines the following indicators

- ★ Transit time in respective Member States of the Northern Corridor,
- ★ Border crossing time
- ★ Weighbridge crossing time
- ★ Stoppage locations, causes, and delays at major nodes of the Corridor.

The following data sources are utilized to analyse transit time and delays along the Northern Corridor; electronic systems of Revenue Authorities and mobile road survey data using ArcGIS Mobile application.

6.2 Transit Time

Transit time is measured by the average time transit trucks take to move from origin to destination.

6.2.1 Transit time in Kenya from the RECTS System Data

Kenya, Rwanda, and Uganda commenced implementing a harmonized Regional Electronic Cargo Tracking System (RECTS) in 2018. The RECTS allows revenue authorities in the three Member States to jointly and electronically track and monitor goods (whose taxes have not been paid) along the Northern Corridor from Loading to destination.

Transit time up to Kenya Exit Borders – Malaba and Busia

Busia and Malaba are about 947 Km and 933 Km from Mombasa, respectively. Both borders are the first exit points from Kenya to Uganda along the Northern

Corridor. The target transit time for cargo from Mombasa to Malaba and Busia border point is 72 hours. The Mombasa Port and Northern Corridor Community Charter set to attain an average transit time target of 60 hours from Mombasa to Malaba and 65 hours from Mombasa to Busia by December 2020. **Figure 18** provides a comparative analysis of transit time from the Port of Mombasa in 2018 to 2020 on these routes.

For the analysis, the sample from trucks plying Mombasa -Malaba route was 1,059 trucks in 2018; 235 trucks in 2019 and 20,286 trucks in 2020. On the same note, a total of 186 trucks were sampled for analysis on the Mombasa-Busia route in 2018; 55 trucks for 2019 and 1,672 trucks for 2020. The increase in transit time was attributable to the disruptions caused by restrictions introduced in response to the COVID-19 pandemic containment measures, including driver testing, lockdowns, curfews, and social distancing measures slowed down processes contributing to high transit time.

Transit Time from Mombasa Port to various Destination

Figure 19 provides transit time from the Port of Mombasa to Kampala/Uganda, Kigali/Rwanda, Elegu-Nimule border/South Sudan, and Mpondwe/DRC for the three years from 2018 to 2020. The route from the Port of Mombasa to Kampala covers 1,169 Km, to Kigali 1,682 Km, to Elegu 1,430 Km, and Mpondwe 1,611 Km. Transit



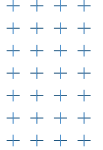
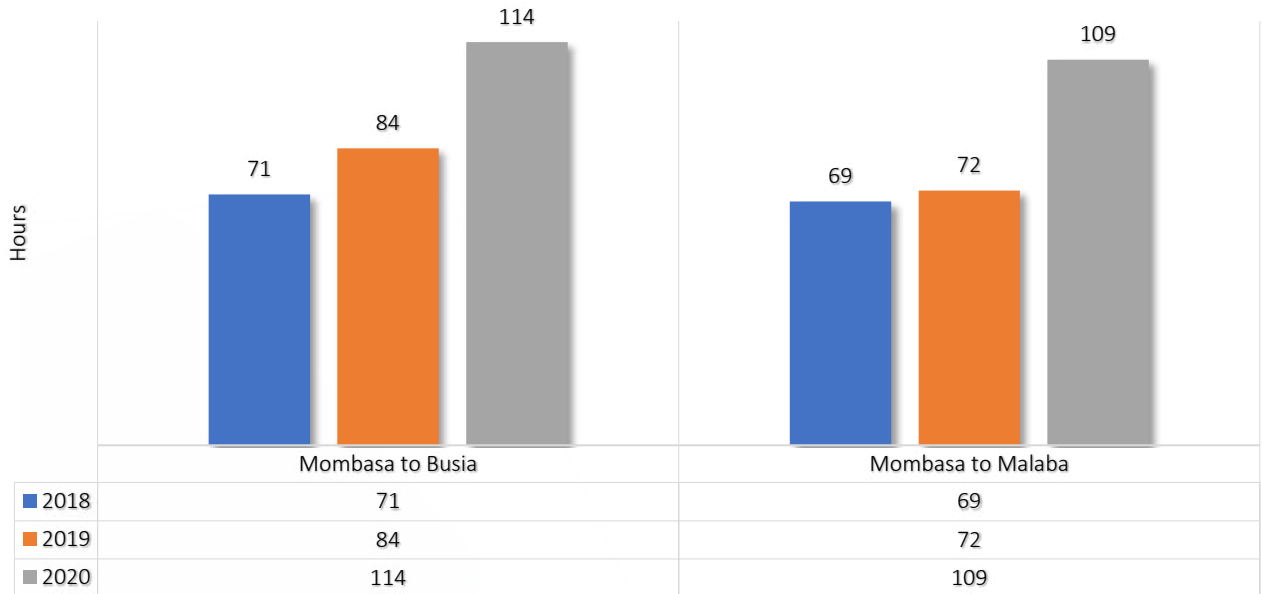


Figure 18: Transit time from Mombasa to Malaba and Busia borders

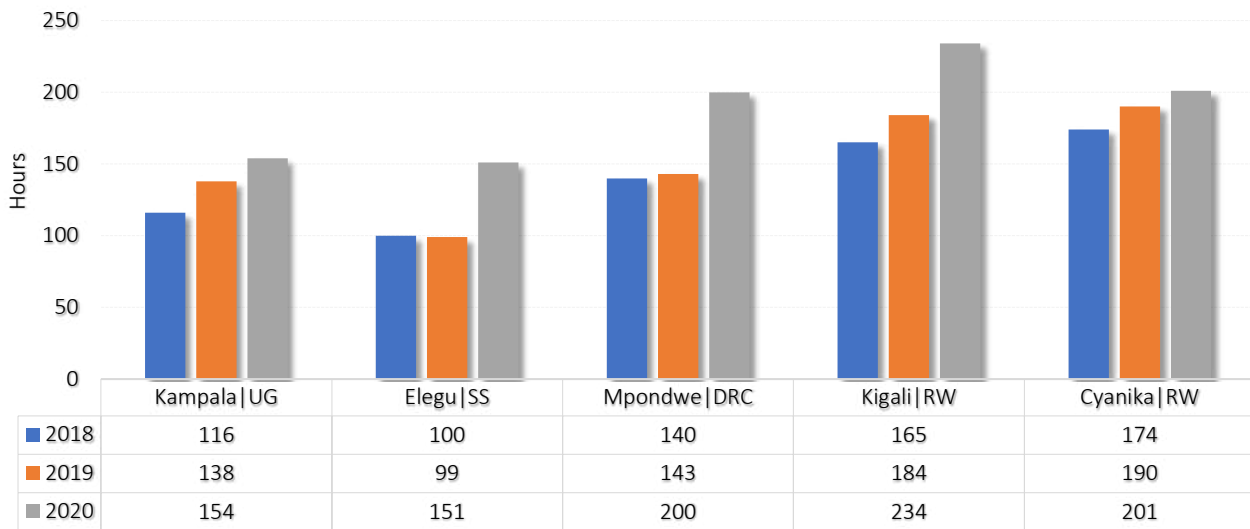


Source: KRA-RECTS data 2018 to 2020



time varied on different routes depending on several factors such as distance, the status of the road, non-tariff barriers, among others. Statistics show an increase in average transit times over the review period with a spike in 2020. Further, it can also be noted that Mombasa to Kigali was the slowest route averaging 7.2 Kms per hour compared to Mombasa to Elegu route that averaged 9.5 Kms per hour in the year 2020; suggesting that there are factors constraining cargo movement on these routes. Sometimes, it takes longer for the RECTS gadgets to be disarmed when a truck has already arrived, which may increase transit time.

Figure 19: Transit time from the Port of Mombasa to various destinations



Source: KRA-RECTS data 2018 to 2020

6.2.2 Transit Time in Uganda from the Regional Electronic Cargo Tracking System

Transit time in Uganda is defined as the time taken to move cargo from the two entry border points of Malaba and Busia to the various destinations in Uganda.

Figure 20 provides exports transit time from Kampala to various borders within the Northern Corridor Member States from 2018 to 2020. All these borders are One-Stop-Border-Post for smooth cargo flow. Over the three years, traffic on Kampala to Elegu route was the highest,

with about 20,767 trucks followed by Kampala to Mpondwe with about 4,783 sampled trucks armed with the RECTS gadget. All the destinations from Kampala have seen a marginal increase in average transit times in 2020 compared to 2019 and 2018. Further, analysis reveals that Kampala to Mirama Hills/Kagitumba was the slowest route averaging 7 Kms per hour despite the shorter distance than Kampala- Elegu route that averaged 12 Kms per hour in 2020.



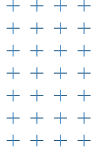
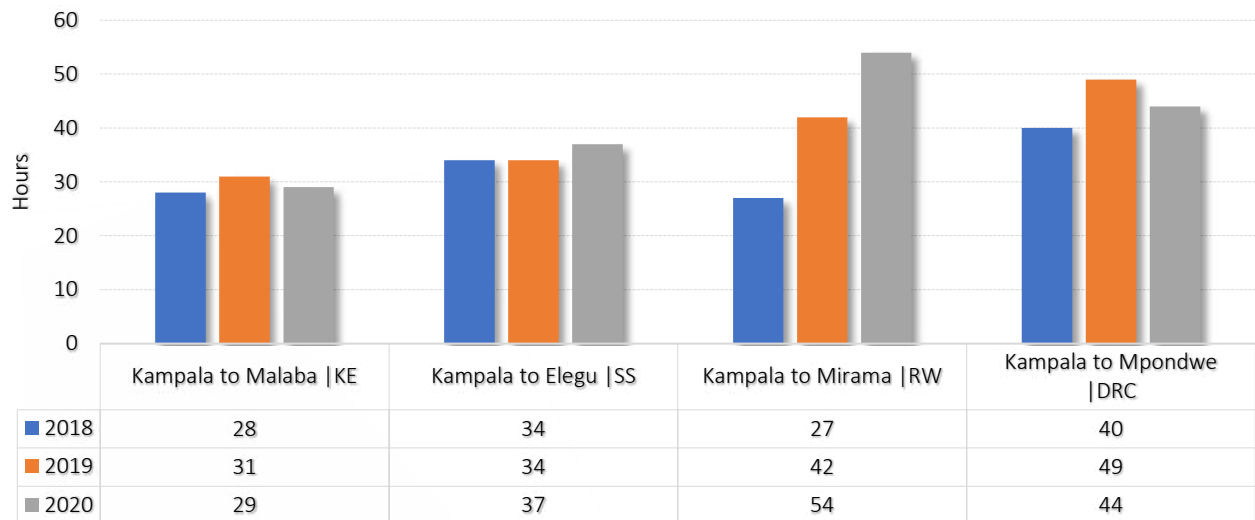


Figure 20: Transit Time from Kampala to Various Destinations in hours



Source: URA-RECTS data 2018 to 2020

6.2.3 Transit Time in Rwanda from ASYCUDA System Data

The indicator measures the time a truck is allowed (electronically in Rwanda Revenue Authority's system) to commence the transit journey to the time the bond is cancelled on the exit border.

Rwanda has three entry borders namely: Kagitumba/ Mirama Hills; Gatuna/Katuna and Cyanika/Cyanika. The exit borders from Rwanda include: Rubavu/Goma; Akanyaru- Haut/Kanyaru Haut; Mururu/Rusizi and Nemba/Gasenyi.

Table 42 below shows the transit times in Rwanda from Kagitumba to Cyanika and Mururu and from Cyanika to Rubavu. From the analysis, average transit time varied across the routes depending on the distance and measures put in place to cope with the COVID-19 pandemic. Cyanika to Rubavu was the slowest route with an average speed of 3 Km per hour despite being the shortest route compared to Kagitumba- Rusizi route was the fastest route with an average speed of 5 Km per hour.

Table 42: Transit time in Rwanda in hours (2020)

Route	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Kagitumba to Kigali	49	25	25	41	33	37	30	68	48	75	89	103
Kagitumba to Rubavu	38	30	32	48	58	46	31	-	49	30	63	43
Kagitumba to Rusizi	66	58	51	83	66	59	69	63	67	216	-	-
Cyanika to Rubavu	19	23	15	23	24	27	34	36	52	38	31	19

Source: RRA-ASYCUDA data Jan-Dec 2020



6.2.4 Transit Time in Burundi from ASYCUDA System Data

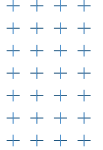
The main Northern Corridor route runs from Kanyaru-Haut/ Akanyaru Haut to Bujumbura and connects with DRC through the Gatumba/Kavimvira border post. In addition, the route through Gasenyi/Nemba connects with the main route at Kayanza. Under the ASYCUDA system, the average transit times from Bujumbura to Kanyaru-Haut and Nemba/Gasenyi and the import routes for the year 2020 are given in **Table 43** below. Data shows inconsistency in transit time over the period varying from as high as 299 hours to a low of 99 hours

on the Kanyaru route. The performance points out that barriers to cargo movement still exist along these routes, resulting in prevailing inefficiencies. Similarly, truck drivers from Bujumbura to Gasenyi/Nemba border took an average of 137 hours to 299 hours during the same review period. Statistics for the import routes of Kanyaru Haut to Bujumbura and Gasenyi/Nemba to Bujumbura improved significantly, registering an average transit time of 46 hours and 56 hours, respectively.

Table 43: Average Transit Time in Burundi along the Corridor in hours

Average Transit time	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Bujumbura to Gasenyi/ Nemba	225	280	292	299	293	182	137	186	282	299	293	182
Bujumbura to Kanyaru Haut	99	117	180	240	299	261	178	188	181	240	299	261
Gasenyi to Bujumbura	79	158	45	38	73	25	74	20	34	38	73	25
Kanyaru Haut to Bujumbura	43	91		39	46			17		39	46	

Source: OBR, Jan to Dec 2020



6.3 Crossing Times at Weighbridges along the Northern Corridor

Crossing times at weighbridges is a major determinant of time taken to transport cargo along the corridor. **Figure 21** shows the average crossing time at the weighbridges along the Northern Corridor in hours for 2020. From the results, the average weighbridge crossing time was recorded as 3 hours. The Kenyan weighbridges have implemented the HSWIM as well as installed the virtual weighbridge technology that has been deployed along the Northern Corridor. Two virtual weighbridges have been installed and operationalised at Eldoret and Ahero along the Northern Corridor. Construction and Installation of additional four virtual weighbridges along the Northern Corridor at Malili, Mau Summit, Cheptiret, and Malaba is on course.



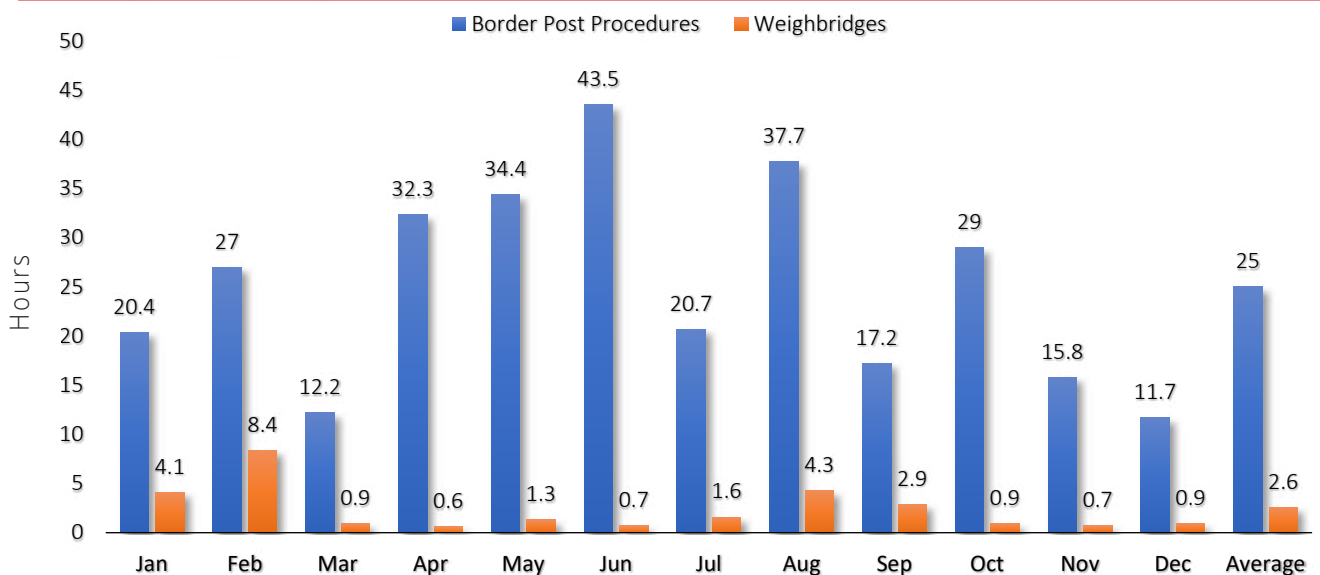
A truck trailer is weighed along the Northern Corridor

On the same breadth data shows that border crossing time was high in 2020.

Border post procedures averaged of 25 hours in 2020 from 7.7 hours in 2019. This time was at its peak from April 2020 to August 2020. This was mainly attributable to the closure of some borders along the northern corridor as a measure to contain the spread of the COVID-19 pandemic. COVID-19 testing procedures

took most of the time. The benefits of Single Customs Territory and OSBP are yet to be fully felt at the border. There is need to enhance systems connectivity and provision of enough packing yards at the border to reduce congestion.

Figure 21: Time taken at Weighbridge and Border Crossing Time in Hours



Source: Road Transport Survey, 2020

6.4 Stoppages Reasons for Cargo along the Northern Corridor

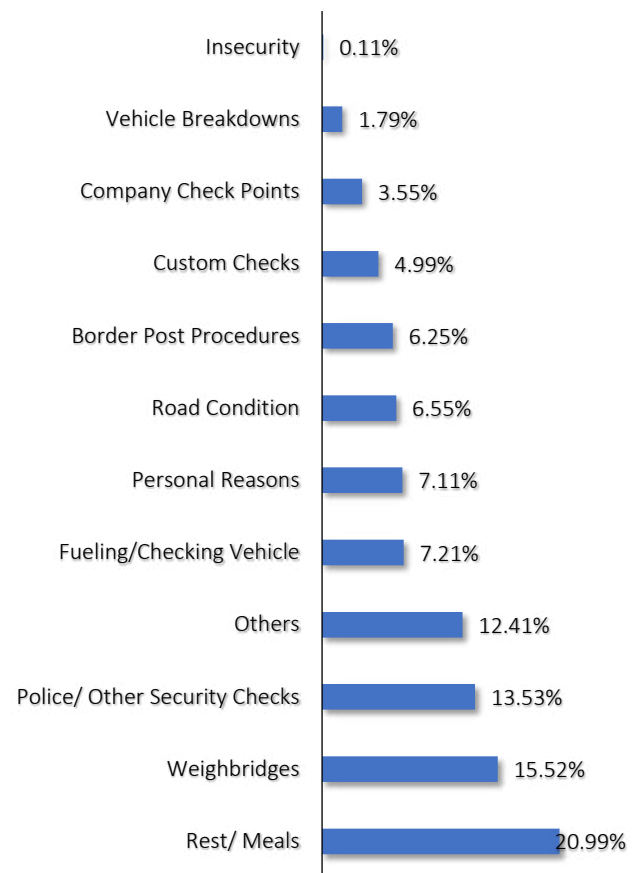
Stoppages along the corridor are a major driver of inefficiency on the Corridor. Stoppages and other delays occasion high administrative and operation costs for moving goods along the Corridor and hinder trade in the region. **Figure 22** below presents the reasons for stoppages by drivers along the Corridor with their respective percentage of the occurrence. Rest/meals by drivers and stoppage at the weighbridges accounted for the highest percentages featuring 21% and 16% respectively for all stoppages. Further, analysis shows that stops for rest and meals were observed at Mtito Andei, Busowa, Kikopey, Maungu, Longonot, Cheptiret, Salgaa, Bukembe, Kimaeti, Masimba, Jua Kali, Mbiko, Machakos junction, Salama, Kwa DC, and Malili, among others.

Police/other security checks and other reasons accounted for 14% and 12%, respectively. Most of the stops categorized as others included mainly delays encountered by transporters to meet the COVID-19 health protocols. These stoppages translate into higher cost of doing business and inefficiency; thus, streamlining procedures to curb the spread of COVID-19 disease will reduce the non-tariff barriers along the Corridor.

These many stops translate into poor efficiency due to delays that reflect on the cost side of doing business within the Northern Corridor. The resulting outcome is high transport costs for the traders, which translate to high product prices for consumers hence worsening off the livelihood. In conjunction with the Member States, the Northern Corridor Secretariat is implementing the Roadside Stations with a variety of amenities and

wellness centres for drivers along the Corridor. This will ultimately reduce the delays along the Corridor caused by unnecessary stops.

Figure 22: Prevalence Stoppage Reasons in Percentage 2020



Source: Road Transport Survey, 2020



[Photo: unsplash.com]

Chapter **7**

Intraregional Trade



7.1 Introduction

This chapter provides an analysis of trade flows among the Northern Corridor Member States. Aggregate statistics are presented for the individual Member States for the year 2020. Comparative analysis is also made with the previous years of 2018 and 2019. The data were obtained from the countries own trade data.

7.2 Formal Trade between Burundi and other Northern Corridor Member States

Table 44 below shows the trends in Burundi's overall trade. Statistics presented show that the trend has been increasing significantly over the years, with the year 2020 registering an overall trade value of **USD 1.071 billion** from **USD 96 million** in 2019. A deeper analysis reveals that the share of imports accounted for **85%** while exports share was about **15%** in 2020. This implies that Burundi is a net importer, given imports are more in demand than exports.

Table 44: Share of Overall Burundi Trade within Northern Corridor in USD

	2018	2019	2020
Exports	26,118,985	24,010,615	162,050,383
Imports	66,236,402	72,253,073	909,485,542
T O T A L TRADE	92,355,387	96,263,688	1,071,535,925
Share of Exports	28%	25%	15%
Share of Imports	72%	75%	85%

Source: Burundi Bureau of Statistics (ISTEEBU) 2018- 2020

Table 45 and **Table 46** present the value (in USD) of trade for Burundi with the Members States of the Northern Corridor except South Sudan. The total value of imports for the year 2020 was valued at about **USD 103 million**, a growth of **43%** compared to 2019, which recorded an aggregate value of **USD 72.3 million**. Similarly, exports increased significantly by **65%**, from **USD 24 million** in 2019 to **USD 39.6 million** in 2020. Kenya and Uganda accounted for most Burundi imports and exports at about **37%** and **34%** respectively of total trade with Northern Corridor Member States. DRC was the biggest importer from Burundi exports accounting for **80%** of total exports with Northern Corridor Member States.

Table 45: Summary of Burundi Trade with other Northern Corridor Member States in USD

Country	Imports Value 2020	Exports Value 2020	Total
DRC	8,460,341	31,753,471	40,213,812
Kenya	47,173,299	5,361,714	52,535,013
Rwanda	2,028,585	78,001	2,106,585
Uganda	45,745,907	2,392,958	48,138,864

Source: Burundi Bureau of Statistics (ISTEEBU) 2018-2020

Table 46: Total value of Burundi trade with other Northern Corridor Member States in USD.



Table 46: Comparison of Total Value of Burundi Trade with other Northern Corridor Member States in USD from 2018-2020

Imports	2018	2019	2020	Exports	2018	2019	2020
DRC	3,920,505	2,461,927	8,460,341	DRC	18,903,800	14,842,098	31,753,471
Kenya	39,224,585	36,121,229	47,173,299	Kenya	3,792,278	2,095,079	5,361,714
Rwanda	4,545,349	5,805,098	2,028,585	Rwanda	5,250,359	2,416,610	78,001
Uganda	40,742,858	27,864,819	45,745,907	Uganda	4,440,169	4,656,828	2,392,958
Total	88,433,297	72,253,073	103,408,132	Total	32,386,606	24,010,615	39,586,144

Source: Burundi Bureau of Statistics (ISTEEBU) 2018- 2020

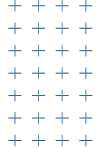
The United Arab Emirates featured a significant proportion of the market for Burundi exports, and DRC also topped the market in Africa for Burundi exports accounting as presented in **Table 47**. The majority of

Burundian imports originate from Asia, principally China, Saudi Arabia, India, and United Arab Emirates. The EAC countries bloc, particularly Tanzania, Kenya, and Uganda, were among the top ten.

Table 47: Top Market for Burundi Exports and Imports in 2020

Country	Export Value in USD - 2020	Country	Import Value in USD - 2020
United Arab Emirates	52,331,500	China	141,807,528
DRC	31,825,548	Saudi Arabia	107,660,121
Pakistan	9,028,058	India	86,200,512
Tanzania	8,583,160	Tanzania	78,020,492
Belgium	8,086,046	United Arab Emirates	62,234,215
Suisse	8,017,021	Belgium	47,852,271
Germany	6,083,513	Kenya	47,231,108
Sudan	6,075,198	Uganda	45,762,166
Oman	5,808,935	Japan	37,155,608
Kenya	5,379,661	Zambia	32,839,772

Source: Burundi Bureau of Statistics (ISTEEBU) 2018-2020



7.3 Formal Trade between DRC and other Northern Corridor Member States

DRC had an overall trade of USD 1.1 billion with Northern Corridor Member States except South Sudan in 2020, out of which the share of exports accounted for 59% while imports were 41%, as shown in **Table 48**. The statistics show that DRC is a net importer when trading with the other Northern Corridor Member States. Rwanda was

the top market for DRC imports whereas Kenya was the top market for DRC exports in 2020. DRC formal imports to the Northern Corridor Member States were valued at approximately USD 1.04 billion, whereas formal exports were valued at USD 55.6 million during the same period.

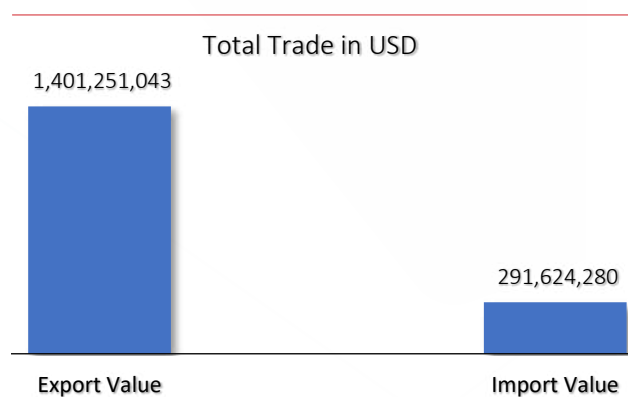
Table 48: Share of DRC Trade with Northern Corridor Countries in USD in 2020

	Imports	Exports	Total Trade	Share of Trade
Burundi	31,753,471	8,460,341	40,213,812	4%
Kenya	142,980,691	27,543,548	170,524,239	16%
Rwanda	596,373,434	9,116,286	605,489,720	55%
Uganda	267,185,897	10,438,359	277,624,256	25%
Total	1,038,293,493	55,558,534	1,093,852,027	100.0%

7.4 Formal Trade between Kenya and other Northern Corridor Member States

Kenya’s trade with Northern Corridor Member States was significant in 2020, with imports accounting for only 17%, suggesting a trade surplus. **Figure 23** implies Kenya is a net exporter in the region, given that the value of total exports is about three times that of total imports. This was mainly attributed to the liberalization of trade under the Customs Union and Common Market regimes. The bulk of exports are raw materials and primary products, while the imports are high-value capital and finished products.

Figure 23: Share of Kenya Trade within Northern Corridor in 2020 in USD



Source KNBS trade data 2020



The table below presents total trade volume in Kenya with the Northern Corridor Member States over the three-year period ending 2020. The total value of imports and exports increased significantly by an annual growth of 20% in 2020 compared to 2019. Total Trade was valued at USD 1.4 billion in 2019 representing an annual decline change of 3.7% when compared to 2018 as shown in **Table 49** below. Considering trade in Kenya with other peers of NC bloc, Kenya is a trade surplus with exports accounting for over 60%.

Table 49: Total Trade Value in Kenya with the Northern Corridor Member States

Total Trade	2018	2019	2020
BURUNDI	50,448,924	56,487,587	62,341,423
DRC	146,109,896	142,491,220	170,524,239
RWANDA	163,105,096	229,932,753	272,521,176
SOUTH SUDAN	98,320,135	105,730,345	230,851,375
UGANDA	1,004,361,651	873,937,145	956,637,109
Grand Total	1,462,345,702	1,408,579,050	1,692,875,323

Table 50 provides trade statistics between Kenya and other Northern Corridor Member States for the year 2020. Kenya's formal imports from the Northern

Corridor region were worth USD 292 million, whereas exports to Northern Corridor Member States were worth USD 1.4 billion, making Kenya the single largest exporter in the region. Uganda emerges as the top destination for Kenya's products, both imports and exports accounting for about 57% of total trade for goods worth approximately USD 95 billion compared to other Northern Corridor Member States. In light of the foregoing. The main exports are horticultural products, tea, coffee, fish and cement. Its main imports are machinery, transport equipment, petroleum, iron, steel, resins, and plastics. Kenya is the largest importer of used motor vehicles in Africa.

It is equally observed that Kenya's top trading partner for imports was China, as presented in **Table 51** below. China provided the largest import market to Kenya, translating USD 3.61 billion of total imports from the rest of the world. Other than China, Kenya's main import partners are India, United Arab Emirates, Japan, Saudi Arabia, the USA and South Africa. Kenya imports mainly machinery and transportation equipment, petroleum products, motor vehicles, iron and steel, resins and plastics. On the other hand, Uganda emerged as the top leading market for Kenya's exports. Pakistan provides the export market for Kenya's coffee, tea, industrial supplies, fuel and transport equipment, flowers worth USD 547 million, followed closely by UK and USA for exports worth about USD 500 million each, respectively.

Table 50: Share of Kenya Imports and Exports with Northern Corridor Member States in 2020

Country	Export Value (in USD)	Import Value (in USD)	Total Trade (in USD)	Share of trade
BURUNDI	58,788,064	3,553,359	62,341,423	4%
DRC	142,980,691	27,543,548	170,524,239	10%
RWANDA	252,112,792	20,408,384	272,521,176	16%
SOUTH SUDAN	230,430,112	421,263	230,851,375	14%
UGANDA	716,939,384	239,697,726	956,637,109	57%
Grand Total	1,401,251,043	291,624,280	1,692,875,323	100%

Source KNBS trade data 2020

Table 51: Share of Kenya Trade Market in the World in USD

Top import market for Kenya in 2020		Top market destinations for Kenya exports in 2020	
Country of Origin	Value	Country of Origin	Value
CHINA	3,613,646,708	UGANDA	716,939,384
INDIA	1,885,883,699	PAKISTAN	546,565,485
UNITED ARAB EMIRATES	922,828,923	UNITED KINGDOM	499,209,137
JAPAN	875,942,824	UNITED STATES OF AMERICA	493,779,802
SAUDI ARABIA	690,024,042	NETHERLANDS	487,375,836
INDONESIA	626,927,067	UNITED ARAB EMIRATES	344,348,951
UNITED STATES OF AMERICA	563,063,135	TANZANIA	313,890,635
SOUTH AFRICA	457,791,824	RWANDA	252,112,792
MALAYSIA	455,632,616	SOUTH SUDAN	230,430,112
EGYPT	448,534,585	EGYPT	189,829,555

Source KNBS trade data 2020

7.5 Formal Trade between Rwanda and other Northern Corridor Member States

Rwanda's total trade with other Northern Corridor Member States has been increasing over the years, as presented in **Table 52** below. The total trade grew by 26% in 2019 and by 0.06% in 2020, indicating growth in trade volumes. Exports grew significantly from USD 333 million in 2018 to USD 617 million in 2019 and further to USD 662 million in 2020, whereas imports decreased during the same period. On the same note, the share of export to total trade was an equivalent of 75% and imports accounted for the remaining 25% in 2020 making Rwanda a net importer among the Northern Corridor Member States.

Table 52: Share of Rwanda Trade within Northern Corridor from 2018 to 2020 in USD

Type	2018	2019	2020
Imports	372,146,545	271,096,916	226,591,411
Exports	333,212,016	617,041,825	662,052,686
Total	705,358,561	888,138,741	888,644,097
Export Share	47%	69%	75%
% Annual change		25.91%	0.06%

Source: National Bank of Rwanda trade data 2018 to 2020



Table 53 shows the value of commodities imported to and exported from Rwanda with other Northern Corridor Member States. Rwanda imports from Kenya took the lion share at an equivalent of 96%, whereas DRC accounted for the largest share of Exports from Rwanda at about 90%. The top ten import products

included: soap and related products; iron and steel products; tubes and pipes; medicaments: palm oil; sugar and confectionery; salt; packaging of goods; footwear; cotton products; and medical instruments. Top exports include food and live animals, beverages and tobacco, crude materials, except fuels

Table 53: Share of Rwanda Imports and Exports with Northern Corridor Member States in USD in 2020

Country	Export Value, USD	Import Value, USD	Total Trade	% Share to total
Burundi	1,327,646	25,985	1,353,631	0.2%
DRC	596,373,434	9,116,286	605,489,720	68.1%
Kenya	17,730,071	217,015,062	234,745,134	26.4%
South Sudan	12,491,098	102,484	12,593,582	1.4%
Uganda	34,130,437	331,593	34,462,030	3.9%
Grand Total	662,052,686	226,591,411	888,644,097	100.0%

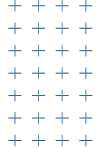
Source: National Bank of Rwanda trade data 2020

The total volume of informal cross-border trade for 2020 is shown in **Table 54** below. Data were available for 5 months, that is, January to March and November to December. The missing months was because the borders were closed following the novel Coronavirus pandemic. Total ICBT trade was recorded at USD 39 Million. Informal Exports took the largest share with a value of USD 36 Million, 94% of all recorded informal trade in Rwanda. In **Table 54** below, DRC is the largest ICBT export partner for Rwanda accounting for 94% of all export trade while Uganda accounted for 4 % and Burundi 2% share of informal exports.

Table 54: Share of Rwanda ICBT trade in USD 2020

Country	Imports	Exports	Total ICBT trade
BURUNDI	713,481	595,546	1,309,027
DRC	1,030,591	34,329,417	35,360,008
TANZANIA	210,572	27,633	238,205
UGANDA	501,718	1,633,427	2,135,145
Total	2,456,362	36,586,023	39,042,385

Source: National Bank of Rwanda 2020



7.6 Formal Trade between South Sudan and other Northern Corridor Member States

Table 55 below shows the share of trade for South Sudan with her peers in the Northern Corridor Member States. South Sudan had an overall trade of **USD 444 million**, trading with Northern Corridor Member States except DRC and Burundi. Out of which, the share of exports was valued at **USD 86.7 million** while imports share absorbed was valued at **USD 357.3 million**.

Further, it is evident that South Sudan is a net importer with a negative balance of trade with all the Northern Corridor Member States exports. The main import products were; sorghum, maize, rice, millet, wheat, gum Arabic, sugarcane, mangoes, papayas, bananas, sweet potatoes, sunflower seeds, cotton, sesame seeds, cassava (manioc, tapioca), beans, peanuts; cattle, sheep among others.

Table 55: Annual Share of South Sudan Trade in USD

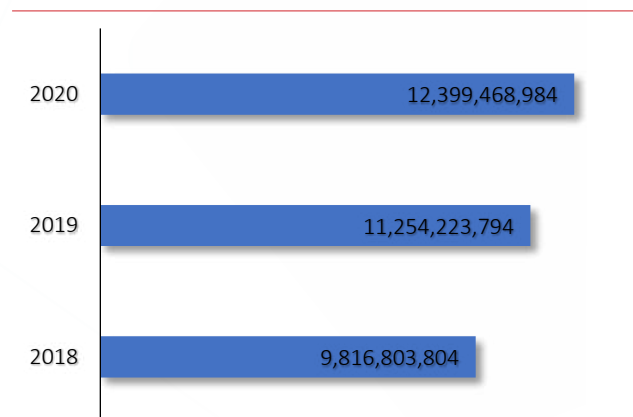
Country	Imports Value 2020	Exports Value 2020	Total Trade	% Share of Trade
Kenya	230,430,112	421,263	230,851,375	33.6%
Rwanda	12,491,098	102,484	12,593,582	1.8%
Uganda	357,339,034	86,724,298	444,063,332	64.6%

Source: NCTTCA Transport Observatory

7.7 Formal Trade between Uganda and other Northern Corridor Member States

As presented in **Figure 24** below, total trade volume in Uganda's trade value grew by an annual increase of 15 % to approximately **USD 11.3 billion** in 2019 and further by 10% to **USD 12.4 billion** in 2020. Out of which exports accounted for about 33% of total trade value in 2020, imports accounted for 67% of total trade volume. This suggests that globally, Uganda is a net importer with an unfavourable trade balance. The main export products for Uganda to the world included; semi-manufactured gold, coffee, fuel products, fish, cocoa beans, cement, tea and cotton. The main import products were Semi-manufactured gold, fuel products, medicaments, crude palm oil, and iron and steel.

Figure 24: Uganda Total Trade in USD



Source: UBOS, Uganda trade data 2018-2020



Total trade volume in Uganda with respect to Northern Corridor Member States was valued at approximately USD 2 billion in 2020. Out of which exports accounted for 56% valued at USD 1.2 billion, and imports were valued at USD 908 million representing 44% of total trade volume with other Northern Corridor Member States. This implies that Uganda is a net exporter among her Northern Corridor peers, as illustrated in **Table 56** below. This is an indication of favourable regional trade agreements that have expanded the country's export markets.

Kenya emerges as the top destination for Uganda's imports and exports, accounting for 60% worth approximately USD 1.2 billion compared to other Northern Corridor Member States. South Sudan comes second, accounting for about 22% of total intraregional trade. The main imports are Semi-manufactured gold, Lubricants, iron, steel, salt, medicaments, Waste, and scrap of tinned iron or steel, and motor vehicles. Main exports from Uganda to Northern Corridor Member States included; cement, tea, palm oil, milk and cream, sugar products, tobacco, electrical energy, maize and wheat products.

Table 56: Share of Uganda Trade with Northern Corridor Countries in USD, 2020

Country	Value of Imports	Value of Exports	Total Trade	Proportion
BURUNDI	33,884,850	58,528,219	92,413,068	4.5%
D.R. CONGO	10,438,359	267,185,897	277,624,256	13.5%
KENYA	773,230,271	465,547,802	1,238,778,074	60.2%
RWANDA	3,458,233	2,311,943	5,770,177	0.3%
SOUTH SUDAN	86,724,298	357,339,034	444,063,332	21.6%
Total	907,736,011	1,150,912,895	2,058,648,907	100.0%

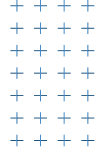
Source: UBOS, Uganda trade data 2020

United Arab Emirates (44%), Kenya (11%), South Sudan (9%), DR Congo (6%), Italy, and Tanzania were top markets for Uganda exports in 2020 whereas, China,

India, Kenya, Tanzania, United Arab Emirate, Japan, Saudi Arabia, South Africa and the Gambia were the principal market for Uganda imports in 2020.

Table 57: Top Market for Uganda Trade in 2020

COUNTRY	EXPORT VALUE 2020 (in USD)	SHARE OF TOTAL EXPORTS
UNITED ARAB EMIRATES	1,844,838,895	44%
KENYA	465,547,802	11%
SOUTH SUDAN	357,339,034	9%
D.R. CONGO	267,185,897	6%



COUNTRY	EXPORT VALUE 2020 (in USD)	SHARE OF TOTAL EXPORTS
ITALY	138,052,360	3%
TANZANIA	95,130,574	2%
GERMANY	93,808,604	2%
SUDAN	89,927,000	2%
NETHERLANDS	78,120,883	2%
BELGIUM	72,530,722	2%

COUNTRY	TOP MARKET FOR IMPORTS (in USD)	SHARE OF TOTAL IMPORTS
CHINA	1,351,951,658.87	16.4%
INDIA	959,110,323.52	11.6%
KENYA	773,230,271.24	9.4%
TANZANIA	743,682,293.83	9.0%
UNITED ARAB EMIRATE	495,865,657.77	6.0%
JAPAN	342,871,170.74	4.2%
SAUDI ARABIA	274,518,994.11	3.3%
SOUTH AFRICA	220,872,242.81	2.7%
GAMBIA	212,871,321.91	2.6%
ZIMBABWE	203,860,627.52	2.5%

Source: UBOS, Uganda trade data 2020

In summary, the report notes that the total trade along the corridor summed to around USD 3.17 billion. Formal Trade between Kenya and Uganda was the leading,

accounting for 32 %, followed by trade between DRC and Rwanda at 19.1% of the total trade value within the region.

**Table 58:** Proportion of Formal Trade among Northern Corridor Members (in USD) 2020

Origin	Destination	Exports Value 2020	Imports Value 2020	Total Trade Value	Share of total trade
Burundi	DRC	31,753,471	8,460,341	40,213,812	1.3%
Burundi	Kenya	3,553,359	47,173,299	50,726,658	1.6%
Burundi	Rwanda	25,985	2,028,585	2,054,570	0.1%
Burundi	Uganda	33,884,850	45,745,907	79,630,757	2.5%
DRC	Kenya	27,543,548	142,980,691	170,524,239	5.4%
DRC	Rwanda	9,116,286	596,373,434	605,489,720	19.1%
DRC	Uganda	10,438,359	267,185,897	277,624,256	8.8%
Kenya	Rwanda	217,015,062	20,408,384	237,423,446	7.5%
Kenya	South Sudan	230,430,112	421,263	230,851,375	7.3%
Kenya	Uganda	773,230,271	239,697,726	1,012,927,997	32.0%
Rwanda	South Sudan	12,491,098	102,484	12,593,582	0.4%
Rwanda	Uganda	3,458,233	331,593	3,789,826	0.1%
Uganda	South Sudan	357,339,034	86,724,298	444,063,332	14.0%
Total Imports/Exports		1,710,279,668	1,457,633,902	3,167,913,570	100.0%

**Exports can be imports depending on the direction. This compilation is based on import data from each country. For a given country, imports are usually recorded with more accuracy than exports since imports generally attract tariff revenues*

Source: Transport Observatory Analysis/INCTTCA

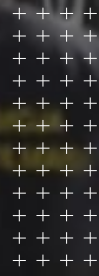


[Photo: AP]



Chapter **8**

Road Safety



8.1 Introduction

Road traffic safety refers to methods and measures for reducing the risk of a person using the road network being killed or seriously injured. Road safety is a global concern issue that needs greater attention. According to World Health Organization (WHO), more than **1.25 million** people die, and up to **50 million** people incur non-fatal injuries annually due to road crashes (WHO, 2020). Further, empirical literature shows that road crashes are prevalent in developing countries accounting for **93%** when compared to developed economies (World Bank 2019).

The Sustainable Development Goal 3; target 3.6 aims to halve the number of global deaths and injuries from road traffic accidents by 2020 (SDG Target 3.6) following the UN Road Safety Decade and the African Action Plan for Road Safety (2011-2020). Therefore, road safety has become a major challenge for the Northern Corridor region, albeit tremendous efforts made in developing and improving transport infrastructure. This report provides details, and country statistics of road traffic crashes along the Northern Corridor. Details are also given of the road user categories, nature of crashes with respect to time, age, and gender groups of road users, most at risk of being killed or injured on the roads.

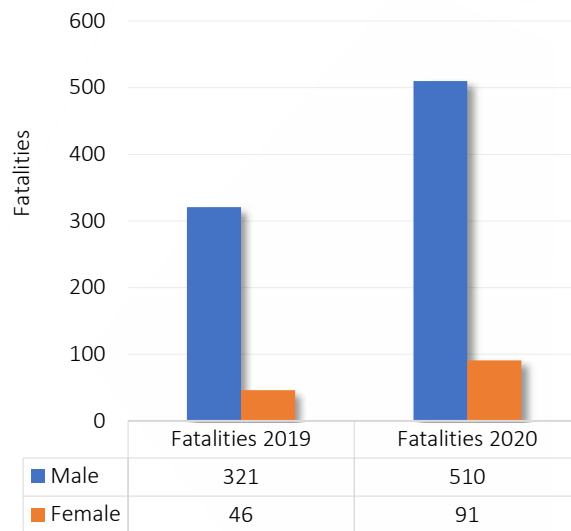
8.2 Road Safety in Kenya

Through the National Transport and Safety Authority (NTSA), the Government of Kenya has been implementing traffic laws to reduce the loss of lives through road crashes. **Figure 25** below gives the distribution of fatalities in Kenya along the Northern Corridor based on gender. Data indicates an increase in fatalities by **64%**, from 367 fatalities in 2019 to 601 fatalities in 2020. The increasing number of accident fatalities poses a serious cause of concern as African countries had committed to reducing accident fatalities by **50%** by 2020. A deeper analysis shows that road crashes have enormous

consequences to the nation and societies, including causing disabilities and long-term psychological effects, the economic burden to the public and households, death of persons, and lowers productivity.

Among the fatalities that were reported along the Northern Corridor in the review period, it is observed that males constitute a significant proportion of fatalities accounting for about **86%**, whereas the female gender constitutes only **14%** of the total fatalities. Furthermore, most of the fatalities were prevalent on Mombasa-Nairobi- Nakuru route.

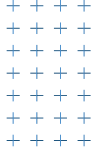
Figure 25: Number of Fatalities by Gender



Source: NTSA Apr-Dec 2019 and 2020

Accident fatalities by Road User Category

Table 57 shows the distribution of fatalities based on the type of vehicle along the Northern Corridor during the same review period. Most fatalities were attributed to accidents caused by commercial vehicles/trucks,



accounting for 35%, followed closely by privately owned vehicles at 24% in 2020. Motorcycles accounted for 13%, whereas public service vehicles recorded 12%. Government vehicles reduced fatalities occurrences by 29% in 2020 when compared to the previous year.

There was a very high increase in fatalities caused by motorcycles by 300%, whereas commercial vehicles/trucks also saw an increase of about 70%, as shown below.

Fatalities by Time

Table 59: Distribution of Fatalities based on Type of Vehicle

Type of Vehicle	Fatalities 2019	Fatalities 2020	% Change
Commercial	125	213	70%
Private	117	146	25%
Public Service Vehicle	53	71	34%
Motor Cycle	20	80	300%
Unknown	45	86	91%
Government	7	5	(-29%)
Total	367	601	64%

Source: NTSA Apr-Dec 2019 and 2020



[Photo: KTA]

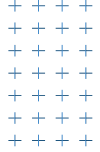


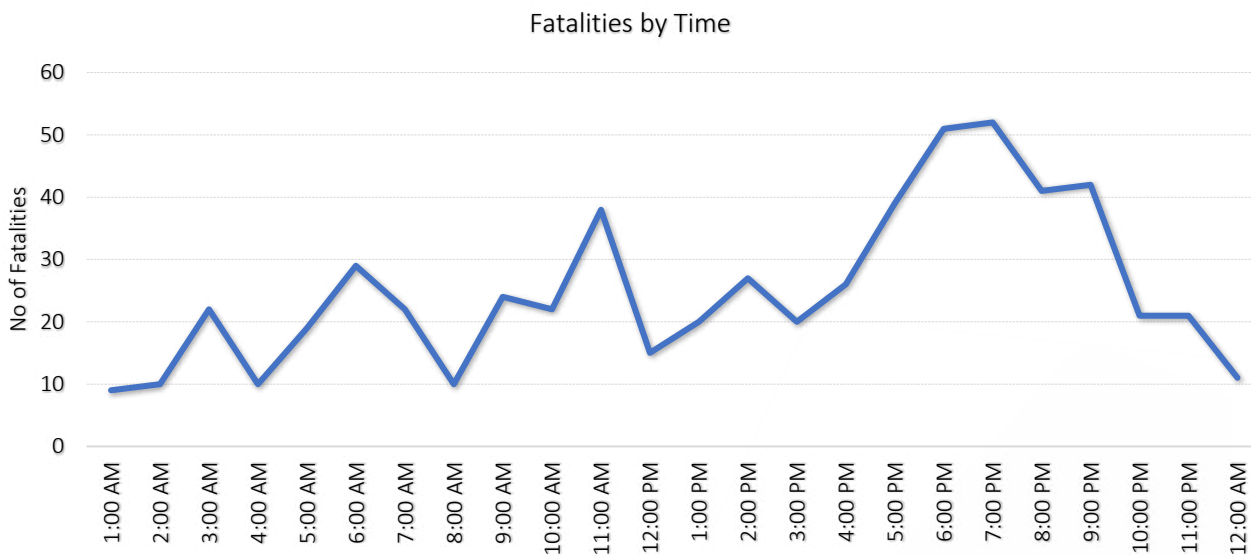
Figure 26 shows most of the accidents occur between 5.00 pm and 9.00 pm. This is occasioned by poor visibility. This suggests that road infrastructure and signage need to be enhanced to ensure improved road safety for those who drive after dusk. Most of the accidents were reported on Friday (15%), Saturday (19%), and Sunday (18%). The report recommends attention to be given to motorcyclists, who have so far been neglected

mainly in transport and planning policies. For instance: establishing measures to increase safe walking and cycling, clear traffic signs, among others.

Causes of fatalities

Hit and run remained the single largest causation factor for all fatalities in 2020, accounting for 28% of all reported fatalities along the Northern Corridor,

Figure 26: Distribution of Fatalities based on Time



Source: NTSA Apr-Dec 2020

followed by losing control and overtaking improperly, which accounted for 15% and 14% respectively. Non-compliance with traffic rules and regulations, including failing to keep near the side or to proper traffic lane, was also among the leading causes of fatalities shown in **Table 60**. Road traffic crashes lead to the death of

people and an enormous drain on a country's human capital, health, and financial resources. By analysing road safety in all context with data and in-depth information, policymakers could help potentially to shift public behaviour and attitudes, influence policy, and, therefore, contribute to saving lives.

**Table 60:** Leading Causes of Fatal Accidents in Kenya along the Northern Corridor

CAUSE OF FATALITIES	PROPORTION
Cause not traced (hit and run)	28%
Losing control	15%
Overtaking improperly	14%
Misjudging clearance	7%
Failing to keep to the near side or to the proper traffic lane	6%
Error of judgment	5%
Excessive speed	4%
Stepping, walking, or running off footpath or verge into the road	3%
Swerving	3%
Pulling out from the near side or from one traffic lane to another without due care	3%
Crossing road not masked by a stationary vehicle	2%
Turning right without due care	2%

Source: NTSA Apr-Dec 2020

8.3 Road Safety in Rwanda

Following the NCTTCA multi-sectoral black-spot mapping survey in Rwanda in 2019, it was identified that Kigali -Huye -Akanyaru (NR-1), Kigali -Musanze -Rubavu (NR-2), and Kigali - Gatuna (NR-3) have twenty-eight (28) hazardous spots. Generally, all the main roads in Rwanda are in a well-maintained condition with no signs of distressed pavement or failing road shoulders along the national truck roads. The Ministry of Infrastructure implements measures to curb the possibility of accidents through strict enforcement and general discipline among the public and specifically road users.

In 2020, 467 accidents were reported in Rwanda along the Northern Corridor, out of which 44 % were fatal and 56% were serious, as presented in **Table 59** below.

Serious injuries can be defined as an injury that causes permanent disfigurement or any permanent injury of any internal or external organ or permanent disabling of any external membrane. Compared to the previous year, the number of road accidents has decreased significantly, with 2020 recording a decrease of approximately 20%. This positive performance indicates that initiatives to reduce road fatalities are yielding good results. Rwanda's ongoing road safety initiatives include road rehabilitation and the widening of Kicukiro-Nyanza-Mugendo (12.23Km) to four lanes from two lanes under the Bugesera International Expressway project, rehabilitation, and widening of Rubengera-Rambura road (15.15Km), among others.

Major causes of accidents were attributed to over speeding, wrong manoeuvres, and reckless driving. The report proposes strict law enforcement against driving over the speed limits, drunk driving and non-compliance with traffic rules to enhance road safety in Rwanda.

Most fatalities were on Ruhwa-Bugarama-Rusizi-Buhinga-Karongi-Rubavu (NR11), accounting for 21% of total accidents along the corridor Rwanda, followed closely by Kigali-Huye -Akanyaru section with 19%. Accidents on Kigali-Huye -Akanyaru section occur between 12 Hr-23 Hrs partly due to poor visibility. Similarly, accidents on the Ruhwa- Rubavu route occur at dawn and dusk.

Table 61: Number of Accidents Distributed by Road Section (Apr-Dec 2020)

Name of Road	No. of Accidents 2019			No. of Accidents 2020		
	Fatal	Serious	Total	Fatal	Serious	Total
Kigali-Huye -Akanyaru (NR1)	54	83	137	42	46	88
Kigali -Musanze -Rubavu (NR2)	51	44	95	35	45	80
Kigali -Gatuna (NR3)	6	12	18	1	1	2
Kigali-Kayonza (NR4)	51	79	130	44	39	83
Kicukiro -Nemba (NR5)	25	32	57	11	25	36
Huye-Kitabi -Buyinga (NR10)	8	6	14	22	12	34
Ruhwa-Bugarama-Rusizi- Buyinga-Karongi -Rubavu (NR11)	20	32	52	26	72	98
Muhanga-Rubengera (NR15)	7	13	20	4	9	13
Muhanga-Ngororero-Mukamira (NR16)	11	18	29	12	9	21
Musanze -Cyanika (NR17)	8	6	14	5	3	8
Kayonza-Gabiro-Kagitumba (NR24)	14	4	18	4	0	4
GRAND TOTAL	255	329	584	206	261	467

Source: NTSA Apr-Dec 2020



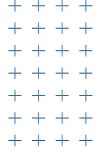




Chapter **9**

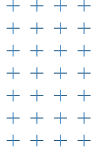
Recommendations





Recommendations

1. Revenue Authorities, the Port Authority, and the shipping lines to work on the realization of shipping pre-arrival clearance to reduce delays in cargo clearance time
2. Stakeholders consider payments of port charges for import and exports in advance to make the pre-arrival processing successful, which will ultimately help reduce cargo dwell time.
3. Revenue Authorities to procure more Regional Electronic Cargo Tracking seals to facilitate truck turnaround time
4. KRA/KPA/KRC Procure appropriate scanners at the discharge point to ensure all the containers, including stacked containers, are scanned.
5. Transporters/Private Sector should resolve concerns around non-finalized documentation by clearing agents and timely receiving cargo pick up notification which leads to delay or failure by cargo owners to pick their cargo after customs releases cargo.
6. In the wake of automation, there is a need for a review of policy and legal framework to ensure that electronic documents for cargo clearance are accepted without the need to again present hard copies, which defeat the purpose of automation.
7. Address insecurity along the Nimule -Elegu highway in Juba road to reduce the cost of doing business.



Annexes and References

1. Sustainable development goals Agenda 2030
2. World bank open data source: <https://data.worldbank.org/indicator/IT>; accessed March 2021
3. Summary table on Ship Turnaround Time

Year	Count	Mean	Min	25%	50%	75%
2016	435	72	12	52	68	89
2017	567	81	10	52	75	100
2018	541	92	3	53	79	111
2019	530	94	6	54	84	122
2020	526	94	8	53	80	114



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