Northern Corridor Quarterly Performance Dashboard

April-June

2020

MOMBASA PORT COMMUNITY CHARTER

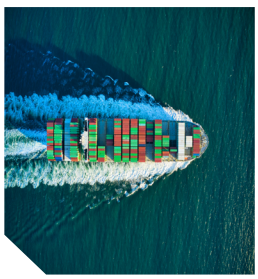
NORTHERN CORRIDOR TRANSPORT OBSERVATORY
RELIABLE PERFORMANCE DATA

Northern Corridor Transit and Transport Coordination Authority

Contents

List of Tables

List of Figures






Quarter Summary

The quarter report provides an analysis of performance indicators that are tracked by the Northern Corridor Transport Observatory and reported on quarterly basis. The indicators are informed by the Mombasa Port and Northern Corridor Community Charter that was reviewed in 2018. The Charter that aims to realize an increased efficiency in trade logistics was a culmination of extensive consultations with both private and public sector stakeholders. The consultations mainly targeted areas of upgrading and improvements in coordinating the monitoring and evaluation processes within logistics services. The analysis in this report is based on detailed data for the quarter covering the period from April to June 2020. The report also provides a comparison of performance for a similar quarter of the previous years to understand and track improvements and challenges along the corridor. The findings from quarterly reports are often utilized in setting strategic interventions and policy inferences aimed at improving the efficiency of the corridor.

Assessing vulnerability and developing resilience of the Northern Transport Corridor

- The outbreak of the COVID-19 pandemic has had a profound effect on the transport and logistics sectors. This global pandemic has exposed the vulnerability of trade facilitation of the Northern Corridor to sudden disasters. More so, the challenges experienced in addressing cross border trade at the onset of the pandemic exposed the lack of trans-boundary disaster management strategies exacerbating the impact of the pandemic on cross border trade. Arising from this observation is the need to have an effective inter-boundary mechanism that will not only respond to disasters but also put in place early warning systems, build the capacity to respond to disasters and establish multi-country mechanisms to mitigate disasters.

- Several studies showed that disasters are often sudden and are known to cause disruptions to society; resulting in socio-economic losses. These losses are pronounced in situations where vulnerabilities exist and should therefore, be mitigated through early detection and prompt interventions to minimize possible socioeconomic losses. The Northern Corridor, which is a Transport corridor transverses several countries that are exposed to different potential hazards and risks that ranges from health, environmental, geographical, as well as socio-political disturbances. Some of these hazards that have the potential to disrupt both transport and the supply chain logistics are volcanic eruptions, earthquakes, flooding, drought, landslides, amongst others. In addition to health pandemics like the current COVID-19, other hazards could occur and disrupt the transport and supply chain logistics in a negative way.

- In addition to existing global disaster mitigation interventions, the Northern corridor member States have ratified various protocols/strategic responses both at national

and international levels to enhance safe trade along the corridor. However, there is still a need for a detailed assessment of regional vulnerability and putting in place national and transboundary disaster mitigation measures. It is recommended that member States should adopt: a harmonized disaster response mechanism in safeguarding the transport corridor, share early warning systems, conduct capacity building of personnel involved in the transport logistics chain and embedding disaster response in national and regional policies that affect trade, transport and all related infrastructure.

Naivasha Inland Container Depot

The ICD at Naivasha handles both containerized and loose cargo. KRA and Customs offices at the ICD are now operational, and the depot has the capacity to hold 700 trucks at any given time. A total of 874 Twenty Feet Equivalent Units (TEUs) were delivered in May 2020, increasing to 2,507TEUs in June 2020. The cargo delivered by rail accounted for 82% of total TEUs in May, but declined to 64% in June 2020 occassioned by decrease in cargo throughput at the port of Mombasa. This indicates that the ICD is already positioning as an important transport node that connects the road and railway networks.

PHOTO: NMG

KPA, KRA and Ministry of Transport officials witness the offloading of the first cargo load at the Naivasha Inland Container Depot in 2019

Cargo is delivered to the ICD at Naivasha mainly by the Standard Gauge Railway and by road. A total of 2,245 TEUs that were hauled by train in May and June 2020 were imports compared to 70 TEUS that were for exports cargo. A total of 24 trains made calls to the ICD with import cargo while only six trains handled export cargo. The export trains operated below full capacity due to low volumes of export cargo. The start of operation of the Naivasha ICD coincided with the emergence of the COVID-19 pandemic partly accounting for the slow growth in performance.

Volume and Capacity

The aggregate throughput for the months of January to May 2020 showed a decline of 5% from 14.3 million metric tonnes in January to May 2019 (Jan-May). Imports accounted for 82% of the total throughput over the period (Jan-May 2020); suggesting that the balance of trade was unfavorable. However, there was a decline in imports as a share of throughput over the review period from 84% in January 2020 to 80% in May 2020; suggesting a contraction in import trade in the countries that uses the port of Mombasa. Exports accounted for only 13% of the total throughput for the five months, increasing from 11% in January 2020 to 13% in May 2020; an indication that imports has been hard hit by the COVID-19 pandemic as opposed to export trade.

Furthermore, there was a drop in demand for crude oil that has been attributed to the outbreak of the Coronavirus and the subsequent cut in oil production by oil-producing countries. Since May 2020 OPEC+ countries have been reducing output by over nine million barrels per day after the virus undermined the global demand for crude oil.

A larger share of imported cargo through the port of Mombasa is containerized cargo accounting for 66% of total containerized imports for the five months (Jan-May 2020). Kenya accounted for the bulk of the total throughput that stood at 64%; whereas about 36% of the total throughput was for transit market. Uganda remains the biggest transit market destination for transit cargo passing through the port of Mombasa; accounting for 3.28 million metric tonnes during the period under analysis.

Maritime Indicators

From January 2020 to May 2020, a total of 214 ships docked at the port of Mombasa. There was a notable decline in the volume of cargo delivered by the ships through the port of Mombasa with the average metric tons per ship recorded 61,598mts in January 2020 declining to 44,278mts in May 2020. These changes may be attributed to a declining global demand for trade which is predicted to dwindle further in tandem with shrinking trade volumes occasioned by the reducing economic activities in all countries during the COVID-19 pandemic. Average waiting time varied from 36 hours in April 2020 to 16 hours in June 2020. Equally, average ship turnaround time improved from 111 hours to 75 hours. The positive performance could be attributed to the various initiatives implemented at the Port, including modernization of equipment and expansion of berth that has led to the improvement of the target.

Port Indicators

The Average Container Dwell Time at the Port has seen a steady improvement from 123 hours in April 2020 to 96 hours in June 2020. However, a comparison with the same quarter in 2019 showed an increase in the dwell time for the quarter of 2020. This was partly due to the measures put in place to curb the COVID-19 pandemic. Available data further showed that "after release time" worsened for the quarter of 2020 when compared to the same quarter of 2019. This could be partly attributed to delays encountered by transporters to meet the COVID-19 health protocols. Requirements for social distancing and enhanced sanitation has undoubtedly resulted in slowing traffic at cargo collection points, as transport providers struggle to comply with the new regulations. Furthermore, transporters were expected to undergo COVID-19 tests and access the port on condition they are COVID-19 free.

Transit Time

Transit time on most of the routes along the Northern Corridor worsened partly due to the border crossing challenges attributable to driver testing requirement for the COVID-19. In addition, COVID-19 containment measures including lockdowns, curfews, and social distancing measures slowed down processes contributing to high transit time. Drivers were experiencing a long stay at border points as they awaited clearance, with long queues of trucks reported at the different borders of the Northern Corridor.

1. Assessing Vulnerability and Developing Resilience of the Northern Corridor

1.1 Background

Transport logistics and supply chains all over the world are reeling from the unprecedented effects of the COVID-19 pandemic. What began as a health concern in Wuhan, China, rapidly evolved into a global health pandemic that resulted in global shut downs of transport and trade logistics. Countries imposed travel restrictions and lockdowns as measures to help stem the spread of the COVID-19 virus. Transport and supply chains bore the brunt of these measures because of two major reasons:

- The restrictions in the movement of people disrupted the economic ecosystem that generates trade and;
- The travel restrictions slowed the movement of goods along the supply chain, notwithstanding the declaration of cargo as essential services.

The World Health Organization (WHO) issued health protocols to guide the response by Countries in containing the spread of the COVID-19 virus. These protocols oscillated around enhanced hygiene practices and social distancing, which also involved testing and isolation. In response, the Northern Corridor Member States put the measures in place that included; curfews, travel restrictions, testing and quarantines, enhanced hygiene practices and social distancing. The measures immediately led to the slowing down of transport and cargo movements, including cross border movements.

The slow movement of cargo across borders brought to the fore the fact that Northern Corridor Member States did not have put in place a harmonized and elaborate protocol to respond to health pandemics and emergencies that the COVID-19 presented. Trade in the region suffered from the different approaches in handling COVID-19 containment measures along the transport corridors. The Northern Corridor Member States have been working on developing a joint approach to ensure smooth cross border trade. This scenario raises the following critical policy questions:

(i) Are the existing trade protocols in the region adequately responsive to disruptions and emergencies by the provision of a harmonized safe approach by all member States?

(ii) Do member States have a detailed vulnerability assessment of the freight and logistics chain to guide the development of safe response measures in the event of disruptions on one part of or the entire region?

1.2 Vulnerability of the Northern Corridor

The Northern Corridor covers approximately 12,707 Km in length of road and 8,206 kilometres of metre gauge railway network that runs from the coastal city of Mombasa to the east part of the Democratic Republic of Congo (DRC). The corridor serves the six member States of Burundi, DRC, Kenya, Rwanda, South Sudan and Uganda. It, therefore, transcends diverse geographical, climatic, socio-economic and political zones that hold different factors that impinge on the vulnerability of the transport corridor.

These factors impact on the operations of the corridor in numerous ways that make it vulnerable to sudden and unfavorable occurrences in a similar manner to the COVID-19. Extreme weather, for instance, can potentially lead to flooding and landslides that can interrupt transport services. Quite often, this will also result in damage to infrastructure, accidents, loss of freight and injuries to road users. Also, part of the corridor runs through the Great Rift Valley which has at times reported geological activities that at time interrupt traffic movement albeit at minimal scale on the Mai-Mahiu Narok stretch. With the launch of the Naivasha Inland Container Depot, this route is expected to gain significance on the operations of the Northern Corridor.

Besides, the increased urbanization along the transport corridor route lends it to the socio-economic dynamics of urban areas that expose freight cargo to frequent gridlocks, safety concerns on road safety and over certain goods (e.g. weapons, hazardous materials). With increasing population and high rate of urbanization, national spatial plans and urban planning might have to be reconsidered with a long-term view of securing the efficacy of the transport corridor.

The region has had a relatively long period of political stability, except for pockets of intermittent political upheavals in few member States and suppressed terrorism activities. However, these occurrences are potentiality disruptive to transport logistics on rail, road, inland

waterways and air transport. Besides posing logistical and security challenges, political instability and security concerns could dampen investor confidence, thus slowing trade and demand for cargo in the event they occur.

There is increasing inter-connectedness of the different transport modes along the corridor, especially with the increased pace of development of railway and road infrastructure. This is creating a dependency between the different modes that will rely on the simultaneous efficiency of each. For example, cargo delivered by railway at the ICD (Inland Container Depot) is expected to be evacuated on time by road freight. Therefore, any disruption in either of the modes creates a domino effect that spreads through the transport logistic chain if the system does not have a fallback response. According to Enei, R. et al. (2011) intermodal transport is heavily impacted on during extremes due to inflexibility of the transport system.

1.3 Hazard risk mapping in the Northern Corridor Member States

The Global Facility for Disaster Reduction and Recovery [1]identifies a number of hazard risks that are faced by Countries that host the Northern Transport Corridor. These hazards that have the potential to disrupt transport and supply chain logistics are volcanic eruptions; earthquakes, flooding, drought and landslides. As shown below these hazards manifest in different countries. An occurrence of any of these hazards in one of the countries would potentially have effects in all the Countries that rely on the corridor.

As shown below, each of the member States has put in place varied initiatives aimed at responding to the possible occurrence of these hazards.

It is, therefore, without doubt, that in addition to health pandemics like the current COVID-19, numerous other disruptive hazards could occur and potentially affect transport and logistics. Whereas countries have put in place national mechanisms, the Northern Corridor by its transboundary nature calls for common vulnerability and disaster response mechanism.

Hazard Risk	Burundi	DR Congo	Kenya	Uganda	Rwanda	South Sudan
Volcanic eruptions		✓		✓	✓	✓
Earthquake	✓	✓	✓	✓	✓	✓
Flooding	✓	✓	✓	✓	✓	✓
Drought	✓	✓	✓	✓	✓	✓
Water Scarcity	✓					
Landslides	✓			✓	✓	✓
Country Initiatives	Institutional and legislative capacity The National Platform for Risk Prevention and Disaster Management A national DRM policy	Disaster risk reduction policy	Guidelines for Disaster Risk Management (DRM) and climate change adaptation National Policy on Disaster Management National Climate Change Action Plan for 2013–2017	Disaster risk management (DRM) and climate resilience	Established Ministry of Disaster Management and Refugee Affairs in 2010 Formulated a National Disaster Management Policy of 2012 Enacting policy to address climate change	Formulated a Strategic Plan on Disaster Management for the period 2018-2020 Strengthening of the capacity of the Ministry and the Relief and Rehabilitation Commission (RRC) and the State Offices

Source:Global Facility for Disaster Reduction and Recovery, https://www.gfdrr.org/en and South Sudan Disaster Management Strategic Plan 2018-2020.

1 *This can accessed at https://www.gfdrr.org/en*

1.4 Minimizing vulnerability of the Transport Corridor

Safran, 2005 identified early warning and preparedness as one of the critical steps towards disaster management. Hazard evaluations and mapping and environmental and vulnerability impact assessment along the Transport Corridor is the first and most crucial step in designing appropriate responses to mitigating disasters that affect transport logistics. Cognizant of this, the Africa Regional Strategy for Disaster Risk Reduction (2006 - 2015) and Declaration of the 2nd African Ministerial Conference on Disaster Risk Reduction 2010 call for improved disaster risk identification, including hazards and sector-wide vulnerability analysis, monitoring and early warning systems. These documents advocate for identification of priority sectors and development of integrated programs for greater results. The sectors include health, especially focusing on safer health facilities, environment as a priority along with infrastructure and governance.

Early warning and preparedness mechanisms developed by member States will help in putting measures to mitigate the impact of disasters on the Transport Corridors. These may include; retrofitting of critical infrastructure and facilities, relocation of affected and vulnerable groups, carry out environmental and vulnerability impact assessments, hazards evaluations and mapping and strengthening early warning systems. To ensure that these measures are effectively implemented, there is need to carry out capacity enhancement for disaster mitigation and recovery. The capacity development would include training and personnel development; exercising emergency drills, carrying out public awareness and education; and environmental management.

1.5 Existing protocols for safe trade in the Northern Corridor Member States

Globally, some measures have been put in place that either directly or indirectly help to ensure that transport systems operate safely and have protocols that seek to avert disasters or ensure an effective response to occurrences.

The SAFE Framework of Standards to Secure and Facilitate Global Trade that was adopted by the World Customs Organization Council in 2005 vouches for Crisis Management and Incident Recovery. The framework notes that to minimize the impact of a disaster or terrorist incident, crisis management and recovery procedures should include advance planning and establishment of processes to operate in such extraordinary circumstances. This element requires that authorized economic operators and Customs develop and document, in conjunction with the appropriate authorities contingency plans for emergency security situations and for disaster or terrorist incident recovery.[1]

The East Africa Community (EAC) regional Authorized Economic Operator (AEO) program was established by Commissioners of Customs of the East African (EAC) countries of Burundi, Kenya, Rwanda, Tanzania and Uganda in 2006 after the adoption of the World Customs Organization (WCO) SAFE Framework of Standards by the WCO Council in 2005. The EAC notes that the programme aims to enhance Customs efficiency in the face of increasing volumes of trade and the increasing vulnerability of the international trade supply chain to security threats as well as the use of the international trade supply chain as a conduit for high security risk materials.[2]

The Africa Regional Strategy for Disaster Risk Reduction (2006 - 2015) and Declaration of the 2nd African Ministerial Conference on Disaster Risk Reduction 2010 called upon member States to undertake vulnerability assessments of schools, health facilities and urban centres, and develop and implement plans to ensure their safety and resilience; The Strategy's objectives were to:

(i) increase political commitment to disaster risk reduction;
(ii) improve the identification and assessment of disaster risks;
(iii) enhance knowledge management for disaster risk reduction;
(iv) raise public awareness of disaster risk reduction;
(v) improve governance of disaster risk reduction institutions; and
(vi) Integrate disaster risk reduction into emergency response management.

2 *Safe Framework of Standards 2018 EditionTrade page 67 of 81*

3 *EAC https://www.eac.int/customs/eacaeo*

The Strategy includes broad directions to achieve these objectives; improved disaster risk identification, including hazards and sector-wide vulnerability analysis, monitoring and early warning systems.

The Sendai Framework for Disaster Risk Reduction 2015-2030 is a global agreement to reduce and prevent disaster risks across the globe. It aims to strengthen social and economic resilience to ease the negative effects of climate change, man-made disasters, and natural hazards. The framework proposes for International, regional, sub-regional and transboundary cooperation in disaster risk reduction and particularly for developing countries that need special attention.

1.6 Policy conclusions

From the foregoing, it is noteworthy that the occurrence of COVID-19 health pandemic has exposed the trade logistics chain as more vulnerable. The slow movement of cargo, particularly across borders, has led to high cost of doing business. The sector needs to be prepared to manage any emerging pandemic as well as a mutual memorandum of understanding among the member States to guide the development of safe response measures in the event of disruptions on one part of or the entire region.

The diversity of the region ranging from diverse geographical, climatic, socio-economic and political zones among the member States, are some of the factors that make the corridor vulnerable and susceptible to different disasters. Some hazard risks that are faced by Countries that host the Northern Corridor have been identified. In addition to health pandemics like the current COVID-19, the hazards, among others, could occur and disrupt the transport and supply chain logistics in various negative ways.

On top of the existing global disaster mitigation interventions available, member States have ratified various protocols/ strategic responses both at national and international levels to enhance safe trade along the corridor. However, there is still need for a detailed assessment of regional vulnerability and putting in place country-specific and transboundary disaster mitigation measures.

1.7 Policy recommendations

Northern Corridor Member States need to develop policies geared towards addressing the hazards that may occur and disrupt transport and supply chain logistics. Policy recommendations towards developing resilience of the Northern Transport Corridor to respond to emerging issues are as follows:

(i) Disaster Vulnerability assessment is an important step in developing a robust regional disaster response mechanism with strong institutional frameworks, adequate resources and multi-stakeholder participation.

(ii) A regional approach will ensure that transboundary logistics system is prepared to respond to unforeseen occurrences that disrupt the transport sector in one or more of the countries through which the Northern Corridor transverses.

(iii) There is need to ensure that risk factors and disaster risk reduction measures are integrated into both national and regional policies, plans and programmes that affect transport and logistics in the region.

(iv) Regional and international cooperation is necessary for assessing, monitoring and responding to transboundary hazards. Therefore, there is a need to develop multilateral protocols to ensure harmonized responses to disaster management.

(v) The protocols developed will ensure that member States can organize emergency responses for the restoration of public transport routes and processing during and after major disaster occurrences. The responses may include creation of alternative access routes and service channels during emergencies, providing early warning, weather forecasting and automation of services.


MAERSK
COSCO
MAERSK

2. Naivasha Inland Container Depot

2.1 Introduction

The launch of the Naivasha Inland Container in December 2019 has been heralded as a key strategy towards enhancing the throughput at the port of Mombasa, decongestion of the port, fast clearance of cargo and improved container handling. The Naivasha ICD is managed by the Kenya Ports Authority in addition to the Nairobi, Kisumu and Eldoret ICDs; which are all part of the main transport nodes on the Northern Corridor route in Kenya. The ICDs were established to realize maximum benefits of containerization of cargo. The Naivasha ICD serves as "Dry Port" and is linked directly linked to the Container Terminal at the port of Mombasa by railway.

The Naivasha ICD is located 572 Km to the west of Mombasa and 120 km from Nairobi on the Mombasa- Nairobi- Naivasha Standard Gauge Railway (SGR) route. The ICD is also linked to the Nairobi-Narok highway that connects to Kisumu and also to the Isebania Board point. The 45,000-square-meter Naivasha Inland Container Depot (ICD) can handle two million tonnes of cargo annually. The ICD is expected to mainly handle cargo destined to Uganda, Rwanda, South Sudan, Ethiopia, Burundi and the Democratic Republic of Congo. Transit time for the train from Mombasa to Naivasha is about 10 hours.The use of Naivasha ICD is expected to reduce the number of trucks on the road and decongest the Nairobi ICD.

Operations at the Naivasha ICD

The KRA and Customs offices at the Naivasha Inland Container Depot (ICD) are now operational, and the depot has the capacity to hold 700 trucks at any given time. The Naivasha ICD includes a one-stop centre for ease of operations and efficient service delivery. The port houses all the Government agencies involved in handling of cargo namely Kenya Railways, Kenya Ports Authority, Kenya Revenue Authority, Kenya Bureau of Standards, Port Health (Public Health) and Revenue Authority officers from member States of Uganda, Rwanda and Tanzania.

Due to the COVID-19 pandemic, truck drivers entering ICD Naivasha are required to have COVID-19 free certificates in order to ensure that cargo is exited through the borders efficiently while containing the spread of the disease in the region.

Services offered at Naivasha ICD include; handling of both containerized and loose cargo, stripping and stuffing of containers, consolidation or storage of full/loose export cargo, storage and handling of empty containers, hire of labour and equipment, weighing of containers, cargo documentation finalized at Naivasha ICD, and leasing of yard slots to shipping lines and other interested parties for storage of empty containers.

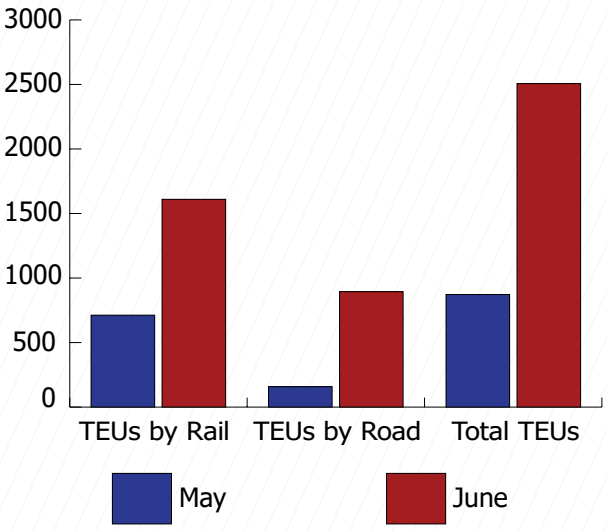
Implication of increased use of ICDs on corridor efficiency

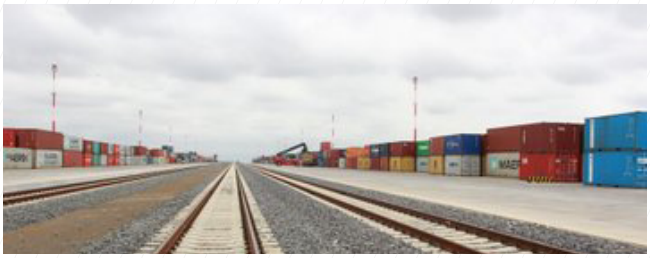
Increased use of ICDs is expected to lead to possible additional transport logistical operations, especially where the use of ICDs is made a mandatory passage. Some of these may lead to loading of costs in addition to the freight charges. These include handling fees charged by the ICD for offloading the main haul truck and reloading the goods on the delivery truck; the cost of the final leg of the transport to destination and storage costs.

2.2 Performance of Naivasha Inland Container Depot

Figure 1 below shows data on cargo delivered to the Naivasha ICD in the months of May and June 2020. Cargo is delivered to the ICD mainly by the Standard Gauge Railway and also by road. A total of 874 Twenty Feet Equivalent Units (TEUs) were delivered in May 2020, increasing to 2,507 TEUs in June 2020. The cargo delivered by rail accounted for 82% of total TEUs in May but declined to 64% in June. This indicates that the ICD is already positioning as an important transport node that connects the road and railway networks.

Figure 1: Cargo delivered to the ICD Naivasha in TEUs





Import cargo accounted for the largest share of cargo handle at the ICD for the two months. A total of 2,245 TEUs that were delivered in May-June 2020 by train were import compared to 70 TEUs that were for export cargo. A total of 24 trains made calls to the ICD with import cargo, while only six trains handle export cargo. The export trains operated below full capacity due to low volumes of export cargo. The start of operation of the Naivasha ICD coincided with the emergence of the COVID-19 pandemic partly accounting for the slow growth in performance.

To spur the usage of the Naivasha ICD, the Kenya Railways introduced a stimulus tariff for SGR freight christened Madaraka Express Freight Service from Mombasa to Naivasha. The tariff would last for 90 days from the month of June 2020. The tariff reduced from $600 to $480 for a 20-foot container and from $850 to $680 for a 40-foot container.

Table 1: Traffic at Naivasha ICD and number of trains

Table 1.4 Traffic as at 30th June 2020 0700hrs

TRAFFIC	IMPORTS (TEUs)	No. Trains (Import)	EXPORTS	EMPTIES (TEUS)	*No. Trains (Exports)	TOTAL (TEUS)
May-20	686	9	28	0	2	714
Jun-20	1,559	15	42	10	4	1,611
Total	2,245	24	70	10	6	2,325

** Train for exports, not full capacity.*

Table 2: Deliveries by Truck

Table 1.5 Deliveries by truck as at 30th June 2020 0700hrs

Deliveries by Truck				
	20	40	Total	TEUs
May-20	156	2	158	160
Jun-20	516	190	706	896
Total	**672**	**192**	**864**	**1,056**

3. Volume and Capacity

The discussion below presents the performance of the port of Mombasa in terms of volume and capacity of cargo handled at the port and along the Northern Corridor.

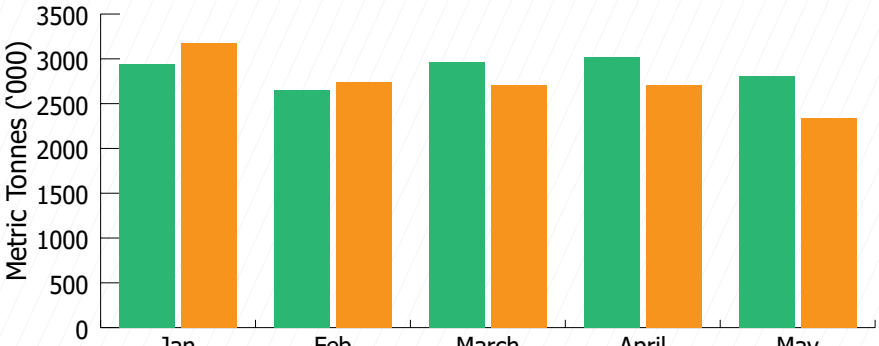
3.1 Cargo Throughput

Cargo throughput measures the total volume of cargo discharged and loaded at the port. It includes all imports, exports, transhipments and restows.

Figure 2 below illustrates the volume of cargo throughput at the port of Mombasa for the months of January to May 2020 and a comparison with the same period in 2019. The aggregate throughput for the period (Jan-May) shows a decline of 5% in 2020 from 14.3 million metric tonnes in Jan-May in 2019. Data shows that cargo throughput in the month of January 2020 was high at 3.2 million metric tonnes, which surpassed the performance for January 2019. However, cargo throughput took a nosedive from the month of February 2020 to May 2020 to record a low of 2.3 million metric tonnes in May 2020. This can be attributed partly to the outbreak of COVID-19 pandemic that has impacted on the global logistics supply chain.

Figure 2: Total Cargo Throughput in Metric Tonnes (Jan-May 2020)

Source: KPA data Jan-May 2019/2020



	Jan	Feb	March	April	May
2019	2,935,528	2,652,283	2,957,691	3,015,923	2,808,806
2020	3,169,736	2,734,954	2,707,794	2,703,973	2,339,577

3.1.1 Throughput by cargo type

Cargo throughput gives an indication of trade in the region. Table 3 presents throughput per type of cargo at the port of Mombasa for the months Jan-May 2020, where imports accounted for 82% of the total throughput over the review period suggesting unfavorable trade balance. It is also observed that there was a decline in imports as a share of throughput over the review period from 84% in January 2020 to 80% in May 2020. This is an indication of declining import trade in the countries that use the port of Mombasa. Conversely, though exports accounted for only 13% of total throughput for the five months, the share of exports to total throughput increased from 11% in January 2020 to 13% in May 2020. The analysis indicates that import trade has been hard hit by the COVID-19 pandemic than export trade.

Table 3: Cargo throughput performance at the port of Mombasa

Source: KPA data Jan-May 2020

Cargo Type	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Total
Imports	2,648,715	2,185,870	2,163,026	2,266,505	1,859,677	11,123,793
Exports	343,083	383,745	395,667	298,285	313,371	1,734,151
Transshipment	169,373	160,131	140,819	129,470	152,779	752,572
Restows	8,564	5,208	8,282	9,712	13,749	45,515
Total Throughput	**3,169,735**	**2,734,954**	**2,707,794**	**2,703,972**	**2,339,576**	**13,656,031**

3.1.2 Cargo throughput profile at the port of Mombasa

General cargos are goods that must be loaded individually, and are neither intermodal containers nor bulk as in the case of oil or grain. These goods may be transported in bags, boxes, crates, drums, or barrels. Bulk cargo is commodity cargo that is transported unpackaged in large quantities such as iron ore, coal, grain), together with ships carrying steel products (coils, plates and rods), lumber or log and other commodities classified as the minor bulks. A tanker is a ship designed to transport or store liquids or gases in bulk. Major types of tankship include the oil tanker, the chemical tanker, and gas carrier. Tankers also carry commodities such as vegetable oils, molasses and wine. Total liquid bulk includes petroleum and oil.

Table 4 below presents the cargo throughput profile at the port of Mombasa for the period covering January to May 2020. Analysis reveals that most cargo is Dry General which accounted for 44% of total throughput. Dry bulk accounted for 26%, and total liquid bulk accounted for 24%. Total liquid bulk shows a significant decline in the review period from 816,751 MT in January 2020 to 375,669 MT in May 2020. This was occasioned by a dip in demand for crude oil attributed to the Coronavirus outbreak and the subsequent cut in oil production by oil-producing countries.

OPEC+ countries have been reducing output by over nine million barrels per day due to the COVID 19 pandemic that has undermined global demand for crude oil.

Table 4: Cargo throughput profile at the port of Mombasa

Source: KPA data Jan-May 2020

MT	JAN	FEB	MAR	APR	MAY	Total	Proportion
DRY GENERAL	1,308,848	1,218,507	1,202,871	1,144,450	1,145,300	6,019,976	44.1%
DRY BULK	866,199	647,734	728,529	663,030	652,079	3,557,571	26.1%
TOTAL LIQUID BULK	816,751	703,374	627,293	757,310	375,669	3,280,397	24.0%
T/MENT	169,373	160,131	140,819	129,470	152,779	752,572	5.5%
RESTOWS	8,564	5,208	8,282	9,712	13,749	45,515	0.3%
TOTAL	**3,169,735**	**2,734,954**	**2,707,794**	**2,703,972**	**2,339,576**	**13,656,031**	**100%**

3.1.3 Containerized Cargo Throughput

Containerized cargo is a method of cargo handling where shipping containers with standardized dimension of twenty feet equivalent (TEU) are used for intermodal freight transport. Table 5 below presents container throughput in TEUs at the port of Mombasa for the period January 2020 to May 2020. Total container cargo for the five months ending May 2020 was recorded as 544,066 TEUs. 64% of the containers handled were full, whereas the remaining 36% accounted for the empty containers. It can also be noted that, over the same period, there was a decline in imports from 60,118 TEUs in January 2020 to 42,190 TEUs in May 2020. On the other hand, full export containers increased positively from 11,718 TEUS to 12,587 TEUs over the same period.

A larger share of imported cargo through the port of Mombasa is containerized cargo accounting for 66% of total containerized imports, as illustrated in table 6 below. The total containerized import cargo for the five months ending May 2020 was approximately 3.76 million MT, and non-containerized was about 7.37 million MT.

Table 5: Container throughput in TEUs at the port of Mombasa

Source: KPA data Jan-May 2020

		JAN	FEB	MAR	APR	MAY	Total
IMPORTS	Full	59,116	46,601	42,569	46,602	41,060	235,948
	Empty	1,002	1,207	1,503	286	1,130	5,128
	Total	60,118	47,808	44,072	46,888	42,190	241,076
EXPORTS	Full	11,718	13,203	15,270	12,132	12,587	64,910
	Empty	43,791	34,753	27,314	33,495	30,598	169,951
	Total	55,509	47,956	42,584	45,627	43,185	234,861
T/MENT	Full	10,518	9,647	7,538	7,416	9,004	44,123
	Empty	2,514	3,213	7,933	4,088	3,126	20,874
	Total	13,032	12,860	15,471	11,504	12,130	64,997
RESTOWS	Full	552	330	516	604	804	2,806
	Empty	2	2	-	-	322	326
	Total	554	332	516	604	1,126	3,132
TOTAL	**Full**	**81,904**	**69,781**	**65,893**	**66,754**	**63,455**	**347,787**
	Empty	**47,309**	**39,175**	**36,750**	**37,869**	**35,176**	**196,279**
	Total	**129,213**	**108,956**	**102,643**	**104,623**	**98,631**	**544,066**

Table 6: Containerized vs Non-containerized for all imports in Metric tons

Source: KPA data Jan-May 2020

IMPORTS	JAN	FEB	MAR	APR	MAY	Total	Proportion
Non- Containerized	919,137	737,749	686,997	750,081	663,891	3,757,855	34%
Containerized	1,729,579	1,448,121	1,476,029	1,516,424	1,195,786	7,365,938	66%
TOTAL	2,648,715	2,185,870	2,163,026	2,266,505	1,859,677	11,123,794	100%

3.1.4 Throughput Market Share per country

Table 7 below presents cargo throughput per market share for the period from January to May 2020 in metric tonnes. Kenya accounted for the bulk of total throughput at 64% whereas about 36% of total throughput was for transit market. Uganda remains the highest destination of transit market through the port of Mombasa, accounting for 3.28 million metric tonnes during the review period. Other transit destinations were South Sudan (3%), DRC (2%), Rwanda (0.95%), Tanzania (0.7%) and Burundi (0.003%) of the total throughput.

Table 7: Throughput as a share of market per destination Jan- May 2020 in MT

Source: KPA data Jan-May 2020

MT	JAN	FEB	MAR	APR	MAY	TOTAL	Jan-May 2020
Kenya	2,078,568	1,734,762	1,760,746	1,733,989	1,407,971	8,716,036	63.830%
Uganda	726,931	657,889	634,940	639,578	617,148	3,276,486	23.990%
South Sudan	89,478	75,946	78,400	82,846	81,809	408,479	2.990%
DRC	65,125	53,910	46,580	60,875	46,851	273,341	2.000%
Rwanda	20,334	32,713	23,633	35,195	17,839	129,714	0.950%
Tanzania	19,785	19,213	22,399	21,674	14,528	97,599	0.720%
Others	90	110	225	312	615	1,352	0.010%
Burundi	52	280	53	33	36	454	0.003%

4. Maritime Indicators

4.1 Introduction

Discussions under this subsection focuses on the performance of container vessel movement from the arrival of the ship at the outer port waiting area, the beginning of its entrance into the port, the arrival at berth, the departure from berth, and the release of the ship at the port of Mombasa, for the quarter ending June 2020. Specific indicators include ships turnaround time and vessel waiting time before berthing at the port of Mombasa. A comparison on some indicators is made with the same quarter for the previous year.

4.2 Number of ships calling at the port of Mombasa

For the period January 2020 to May 2020, a total of 214 ships docked at the port of Mombasa. The analysis shows that the number of ships calling at the port of Mombasa was steady, as shown in Table 8 below. However, there was a notable decline in the volume of cargo delivered by the ships through the port of Mombasa during the same period. The average metric tonne per ship ranged from 61,598mts in January 2020 declining to 44,278mts in May 2020. This is attributed to a declining global demand for trading commodities. This is predicted to dwindle further in the short term in tandem with shrinking trade volumes occasioned by declining economic activity in all countries during and after the immediate post-COVID-19 pandemic period.

Table 8: Number of ships docked versus TEUS received at Mombasa Port

Source: KPA data Jan-May 2020

Month 2020	Number of Ships	TEUs (FULL)			Total TEUs	Total MT	Average MT per Ship	Average Import TEU/ Ship
		Imports	Transhipment	Restows				
Jan	43	60,118	13,032	554	**73,704**	2,648,715	61,598	1,714
Feb	43	47,808	12,860	332	**61,000**	2,185,870	50,834	1,419
Mar	42	44,072	15,471	516	**60,059**	2,163,026	51,501	1,430
Apr	44	46,888	11,504	604	**58,996**	2,266,505	51,511	1,341
May	42	42,190	12,130	1,126	**55,446**	1,859,677	44,278	1,320

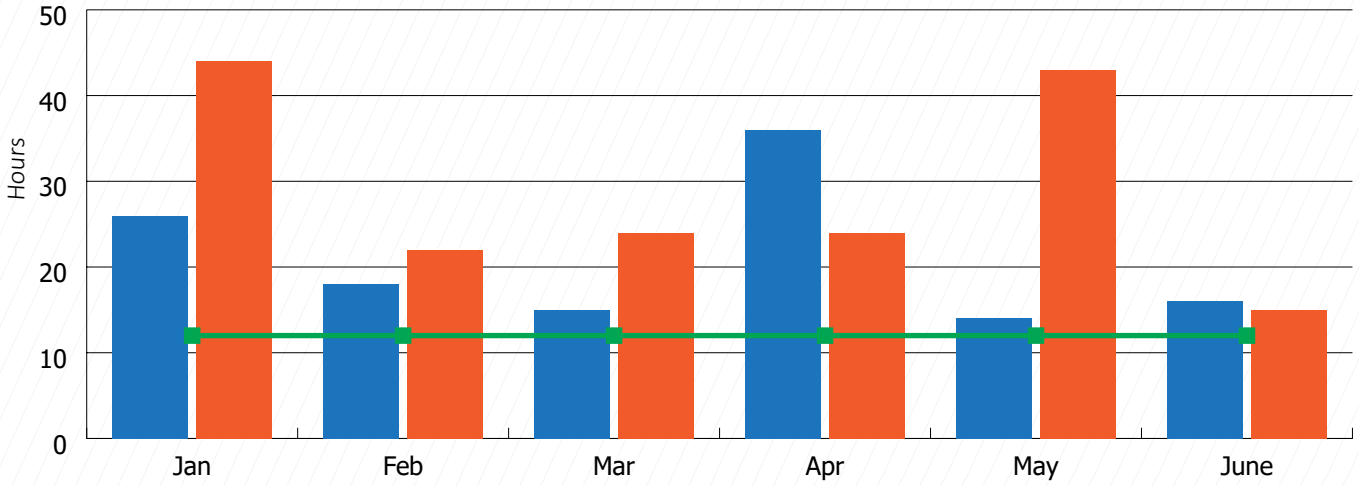
4.3 Vessel Waiting Time before berth (hours)

Vessel Waiting Time before berth is measured from the time the vessel arrives at the fairway buoy to the time at its first berth, including waiting at their convenience.

Figure 3 below illustrates the time taken by the vessel at the fairway buoy to the time at its first berth for the quarter ending June 2020. The set target is 12 hours by December 2020 as per the Mombasa port & Northern Corridor Community Charter. During the review quarter, average waiting time varied from 36 hours in April 2020 to 16 hours in June 2020. The positive performance could be attributed to the stringent pre-planning whereby the terminal knows in advance the vessels that will arrive and as such plan the berthing of ships accordingly.

Figure 3: Average Vessel Waiting Time before Berth in hours at the port of Mombasa

Source: KPA data Jan-Jun 2019 and 2020



	Jan	Feb	Mar	Apr	May	June
2019	44	22	24	24	43	15
2020	26	18	15	36	14	16
Target	12	12	12	12	12	12

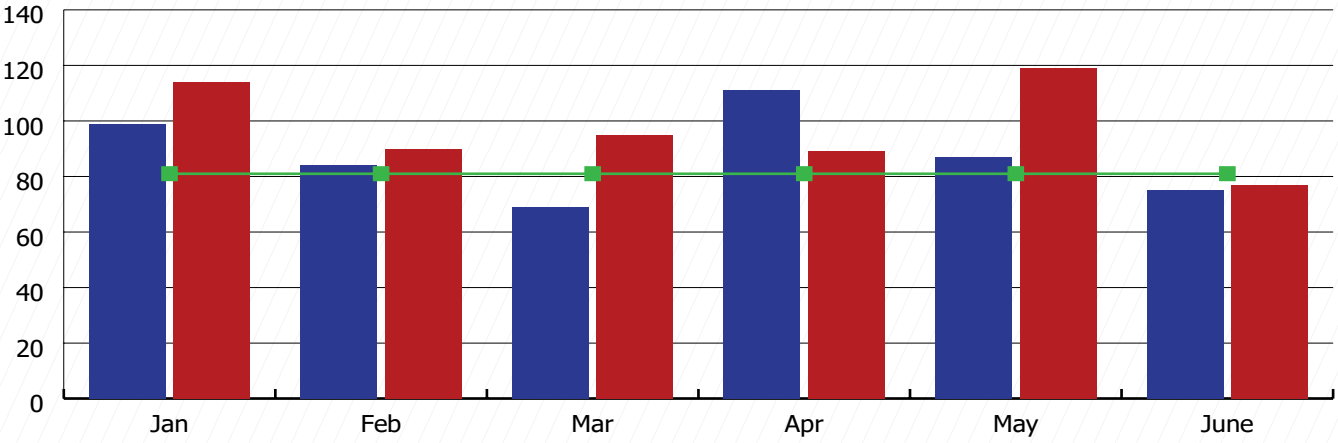
4.4 Ship turnaround time at the port of Mombasa

Ship Turnaround Time 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

Figure 4 presents the time the ship took from arrival at the Port area (Fairway Buoy) to the time it left the port area demarcated by the fairway buoy. The set target is 81 hours by December 2020 as per the Mombasa Port & Northern Corridor Community Charter. During the review quarter (Apr-Jun 2020) average ship turnaround time improved from 111 hours to 75 hours. The positive performance could be attributed to the initiatives that have been implemented, including modernization of equipment and expansion of berth that has led to the improvement of this target.

Figure 4: Average Ship Turnaround Time at the port of Mombasa in hours

Source: KPA data Jan-Jun 2019 and 2020



2019	114	90	95	89	119	77
2020	99	84	69	111	87	75
Target	81	81	81	81	81	81

5. Port Indicators

5.1 Introduction

This section focuses on performance at the port in terms of time and delays specifically container dwell time, One Stop Centre Clearance Time, Time Taken at the Document Processing Centre (DPC) and Delay after customs release at the port of Mombasa for the quarter ending June 2020.

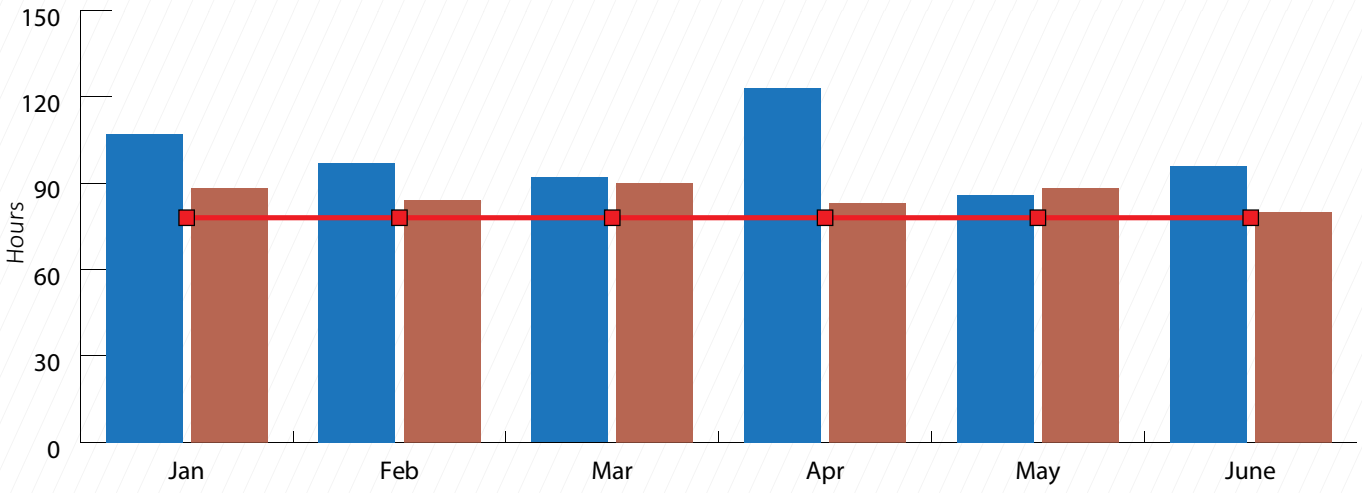
5.2 Containerized Cargo Dwell time at the port of Mombasa

Containerized cargo Dwell Time is the measure of time that elapses from the time a container is offloaded at the port to the time it leaves the port premises.

The target for cargo dwell time for import containers at the port of Mombasa is set at 78 hours by December 2020 as per the Mombasa Port and Northern Corridor Community Charter; 60 hours by December 2022 and 48 hours by December 2024. Figure 5 presents the quarterly analysis of average import containerized cargo dwell time at the port of Mombasa. The Average Container Dwell Time at the Port has seen a steady improvement from 123 hours in April 2020 to 96 hours in June 2020. When compared to the same quarter in 2019, there was an increase in dwell time for the quarter of 2020. This is partly due to the measures put in place to curb the COVID-19 pandemic. These measures have had effects on the movement of cargo within the Member States and across their borders. Further, it is noteworthy that expansion in port infrastructure, automation of services and use of SGR are some of the measures that have led to an improvement in containerized cargo dwell time.

Figure 5: Average import containerized cargo dwell time

Source: KPA Jan-Jun 2019/2020



	Jan	Feb	Mar	Apr	May	June
2019	88	84	90	83	88	80
2020	107	97	92	123	86	96
Target	78	78	78	78	78	78

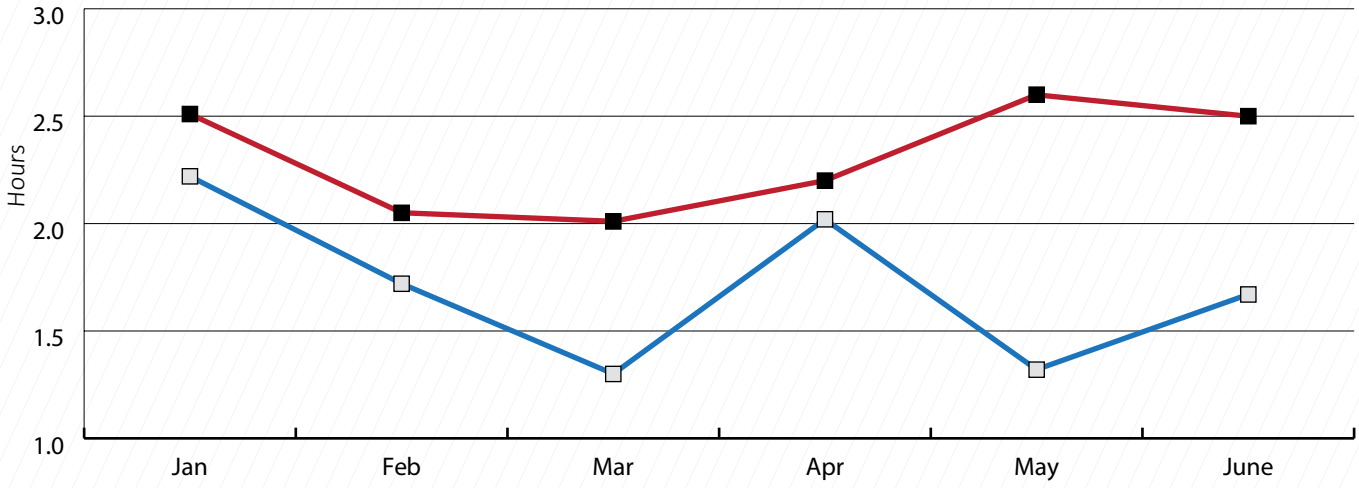
5.3 Time for customs clearance at the Document Processing Centre (DPC)

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.

DPC time 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. Figure 6 presents the performance of time taken for customs clearance at the DPC for the quarter ending June 2020 and the previous year same quarter. Data indicates an improvement when compared to the same quarter of 2019. Stability of SIMBA system, integrity of clearing agents, quality of declaration by the relevant agents and document volumes waiting for processing are key factors that affect this target. However, it is important to note that there has been a reduction in the volume of cargo handled at the port due to the global pandemic of COVID-19.

Figure 6: Average time taken at the Document Processing Centre (DPC)

Source: KRA Jan-Jun 2019/2020



2019	2.51	2.05	2.01	2.20	2.60	2.50
2020	2.22	1.72	1.30	2.02	1.32	1.67

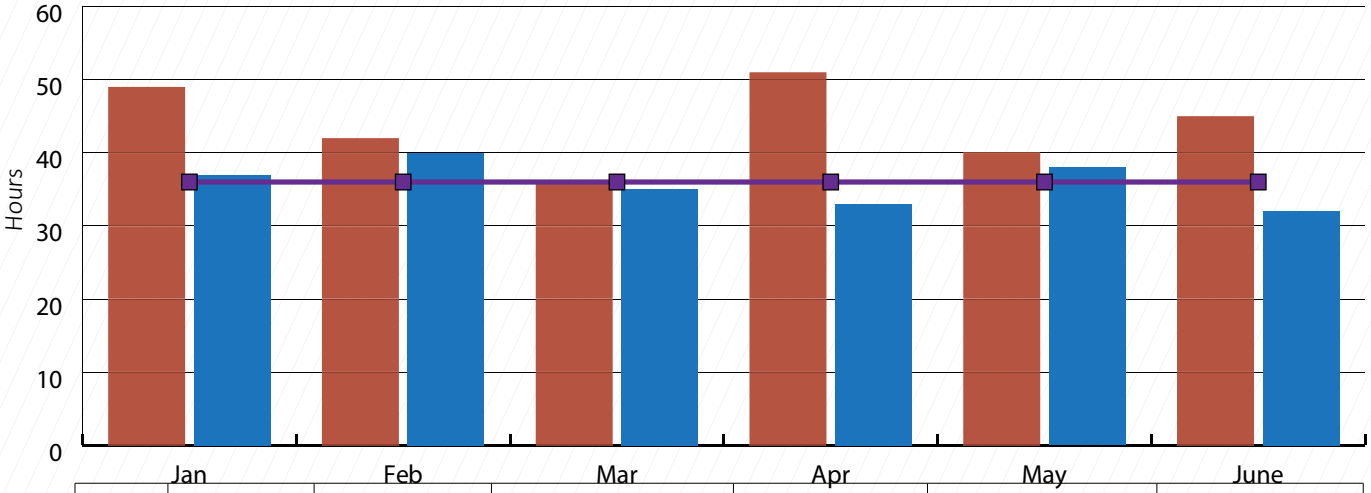
5.4 Delay after customs release at the port of Mombasa

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

Figure 7 presents the time taken to pick the cargo after Customs release at the port of Mombasa for the quarter ending June 2020. Statistics shows that after release time worsened for the quarter of 2020 when compared to the same quarter of 2019. This could be partly attributed to delays encountered by transporters to meet the COVID-19 health protocols. Requirements for social distancing and enhanced sanitation has undoubtedly resulted in slowing traffic at cargo collection points, as transport providers struggle to comply with the new regulations. Furthermore, transporters were expected to undergo COVID-19 tests and access the port on condition they are COVID-19 free.

Figure 7: Average after release customs time at the port of Mombasa

Source: KRA Jan-Jun 2019/2020



	Jan	Feb	Mar	Apr	May	June
2019	37	40	35	33	38	32
2020	49	42	36	51	40	45
Target	36	36	36	36	36	36

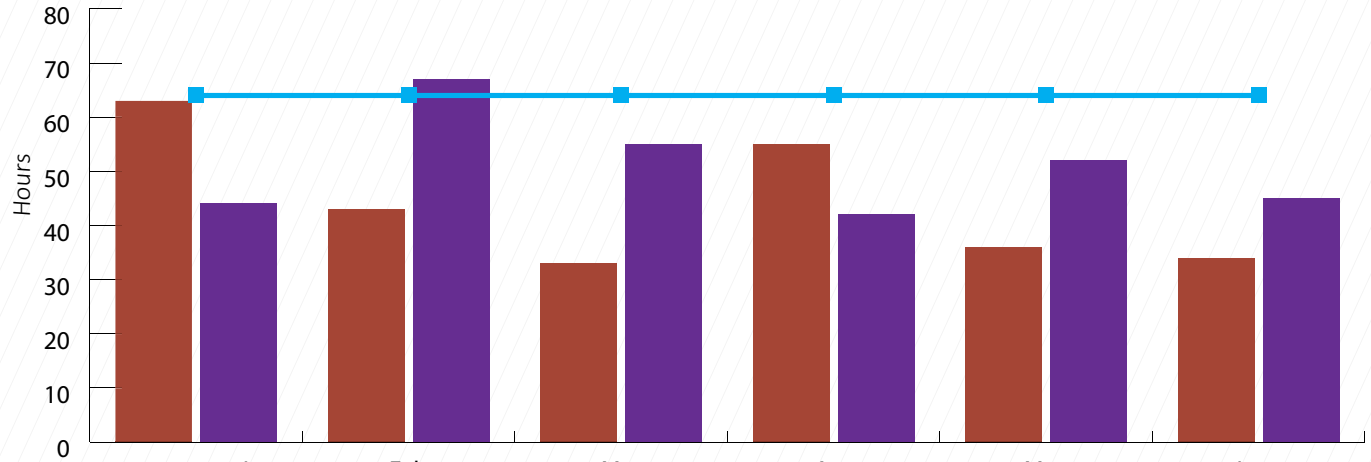
5.5 Customs One Stop Centre Clearance Time at the port of Mombasa

One Stop Centre Clearance Time is measured as the average time taken from passing a registered customs entry to the issuance of release order by customs.

The Mombasa Port and Northern Corridor Community Charter sets to achieve 64 hours by December 2020; 48 hours by December 2022 and then 24 hours by December 2024 as the target for this indicator. As presented in figure 8 below, performance for the quarter ending June 2020 recorded positive achievement within the set target of 64 hours. Performance improved significantly from 55 hours in April 2020 to 34 hours in June 2020. The statistics show improvement in the quarter of 2020 compared with 2019 except for the month of April 2020.

Figure 8: Customs one stop clearance time at the port of Mombasa 2020

Source: KRA Jan-Jun 2019/2020



	Jan	Feb	Mar	Apr	May	June
2019	44	67	55	42	52	45
2020	63	43	33	55	36	34
Target Dec 2020	64	64	64	64	64	64

5.6 Rwanda Revenue Authority (RRA) customs release time and delays

The Mombasa Port and Northern Corridor Community Charter commits the Rwanda Revenue Authority to facilitate fast processing release of transit cargo and to reduce clearance times for transit cargo. Figure 9 presents the time taken for Single Custom Territory (SCT) procedures for the quarter ending June 2020 for Rwanda. The indicators analyzed include; customs entry release time, physical goods release processing time and delay after physical goods release time. The process of clearance under SCT is as follows:

(i) The clearing agent lodges an entry into ASYCUDA which is interfaced with other agencies under the Single Window system (Rwanda Electronic Single Window) that allows all the border agencies to interface with ASYCUDA when a consignment is dealt with at Mombasa.

(ii) The agent self-assesses taxes/bond security and pays taxes in the bank where applicable.

(iii) Customs processes and electronically issues entry release to the agent.

(iv) If a consignment is dealt with at Mombasa, the agent requests for the physical release of goods from RRA Mombasa office; RRA issues a physical goods release order (Exit Note) to the agent.

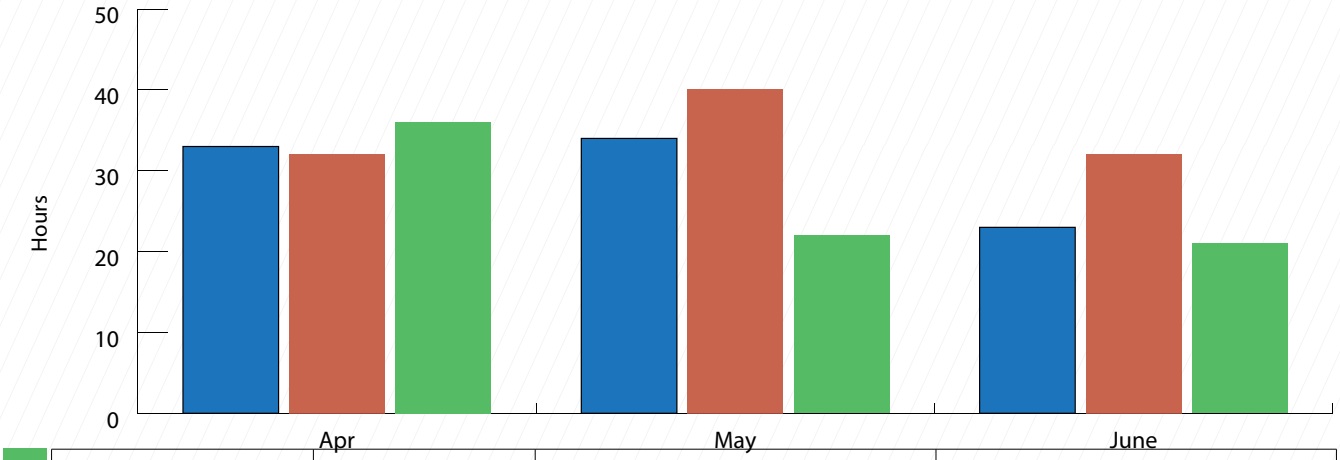
(v) Basing on the Exit Note, KRA processes final release of goods from the Port on Form C2 which accompanies the goods to exit border station and also seals the goods where applicable.

(vi) Seals are applied at Mombasa, and the other agencies conduct their procedures when the truck/goods arrive at the trader's premise in Rwanda.

As shown in figure 9 below, the average time between passing/ Acceptance of customs entry registration and issuance of customs release order improved marginally from 36 hours in April 2020 to 21 hours in June 2020 during the quarter. There is still a challenge of automated exchange of data among the member States participating in the SCT framework of clearing goods; the said interface/platform for the exchange of data on goods being cleared is not efficient. There is need to adopt a single transit system for the Northern Corridor for clearance of internationally traded goods as recommended by earlier Northern Corridor Transport Observatory studies in order to address this problem.

Figure 9: RRA Single customs processing and release time in Hours (April-June 2020)

Source: RRA data 2020



	Apr	May	June
Processing Time	33	34	23
Customs Release Time	32	40	32
After Release Time	36	22	21

6. Corridor Indicators

6.1 Introduction

Corridor Indicators cover the period from the time goods are released at the port/ Inland Container Depots up to exit at the border and final destinations. In this category, the indicators of interest are compliance levels at weighbridges, the volume of traffic and transit time along the respective routes on the Northern Corridor.

6.2 Transit Time in Kenya using SIMBA System Data

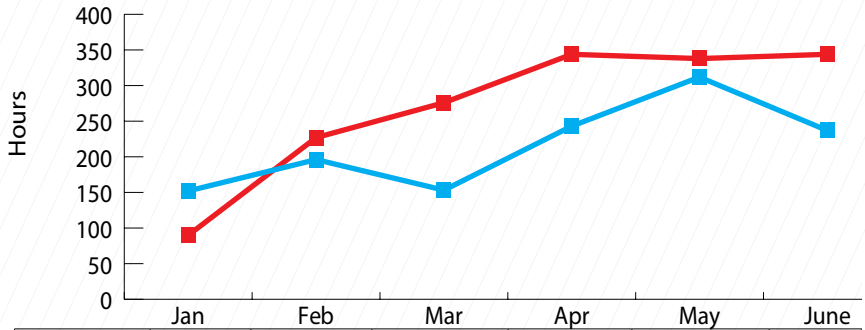
Transit time in Kenya is an estimate of the period from the time cargo is removed from the port of Mombasa to the time the export certificate is issued after crossing the border at Malaba or Busia.

Based on the Mombasa Port and Northern Corridor Community Charter, the set target for transit time from Mombasa to Malaba is 60 hours by December 2020; 40 hours by December 2022 and 36 hours by December 2024. On the other hand, the Charter target for transit time from Mombasa to Busia is 65 hours by December 2020; 45 hours by December 2022 and 36 hours by December 2024.

Figure10 presents transit time measure under the SIMBA system from the port of Mombasa to the borders of Malaba and Busia respectively for the quarter of Apr-Jun 2020. A total of 20,242 trucks were sampled to measure the transit time from the port of Mombasa to Malaba border whereas a total of 718 trucks were sampled for the Mombasa- Busia route during the same review period. All these trucks were issued with a certificate of export at the respective borders. Statistics show that transit time worsened on all the routes which could be attributable to border crossing challenges due to driver testing requirement for the COVID-19 led to an increase in the transit time as illustrated in the figure. In addition, COVID-19 containment measures including lockdowns, curfews, and social distancing measures slowed down processes contributing to high transit time. In the reporting period, drivers were experiencing a long stay at border points as they awaited clearance, with long queues of trucks reported at the Malaba border.

Figure 10: Transit time from Mombasa to Malaba and Busia in hours

Source: KRA Jan-Jun2020



	Jan	Feb	Mar	Apr	May	June
Mombasa to Malaba	152	196	153	243	312	237
Mombasa to Busia	90	227	276	344	338	344

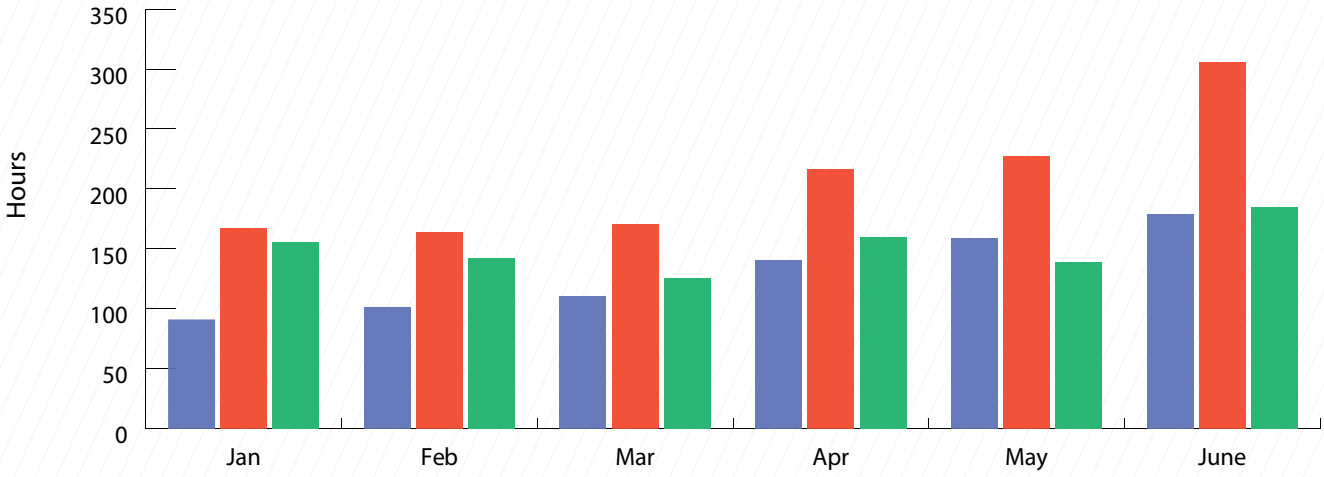
6.3 Transit time under the RECTs regime (Origin to Destination)

Regional Electronic Cargo Tracking System (RECTS) was implemented in March 2018 with the objective of reducing the cost of cargo transportation along the Northern Corridor. RECTS allows Revenue Authorities in Rwanda, Uganda and Kenya to jointly and electronically track and monitor goods along the Northern corridor from Loading (Departure) to destination within Kenya, Rwanda and Uganda. Currently, KRA has about 3,000 R-ECTS gadgets accounting for only 15 per cent of the transit cargo along the corridor. Not all goods are tracked using ECTS. The scope of analysis on this indicator is only for cargo tracked with the ECTS gadgets.

Figure 11 provides transit time from the port of Mombasa to Kampala/Uganda, Elegu-Nimule border/South Sudan and Kigali/Rwanda for the quarter ending June 2020. All the destinations from Mombasa have seen a deteriorating performance in average transit times in the review quarter, which was occasioned by long time taken for processing of driver COVID-19 test results as a requirement for the COVID-19 health protocol. It was observed that the truckers could not get a customs release to proceed on their journeys without a valid COVID-19 certificate.

Figure 11: Transit time from the port of Mombasa to various destinations

Source: KRA (RECTS) Jan-Jun 2020



	Jan	Feb	Mar	Apr	May	June
Mombasa to Elegu	91	101	110	140	159	179
Mombasa to Kigali	167	164	170	216	227	306
Mombasa to Kampala	156	142	126	160	139	185

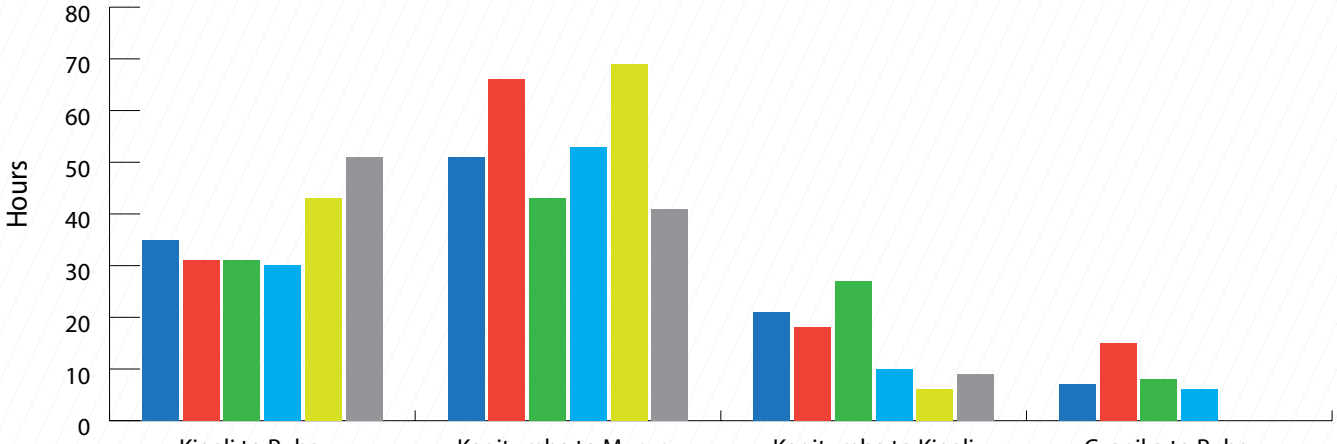
6.4 Transit Time in Rwanda

Transit time in Rwanda is the time duration from 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. Entry borders to Rwanda are; Kagitumba, Gatuna and Cyanika whereas exit Borders from Rwanda include; Rubavu; Akanyaru-Haut; Mururu and Nemba.

Figure 11 below shows the transit times in Rwanda from Kagitumba and Cyanika borders for the quarter of April- June 2020 using the Regional electronic cargo tracking system. 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.

Figure 12: Mean Transit time Rwanda Jan-Jun 2020

Source: RRA (RECTS) Jan-Jun 2020



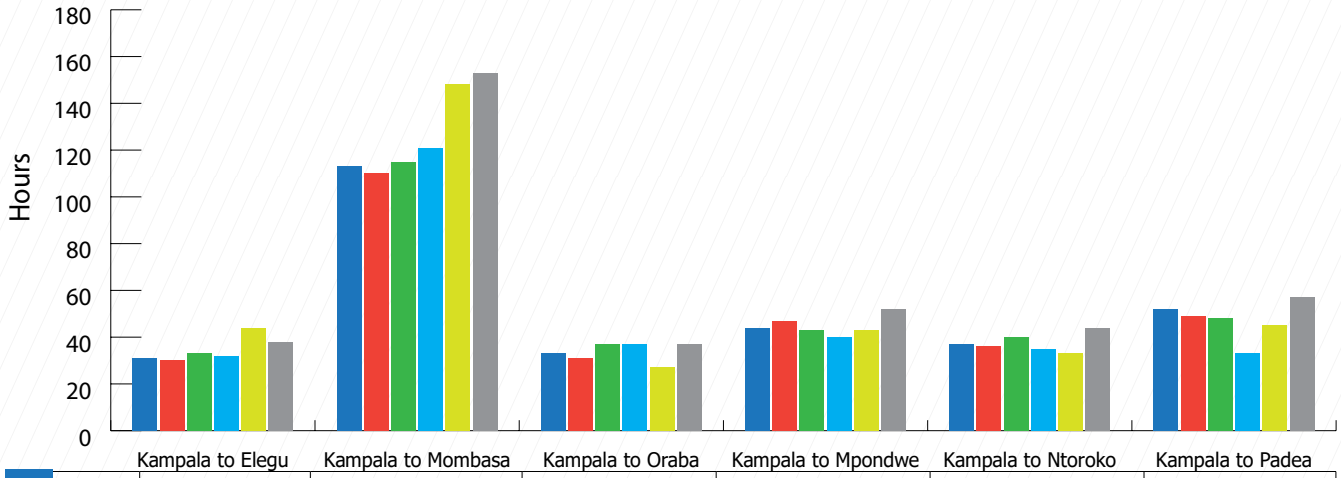
	Kigali to Rubavu	Kagitumba to Mururu	Kagitumba to Kigali	Cyanika to Rubavu
Jan	35	51	21	7
Feb	31	66	18	15
Mar	31	43	27	8
Apr	30	53	10	6
May	43	69	6	
June	51	41	9	

6.5 *Transit Time in Uganda*

Transit time in Uganda tracks the time taken to move cargo between Kampala and various borders between Uganda and Northern Corridor Member States, as illustrated in figure 12 below. The transit time varied on different routes depending on a number of factors such as distance, the status of the road, non-tariff barriers, among others. All the destinations analyzed from Kampala have seen a marginal increase in average transit in the review quarter. As stakeholders put in place measures to contain the Coronavirus disease, particular attention needs to be paid to categories of people who are most vulnerable to exposure and the effects of the pandemic. Some of the most vulnerable include drivers and their assistants who have to cross borders and through urban areas that are marked as hotspots for infections.

Figure 13: Average transit Time from Kampala in hours

Source: URA (RECTS) Jan-Jun2020



	Kampala to Elegu	Kampala to Mombasa	Kampala to Oraba	Kampala to Mpondwe	Kampala to Ntoroko	Kampala to Padea
Jan	31	113	33	44	37	52
Feb	30	110	31	47	36	49
Mar	33	115	37	43	40	48
Apr	32	121	37	40	35	33
May	44	148	27	43	33	45
June	38	153	37	52	44	57

7. Conclusion

In conclusion, findings show that maritime indicators improved during the review period. On the other hand, it is evident that the Northern Corridor Member States have experienced reductions in trade volumes. Certainly, the effects of the COVID pandemic have not only led to decline in cargo throughput at the port of Mombasa but also some reduction in the logistics operations of the corridors. The movement of goods along the corridor routes has been slowing down partly due to the COVID pandemic effects. Statistics show that transit time worsened on all the routes which was occasioned by long time taken for processing of driver COVID-19 test results as a requirement for the COVID-19 health protocol. It was also observed that truckers could not get customs release document to proceed on their journeys without a valid COVID-19 certificate.

As Member States continue to implement measures to contain the spread of the covid-19, it is incumbent upon players in the transport and logistics sector to put in place an elaborate mitigation plans to ensure that the Corridor operates at the best possible level. Some of the possible interventions include:

(i) Develop a sustainable and resilient response plan in the event of any vulnerabilities in future,

(ii) Implement a strategy to manage the effects of pandemics and other disasters,

(iii) Developing disaster responses transboundary policies and protocols, and

(iv) Design/adopt technology applicable interventions. |

8. References

1. Enei, R., C. Doll, S. Klug, I. Partzsch, N. Sedlacek, J. Kiel, N. Nesterova, L. Rudzikaite, A. Papaniko-laou, V. Mitsakis (2011):, — Vulnerability of transport systems- Main report Transport Sector Vulnerabilities within the research project WEATHER (Weather Extremes: Impacts on Transport Systems and Hazards for European Regions) funded under the 7th framework program of the European Commission. Project co-ordinator: Fraunhofer- ISI. Karlsruhe, 30.9.2010
2. Africa Regional Strategy for Disaster Risk Reduction (2006- 2015)
3. The SAFE Framework of Standards , 2018, World Customs Organization,
4. The Sendai Framework for Disaster Risk Reduction 2015-2030, United Nations

Northern Corridor Transit and Transport Coordination Authority

TRADE MARK EAST AFRICA
Growing Prosperity Through Trade

MOMBASA PORT COMMUNITY CHARTER

The Permanent Secretariat
1196 Links Road, Nyali
P.O. Box 34068-80118
Mombasa, Kenya

Telephone
+254 729 923574
+254 733 532485

E-mail:
ttca@ttcanc.org
Website:
www.ttcanc.org

@NorthernCoridor

NorthernCorridor