AN ASSESSMENT OF THE STATUS OF BLUE ECONOMY SECTORS IN KENYA

Sector Report on Ports, Harbours and Maritime Transport to Kenya's GDP: A Blue Economy Perspective

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Acronyms

AD	Anno Domini
AI	Artificial Intelligence
AFC	Agriculture Finance Corporation
AfCFTA	Africa Continental Free Trade Area
AU	African Union
BE	Blue Economy
BMU	Beach Management Unit
CFS	Container Freight Station
CoK	Constitution of Kenya 2010
COMESA	Common Market for Eastern and Southern Africa
EAC	East African Community
DPC	Document Processing Centre
DRC	Democratic Republic of Congo
EEZ	Exclusive Economic Zone
EIRR	Economic Internal Rate of Return
EMCA	Environmental Management and Coordination Act
EPZ	Export Processing Zone
EPZA	Export Processing Zone Authoriy
ERS	Economic Recovery Strategy
ESIA	Environmental Strategic Impact Assessment
EU	European Union
FIPA	Foreign Investment Protection Act
FIRR	Financial Internal Rate of Return
FY	Fiscal Year
GDP	Gross Domestic Product
GHG	Green House Gases
GOK	Government of Kenya
IBEOS	Institute for Blue Economy and Ocean Studies
ICD	Inland Container Depot
ICDC	Industrial & Commercial Development Corporation
ICJ	International Court of Justice
ICMS	Integrated Customer Management System
ICSID	International Center for Settlement of Investment Disputes

ICZM	Integrated Coastal Zone Management
IMF	International Monetary Fund
IMO	International Maritime Organization
ISPS	International Ship and Port Facility Security
IT	Information Technology
KEBS	Kenya Bureau of Standards
KeNHA	Kenya National Highways Authority
KenTrade	Kenya Trade Network Agency
KFA	Kenya Farmers Association
KIFWA	Kenya International Freight and Warehousing Association
KMA	Kenya Maritime Authority
KMFRI	Kenya Marine and Fisheries Research Institute
KNCCI	Kenya National Chamber of Commerce and Industry
KNSL	Kenya National Shipping Line
KPA	Kenya Ports Authority
KRA	Kenya Revenue Authority
KWATOS	Kilindini Waterfront Automated Terminal Operations System
LAPSSET	Lamu Port South Sudan Ethiopia Transport Project
LCDA	LAPSSET Corridor Development Authority
LMMAs	Locally Managed Marine Areas
LPI	Logistics Performance Index
LOA	Length Over All
LSCI	Liner Shipping Connectivity Index
MIGA	Multilateral Investment Guarantee Agency
MT	Metric Tonnes
MTP	Medium Term Plan
MRIP	Mombasa Port Resilient Infrastructure Project
MPAs	Marine Protected Areas
NEMA	National Environment Authority
NHIF	National Hospital Insurance Fund
OECD	Organisation for Economic Co-operation and Development
OCPD	Officer Commanding Police Division
OSC	One Stop Centre
PAPs	Project Affected Persons

PMAESA	Port Management Association of Eastern and Southern Africa
RMGs	Rail Mounted Gantry Cranes
RTI	Railway Training Institute
SBEC	Sustainable Blue Economy Conference
SDG	Sustainable Development Goals
SEZ	Special Economic Zone
SGR (Kenya)	Kenya Standard Gauge Railway
SMCA	Standards, Metrology and Conformity Assessment
SMEs	Small and Medium Enterprises
STCW	Standards of Training, Certification and Watch-keeping for Seafarers
TEUs	Twenty-foot Container Equivalent Units
TLS	Transport Layer Security
TSI	Trade Support Institution
TVET	Technical Vocational Education and Training
UAE	United Arab Emirates
UNCTAD	United Nations Conference on Trade and Development
VAT	Value-added Tax
WBLPI	World Bank Logistics Performance Index
WIO	Western Indian Ocean
WTO	World Trade Organisation

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SECTION I

1. Background and Context

1.1. Kenya's Economic Performance

Since independence in 1963, Kenya's economic performance has registered negative to moderate GDP growth. Apart from short periods of robust growth, the significant economic performance of the 1960's and early 1970's has not been sustained neither into the 1980's, 1990's nor 2000's despite the fact that the country maintained a laudable degree of political stability and a predictable development strategy. Between 1963 and 1973, GDP growth averaged 6.6% while the period 1974-1979 witnessed an average growth rate of 7.2%. The 1980's registered declining GDP growth averaging 4.2% which further deteriorated to an average of 2.2% in the 1990's and stagnated between 1991 to1993. During this period (1991-1993), Kenya experienced economic misfortunes in the form of a decline in agricultural production by about 4%, a 100% surge in inflation in 1993 and a debt-GDP ratio of 10%. These negative developments led to the suspension of foreign aid. Subsequently, in 1993 the GOK initiated a program of economic reform and liberalization with assistance from the Bretton Woods institutions. As part of the program, the government removed price controls and import licensing, removed foreign exchange controls, and privatized some state-owned corporations, retrenched civil servants and instituted tight fiscal and monetary policies. As a result of these measures, real GDP growth improved and grew at an average rate of 4% during the period 1994-1996[1]. However, in 1997, the economy encountered a period of slow growth partly due to adverse weather conditions that prevailed then and partly due to the suspension in the implementation of economic reforms agreed upon with the IMF and the World Bank. This resulted in the suspension in the flow of donor funds in 1997. Later in the year, the government decided to move ahead with the reform process and this laid a strong basis for renewed economic growth.

Between the years 2003 and 2008, transparent and more accountable systems like Economic Recovery Strategy (ERS), governance, institutional and legal reforms, anti-corruption measures and reforms in KRA to improve revenue collection efficiency were put in place. The reforms led to a surge in revenue collection and massive infrastructure investments were designed and implemented. By 2005s, the Kenyan public debt had reduced from highs of 80% of GDP in 2002 to 27% of GDP in 2005. GDP growth improved from 2% in 2003 to 7% in 2007[2]. This growth however declined to 1% in 2008 due to post election violence but improved by an average of 5% during the period 2009-2013[3]. Between 2013-2020 and under the Jubilee Administration, GDP growth has averaged 5.3% and was expected to grow at a pace of 6.3% by the end 2021 but this has been revised downwards due to the surge in Covid-19 infections. Real GDP growth was 5.7% in quarter 1 of 2018, 6.0% in quarter 2, 6.2% in quarter 3 and 5.3% by the close of 2018. The Jubilee Administration has also gone on a borrowing spree and registered a debt-GDP ratio of 62.1% in 2019, 66.4% GDP in 2020, and is expected to reach 70.5% GDP in 2021 and 73.3% GDP in 2022[4]. Despite the implementation of huge infrastructure investments by the Jubilee Government since 2013, the multiplier effects of this infrastructure has not been felt on the ground and this has further been compounded by the Covid-19 pandemic which has negatively affected

[1] David Bigman (2002). Globalization and the Developing Countries: Emerging Strategies for Rural Development and Poverty Alleviation. CABI p. 136. ISBN 978-0-85199-575-5

[2] "Kenya Vision 2030". Kenya Government 2007.

[3] "Economic Survey 2018". Kenya National Bureau of Statistics.

[4] *IMF – World Economic Outlook Database, October 2020*

the socio-economic-political fabric the world over, Kenya included. Appendix 1 gives the GDP growth rates at 2009 constant prices for the period 2011-2019.

1.2. Structure of Kenya's Economy and Implications for the Blue Economy Sectors

The various sectors of the economy contribute differently to GDP and this has had growth implications for the blue economy sectors. The agricultural sector has dominated the Kenyan economy. Agriculture is practiced on about 15%–17% of Kenya's total land area which is sufficiently fertile and receives adequate rainfall to allow meaningful agricultural production with 7%–8% being classified as first-class land. Kenya is a leading producer and exporter of tea and coffee, as well as the third-leading exporter in Africa of fresh produce, such as cabbages, onions and mangoes. Small farms grow most of the corn and also produce potatoes, bananas, beans, peas and chilies. As earlier mentioned, agriculture has been one of the largest contributors to Kenya's gross domestic product (GDP). In 2005, agriculture, including forestry and fishing, accounted for about 24% of the GDP, as well as 68% of wage employment and 50% export revenues. In 2006, almost 75% of working Kenyans made their living by farming, compared with 80% in 1980. This significant contribution of the agricultural sector meant that policies, strategies and resources were prioritized in favour of the agricultural value chain. Huge budgetary allocations were used in agricultural development initiatives including the financing of various government owned enterprises such as Agriculture Finance Corporation (AFC), Industrial & Commercial Development Corporation (ICDC), Kenya Farmers Association (KFA) and the like. Appendix 2 shows that the dominance in the contribution of agriculture, forestry and fishing to nominal GDP has continued and ranged from 30.2% in 2015 to 34.1% in 2019 with crop production averaging about 26%. In comparison, sectors related to the blue economy such as maritime transport, coastal and marine forestry, fishing and aquaculture have continued to contribute a meager 1.8% on average over the review period. Other favored sectors include: manufacturing contributing 8.4% on average, while transportation and storage's contribution average was 8%, of which shipping and storage contributed a subtle 1% over the review period. The other major contributors include financial and insurance activities (6.6%), real estate sector at 7.2% and non-blue economy tourism.

Notable is the rather insignificant contribution of the Blue Economy sectors to GDP. Sub-sectors such as shipping and ship building, maritime transport, Mombasa Port and inland waterways development, deep sea mineral exploration, mining and extraction, ocean oil and gas, energy, eco-tourism, fisheries and aquaculture have not be given due recognition. This suggests that governance and economic policies, strategies and reforms have not adequately addressed neither the challenges bedeviling the development of these sub-sectors nor exploited the opportunities offered by these sub-sectors. For the ports and maritime transport sub-sector for example, this misnomer has translated into congestion at the ports, longer ship waiting and turnaround times, low labour force productivity, inefficient logistics and underdeveloped multimodal transport that links the ports to the hinterland. This has tended to increase freight and transportation costs with negative effects on sub-sector performance. Whereas Kenya and other East African countries of Uganda, Rwanda, Burundi, DRC, South Sudan, Somalia, and to some extent Tanzania rely on the Port of Mombasa and seaborne transport for their export/import trade to the tune of about 90%, the challenges facing the efficient performance of the Port have until recently been given lukewarm attention. It's no surprise that coastal areas, counties and towns bordering lakes have continued to register high levels of unemployment and poverty. The opportunities offered by the ocean economy sectors, if sustainably exploited offer latitude for improved economic contribution to the local and national economy.

1.3. Kenya's International and Regional Economic Linkages

Kenya's interaction with the world economy can be traced back to the ancient world trade routes that traversed Africa, Asia and Europe between 70 AD and 1500 AD. It was during this time that merchants traded products with the Kenyan coast in exchange for African goods[5]. In 1499 AD, Vasco da Gama discovered the sea route to India through South Africa and this new route contributed to the domination of East African trade by European nations with the Portuguese entrenching themselves in the 16th and 17th centuries. The Omani Arabs replaced the Portuguese in the 18th century and the former were eventually replaced by the British in the 19th century. By 1895, the British had practically dominated the coastal strip and by 1920 they had followed the interior trade routes all the way to the Buganda Kingdom[6]. The British employed Indians to build a railway line from Mombasa at the coast to Kampala, the capital of the Buganda Kingdom. Subsequently major towns sprang up along the infrastructure while the Europeans moved inland and settled as a farming community. The Indian railway constructors did not return to their motherland but established shops (dukawallahs) in the new towns[7]. It was during the subsequent colonial period that ensued that this European settler farming community and the Indian dukawallahs laid the foundations of the modern Kenyan economy with its international and regional linkages.

This international interaction has, in recent years, been buoyed by globalization and economic integration coupled with strategic, and enhanced bilateral and multilateral trade relations. Kenya continues to be the economic, commercial, financial, and logistics hub of East and Central Africa and is a member of the East African Community (EAC), Common Market for Eastern and Southern Africa (COMESA), African Union (AU), World Trade Organisation (WTO), United Nations Conference on Trade and Development (UNCTAD), African Continental Free Trade Area (AfCFTA), etc. In order to improve the business environment, Kenya has continued to undertake actions geared towards the promotion of the Ease of Doing Business and the World Bank's 2020 Doing Business indicators has ranked Kenya at position 56 out of 190 countries. In addition, the government has initiated a broad range of business reforms, including easier frameworks for starting a business, obtaining access to electricity, registering property, protecting minority investors, and streamlining insolvency rules[8].

All these efforts have culminated in the improvement of international connectivity through investments in EPZs and SEZs, increased international capital flows and increased seaborne trade, with the latter underlining the importance of maritime and multimodal transport development. Investments in the development of the shipping and ship building/maintenance, ports and port areas, port equipment, IT, logistics, maritime safety and the marine ecosystem will enhance the contribution of these blue economy sub-sectors to the local economies, national and regional GDP. This is further supported by the fact that 90% of seaborne trade is transported by sea and about 90% of East, Central, South Sudan and Horn of Africa exports and imports are serviced through the Port of Mombasa.

[5]http://en.wikipedia.org/economy_of_Kenya#_note 27
[6]http://en.wikipedia.org/economy_of_Kenya#_note 31
[7]http://en.wikipedia.org/economy_of_Kenya#_note 34
[8] World Bank Group, Doing Business, 2018.

1.4. Kenya's Blue Economy Agenda

Kenya's economic performance has been hampered by numerous factors: heavy dependence on agriculture, high population growth that has outstripped economic growth, high levels of unemployment, escalating energy prices leading to high production costs, poor infrastructure in agricultural production areas and a high debt-GDP ratio and the COVID-19 pandemic. This has led to reduced revenues, extreme income disparities and high poverty levels with 23% of Kenyans living on less than US$1 per day.

Despite these challenges, Kenya has enjoyed periods of significant economic growth that have permitted the country achieve the status of a middle-income country in 2016 and the country has been one of the fastest-growing economies in Sub-Saharan Africa. The IMF expects economic growth to pick up to 7.6% in 2021 (latest estimates), subject to the post-pandemic global economic recovery. As is noted in the Kenya Start up Ecosystem Overview of April 2010[9], there is a high level of IT literacy and innovation, especially among young Kenyans. This has encouraged innovative projects and advancements to be realized in the transport and blue economy sectors. Kenya has a well-developed social and physical infrastructure. In addition, 70% of Kenyans expect living conditions to improve in the coming decades. This expectation of Kenyans is well articulated in Vision 2030 which is Kenya's current blueprint for future economic growth. Its goal is to create a prosperous and globally competitive nation with a high quality of life by the year 2030[10]. To do this, it aims to transform the Kenyan economy while creating a clean, secure and sustainable environment. Recommendations of the Sustainable Blue Economy Conference hosted in Kenya in 2018 expressed the need to exploit Kenya's existing potential to stimulate the growth of the blue economy sectors[11].

In order to fulfill the stated aspirations of Kenyans as is articulated in Vision 2030 and the MTP III and in the spirit of diversification, the government has embraced the blue economy concept which, since 2012 Rio+20 Conference, has gained international acclaim and has been identified as a pathway toward sustainable blue growth. The Conference underscored the need to stimulate "blue growth," particularly for island nations and developing countries with significant coastlines and/or maritime areas. As such, more and more coastal and island nations are looking at the ocean as the next frontier for economic development. Suffice it to say that it has been recognized that the Blue or Ocean economy is essential to the future welfare and prosperity of humankind, as it is a key source of food, energy, minerals, health, leisure and transport upon which hundreds of millions of people depend.[12] The traditional sectors of shipping and ship building, passenger transport, seaborne trade, port development and marine transport, logistics, tourism, fisheries, and the emerging new industries that include aquaculture; marine renewable energy technologies for wind, wave and tidal energy and pharmaceutical bio-products are now being seen as cornerstones for responsible, sustainable and environmentally friendly economic growth conduits.

At a global level, the transition to a blue economy is seen to significantly contribute to the achievement of Sustainable Development Goal (SDG) 14 for the ocean and other goals such as poverty reduction, food security, energy security, climate change adaptation and mitigation, among others. It also supports the implementation of the 2030 Agenda for Sustainable Development and underscores the need for determined and coordinated policy

[9]Kenya Start Up Ecosystem Overview: VC4A, April 2019

[10]Kenya Vision 2030

[11] Report On The Global Sustainable Blue Economy Conference 26th – 28th November 2018, Nairobi, Kenya, Prepared By SBEC Technical Documentation Review Committee At A Retreat Held At Lake Naivasha Simba Lodge, Kenya, December 5th – 9th 2018.

[12]OECD 2016. The Ocean Economy in 2030, OECD Publishing, Paris, p 3.

actions geared toward sustainable management and exploitation, protection and preservation of coastal and marine resources for the present and future generations.

From a Kenyan perspective, it is important to note that: a) the estimated annual economic value of goods and services in the marine and coastal ecosystems of the blue economy in the WIO region is over US$22 billion [13]; b) Kenya's share of the WIO region's blue economy is slightly over US$4.4 billion (20%), with the tourism sector making the largest contribution of over US$4.1 billion, according to the Kenya Maritime Authority (KMA) estimates.[14]; and, c) Kenya's marine fisheries had the potential of producing 350,000 metric tonnes in 2013 worth Ksh90 billion (KMA), yet the region only yielded 9,134 metric tonnes worth Ksh2.3 billion in that year.[15] These and other benefits will be lost unless concerted efforts geared towards the development of the blue economy sectors are undertaken. Due to the huge scope, a blue economy multi-sectoral investment opportunities analysis approach needs to be undertaken in order to come up with a portfolio of bankable investments that can be implemented in the short, medium and long term. The beginning point should be the development of a Blue Economy Policy, Strategy and Operational Plan.

[13] UNDP 2018. Leveraging the Blue Economy for Inclusive and Sustainable Growth, Policy Brief, Issue No 6/2018.
[14]Ibid
[15] Ibid.

SECTION II

Role of Ports, Harbours, Maritime Transport and Logistics in Economic Development

2.1 Ports and Maritime transport in Economic Development

Ports can be defined as a land area with sea (maritime) and land connectivity, and an interconnected access to a logistics and transport system. Economic theories recognize ports as an important economic development factor, since time immemorial, as they have promoted not only trade, but social well-being and welfare of the surrounding cities and nations (Funke and Yu, 2011 and 2017). It is through such theories and concepts that we appreciate the role of ports in the advancement and development of major cities, historically. Examples of such cities or empires include Rome, Athens, Phaleon and Alexandria (De Graeew, 2014). Ports exist not only to facilitate imports, but to also open up countries to markets, for exports as well. They contribute greatly to the world trade of a nation, and it is the maritime industry that plays the pivotal role in facilitating the import and export trade (Heijman, 2017). This enables the ports to act as catalysts of a country's major activities in manufacturing, logistics and value addition services, minerals and extractives and general trading and commerce.

It has also been noted that ports have a multiplier effect on a given economy, and the effects are generally felt beyond the port, and its activities. De Langen (2012) describes ports as funnels to economic development, and their positive impact to the economic sector is felt not only in the town where a port is domiciled, but along the corridor served by the port, and its hinterland at large. They play a crucial role in connecting the logistics nodes and links from a country's or region's hinterland, to global markets (Notteboom, 2001; De Langen, 2004). Lugt (2005) notes that, in maritime and logistics clusters, it is actually the secondary industries and activities, such as manufacturing, value addition, logistics and transport services that offer greater opportunities in terms of employment, significantly more than the port activities.

Scholarly articles have noted the increasing contribution of port logistics services in the harbour to the hinterland economy (Notteboom, 2008). Maritime transport provides the cheapest and most effective means of transportation, compared to other modes of transport. This is evidenced by the number of industries domiciled in and round ports, with a good example in the local context being Mombasa. This is because industries require reliable modes of transport for their imports, mostly raw materials and other necessary inputs and implements, and also for the facilitation of the exports to onwards transportation to overseas markets. Poor performances of ports, and the high logistical costs involved, hamper international trade, thereby disadvantaging a country's economy. Haralambides (2017) argues that high port and logistics costs hamper the exports of developing countries, which are already disadvantaged due to minimal value addition, and volatility of international markets and prices of such commodities.

Studies have shown that shipping and proper maritime administration have played a leading role in the economic development of many countries such as Norway, Japan, India and Poland, among others. It has a huge multiplier effect in an economy given that in addition to hard infrastructure; it requires skills, IT, logistics, maintenance, insurance and finance. It brings with it benefits related to improvement in the balance of payments, saving foreign exchange, reducing transportation costs and stimulating ship building, repair and maintenance. In a developing country like Kenya, where the modern economies tend to be predominantly oriented towards distant overseas markets - which means that shipping is of great importance, and if it is well organized, the shipping activities assists development of modern agricultural systems and contribute to the establishment and expansion of modern industry. The benefits, therefore, of integrating ports development and maritime transport into Kenya's development agenda cannot be gainsaid.

2.2 The Port of Mombasa: Overview and Importance

The Port of Mombasa is strategically located on Kenya's coastal region, about half way between the Port of Durban in South Africa and the other major Middle East ports and is a gateway to East and Central Africa's hinterland. It serves the Kenyan agricultural hinterland and transits Kenya's landlocked neighbors and hinterland countries including Uganda, Rwanda, Burundi, the Democratic Republic of Congo (DRC), South Sudan, Somalia and Ethiopia. It thus serves the Great Lakes Region and the Horn of Africa. The Port of Mombasa is the second largest port in Africa in terms of tonnage and containers handled after the Port of Durban in South Africa[16].

The Port of Mombasa has been the hub for international trade in the region since its development under British rule in the late 19th Century. In its international nature, the Port of Mombasa has a wide variety of shipping lines that travel to important worldwide destinations that include Western Europe, Asia, the Americas, the Far East, and the rest of Africa. Regular feeder services operate between the Port of Mombasa and Dar-es-Salaam, Mogadishu, Durban, Salalah, Djibouti, and Dubai. Over the years, infrastructural development has taken place and the port is adequately equipped to service a variety of cargoes from dry bulks (like fertilizers, grains, soda ash, and cement) to liquid bulks (like crude oil and petroleum products) to bagged products (like coffee, sugar, tea). The port is also equipped to handle break-bulk (timber and iron and steel), motor vehicles, machinery, and containerized cargo.

Among the cargo profiles, containerized cargo has been the fastest growing category, and the Port has a dedicated terminal equipped with ship-to-shore gantry cranes and a complete line of support machinery. New terminals and berths are in the offing. Containerized cargo represents about 80% of the Port of Mombasa's total throughput, and this has been growing at an average rate of 13% per year for the last 3 years. The Port of Mombasa also operates Inland Container Depots (ICDs), dry ports for handling and storage of containerized cargo and empty containers. KPA owns and operates three ICDs directly linked to the container terminal in Mombasa by rail and road. They are in Nairobi, Kisumu, and Eldoret. General cargo at the Port of Mombasa includes bags, steel, roll-on/roll-off, and other cargoes. General cargo is usually unloaded using KPA's quayside equipment and ship's gear. Most general cargo is moved from quayside to storage yards in the back or outside

[16] Gekara, V and Chhetri, P 2013, 'Upstream transport corridor inefficiencies and the implications for port performance: A case analysis of Mombasa Port and the Northern Corridor', Maritime Policy and Management, pp. 1-15.

of the port. Vehicles are unloaded by KPA gangs and stored in the Port of Mombasa's vehicle terminal. Bulk cargoes include cement and fluorspar, soda ash, grain and agri-bulks, and oil. A dedicated 1968 facility at the Mbaraki Wharf is operated by the Bamburi Cement Company where cement and fluorspar are loaded for export. The Magadi Soda Company handles exports of soda ash at a dedicated facility.

Lastly, it's important to note that the Port of Mombasa has a length of 7 nautical miles, a width of 300 m and a maximum depth of 15m. The inner harbour has a tidal range of 3.5 m. The main port currently has 19 berths comprising of 1bulk grain terminal, 2 oil terminals/jetties, 4 container berths and 12 general cargo berths. Recent investments in modernizing handling equipment, dredging of the main entrance channel and widening of the turning basin has enabled larger, modern post panamax vessels to call at the port. The port is currently ranked 117th of the top ranked container world ports and 5th in Africa.

2.3 Current Contribution of Ports, Harbours and Maritime Transport to GDP

Ports, harbours and maritime transport and their related efficiency and logistical activities have become an integral part of international trade, playing a vital role of not only facilitating global seaborne trade and commerce, but also enabling the attainment of various core functions, including, but not limited to, stimulating import-export trade, revenue and taxes generation, employment creation, value addition, asset creation, branding, packaging and storage. In fact, various studies have established that poor port performance hampers these processes, thereby negatively impacting not only on a country's rate of economic growth but also limiting economic growth of the hinterland. In the paragraphs that follow, we present the benefits that this sub-sector has been generating as part of the blue economy.

2.4 Direct Benefits

Improved Revenues, tax remittances and contribution to GDP: The total revenues increased from Kshs. 29.9 billion in the 2013/14 financial year to kshs 34.8 billion in 2014/15, kshs 38.8 billion in 2015/16, kshs 40.2 billion in 2016/17, kshs 43.6 billion in 2017/18 and reached kshs 50.2 billion in the FY 2019/20, representing an average 9.5% annual change over the entire period (Table 9). Operating revenues showed an increasing trend over the review period and registered an overall annual change of 30%. Profit before tax registered an average increase of 12.6% over the entire period reaching kshs 8.2 billion in the 2019/20 financial year. KPA's financial performance has been a challenge and it's one of the institutions earmarked for operational restructuring.

Table 9: Profit and Loss Statement as at June 30th (kshs '000') for Port of Mombasa

Financial Year	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Total Revenues	29,920,987	34,800,563	38,828,126	40,197,301	43,629,543	53,258,000	50,164,000
% change		16	12	4	9	22	-6
Total Operating Expenses	-25,601,821	-28,415,612	-29,554,006	-30,690,159	-33,797,671	39,372,150	41,986,000
% change		11	4	4	10	-216	7
Profit before Tax	5,168,105	7,052,106	10,395,178	10,628,242	10,308,479	13,886,000	8,178,000
% change		36	47	2	-3	35	-41

Source: KPA Financial Position Review and Annual Reports, various

As is evident from Table 10, the percentage share of total port revenue to sub-sector GDP has stabilized at around 12% with a high of 13.9% in 2018/19 financial year. On the other hand, the share of total port revenue to overall GDP is about 1% on average. Taxes paid to the exchequer were 0.08% of GDP on average. These results call for measures geared towards promotion of interventions that increase port revenues.

Table 10: Percent share of KPA revenue in Sub-sector and overall GDP[17]

FY	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Total Revenues KPA	29,921.0	34,800.6	38,828.1	40,197.3	43,629.5	53,258.0	50,164.0
Transport & Storage GDP	274,754.9	292,628.7	313,749.3	340,372.5	366,814.3	382,566.0	397,170.0
GDP at market prices	4,061,901.5	4,300,698.6	4,507,377.1	4,792,173.5	5,049,309.5	6,130,340.7	7,110,340.4
KPA revenues as a % of transport & storage	10.9	11.9	12.4	11.8	11.9	13.9	12.6
KPA revenues % of overall GDP	0.7	0.8	0.9	0.8	0.9	0.9	0.7

Source: Own calculations

Contribution of import/export trade to GDP: The general cargo traffic also increased by 9.3% on average with dry cargo imports increasing by 14.3% and liquid bulk imports by 4.8%. The total imports handled through the port increased by 8.2% over the review period. Imports handled grew at an average rate of 6%, exports at an average rate of 5% with total throughput growing at an average rate of 6%[18]. On the other hand, and in tandem with the global increase in containerization, container traffic increased from a total of 436.7 thousand TEUs in 2005 to about 1,076.1 thousand TEUs in 2015, an increase of 12.6% on average. Our analysis also shows that containerized imports increased by 9.8% of the traffic while containerized exports increased by 10.1% of the traffic on average. Kenya exports of goods as percentage of GDP is 13% and imports of goods as percentage of GDP are about 22%.

Port throughput, wage bill/employment and GDP: Ports across the globe have been seen to positively influence the creation of employment opportunities, as a result of increased volumes and throughput. In one of such studies[19], it was found that an increase of one million tonnes of port throughput is associated with an increase in employment in the port region of 0.0003% implying that in a region with one million employees, employment would increase by 300 units while in the long run this increase would be 7500 units. It was also found out that liquid bulk has lower employment impacts as compared to other cargo categories. If this category was not included, the employment impact in the port region doubles implying that an increase of one million tonnes port throughput is associated with a regional employment increase of 600 units. This finding confirms the fact that only a few jobs are needed to handle liquid bulk as the loading and unloading of a large part of this bulk is by pipelines. It was also found out that private ports have the largest employment impacts in regions with one million additional tonnes of port throughput creating 1000 jobs. In the local context, increased throughput not only necessitated the direct injection of capital to facilitate port expansion of new terminals, but also the advent of inland container depots (ICDs) and container freight stations (CFSs), which were seen as a stopgap measure in containing the congestion that was brought about by increased container throughput. The ports and CFSs are responsible for around 10,000 employment opportunities, direct and indirect. Table 11 shows that the average percent share of KPA establishment expenses, which are used as a proxy for employment, in sub-sector GDP as

[17]Own calculations

[18]Own calculations based on data in table 7.

[19]Ferrari,C.,Merk,O.,Bottasso,A.,Conti,M.,Tei,A.(2012),"PortsandRegionalDevelopment:aEuropeanPerspective", *OECD Regional Development WorkingPapers*,2012/07. OECDPublishinghttp://dx.doi.org/10.1787/5k92z71jsrs6-en

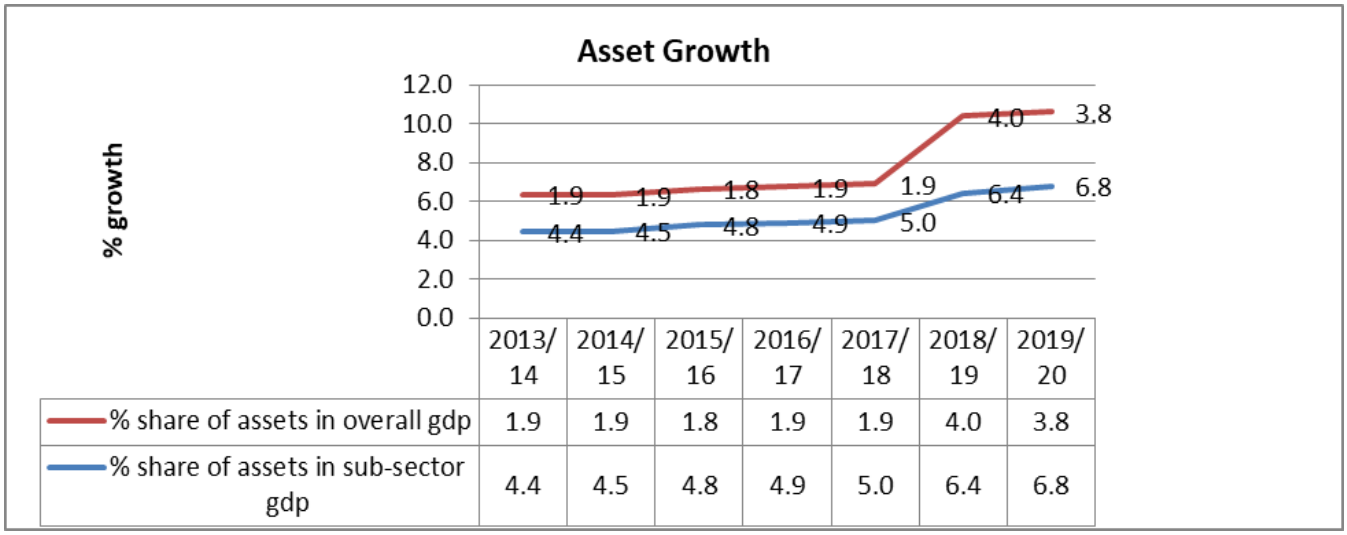
well as in the overall GDP. From the table, KPA wage bill is about 5.2% of sub-sector GDP and about 0.4% of the overall GDP.

Table 11: Percent share of KPA wage bill in sectoral and overall GDP

Financial Year	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/19	2019/20
KPA Establishment Expenses (Kshs '000')	14,341.75	15,959.1	16,142.2	16,673.1	17,789.1	19,034.3	20,366.7
Transportation and storage GDP (Kshs '000')	274,754.9	292,628.7	313,749.3	340,372.5	366,814.3	382,566.0	397,170.0
GDP at market prices (Kshs '000')	4,061,901.5	4,300,698.6	4,507,377.1	4,792,173.5	5,049,309.5	6,130,340.7	7,110,340.4
% share of KPA wages to transport & storage GDP	5.2	5.5	5.1	4.9	4.8	5.0	5.1
% SHARE of KPA wages to overall GDP	0.4	0.4	0.4	0.3	0.4	0.3	0.3

Source: Own calculations

Asset growth and GDP: Data also shows that the share of the book value of KPA assets in sub-sector GDP has tended to increase over time from 4.4% in the 2013/14 FY, to 4.5% in the 2014/15 FY and attained a high of 6.8% in the 2019/20 FY. With respect to overall GDP, this share tended to stabilize around 2% over the 2013-2018 review period but increases thereafter to 4% in 2018/19 and declines to 3.8% in the 2019/10 fiscal year (Chart 1).



	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
% share of assets in overall gdp	1.9	1.9	1.8	1.9	1.9	4.0	3.8
% share of assets in sub-sector gdp	4.4	4.5	4.8	4.9	5.0	6.4	6.8

Chart 1: Share of KPA assets in sub-sector and overall GDP
Source: Own calculations

2.5 Indirect Benefits

Ports generate indirect benefits due to local purchases by the port-related companies that are directly dependent upon seaport activity. Port activities are therefore responsible for a wide range of indirect employment effects through the linkages of harbors with other economic sectors and the spatial interactions with large logistics and economic poles outside port areas. In addition, there are induced benefits which accrue locally and throughout the wider national or supranational economy due to purchases of goods and services by those directly employed. Induced employment can include grocery stores, local construction industry (housing), retail stores, health care providers, local transportation services, local and state government agencies providing public

services and education to those directly employed, and businesses providing professional and business services in support of those directly employed. Other and related indirect benefits are enumerated below.

Hinterland development and improved economic activities: Globalization and outsourcing of production and manufacturing functions of organizations, has seen the increase in concepts of EPZs and more lately, SEZs. This is majorly due to the huge infrastructural developments that connect the Port of Mombasa to the hinterland. One major project is the SGR that connects the Port of Mombasa to Nairobi, and Suswa, where the Naivasha ICD is located. The ICDs serve as an extension of the port, bringing the services of the port closer to the hinterland, with manufacturers and producers able to collect or deliver their cargoes for onwards delivery, at minimal costs, greatly reducing the cost of transport and other incidental costs. Cases of cargo dumping, theft and pilferage have also greatly reduced with improved security and control of cargo, being delivered at the doorstep of consignees. The expansion of the Port of Mombasa has contributed greatly in the infrastructure development along the Central and Northern Corridors, with expansion of highways to neighboring highways, with Mombasa directly benefitting through the Mombasa Port Area road development project, set to improve the road network around the port of Mombasa, and its environs, thereby greatly improving accessibility of the port, and reducing traffic congestion, and related costs significantly. Other indirect benefits include employment opportunities created in port related entities such as banks, insurance companies, freight forwarding, transport, etc.

Vibrant Local Economy: This is in the form of:

- *Increased consumer spending and tax remittances:* this includes contributions to the local economy in terms of consumer spending and tax remittances to the county exchequer.
- *Tourism promotion:* It was evident that that operationalization of SGR in Mombasa County will have a positive impact on tourism due to reduced cost of commuting and high passenger capacity to and from Mombasa. As a result it was envisaged that there will be some positive impetus on this sector on both local and international tourism activities.
- *Decongesting Mombasa City:* There is notable decrease in the number of trucks carrying containers to and from the port of Mombasa. Due to the reduced number of trucks in County of Mombasa roads accessing the port through Changamwe, Port-Reitz, Docks and Shimanzi has resulted into a gradual reduction in congestion and traffic snarl-ups in the town and improved the flow of traffic.
- *Environmental Protection:* This huge reduction in road traffic will reduce distillate consumption, potentially augmenting climate change management initiatives. With 60 – 80 trucks off the road the green gas emissions will be significantly reduced. This will also increase safety on the roads due to reduced traffic.

Customs Duty Collected by KRA and GDP: Customs duty collected by KRA does not go to KPA coffers but is utilized in the entire economy and can hence be considered as an indirect benefit. In this regard, KRA collected customs duty amounting to Kshs 502,634 million in the 2015/16 FY which increased to Kshs 559,342 million in the 2016/17 FY, to Kshs 621,585 million in the 2017/18 FY, Kshs 686,313 million in the 2018/19 FY before declining to Kshs 656,933 million in the 2019/20 FY. Chart 2, below, presents data on customs duty collected by KRA while chart 3, below, shows customs duty as a % of GDP. Note the upward trend safe for the 2017/2018 FY when it declined to 13.0% from 14.3% in the 2016/17 FY.

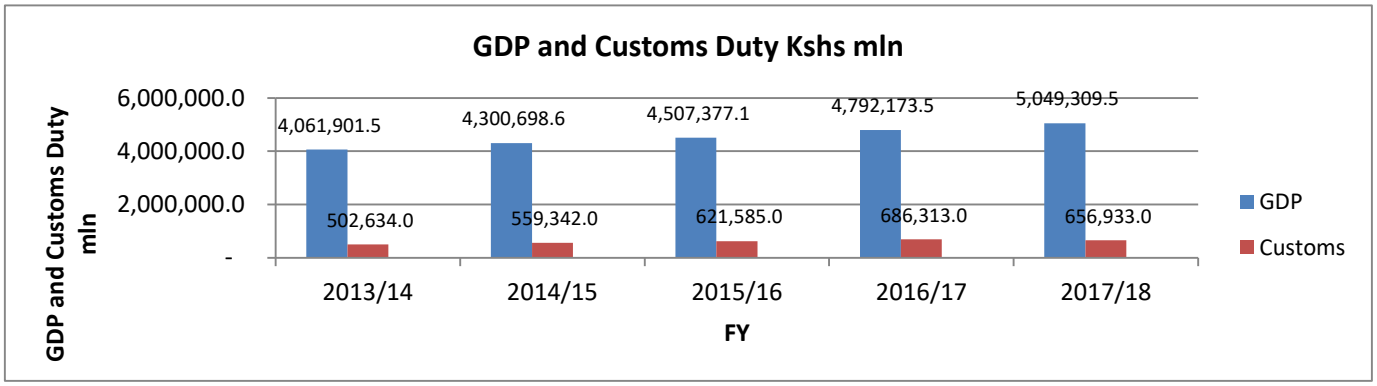


Chart 2: Customs duty as a % of GDP2013-2018
Source: Own calculations

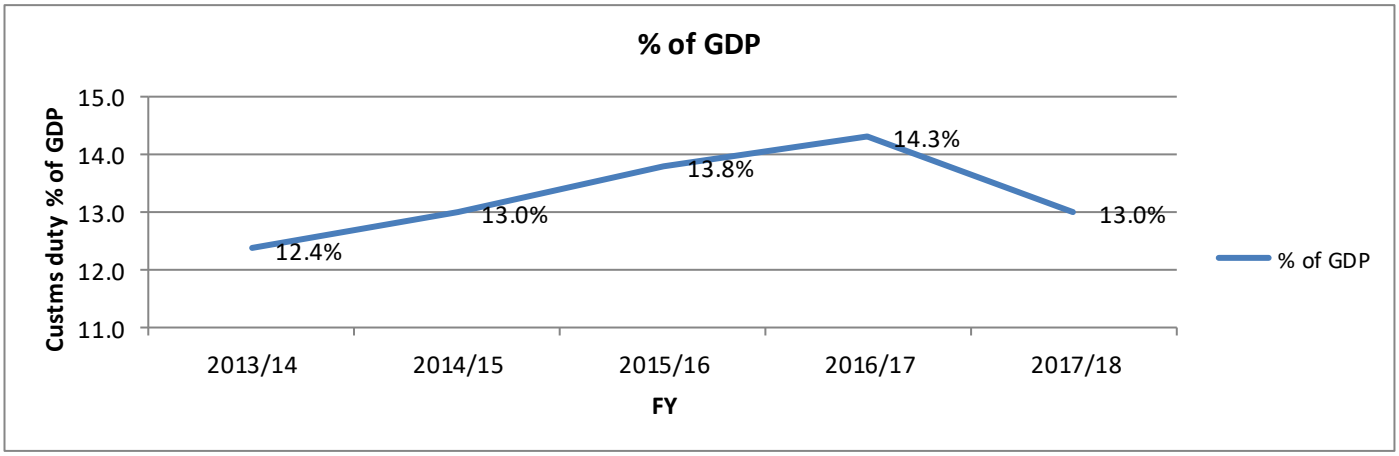


Chart 3: Customs duty as a % of GDP 2013-2018
Source: Own calculations

3 Values of Ports, Habours and Maritime Transport

3.1 Values generated by Ports, Harbours and Maritime Transport

Increased Export/Import Trade: According to the Kenya Economy Survey 2020, in 2019, Africa remained the leading destination of Kenya's exports accounting for 37.6 per cent of the total exports at Kshs 224.2 billion, with exports to EAC partner states accounting for 62.6 per cent of the total exports to Africa. Europe was the second leading destination of exports, accounting for 25.4 per cent of the total exports at Kshs 151.3 billion. The share of export earnings from European Union (EU) stood at 22.4 per cent of the total export earnings, mainly from horticultural products. Netherlands, United Kingdom and Germany were the three major export destinations within the EU region in 2019. Asia was the main source of imports in 2019, accounting for 63.8 per cent of the total value of imports, with China, India, United Arab Emirates (UAE), Japan and Saudi Arabia being the main sources of imports from the region. The overall Balance of Payments position improved from a surplus of KShs 103.4 billion in 2018 to a surplus of KShs 106.4 billion in 2019, on account of a build-up in official reserves. The current account balance worsened to a deficit of KShs 567.0 billion in 2019 from a deficit of KShs 511.3 billion in 2018. The financial account net inflows declined by 3.9 per cent from a surplus of KShs 662.0 billion in 2018 to a surplus of KShs 636.3 billion in 201920.

[20] Kenya Economic Survey, KNBS 2020

Political-socio-economic regional linkages: Regional Economic Communities have promoted transshipment and hinterland multimodal infrastructural development, have been enhanced through the East African Community (EAC), which was created in 1967, dissolved in 1977 but reconstituted in 2000. Member countries include Burundi, Kenya, Rwanda, Tanzania, Uganda and South Sudan. The EAC boasts a total population of more than 150m and a combined GDP of about $150bn. These linkages were further enhanced by Kenya's membership to the COMESA. Recently, Kenya has ratified the coming into force of the AfCFTA. The IMF underlines the fact that greater integration will allow easier access for those looking for effective market demand which will in turn ensure sustained economic growth and improved economic efficiency. Suffice it to say that a larger regional market will lead to economies of scale, lower transaction costs, increased competition and greater attractiveness as a destination for foreign direct investments. The community is already one of the fastest-growing economic blocs in the world, and according to the IMF, real GDP growth averaged 6% between 2003 and 2013. The architecture of the regional economic block is already advanced with a Customs Union that has been in force since 2005 and became fully-fledged in 2010; a common market that allows for the free movement of goods, people, labour, services and capital that went into effect in 2010; a monetary union that is in the process of being implemented following a 2013 protocol and the launch of the East African Payment System in 2014 which should result in the introduction of a single currency by 2024; and, eventually the setting up of a political federation. Chart 4 shows the share of trade moving through the Mombasa Port to other countries in the region.

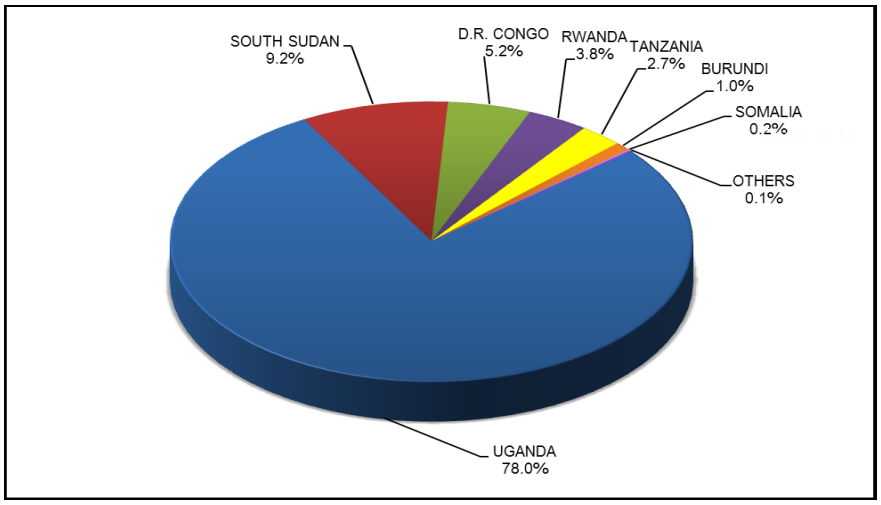


Chart 4: Share in transit trade based on own calculations

Table 3 below gives foreign trade values of export and imports merchandise passing through the Port of Mombasa.

Table 3: Foreign Trade Values

Foreign Trade Values	**2015**	**2016**	**2017**	**2018**	**2019**
Imports of Goods ***(million USD)***	16,093	14,113	16,687	17,378	17,655
Exports of Goods ***(million USD)***	5,906	5,700	5,747	6,052	5,839
Imports of Services ***(million USD)***	2,523	3,095	2,847	3,476	3,440
Exports of Services ***(million USD)***	3,692	3,885	3,785	4,512	4,390

Source: World Trade Organisation (WTO); latest available data

Increased Trade Transportation Connectivity and Market Capture: The number of vessels visiting a port is dependent on several things among them port connectivity as well as market capture. As is seen in Table 4, the total number of ships that visited the Port of Mombasa in 2020 was 1,621. 33.3% of those ships were container carriers, 7.2% were general cargo carriers, 18.8% were bulk, 12.5% were tankers and 8.6% were car carriers. The gross registered tonnage was 45, 041,133. The average port days, given by the ratio of port days divided by the number of vessels, was 3.7 days. As we shall see, these indicators are important for port efficiency performance. It is important to note that Kenya is a member of the Northern Corridor member states and it has been shown that these countries are poorly interconnected with trade transportation regionally and internationally. This situation is reflected in their poor ranking on both the World Bank Logistics Performance Index (LPI) and the UNCTAD Liner Shipping Connectivity Index (LSCI). Out of 155 economies ranked in the WB LPI, Northern Corridor countries are ranked in the bottom 50 consistently between 2007 and 2012. Similarly, out of the 152 economies ranked in UNCTAD LSCI, these key transit countries rank poorly. This negatively affects vessels calls and contributes to poor port performance.

Ship type	No. of ships		Gross registered tonnage (GRT)	Length Overall (meters)	Port Time (days)	Average port days
		% share				
Barge	22	1.36	28,317	1,458	139	6.3
Bulk	305	18.82	8,887,582	56,860	1,815	6
Car Carrier	139	8.57	7,846,333	27,268	149	1.1
Container	539	33.25	16,881,553	114,760	1,581	2.9
Fishing	91	5.61	98,712	5,221	236	2.6
Gen Cargo	117	7.22	1,379,409	14,942	606	5.2
Passenger	3	0.19	24,129	312	6	2.1
Roro	41	2.53	1,928,636	9,322	91	2.2
Tanker	202	12.46	6,734,371	38,120	753	3.7

Table 4: Vessel calls and average port days per ship for Mombasa Port in 2020

Tug	37	2.28	11,090	1,155	184	5
Yacht	0	0.00	-	-	-	0
Naval	12	0.74	124,502	1,646	35	2.9
Others	113	6.97	1,096,499	12,152	326	2.9
TOTAL/AVERAGE	**1,621**	**100.00**	**45,041,133**	**283,215**	**5,923**	**3.7**

Source: KPA Annual Report 2020

Increased throughput: General cargo traffic is dominated by imports which account for more than 80% of total cargo handled at Mombasa Port over the 2016-2020 period. This trend has been maintained in the last decade or so. Out of total import cargo, about 30% is transit cargo destined to hinterland countries and shows a gradual steady increase over time. The overall cargo traffic at Mombasa Port has been increasing due to growth of the Kenyan economy as well as the landlocked countries. As is evident from Table 5, on average, general cargo comprised 8% of total imports on average, dry cargo imports comprised 30% of imports and liquid bulk comprised 30% of imports as well[21]. The large share of imports in total throughput is attributed to the general nature of the East African economies who are net importers.

Table 5: Cargo Traffic in Mombasa Port (Imports 1000 MT)

	2016	2017	2018	2019	2020
IMPORTS ('000' MT)					
Containerized Cargo	7,146	7,502	8,011	9,202	9,093
% of Total Imports	**31**	**29**	**31**	**33**	**33**
Conventional Cargo	1,846	2,003	1,771	1,996	2,105
% of Total Imports	**8**	**8**	**7**	**7**	**8**
Dry Bulk	6,447	7,920	7,929	7,784	8,254
% of Total Imports	**28**	**31**	**31**	**28**	**30**
Liquid Bulk	7,677	8,179	7,764	8,576	8,318
% of Total Imports	**33**	**32**	**30**	**31**	**30**
TOTAL	**23,116**	**25,604**	**25,475**	**27,558**	**27,770**
% change in Total Imports		**11**	**-1**	**8**	**1**

[21] Own calculations.

	2016	2017	2018	2019	2020
Imports % of total Throughput	**84**	**84**	**82**	**80**	**81**
TOTAL THROUGHPUT ('000' MT)	**27,364**	**30,345**	**30,923**	**34,440**	**34,115**

Source: KPA Annual Report 2020

Increased Containerization: Container traffic at the port continued to increase in tandem with the worldwide increase in the rate of containerization of seaborne trade. As is evident from Table 6, container traffic increased from a total of 1,091,371 TEUs in 2016 to about 1,359,579 TEUs in 2020. The analysis also shows that containerized imports increased by about 46% while containerized exports increased by about the same percentage on average over the 2016-2020. Transit traffic increased by about 9.5% on average over the review period. Notable is the decrease in container traffic in 2020 as a consequence of the effects of covid-19 on the global economy. In general, it should be noted that over the review period, terminal utilization rate was over 300% painting a picture of congestion at the port.

Table 6: Container Traffic in the Port of Mombasa (TEUs): 2016 – 2020

		2016	2017	2018	2019	2020
IMPORTS	Full	527,816	554,400	591,460	592,807	589,296
	Empty	8,167	7,055	10,427	8,715	10,733
TOTAL		**535,983**	**561,455**	**601,887**	**601,522**	**600,029**
Imports % of total		49.1	47.2	46.2	42.5	44.1
EXPORTS	Full	128,913	134,464	149,303	145,192	153,739
	Empty	378,444	406,799	425,379	450,768	422,180
TOTAL		**507,357**	**541,263**	**574,682**	**595,960**	**575,919**
Exports % of total		46.5	45.5	44.1	42.1	42.4
TRANSHIPMENT	Full	42,586	60,998	85,776	151,983	123,578
	Empty	5,445	20,205	35,801	59,621	52,249
TOTAL		**48,031**	**81,203**	**121,577**	**211,604**	**175,827**
Transshipments % of total		4.4	6.8	9.3	14.9	12.9
RESTOWS	Full		5,238	5,590	7,022	6,896
	Empty		798	126	546	908
TOTAL			**6,036**	**5,716**	**7,568**	**7,804**
TOTAL	Full	699,315	755,100	832,129	897,004	873,509
	Empty	392,056	434,857	471,733	519,650	486,070
TOTAL		**1,091,371**	**1,189,957**	**1,303,862**	**1,416,654**	**1,359,579**
% Change in Containerization			**9.0**	**9.6**	**8.7**	**-4.0**

Source: KPA Annual Report 2020

Increased Transited Cargo: Transit cargo has registered an upward trend over the years. The data contained in Table 7 below reveals that transit traffic increased at an average rate of 7% over the review period. Transit cargo to Uganda dominated with an average share of about 82% and an average annual change of about 5%. South Sudan registered a share of 8.2% and an annual rate of change of 16%. Tanzania recorded a share of 3% of transit traffic but the average rate of change has been declining due to the shift from the Port of Mombasa to

the Port of Dar-es-salaam which is the main competitor to Mombasa Port. DR Congo's share stood at 5% with an average rate of change of 20% over the review period. Rwanda exhibited an average share of about 4% with an annual average rate of change of about 7%, reflecting an upward trend. It should also be noted that transit traffic is dominated by import cargo as opposed to exports and also that the increase in the rate of containerization has a positive effect on transport cost since cost is defined for different container sizes and this has a significant effect on average transportation costs.

Table 7: Transit Traffic (MT): 2016 – 2020 Port of Mombasa

		2016	2017	2018	2019	2020
UGANDA	Imports	5,922,160	6,590,095	7,417,307	7,646,869	7,152,317
	Exports	424,555	522,876	471,812	486,053	546,014
	Total	**6,346,715**	**7,112,971**	**7,889,119**	**8,132,922**	**7,698,331**
% change MT			**12**	**11**	**3**	**-5**
% share		**82**	**82**	**82**	**82**	**76**
TANZANIA	Imports	171,238	244,239	229,652	234,126	234,578
	Exports	11,319	27,459	18,373	20,834	18,431
	Total	**182,557**	**271,698**	**248,025**	**254,961**	**253,010**
% change MT			**49**	**-9**	**3**	**-1**
% share		**2**	**3**	**3**	**3**	**2**
BURUNDI	Imports	35,755	21,578	20,610	1,856	560
	Exports	39	43	1,623	620	165
	Total	**35,794**	**21,621**	**22,233**	**2,475**	**725**
% change MT			**-40**	**3**	**-89**	**-71**
% share		**0.5**	**0.3**	**0.2**	**0.0**	**0.0**
RWANDA	Imports	180,281	167,323	219,650	219,949	421,762
	Exports	13,741	12,232	11,084	11,432	5,052
	Total	**194,022**	**179,555**	**230,734**	**231,381**	**426,814**
% change MT			**-7**	**29**	**0**	**84**
% share		**2.5**	**2.1**	**2.4**	**2.3**	**4.2**
SOUTH SUDAN	Imports	552,179	545,634	563,663	651,532	980,026
	Exports	45,673	128,118	170,469	118,355	76,000
	Total	**597,852**	**673,752**	**734,132**	**769,886**	**1,056,026**
% change MT			**13**	**9**	**5**	**37**
% share		**7.7**	**7.8**	**7.6**	**7.7**	**10.4**
D. R. CONGO	Imports	341,843	317,096	413,249	481,083	652,473
	Exports	35,092	43,028	57,719	65,872	79,635
	Total	**376,935**	**360,123**	**470,968**	**546,954**	**732,108**
% change MT			**-4**	**31**	**16**	**34**
% share		**4.9**	**4.2**	**4.9**	**5.5**	**7.2**
SOMALIA	Imports	3,950	3,820	1,964	374	1,229
	Exports	25	-	25	-	7
	Total	**3,975**	**3,820**	**1,989**	**374**	**1,236**

		2016	2017	2018	2019	2020
% change MT			**-4**	**-48**	**-81**	**230**
% share		**0.1**	**0.0**	**0.0**	**0.0**	**0.0**
OTHERS	Imports	9,688	13,065	7,361	8,552	2,704
	Exports	999	-	-	15	61
	Total	**10,687**	**13,065**	**7,361**	**8,566**	**2,765**
TOTAL	**Imports**	**7,217,094**	**7,902,850**	**8,873,456**	**9,244,340**	**9,445,650**
	Exports	**531,443**	**733,756**	**731,106**	**703,180**	**725,365**
	Total	**7,748,537**	**8,636,606**	**9,604,562**	**9,947,520**	**10,171,015**
% share imports		93.1	91.5	92.4	92.9	92.9
% share exports		6.9	8.5	7.6	7.1	7.1
% change transit traffic			11.5	11.2	3.6	2.2

Source: KPA Annual Report 2020

Increased Cargo Traffic in Inland Container Depots: As was alluded to earlier, the Port of Mombasa also operates the inland container depots (ICDs) in Nairobi, Kisumu, Eldoret and most recently Naivasha with the Nairobi ICD being the busiest. As already pointed out in other analysis on cargo traffic, import cargo dominates ICDs operations. This is evident in Table 8 which shows ICD operations for Nairobi expressed in twenty-foot container equivalent units (TEUs). There are minimal operations at the Kisumu, Eldoret and Naivasha ICDs but this is envisaged to change in the not too distant future.

Table 8: Container traffic (TEUs) at Nairobi Inland Container Depot

	2016	2017	2018	2019	2020
IMPORTS FULL	9,401	15,110	177,652	262,895	234,676
EXPORTS FULL	4,960	4,713	11,701	13,777	15,200
EMPTY	13,242	10,636	68,619	142,158	143,276
TOTAL	**27,603**	**30,459**	**257,972**	**418,830**	**393,152**
% change		10	747	62	-6

Source: KPA Annual Report 2020

3.2 Port Security Achievements

The following measures have been introduced, *inter alia*:

- New electronic surveillance equipment including CCTV
- A fully fledged police station within the port headed by an Officer Commanding Police Division/OCPD Port.
- Coastguard surveillance of waters in port area;
- New search and rescue center set up jointly with the IMO to supplement sea surveillance;
- Plain-clothes and uniformed security officers on patrol in port areas;
- Strict controls on port entry with all port users and visitors required to display biometric passes and to wear reflector jackets when accessing the quayside;
- Restricted entry to container terminal and other key sections such as oil terminals;
- Continuously manned watch towers in car handling area and container terminal;
- A rapid response team to deal with urgent security matters in or near the port area;
- A centralized verification area at the container terminal, car handling area and the CFS;

- Physical and electronic operated Barriers at port gates to deter forced entry and ensure proper security checks;
- Mandatory scanning of all export containers; and
- Random targeting of import containers for scanning without stripping – thus helping to reduce pilferage.

All these measures are further complimented by others contained in the KPA 2019 safety handbook.

3.3 Environmental Management Achievements

The ports, harbours and maritime transport activities have significant negative environmental impacts which if not addressed can curtail the socio-economic benefits of the BE. As such, KPA manages the marine and terrestrial environment in accordance with the IMO Convention for the Prevention of Pollution from Ships (MARPOL 73/78) and Environmental Management and Coordination Act No. 8 of 1999 (EMCA). The above is achieved through the implementation of Mombasa Port Resilient Infrastructure Program (MRIP), under the Green/Eco-Port Policy. KPA has prioritized the following environmental programs:

- Reduction of air pollution caused by Green House Gases (GHG) and their corresponding effects through the establishment of carbon sinkers which has been actualized by planting and maintenance of 7000 trees in 6 counties,
- Enhancement of air quality, reduction of particulate matter/ inhalable particles through the use of eco-hopper (if utilized),
- Efficient energy use and conservation through the use of modern operational machines,
- Promoting Port environment through the implementation of environmental monitoring and management programs for each project undertaken by the Authority,
- Control soil erosion, landslide and marine pollution by surface runoff through the Eco-face terracing.

Section IV

4 Governance of Ports, Harbours and Maritime Transport and Policy Alignment

4.1 Governance

This section analyses the national, regional and global policy and legal framework in place in Kenya in relation to the contributions of ports, harbours and maritime transport to Kenya's GDP and to Kenya's BE. Kenya's principal law is the Constitution of Kenya 2010, while other relevant sector legislations include the Kenya Maritime Authority Act, Kenya Ports Authority Act and Merchant Shipping Act. In this regard, the state run

institutions in this sector would either be established under the Constitution or legislation. The relevant line ministries are established under the direct mandate of the Constitution of Kenya, 2010, and a number of relevant institutions under these ministries have been directly established under legislation.

4.1.1 Global architecture

The International Maritime Organization (IMO) is the United Nations specialized agency with responsibility for the safety and security of shipping and the prevention of marine and atmospheric pollution by ships. Many of IMO's technical conventions contain provisions for ships to be inspected when they visit foreign ports to ensure that they meet IMO requirements. The conventions provide uniform parameters for exercise of port State control for coastal States such as Kenya. This is in line with the rights of coastal States as set out in the 1982 United Nations Convention on the Law of the Sea (1982 UNCLOS). The regional and national policy and legal framework in place in Kenya in relation to the contributions of ports, harbours and maritime transport to Kenya's GDP and to Kenya's BE is aligned to and derives its international permission from the IMO.

4.1.2 Regional architecture

The Lamu Port, South Sudan, Ethiopia Transport Corridor (LAPSSET Corridor) Program is Eastern Africa's infrastructure project bringing together Kenya, Ethiopia and South Sudan. This project consists of seven key infrastructure projects starting with a new 32 Berth port at Lamu (Kenya); Interregional Highways from Lamu to Isiolo, Isiolo to Juba (South Sudan), Isiolo to Addis Ababa (Ethiopia), and Lamu to Garsen (Kenya), Crude Oil Pipeline from Lamu to Isiolo, Isiolo to Juba; Product Oil Pipeline from Lamu to Isiolo, Isiolo to Addis Ababa; Interregional Standard Gauge Railway lines from Lamu to Isiolo, Isiolo to Juba, Isiolo to Addis Ababa, and Nairobi to Isiolo; 3 International Airports: one each at Lamu, Isiolo, and Lake Turkana; 3 Resort Cities: one each at Lamu, Isiolo and Lake Turkana; and The multipurpose High Grand Falls Dam along the Tana River.

4.1.3 National Institutional architecture

4.1.3.1 State Actors

The Ministry of Transport, Infrastructure, Housing, and Urban Development: Specifically, the State Department for Maritime and Shipping Affairs is tasked with five main functions: (a) promotion of maritime and shipping industry; (b) ship registration in Kenya; (b) human resource development, management and research in support of Kenya's Shipping Industry (c) Marine cargo insurance; (d) Establishment of effective admiralty jurisdiction; and (e) Development of a central data and information center.

State Department for Fisheries, Aquaculture and the Blue Economy: Notably, the blue economy falls under the this department which is tasked with a number of functions including: (a) co-ordination of development of policy, legal, regulatory and institutional framework for the fisheries industry and the blue economy; (b) enhancement of technical cooperation with partner states; (c) Co-coordinating maritime spatial planning and integrated coastal zone management; (d) Protection and regulation of maritime ecosystems; (e) management and licensing of local and foreign fishing trawlers in Kenya waters; (f) protection of the maritime resources in EEZ; (g) overall policy for exploitation of agro-based maritime resources; (h) policy on development of fishing ports and associated infrastructure; and (i) capacity building for sustainable exploitation of agro-based maritime resources.[22] It is to be noted that this department is under the Ministry of Agriculture, Livestock, Fisheries and

[22]ibid.

Cooperatives.[23] The linkages in the functions of the State Department for Maritime and Shipping Affairs and the State department for Fisheries, Aquaculture and the Blue Economy illustrate the need for a multi-sectoral approach between the two institutions, if optimum realization of Ports, Harbours and Maritime Transport to Kenya's GDP and to Kenya's BE in Kenya is to be achieved.

Kenya National Shipping Line: It was established in 1988 by the Kenyan Government, with its head office in Mombasa. It was established mainly as a state-owned shipping firm, to provide end-to-end customer driven solutions for cargo transportation. KNSL currently falls under the State Department for Shipping & Maritime. Over the years, it has been extensively reported that KNSL had almost reached an insolvent status due to lack of business, despite reported attempts to revive it.[24] The KNSL website identifies a number of challenges and latent opportunities which affect the institution's contribution to of Ports, Harbours and Maritime Transport sector to Kenya's GDP and BE. These include that the current shipping industry requires KNSL to expand its competence to meet its goals through enhanced services.[25] It also demands that KNSL develop capacity in new areas related to public policy, communications and collaboration in order to address the changing environment in the region. Success and relevance of KNSL in capacity expansion and effectiveness requires a significant infusion of resources and intellectual capital.[26]

Kenya Trade Network Agency (KenTrade): KenTrade is a state Agency under the National Treasury that is mandated to facilitate cross border trade and establish, manage and implement the National Electronic Single Window System (Kenya TradeNet System).

4.1.3.2 Non-State Actors

Port Management Association of Eastern & Southern Africa (PMAESA)[27]: PMAESA is a non-profit, inter-governmental organization made up of port operators, Government line ministries, logistics and maritime service providers and other port and shipping stakeholders from the Eastern, Western and Southern African and Indian Ocean regions. PMAESA is critical to this sector as it offers an appropriate framework for exchange of information and ideas among members and seeks to create an enabling environment whereby members can interface with one another in the port, transport and trade spaces.[28] Its members are represented in relevant organizations involved in shaping the global policy, patterns, and enacting new requirements in maritime transport and trade.[29]

The Kenya National Chamber of Commerce and Industry (KNCCI):[30] is registered as a not-for-profit private company limited by guarantee under the Companies Act Chapter 486 of the laws of Kenya. KNCCI is a membership based trade support institution (TSI) working to protect commercial and industrial interests of Kenya's business community. KNCCI advocates for the creation of a favorable commercial, trade and investment environment that supports enterprise expansion. The membership of KNCCI constitutes small,

[23]'State Department for Fisheries, Aquaculture and The Blue Economy' (*Ministry of Agriculture*) <https://kilimo.go.ke/state-department-for-fisheries-aquaculture-and-the-blue-economy/> accessed 19 April 2021.

[24]https://www.businesschief.eu/leadership-and-strategy/government-approves-revival-kenya-national-shipping-line

[25] https://knsl.go.ke/background-2/

[26] https://knsl.go.ke/background-2/

[27]'Port Management Association of Eastern & Southern Africa' <https://www.pmaesa.org/> accessed 16 April 2021.

[28]ibid.

[29]ibid.

[30]https://www.kenyachamber.or.ke/about-kncci/

micro enterprises (SMEs), medium and large enterprises. Before the promulgation of the Kenyan Constitution in August 2010, the KNCCI had its main operations at the head office in Nairobi with regional offices in the major towns in Kenya. However, after the promulgation of the constitution, the Chamber amended the legal instrument to establish a National Office and County Chamber's offices in all the 47 Counties. This is critical to this sector as KNCCI penetrates all corners of the country.

Kenya International Freight and Warehousing Association (KIFWA): KIFWA is the sole representative of all clearing, forwarding and warehousing companies in Kenya. The formation of KIFWA was born out of the need to form one national body which is cohesive enough to represent the interests of all its members.[31]

4.2 Regulatory Framework

Kenya Ports Authority Act, Chapter 391 Laws of Kenya (the KPA Act): The KPA Act establishes the Kenya Ports Authority (KPA), and sets its headquarters in Mombasa, Kenya.[32] The mandate of KPA is to: maintain, operate, improve and regulate the ports of: Funzi, Malindi, Kilifi, Mtwapa, Kiunga, Shimoni, Lamu, Vanga, Mombasa, Kisumu Port; construct, operate and maintain beacons and other navigational aids; construct new ports; carry on the business of stevedore, wharfinger or lighterman; act as warehousemen and to store goods whether or not such goods have been or are to be handled as cargo or carried by the KPA; to the extent determined by the relevant line Minister, to act as carriers of goods or passengers by land or sea; consign goods on behalf of other persons to any places whether within Kenya or elsewhere; provide such amenities or facilities for persons making use of the services performed or the facilities provided by the Authority as may appear to the Board necessary or desirable.[33] These powers of the KPA include all such powers as are necessary or advantageous and proper for the purposes of the Authority.[34] This Act crystallizes the functions and operations of ports in Kenya, which are critical centers for enhancing Kenya's GDP and blue economy components including: coastal shipping, cruise shipping, fishing, international shipping, mining of marine minerals, oil drilling, offshore or maritime monitoring, and passenger ferries.

Kenya Maritime Authority Act of 2006 (the KMA Act): The KMA Act establishes the Kenya Maritime Authority (KMA). The mandate of the KMA is set out in the KMA Act. This mandate is critical to Kenya's GDP and Blue Economy because it includes the: administering and enforcing the provisions of the Merchant Shipping Act, 2009 (No. 4 of 2009) and any other legislation relating to the maritime sector for the time being in force; coordinating the implementation of policies relating to maritime affairs and promote the integration of such policies into the national development plan; advising government on legislative and other measures necessary for the implementation of relevant international conventions, treaties, and agreements to which Kenya is a party; undertaking and coordinating research, investigation, and surveys in the maritime field; discharging flag State and port State responsibilities in an efficient and effective manner having regard to international maritime conventions, treaties, agreements and other instruments to which Kenya is a party; developing, coordinating and managing a national oil spill contingency plan for both coastal and inland waters and shall in the discharge of this responsibility be designated as the "competent oil spill authority;" maintaining and administering a ship register; dealing with matters pertaining to maritime search and rescue and co-ordinate the activities of the

[31] https://www.kifwa.co.ke/about.php

[32]'Kenya Ports Authority Act, Chapter 391 Laws of Kenya'
<http://kenyalaw.org:8181/exist/kenyalex/actview.xql?actid=CAP.%20391> accessed 8 April 2021, section 3.

[33]ibid, section 12 as read together with Second Schedule.

[34]ibid, section 12 (2).

Kenya Ports Authority, the Kenya Navy and any other body engaged during search and rescue operations; enforcing safety of shipping, including compliance with construction regulations, maintenance of safety standards and safety navigation rules; conduct regular inspection of ships to ensure maritime safety and prevention of marine pollution; oversee matters pertaining to the training, recruitment and welfare of seafarers; planning, monitoring and evaluating training programmes to ensure conformity with standards laid down in international maritime conventions; conduct investigations into maritime casualties including wreck; undertaking enquiries with respect to charges of incompetence and misconduct on the part of seafarers; ensuring, in collaboration with such other public agencies and institutions, the prevention of marine source pollution, protection of the marine environment and response to marine environment incidents; regulating activities with regard to shipping in the inland waterways including the safety of navigation; and implementing and undertaking co-ordination in maritime security; undertaking any other business which is incidental to the performance of any of the foregoing functions.[35] The KMA Act therefore establishes KMA as the regulatory authority in relation to Ports, Harbours, and Maritime Transport in Kenya. Given the wide scope of Kenya's blue economy resources and the multiple regulations and institutions managing the individual sectors, the coordination mandate of the KMA through the this Act is critical to how all facets of Kenya's blue economy can be coordinated and resources managed so that the Blue Economy brings about the maximum benefits to society in an inclusive and sustainable manner.

The Merchant Shipping Act, 2009: This Act is critical as it provides for the registration and licensing of Kenyan ships, regulating proprietary interests in ships, the training and the terms of engagement of masters and seafarers and matters ancillary thereto. It also provides for the prevention of collisions, the safety of navigation, the safety of cargoes, carriage of bulk and dangerous cargoes, the prevention of pollution, maritime security, the liability of ship-owners and others, inquiries and investigations into marine casualties. Additionally, the Act provides for the control, regulation and orderly development of merchant shipping and related services, and the general consolidation of the law relating to shipping and for connected purposes.[36] This Act regulates ships in inland waters.[37] The Act applies to Kenyan ships wherever they may be; and to all other ships while in a port or place in, or within the territorial and other waters under the jurisdiction of Kenya.[38] This Act therefore provides the legal basis for maritime safety, security, training, and regulation for water transport and related industries as for implementation by the KMA and KPA. The Act's role in the development, management and safety of Kenya's national fleet and capable sea farers and is also important to Kenya's Blue Economy and its contribution to GDP.

Kenya Revenue Authority, 1995 (KRA Act): The KRA Act establishes the Kenya Revenue Authority (KRA).[39], as an agency of the Government of Kenya that is responsible for the assessment, collection and accounting for all revenues that are due to government, in accordance with the laws of Kenya. KRA is an agency of the Government for the collection and receipt of all Government revenue and is therefore a critical institution to Kenya's GDP. It operates under the general supervision of the line Cabinet Secretary. In the performance of its

[35]'Kenya Maritime Authority Act, Act No. 5 of 2006'
<http://kenyalaw.org:8181/exist/kenyalex/actview.xql?actid=No.%205%20of%202006#part_II> accessed 8 April 2021, section 5.
[36] Merchant Shipping Act, 2009 preamble.
[37] Merchant Shipping Act, 2009 section 3(4)
[38] Merchant Shipping Act, 2009 section 3(1)
[39]'Kenya Revenue Authority Act, No. 2 of 1995'
<http://kenyalaw.org:8181/exist/kenyalex/actview.xql?actid=No.%202%20of%201995> accessed 16 April 2021, section 3.

functions for the collection and receipt of all revenue under subsection, KRA has the mandate to administer and enforce: (a) all provisions of the written laws relating to revenue to assess, collect and account for all revenues in accordance with those laws, as is set out in part 1 of the First Schedule of the KRA Act[40] and as set out in Part II of the First Schedule of the KRA Act, relating to revenue and for that purpose to assess, collect and account for all revenues in accordance with those laws. KRA also has the mandate to advise the Government on all matters relating to the administration of, and the collection of revenue under the written laws or the specified provisions of the written laws set out in the First Schedule; and to perform such other functions in relation to revenue as the Minister may direct. The laws relevant to KRA as set out in the First Schedule can be amended by the relevant line minister. KRA's revenue collection mandate as well as its advisory mandate to government on tax collection at the points of entry and exit into and from Kenya is significant to Kenya's blue economy as a destination as well as transit point. This is because the efficiency of tax assessment and collection as well as extent of taxation is a significant factor in the choice of ports by shippers. This in turn has a significant effect on the revenues generated from the blue economy related activities.

Standards Act (Chapter 496, Laws of Kenya): The Standards Act seeks to promote the standardization of the specification of commodities, and to provide for the standardization of commodities and codes of practice. The Act also establishes the Kenya Bureau of Standards (KEBS) to implement this mandate. KEBS was established in 1974 and plays a critical role in this sector. First, it is mandated with the provision of the country's quality infrastructure for facilitation of trade. In this sector which is characterized by trade globalization, market entry requires compliance to international standards and evidence of such compliance through an internationally recognized Standards, Measurement Systems (Metrology), Conformity Assessment and Accreditation. Secondly, is the support of Kenya's Industries: An effective and efficient quality infrastructure helps to increase productivity in manufacturing and service delivery. This helps to create jobs, encourages investment and can promote the careful use of natural resources. Thirdly is sustainability of production systems. A quality infrastructure facilitates improvements in environmental protection through sustainable consumption and production, health care, consumer protection, and distributes national wealth more equally by enabling transfer of knowledge to small enterprises. With the re-establishment of the East African Community (EAC) and Common Market for Eastern and Southern Africa (COMESA), KEBS activities now include participation in the development and implementation of SMCA activities at the regional level where it participates in the harmonization of standards, measurements and conformity assessment regimes for regional integration. KEBS operates the National Enquiry Point in support of the WTO Agreement on Technical Barriers to Trade (TBT). KEBS role in this regard is significant to Kenya's GDP and blue economy as a destination as well as transit point for goods.

The Kenya Roads Act of 2007: This Act establishes the Kenya National Highways Authority (KeNHA). KeNHA was inaugurated in September 2008. Its headquarters is in Nairobi and it has ten regional offices and three corridor management offices. KeNHA is responsible for the development, rehabilitation, management and maintenance of all National Trunk Roads comprising Classes S, A, and B roads. Class-S Road is a highway that connects two or more cities and carries safely a large volume of traffic at the highest speed of operation. Class-A Road is a highway that forms a strategic route and corridor connecting international boundaries at identified immigration entry and exit points and international terminals such as international air or sea ports. Class-B Road is a highway that forms an important national route linking national trading or economic hubs, County

[40]ibid, section 5 (2) (a) (1)-the List of laws is set out in the First Schedule of the KRA Act.

Headquarters and other nationally important centers to each other and to the national capital or to Class A roads. Under the Constitution of Kenya 2010, the National Government (through the Ministry of Transport, Infrastructure, Housing, Urban Development and Public Works) has the overall responsibility for the provision of an efficient road network in Kenya. The Ministry provides the policy and regulatory frameworks, coordination, oversight, supervision, liaison with other state agencies and any services necessary for the smooth functioning of the roads sub-sector. The Kenya Roads Act and KeNHA are critical to facilitation of operations of ports, harbours and maritime transport through an effective multi-modal transport structure.

4.3 International conventions

It is important to note that Kenya respects all aspects of international law and is a signatory of major international conventions. In this regard, Kenya has continued to implement the maritime security requirements contained in Chapter XI-2 of the International Convention for the Safety of Life at Sea 1974 and the International Ship and Port Facility Security (ISPS) Code through the Merchant Shipping Act, 2009 and the Merchant Shipping (Application of Safety Convention, 1974) Order, 2004. These regulations apply to all Kenyan territorial waters and seaports. Until recently KPA was concerned mainly with cargo security. However, in tandem with emerging security concerns the world over, KPA is focusing on the security of everyone visiting its ports and using their facilities. KPA has continued to investment in new security and surveillance related infrastructure geared towards making the port a safe place to dwell and do business.

4.4 Institutional Alignment

Ministerial Realignment: The blue economy falls under the State Department for Fisheries, Aquaculture and the Blue Economy which is under the Ministry of Agriculture, Livestock, Fisheries and Cooperatives.[41] The State Department for Fisheries, Aquaculture and the Blue Economy is tasked with a number of functions including: (a) co-ordination of development of policy, legal, regulatory and institutional framework for the fisheries industry and the blue economy; (b) enhancement of technical cooperation with partner states; (c) Co-coordinating marine spatial planning and integrated coastal zone management; (d) Protection and regulation of maritime ecosystems; (e) management and licensing of local and foreign fishing trawlers in Kenya waters; (f) protection of the maritime resources in EEZ; (g) overall policy for exploitation of agro-based maritime resources; (h) policy on development of fishing ports and associated infrastructure; and (i) capacity building for sustainable exploitation of agro-based maritime resources.[42] The linkages in the functions of the State Department for Maritime and Shipping Affairs and the State department for Fisheries, Aquaculture and the Blue Economy illustrate the need for a multi-sectoral approach between the two institutions. Other related administrative, policy, legal and institutional coordination issues need urgent attention in order to optimize the contribution of Ports, Harbours and Maritime Transport to Kenya's GDP and to Kenya's BE.

Support to KNSL: KNSL currently falls under the State Department for Shipping & Maritime Affairs. Over the years, it has been extensively reported that KNSL had almost reached an insolvent status due to lack of business, despite reported attempts to revive it.[43] The KNSL website identifies a number of challenges and

[41]'State Department for Fisheries, Aquaculture and The Blue Economy' (*Ministry of Agriculture*) <https://kilimo.go.ke/state-department-for-fisheries-aquaculture-and-the-blue-economy/> accessed 19 April 2021.

[42]ibid.

[43]https://www.businesschief.eu/leadership-and-strategy/government-approves-revival-kenya-national-shipping-line

latent opportunities which affect the institution's contribution to of Ports, Harbours and Maritime Transport sector to Kenya's GDP and BE. These include that the current shipping industry requires KNSL to expand its competence to meet its goals through enhanced services.[44] It also demands that KNSL develop capacity in new areas related to public policy, communications and collaboration in order to address the changing environment in the region.

Section V

5.1 Challenges to the Performance of the Sub-sector

Service Port or Landlord Port: At present KPA owns the entire port infrastructure and undertakes all port operations. There is no separation between public and private sector roles. Subsequently, it becomes quite difficult to strategically plan port management and development. The way out of this institutional dilemma is to

[44] https://knsl.go.ke/background-2/

undertake an administrative reform that ensures that the port is migrated from a Service Port to a Landlord Port. The new port management model will require, if and when adopted, the acquisition of new project management, implementation supervision and coordination skills including procurement, contract management and transaction advisory skills, inter alia. Stakeholder integration, corporate and development communication including monitoring and development for results need to be integrated urgently and in a systematic and programmatic way.

Congestion at the Port of Mombasa: Reviewed data indicate that there is a high average berth occupancy rate across all the terminals over the review period. The berth occupancy ratio (BOR) registered at the port average about 75-80% and is above the UNCTAD recommended rate of 70%. A high BOR tends to increase not only port related charges but also costs of logistics. This also indicates that the port is deficient in mooring facilities including berths and wharf.

Long ship turnaround time: Reviewed data indicate that ship turnaround time is well above the target of 72 hours and even reached 87 hours in December 2020. Long ship turnaround time is an indication of, among others: long ship waiting time occasioned by low productivity, high BOR, obsolete and unreliable port equipment, inefficient logistics, etc.

Inadequate berth length: Most of the berths have inadequate LOA meaning that vessels visiting the Port are longer than the berth length. This implies that the berths cannot be efficiently and productively used.

Inefficient Port Operations: From an institutional point of view, inefficiency in port operations is brought about by a multitude of factors that include inadequate and aged facilities, poor hinterland transport connectivity, inefficient document and cargo clearance procedures and slow cargo loading/unloading. This led to long periods of port congestion. From a management point of view, port operations are hampered by bureaucratic tendencies, political interference, and insistence on increases in labour force productivity and port throughput with little attention being given to internal capacity improvements.

Inadequate hinterland connectivity: Roads linking the port area to the Kenyan hinterland have been, for the most part, underdeveloped and impassible especially during adverse weather conditions. This hinders efficient transportation leading to congestion, air pollution and increases in transportation costs. Most of the roads linking the port to hinterland countries being served by the Port are also deplorable leading to increased logistical and transportation costs. Until the advent of the SGR, the railway system has also been inadequate and unreliable.

Crime related challenges: Maritime security is of paramount importance to Kenya as the country relies heavily on the ocean for transport, trade, food, and international communication. Thus, threats to maritime transport have far-reaching knock-on effects on trade, food security, tourism, and other ocean industries. Reviewed literature underlines the fact that piracy and armed robbery at sea, illicit trade in crude oil, arms and drugs trafficking, human trafficking and smuggling of contraband goods, marine pollution, and illegal activity in protected areas require enhanced regional and international collaboration to overcome (see Nyonje, Ouma and Orina, 2020). In 2016, the Business Daily Africa reported that Kenya lost an estimated KSh10 billion (US$100 million) in revenue, annually, due to illegal fishing alone. In addition, the Eastern Africa region faces challenges of illegal and unregulated fishing, piracy and armed robbery, maritime terrorism, illicit trade in crude oil, arms, drug and human trafficking and smuggling of contraband goods; degradation of marine ecosystems through discharge of oil, the dumping of toxic waste, illegal sand harvesting and the destruction of coral reefs and

coastal forests.[45] In recent years, Kenya and its coastline has been a target of destructive terrorist attacks, facilitated primarily from the sea. Some of these attacks are embedded among the coastal communities who are susceptible to radicalization due to low incomes and lack of viable futures. Others crimes include use of illegal fishing gears such as nets with mesh sizes below the legal minimum requirement, dynamite fishing, and the criminal operations of small-scale fishers entering Kenya's waters from neighboring countries. Kenyan fishermen are frequently caught up in cross-boundary fishing conflicts in L. Victoria, L. Turkana and the Indian Ocean. In the geo-political arena, the maritime boundary dispute with Somalia which is before the International Court of Justice (ICJ) needs to be settled as Kenya could lose a significant proportion of its ocean resources.

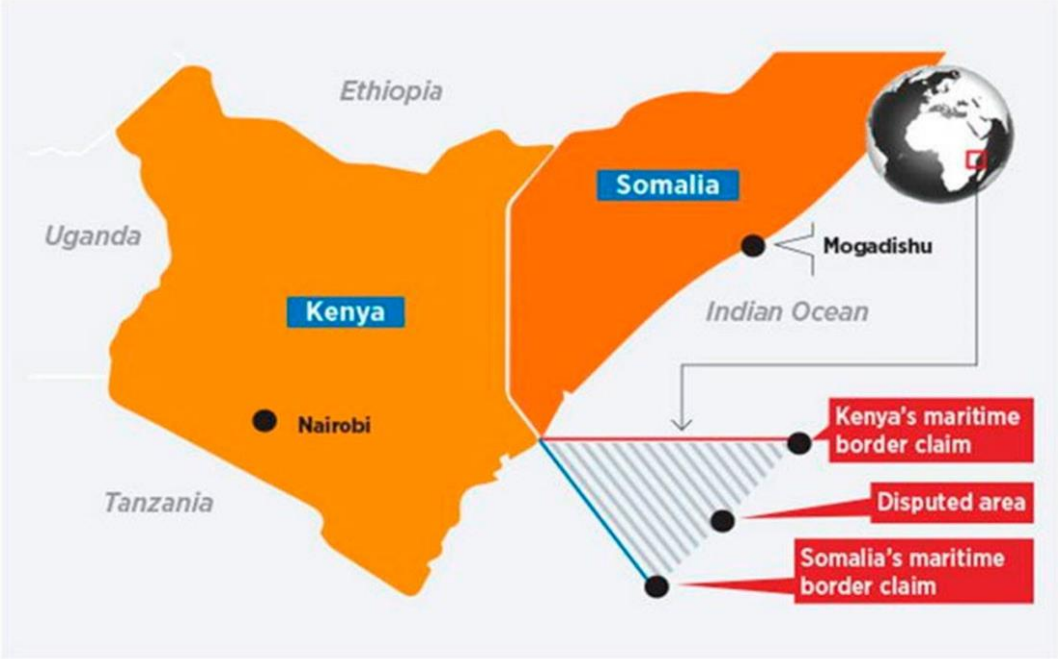


Chart 5: Kenya-Somali maritime border dispute
Source: Nyonje, Orina and Ouma

Section VII

[45] UNDP, "Leveraging the Blue Economy for Inclusive and Sustainable Growth," Policy Brief, Issue No: 6/2018, April, 2018, op. cit., p.2

6 Potentials, Implementation Plan and Economic Viability of Investments in Ports, Habours and Maritime Transport

6.1 Potentials for further development of Ports, Harbours and Maritime Transport Sub-sector

Increase berth capacity: Data contained in Table 12, indicates the high average berth occupancy rates across all the terminals over the review period. This is an indication of congestion at the port which in turn leads to higher vessel delay surcharges, higher cargo handling charges and higher other KPA related charges. This has a detrimental effect on freight charges which in turn tend to increase overall transportation costs. This also has a negative spillover effect on the time spent at the One Stop Centre (OSC) and also at the Document Processing Centre (DPC) thereby increasing logistics costs. A high berth occupancy rate also increases berth dwell time. In addition to increasing transportation costs, these negative effects of high berth occupancy rates tend to increase the cost of doing business which makes production uncompetitive. The causes of the high berth occupancy rates include: insufficient berths; few or unreliable gantry cranes, and insufficient, inadequate or unreliable container yard equipment, among others. There is need to increase port berth capacity to counter these detrimental effects.

Table 12: Berth Occupancy (average %)

Terminal	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
General cargo berths	63.9	60.9	61.4	64.4	63.5	73.3	75	78.4	83.5	81.5
Mombasa container terminal	94.5	75.7	82.7	93.0	91.4	52.9	71.6	56.6	64	64.1
Shimanzi oil terminal	81.8	80.1	77.5	75.7	79.2	86.6	88.4	86.4	82.6	81.7
Kipevu oil terminal	84.5	80.2	83.5	79.4	86.0	82.7	78.1	75.8	70.7	43.5
Mbaraki wharf	76.2	79.3	56.0	62.2	55.8	40.9	53.4	38.9	33.7	25.9

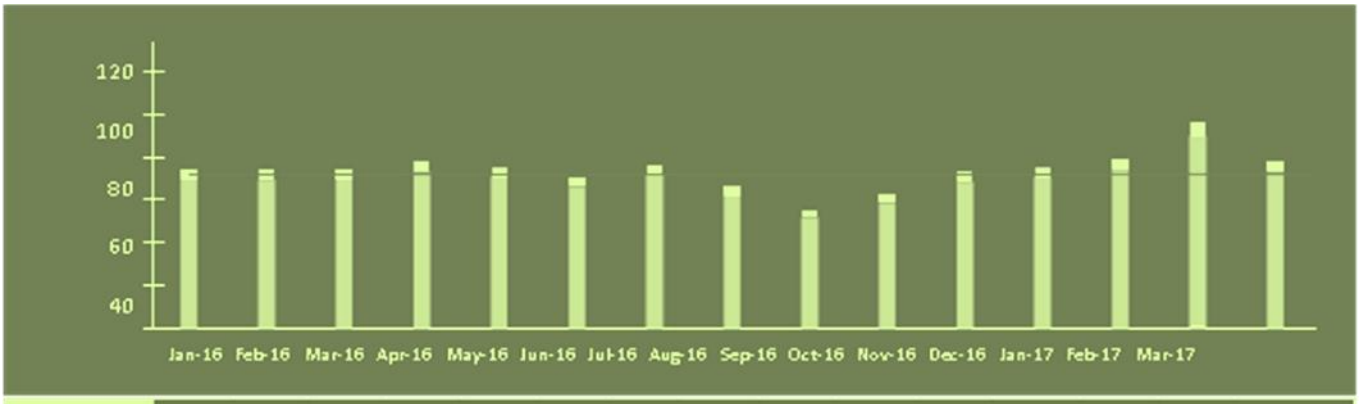
Source: KPA Annual Reports 2015and 2020

Improve cargo handling capacity: From the statistics available (Chart 6), average waiting time per ship is predominantly high, at 2.5 days per ship, but this trend is also characterized by large variations. This indicates that the cargo handling process is not only inefficient but also unreliable and unpredictable. Available evidence indicates that erratic waiting times are seasonal and are worse during the rainy seasons possibly an indication of the poor quality of the road infrastructure. This in turn leads to congestion at the port due to the slow off-take of cargo. This has implications for vessel turnaround time.

Chart 6: Average ship waiting time
Source: Based on own calculations

Improve Port Operations Efficiency: The ship turn-around time is a summation of two time limits starting from the time the ship arrives at the berth and time spent as it is served up to the time it departs the port. Ship

turnaround is an important indicator of overall port efficiency and is influenced mainly by arrival rates, waiting times and cargo off-take. According to BITRE 2009, vessel turnaround is also a good indicator of the efficiency of shipping operations, cargo loading and unloading, and onward clearance to other cargo destinations. It further indicates the condition and efficiency of port equipment, its information management systems, and its workforce (Chart 9).



Turnaround Time	75.1	75.0	75.3	78.4	75.8	75.5	70.9	66.8	56.2	62.8	73.4	74.1	76.4	96.2	78.4
Target	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72

Chart 7: Ship turnaround time
Source: Northern Corridor Transport Observatory, Mombasa, Jan 2016- March 2017

As is evident from the data in the Chart 7 ship turnaround time has been above the target of 3 days for the most part. During the October-December 2020 quarter, reviewed literature shows that a total of 130 ships were called and statistics indicate that 25% of vessels recorded an average turnaround time of 55 hours in October 2020 and increased to 87 hours in December 2020. The average turnaround time for the quarter increased from 82 hours in October to 166 hours in December 2020. This performance fell short of the 81 hours target[46]. From an institutional point of view, the situation was brought about by a multitude of factors that included inadequate and aged facilities, poor hinterland transport connectivity, inefficient document and cargo clearance procedures and slow cargo loading/unloading. This led to long periods of port congestion. From a management point of view, port operations are hampered by bureaucratic tendencies, political interference, and insistence on increases in labour force productivity and port throughput with little attention being given to internal capacity improvements. A comparison with other ports in the world indicates that the Mombasa Port needs to address this issue in order to compete competitively (Table 13).

Table 13: Port Turnaround for Major Selected Ports

Port	Duration		Port	Duration	
	Hours	Days		Hours	Days
Singapore	26	1.1	LeHavre	18	0.8
HongKong	23	1.0	Melbourne	31	1.3
Shanghai	19	0.8	East Port Said Port	18	0.8
Busan	13	0.5	SydneyPorts	29	1.3
Rotterdam	40	1.7	Karachi	19	0.8
Hamburg	25	1.0	Manzanillo	26	1.1
Los Angeles	61	2.5	PuertodeBuenosAires	36	1.5

[46] Northern Corridor Transit and Transport Coordination Authority, pg. 10

Port		Duration	Port		Duration
Long Beach	24	1.0	PortofBrisbane	34	1.4
Port Klang	11	0.5	Izmir	52	2.2
New York/New Jersey	22	0.9	Gothenburg	30	1.3
Laem Chabang	12	0.5	Chennai (Madras)	41	1.7
Tokyo	22	0.9	Tauranga	31	1.3
Santos	37	1.5	Auckland	37	1.5
Vancouver	49	2.0	Fremantle	27	1.1
Durban	**72**	**3.0**	**Adelaide**	**22**	0.9

Source: http://researchbank.rmit.edu.au/ as adapted from BITRE

Improve Productivity at the Port: Charts 7 and 8 show some productivity indicators based on dry cargo handled per ship working day. On average, dry cargo handled per ship working day increased from 3,477 tons in 2011, increasing thereafter to 6,998 tons in 2016, declining and then rising to attain a high of 8495 tons in 2019 and thereafter declining to 7, 922 tons in 2020. This rate increased by 7.4% in 2012, increased by 1.6% in 2013, increased slightly by 1.9% in 2014 and was on an upward trend up to 2019 before declining in 2020. These unpredictable changes in productivity suggest that there are some fundamental issues related to productivity that need attention. These could include: labour force productivity, per gang shift issues, equipment availability and reliability, etc. There is also cargo saturation due to limited berth capacity and this affects productivity. There is arbitrary change of commodity designated berths. This has the effect of reducing productivity as it takes time to mobilize stevedoring labour and cargo handling equipment.

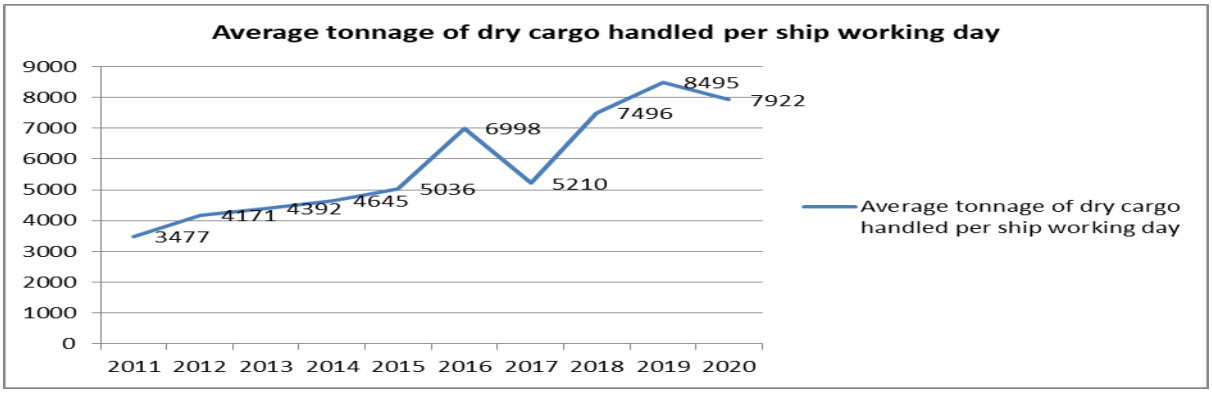


Chart 8: Average cargo handled per ship working day

Source: Own calculations based on KPA Annual Reports 2015 and 2020

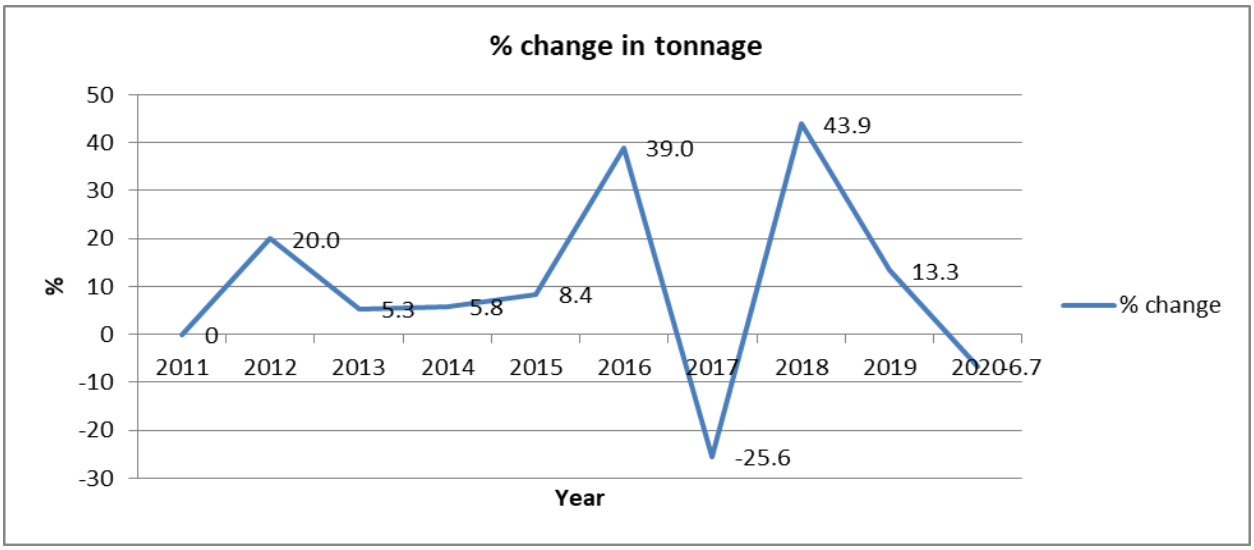


Chart 9: Percentage change in average cargo handled per ship working day
Source: Own calculations based on KPA Annual Reports 2015 and 2020

Improve berth length: Most of the ships visiting the port are longer than the designed berth LOA. This is true across most of the berths. This implies that the berths cannot be efficiently and productively used due the inadequate length. This also limits the number of vessels visiting the port. In addition, throughput has been increasing steadily and such increments need expanded port area capacity.

Table 14: Comparison between designed berth length and ship length

Berth/Wharf	Allowable LOA	Number of Calling Ships	Ships with Longer LOA Than Designed LOA	Ratio
Mbaraki	276m	7	0	0 %
No.1	156m	180	162	90 %
No.2	150m	4	3	75 %
No.3	150m	78	72	92 %
No.4	171m	95	23	24 %
No.5	161m	111	85	77 %
No.7	187m	62	23	37 %
No.8	154m	39	5	13 %
No.9	162m	62	52	84 %
No.10	184m	56	37	66 %
No.11	166m	106	69	65 %
No.12	165m	113	4	4 %
No.13	157m	104	84	81 %
No.14	163m	87	72	83 %
No.16	160 m	108	101	94 %
No.17	165 m	103	100	97 %
No.18	215 m	116	36	31 %
No.19	216 m	2	-	-
Total		1,433	928	65 %

Source: Mombasa Port Master Plan including Dongo Kundu, JICA 2015, pg. 21-22

Subsequently, new berths are being constructed, the construction of the 2nd Container terminal, set to increase throughput by a further 1 million TEU, is almost complete and structural works to deepen the harbour are on-going. Dredging of the lead channel will allow bigger vessels of capacities exceeding 20,000 TEUs to call at the

port. In the medium term, dredging of the harbour to accommodate vessels of at least 10,000 TEUs from the current 6000 TEUs will contribute to the transformation of the Port of Mombasa from a service port into a regional and international hub. These investments will, inter alia, improve connectivity and market capture and create ample spaces needed for the transfer, loading/offloading cargo, increase storage capacity and will improve productivity and efficiency in delivery operations.

Improve cross sector linkages: In addition, the implementation of activities envisaged in the Mombasa Port Master Plan including Dongo Kundu as well as those under the LAPSSET Project will enhance port performance. The development of small ports and ICDs will go a long way into reducing pressure on KPA, and enhancing the potential for Blue Economy. In addition, development of port infrastructure including multimodal transport will improve the sub-sector connectedness with other sectors such as agriculture, aquaculture and forestry, tourism, manufacturing, mining, energy, and water and environment, inter alia. This will as provide more connectivity between the ports, local population and the neighbouring countries. This will lead to creation of employment opportunities, reduced overload of the port of Mombasa and improvement in efficiency in cargo transportation corridors.

Port infrastructural investments for faster development-Malindi Port development: Implementation of a new international port development study in order to cope with the existing and forecasted demand for port and maritime transport services is required. Whereas the Port of Mombasa will be improved both structurally and capacity wise, nevertheless the advantages for the development of a state of the art international port, possibly in Malindi cannot be gainsaid. In addition, spatial rationalization based on the preparation of spatial utilization plans needs to be undertaken in order to improve capacity, efficiency and productivity.

LAPSSET Project and Lamu Port: The Lamu Port South-Sudan, Ethiopia Transport (LAPSSET) Corridor is an inter-regional multi-modal infrastructure. The LAPSSET is the largest transport and infrastructural development project in Kenya as well as East and Central Africa (Lango, 2019). The projects main aims are to enhance trade and logistics in the region as well as provide seamless connectivity between the countries and the Kenyan counties. The project is in line with the Kenyan's vision 2030 and is expected to contribute to the development of blue economy sector in Kenya since its goals include exploration of marine resources by increasing commercial fishing, offshore and inland mineral exploitation, shipping, international and regional trade, carbon sequestration as well as international tourism (LAPSSET Corridor Development Authority, 2018). The US$25.5 billion project has 9 components which include a Port in Lamu, an inter-regional highway, a standard Gauge Railway, a crude oil pipeline, product oil pipeline, oil refinery, resort cities, international airports as well as other supporting infrastructure such as high grand fall multipurpose dam and fiber optic communication system (LAPSSET Corridor Development Authority, 2016).

The Lamu port, which is being constructed under the project, had its first berth launched in May 2021. Once complete, the new port will have 32 Berths as well as ships building and repair center and is intended to unlock logistics and trade and create a regional transport hub. The port will be able to handle the largest ships in the world as it will have a 500m wide channel with a depth of over 18 meters. By the year 2030, the port is expected to handle more than double of containers handled by the Mombasa port thus providing a competitive environment and trading flexibility as well as reducing pressure on the Mombasa port (LAPSSET Corridor Development Authority, 2018). Appendix 3 shows the cargo forecast for the new port by 2030.

Enhance maritime and shipping-related businesses: There is need to enhance maritime and shipping related businesses such as shipbuilding and repairing, container manufacturing and repairing, bunkering, shipping agency, ship brokerage, terminal operator, CFS operators and marine cargo insurance, among others.

Exploit opportunities offered by the ratification of AfCFTA: Kenya is a signatory of the AfCFTA which came into effect in January 2021. The agreement has created a huge single market of 1.2 billion people across 54 countries, most of them landlocked, with a combined GDP of US$3.4 trillion. The achievement of the outcomes of the agreement and benefits to Kenya will depend on the interconnectedness between the countries and ports and maritime transport actors will be vital in the achievement of these benefits as sea transport offers the cheapest and fastest way of moving volumes of goods across long distances. The landlocked countries will continue to depend on the maritime gateways for their seaborne trade as other types of freight, especially road and rail, are less efficient, unreliable and more expensive. The maximization of benefits from this arrangement will depend on Kenya's ability to improve the capacity, efficiency, logistics, and safety of ports, harbours and maritime transport systems and the expansion and investment in maritime transport infrastructure has to be prioritized.

Increase equipment: The findings of this study support port stakeholders who have raised issues on several platforms about equipment shortage, which slows down quay and yard operations, sometimes even hampering delivery operations, especially for ICD bound cargo. The port needs a major audit of its quay equipment, such as STS gantry cranes, transfer equipment such as tug masters and straddle carriers, and yard/stacking equipment, such as reach stackers, forklifts and RMGs. The audit should be carried out with the sole purpose of identifying equipment suitability, availability and if equipment is adequate to meet the demands of the projected traffic. Forecasting will be of utmost importance in procurement of such equipment, to ensure man-hours or moves are adequate to keep up with the operations at the portaf and that equipment will not breakdown frequently, causing delays in operations.

Enhance ICT infrastructure: ICT plays a key role in improving communications. ICT needs to be enhanced, especially because of the push for paperless trading and introduction of systems to improve processes and service delivery at the port. Such systems include KWATOS, Simba System, KenTrade and the newly introduced ICMS system. All clearance takes place online, and should there be no downtime in any of the above mentioned systems, then operations are negatively affected, leading to slowing down of service delivery, increasing cargo dwell time at the port.

Undertake automation of operations: In a bid to improve service delivery, ports across the globe are adapting to automation. KPA should follow suit, albeit in phases. Automated ports are utilizing AI to control operations, optimization of operations are done by the use of big data and advanced analytics, and employment of dynamic scheduling. Equipment manufacturers, such as Kalmar, have introduced technologically advanced equipment, and respective TLS and TOS software, which make full use of interconnectivity through IoT, realized because of the current 4^{th} industrial revolution, termed Port 4.0. This concept minimizes reliance on human dependence and interaction, thereby reducing human error and labour costs.

Increase qualified staff and training: KPA needs to maintain optimum levels of staffing to ensure that all critical areas are manned adequately, and avoid instances where they may be short of staff, hampering service delivery. The issue of manpower is more sensitive in the wake of COVID, where older staff, or those that fall in the high risk category, may have to work remotely. But the port being a complex system, some duties need staff to be present in person, hence need to ensure that staff are always present, as and when needed.

In order to sustainably exploit the potential of the sub-sector, a cadre of staff with the appropriate technical and managerial skills will be required. Education and training must ensure that the trained manpower is of international standards and competent to effectively meet both domestic and international demand. In Kenya, marine education and training is offered through the Kenya Marine and Fisheries Research Institute (KMFRI), Universities, Bandari Maritime Academy, Coast National Polytechnic and Railway Training Institute (TRI) Marine School, Kisumu and Technical Vocational Education and Training (TVET) institutions. In the process of satisfying their mandates, these institutions face a lot of challenges that need to be addressed. These challenges include: shortage of instructors and lecturers with professional training in maritime related disciplines, shortage of opportunities for onboard training for students who complete shore-side training and inadequate training facilities and equipment to enable students acquire the practical training to attain the competencies for Standards of Training, Certification and Watch-keeping for Seafarers (STCW) 1978.

Investments to improve maritime security: Guarantee security and safety of both persons and goods within the maritime transport, harbours and ports to encourage more investments and utility of the Maritime transport and its hinterland connections. Studies have shown that cargo owners prefer road transport as opposed to railway, hence road access development to the ports should be given priority.

Integrated Environmental and Social-economic Considerations: Most countries in the world, who are leaders as far as the exploitation of the blue economy is concerned, have marine related legal frameworks, plans, strategies and policies in place and Kenya can benchmark, design, develop and implement related instruments. Suffice it to say that some of these structures and plans are already in place and are in various stages of implementation and what is needed is policy integration and proper synchronization. As is pointed out by Nyonje, Orina and Ouma (2020), the supreme Law of the Land, the constitution of Kenya (Republic of Kenya, 2010) specifies the right to sustainable environment as a fundamental right and freedom with Article 42 providing for 'the right to a clean and healthy environment' which includes the right to have the environment protected for the benefit of present and future generations. Furthermore, Article 69(a) discusses the role of the state in ensuring sustainable development as well as the importance of equitably sharing of benefits derived from the environment.

Some of the legislations and plans that address the various aspects of environmental-social-economic issues from a blue economy perspective and which will need integration and synchronization and are being implemented under the Third Medium-Term Plan (MTP III) and contains the BE Sector Plan 2018–2022 include: National Environmental Management and Coordination Act, Fisheries Management and Development Act, Wildlife (Conservation and Management) Act, National Environmental Policy for infrastructure projects in the blue economy, Forest Act, Maritime Zones Act, the Integrated Coastal Zone Management (ICZM) Plan, the Marine Protected Areas (MPAs), the Locally Managed Marine Areas (LMMAs), the mangroves specific Forest Management Plan and the Marine Management Plan, among others. The completion of the Marine Spatial Plan as a tool for integrated environmental management decision making will go a long way into the identification of the different uses and the much needed sectoral diversity of the blue economy.

Port infrastructural development will lead to the destruction of coastal forests in general while the Mombasa Master Plan points out that the planned port infrastructural developments will lead to the clearing of 36 ha of mangrove in the Dongo Kundu area which is a significant loss of biodiversity and associated ecological services such as provision of fuel wood, construction materials and fishing and breeding ground for offshore organisms. The mangrove forest also acts as a natural buffer against ocean related disasters, tidal waves and provides carbon storage, with the latter assisting in mitigating climate change. In addition, land reclamation, bank

protection and dredging will disturb the aquatic and tidal flora and fauna, lead to changes in water quality and increase sediment load. To mitigate against these negative cumulative impacts, an Environmental Strategic Impact Assessment needs to be undertaken and should include a community driven Ecosystem Management Plan geared towards the restoration of the original ecosystem functions. For purposes of sustainability, such a plan should include a portfolio of bankable community livelihood projects. The affected sacred Kaya forests will need to be restored in accordance with the Archeological Impact Assessment which will be a part of the Environmental Strategic Impact Assessment (ESIA).

Last but not least, the role of the National Environment Management Authority (NEMA) that include coordinating the various environmental management activities being undertaken, promotion of the integration of environmental considerations into development policies, plans, programmes and projects needs to be enhanced. It's role in taking stock of Kenya's natural resources including their utilization and conservation will have to be improved. In addition, the Kenya Marine Authority (KMA) and KPA roles as environmental leaders will need to be better articulated. Thus, these institutions will need to enhance the monitoring, evaluation and management of offshore and onshore environment and implement proactive measures against potential concerns of pollution control, waste management, global warming prevention, and occupational health and safety in coordination with the relevant authorities. Mitigation measures contained in the Green Port Policy will need to be implemented.

6.2 Implementation Schedule

Table 15: Implementation schedule of Ports, Harbours and Maritime transport related projects

SN	Project	Comments	Short-term (2021-2023)	Medium-term (2024-2028)	Long-term (2029-2039)
A.	Soft Projects				
	(i) ICT improvements	Planned upgrades implemented and others ongoing			
	(ii) New port equipment and Automation of Operations	3 gantry cranes, 3 mobile cranes, 12 RTGs and 20 terminal tractors bought.			
		Purchase of additional equipment ongoing			
		Fixed berth window system implemented for berths 16-19			
	(iii) Institutional, legal, Policy harmonization and Alignment	Many conflicting and overlapping port governance legislations. Need for harmonization and alignment.			
	(iv) Integrated environmental management and marine ecosystem health, restoration and preservation	Need for policy harmonization and development of a portfolio of "bankable" projects. Resource mobilization and implementation thereafter			
B.	Mombasa Port Development Project+Dongo Kundu				
	(i) Expansion of Gate 18/20	complete			
	(ii) Conversion of berth 11-14 to container terminal	Ongoing			
	(iii) Improvement of berth 19	complete			
	(iv) Development of new container terminal	Ongoing			
	(v) Phase 1 (berth no. 20 and 21)	complete			
	(vi) Phase 2 (berth no.22)	ongoing			
	(vii) Phase 3 (berth no. 23)	-Resource mobilization ongoing			
		- tendering & implementation			
	(viii) Rehabilitation of shipbuilding & repair				
	(ix) Projects in the KPA Master Plan	Feasibility & detailed design, ESIA and RAP studies need to be carried out for some projects. Project preparation and transactionary advisory services for structured financing & tendering.			
	(x) Projects in the Mombasa Master Plan developed by JICA	Feasibility & detailed design, ESIA and RAP studies need to be carried out for some projects. Project preparation and transactionary advisory services for structured financing & tendering.			
	(xi) Staff capacity development & training	Improvement of facilities of Bandari College as well as other maritime training institutions ongoing			
	(xii) Green Port Initiatives	Implementation is ongoing			
	(xiii) Port Maritime safety and security	Implementation is ongoing			

SN	Project	Comments	Short-term (2021-2023)	Medium-term (2024-2028)	Long-term (2029-2039)
C.	SGR	Mombasa-Nairobi complete. Extension to Suswa ongoing. Extension to Western Kenya and to the border expected			
D..	Development of Small Ports				
	(i) Rehabilitation and development of Kisumu Port	Ongoing			
	(ii) Rehabilitation and development of Shimoni Port	Ongoing			
	(iii) Rehabilitation and development of Port Reitz	Ongoing			
	(iv) Development of Kipevu terminal	Ongoing			
	(v) ICDs, EPZs and SEZs	Expansion and development of existing ones ongoing (Nairobi, Kisumu, Eldoret). New one built in Naivasha			
E.	LAPSSET and Lamu Port				
	(i) Lamu Port development	1st berth complete & commissioned in May 2021. Development of other berths ongoing			
	(ii) LAPSSET Corridor projects	Some major road sections have been commissioned. Implementation of others is ongoing.			

Source: Own compilation and also from prioritized projects under the "Vision 2030" and MTP III Blue Economy Plan

Table 15 above presents the implementation schedule for projects envisioned in the ports, harbours and maritime transport sub-sector. It is prepared under the following assumptions:

- All the state and non-state actors will fulfill their mandates as far as the development of this sub-sector is concerned;
- All the required resources for their implementation will be secured.

6.3 Economic Viability of Investments in Ports, Harbours and Maritime Transport

6.3.1 Institutional, Legal, Policy and Political Support for BE Financing

Since the SBEC of 2018, the development of the Ports, Habours and Maritime Transport sub-sector is well entrenched in the government's BE development agenda. The BE sector is anchored in the State Depart of Fisheries, Aquaculture and Blue Economy and an implementation Committee is in place and anchored in the President's Office. The BE has been embraced in the GoK blue print "Vision 2030" and MTP III Blue Economy Sector Plan 2018-2022. The Government of Kenya sees the BE as one of the major sectors that will promote economic growth, reduce unemployment and poverty, and enhance food security while contributing immensely towards sustainable livelihoods. The Blue Economy also contributes to the attainment of several SDGs as mentioned in an earlier section of this report.

Moving forward, it is notable that existing demand forecasts up to 2035[47] based on cargo profiles, containerization rates and capacity requirements show the need for undertaking additional investments in the

[47]Mombasa Port Master Plan including Dongo Kundu.

ports, harbours and maritime transport sub-sector. Thus, given the expected exponential growth in the demand for port and maritime transport services and given that the Port of Mombasa serves not only the Kenyan economy but all other regional economies, there is need to prioritize investments that will enhance the contribution of this sub-sector to GDP. Key infrastructural related projects whose sub-components are under implementation include: the Mombasa Port Development Program and Small Ports Development, the LAPSSET and Lamu Port Development, Projects under the Mombasa Master Plan including Dongo Kundu, Inland Container Depots development, SEZs, ICT and Maritime safety related programs. All these programs underline the need for an integrated all inclusive approach to development while ensuring that the health of the marine ecosystem is ensured and enhanced.

During the Nairobi SBEC of 2018, BE financing need was estimated at about US$ 180 billion. The key question is whether this financing need will be realized in a timely manner. What is clear is that the much needed institutional, legal, policy and political support framework for efficient and effective resource mobilization is in place and some of the investment finance needs for project components within the ports, harbours and maritime transport are being met or shall be met within the framework of national planning and budgeting cycle. The integrated financing plan should also take into consideration issues related to sustainable marine ecosystem economic exploitation that meets the criteria for sustainable environment, ocean health preservation and restoration. Other "bankable" project components will attract financing based on their economic and financial viability within the framework of a healthy and sustainable marine ecosystem.

6.3.2 Economic and Financial Analysis of key sub-sector Investments

Mombasa Port Development Project: As mentioned elsewhere, one of the major investments are infrastructural and environmental management projects contained in the Mombasa Port Development Project and outlined in the Mombasa Master Plan prepared by JICA. The base case projects' cost amount to USD 1.3 billion and the major outputs are: (i) Mombasa Port Master Plan (revised in 2009 by KPA) is reviewed and revised, (ii) strategic planning and management system in KPA is improved, (iii) future capacity and forecast method in KPA is improved and (iv) Comprehensive Mombasa Port development implementation/investment plan is prepared. To determine the feasibility of the project, a sensitivity analysis was carried out for 3 alternatives: (i) Case A: The costs increase by 10%; (ii) Case B: The benefits decrease by 10% and (iii) Case C: Both Case A and B occur simultaneously.

Table 16a: Sensitivity Analysis

Base Case: (New 11 berths and other improvement works on existing facilities)			
Case	NPV (1,000 US$)	B/C Ratio	EIRR
Base Case	851,515	1.55	18.5%
Case A	697,408	1.41	17.0%
Case B	612,257	1.40	16.9%
Case C	458,150	1.27	15.4%

Source: Mombasa Port Master Plan, page 46

Alternative Case

Table 16 b: (New 13 berths and other improvement works on existing facilities)

Case	NPV (1,000 US$)	B/C Ratio	EIRR
Original Case	710,974	1.42	17.3%
Case A	542,813	1.29	15.8%
Case B	471,715	1.28	15.7%

Case C	303,554	1.16	14.2%

Source: Mombasa Port Master Plan, page 46

An economic opportunity cost of capital of 12% was used for calculating the net present value (NPV) and benefit-cost (B/C) ratio. The results contained in Table 16 above show that the return on investment for the Mombasa Port Development Project is economically sound meaning that it is feasible and able to attract financing. The FIRR contained in Table 17 also show that the development alternatives contained in the MPMP are also financially feasible. The public private partnership schemes considered in the Plan suggest that soft financing is more feasible as opposed to private financing.

Table 17: Financial Internal Rate of Return

Case	Base	expense 10% plus	revenue 10% minus	expense 10% plus revenue 10% minus
1	9.7%	8.2%	8.1%	6.5%
2	8.9%	7.4%	7.2%	5.7%

Source: Mombasa Port Master Plan, page 46

LAPSSET and Lamu Port Project: The other major project being implemented is the LAPSSET and Lamu Port Project. As outlined elsewhere in this report, this US$ 25.5 billion is the largest project in East and Central Africa and comprises the following components: (i) LAMU (Sea) Port at Manda Bay with a Port Master Plan consisting of a total of 32 berths along 6,000m of coastline; (ii) 1,710km of standard gauge railway line from Lamu to Isiolo, Isiolo to South Sudan and Isiolo to Ethiopia. The share of railway transportation volume will constitute more than 90% of long-hauling cargo movement between Lamu and Southern Sudan and Ethiopia. It is estimated that the railway will handle 3 and 4.7 million tons of imports and exports respectively by 2020 and 5.1 and 9.3 million tons of imports and exports respectively by 2030; (iii) 880 km Highway from Lamu to Isiolo, Isiolo to South Sudan, and Isiolo to Ethiopia; (iv) Oil pipeline from Lamu through Isiolo to South Sudan and Ethiopia; (v) Oil refinery at Lamu to refine oil products for Kenya and Ethiopia. The refinery will have a capacity of 120,000bpd (barrels per day); (vi) International airports in Lamu, Isiolo, and Lokichogio and Resort cities at Lamu, Isiolo (Kipsing Hill) and Lake Turkana (Eliye Springs); (vii) Associated infrastructures which will include electricity supply of 1,100MW and water supply, from River Tana and, (viii) A corridor of 200m wide to accommodate the highway, railway, oil pipeline and other utilities such as fiber optic cable, power lines and sewage as identified in the Master Plan. The implementation of this project will trigger several economic activities that prospective investors can take advantage of. These include: (i) Free Trade Zones at Moyale Border Post, Nadal Border Post, Isiolo and Lamu; (ii) Distribution centers, warehousing and transport logistics at Moyale Border Post, Nadal Border Post, Isiolo and Lamu; (iii) Livestock farming and meat processing in Garissa, Mandera Border Post and Isiolo; (iv) Irrigation projects, food processing and export processing zones in Garissa, Bura Area and Lamu; (v) Fishing, fish processing, boat making/ship building/repair at Lake Turkana and Lamu; and Development of housing estates, chemical factory and special economic zones at Lamu. The feasibility studies show that all the nine project components are economically and financially viable with high EIRR of between 12.9% and 23.4% compared to the acceptable industry minimum standard rate of return of 10% for infrastructure projects. This project is therefore attractive to private investors who are expected to participate substantially in the development of the various components. Other components are to be financed by the participating governments.

Returns to investments in sustainable environment, ocean health preservation and restoration: It is evident that infrastructural development will lead to the destruction of coastal forests leading to loss of biodiversity and

associated ecological services such as provision of fuel wood, construction materials and fishing and breeding ground for offshore organisms. The mangrove forest, for example, acts as a natural buffer against ocean related disasters, tidal waves and provides carbon storage, with the latter assisting in mitigating climate change. In addition, land reclamation, bank protection and dredging will disturb the aquatic and tidal flora and fauna, lead to changes in water quality and increase sediment load. There is overwhelming evidence from the exploitation of ocean resources that the profit motive has been the driving force behind the economic exploitation with no regard to sustainable environmental management, ocean preservation and restoration. To mitigate against these negative cumulative impacts, a portfolio of "bankable", people centered, environmental sound and ocean health encompassing, equitable, and sustainable projects need to be prepared for structured financing considerations. This is underlined by the fact that research shows that, for example, every US$1 invested in mangrove conservation and restoration has a multiplier effect of $3 in returns[48].

Economic viability of investments in port connectivity, performance and logistics: As is highlighted elsewhere in this report, investments in the improvement of port connectivity, performance, turnaround time, attractiveness and logistics performance are being implemented. An efficient port reduces delays to shippers, reduces congestion and turnaround time, reduces overall logistics costs and improves reliability of goods in transit. In a recent study PwC's[49] showed that based on the degree of port centrality (shipping liner connectivity), the amount of trade passing through a port, and the size of the hinterland, Durban (South Africa), Abidjan (Cote d'Ivoire) and Mombasa (Kenya) are most likely to emerge as the major hubs in Southern Africa, West Africa and East Africa, respectively. They showed that improving port performance could increase GDP by 2%. This finding underlines the fact that these investments including automation of port operations and the one stop center and one documentation center have a positive effect on GDP.

Multiplier Effects of Port throughput, volume of trade and economic growth: This report has shown that general cargo as well as containerized cargo has continued to grow steadily over the review period at a rate of about 13%. There is a positive relationship between throughput on the one hand and the volume of trade on the other. Depending on the nature of exports and imports, port throughput with adjust appropriately. The effect on port throughput of neighbouring countries' volume of trade is also positive. This implies that as Kenya's economy as well as the economies of the hinterland landlocked countries continues to grow, then throughput handled at Kenyan ports will also continue to grow. The Port of Mombasa and Lamu Port together with other small ports being developed will continue to be important gateways for East and Central Africa's seaborne trade in exports and imports. As these economies continue to register economic growth rates of about 6% on average, ports will be essential for sustaining and handling increased seaborne trade both in agricultural as well as manufactured goods. This further implies that policies that stimulate investments and growth in other related sectors such as agriculture and manufacturing need to be prioritized because this has a direct positive impact on trade and throughput.

Employment creation as an incentive for investment: Analysis contained elsewhere in this report indicate that ports across the globe have been seen to positively influence the creation of employment opportunities, as a

[48] See 5 pillars of a new ocean agenda, Nicola Frost and Kristian Teleki. GreenBiz, December 21, 2020
[49] https://www.pwc.co.za/en/publications/african.ports.html

result of increased volumes and throughput. In one of such studies[50], it was found that an increase of one million tonnes of port throughput is associated with an increase in employment in the port region of 0.0003% implying that in a region with one million employees, employment would increase by 300 units while in the long run this increase would be 7500 units. It was also found out that liquid bulk has lower employment impacts as compared to other cargo categories. If this category was not included, the employment impact in the port region doubles implying that an increase of one million tonnes port throughput is associated with a regional employment increase of 600 units. It was also found out that private ports have the largest employment impacts in regions with one million additional tonnes of port throughput creating 1000 jobs. These findings further underline the economic viability and investor attractiveness of investments in ports, harbours and maritime transport sub-sector.

6.3.3 Investment Procure, Incentives and Guarantees[51]

Investment Procure: Kenya Investment Authority's One Stop Center provides pre-investment facilitation services through KenInvest. These services include:

- *Company Registration:* (i) Obtain approval for the company name from the Registrar of Companies; (ii) Stamp the memorandum, articles and statement of nominal capital; (iii) Pay stamp duty; (iv) Declaration of compliance (Form 208) is signed before a Commissioner of Oaths/notary public; (v) File deed and details with the Registrar of Companies at the Attorney General's Chambers;
- *Tax Registration:* Apply online on KRA website www.kra.go.ke;
- *Single Business Permit:* Apply through the county offices where the business is located. The fees depend on type of business, number of employees and size of business premises;
- *National Social Security Fund:* The employer a standard contribution of about 1% of employee's salary subject to a maximum of Kshs 400 per month with one half of the being deductible from the employee's salary;
- *National Hospital Insurance Fund (NHIF):* The employee contributes a fixed sum which must be deducted from by the employer from the employee's salary with a maximum contribution of Kshs 1,700 per month. These contributions cover only a fraction of the actual medical costs. In some instances, the employer gives medical insurance;
- *Registration with KenInvest:* Fill the Investment Application form and attach all documentation related to business registration and an investment certificate will be issued;
- *Obtain an Environment Permit from NEMA:* An Environmental Impact Assessment (EIA) on the business site is carried out by NEMA and a certificate issued;
- *Work Permits:* Apply for work permits from the Department of Immigration for foreign and expatriate staff.

Investment Incentives: The following tax benefits and other incentives are offered to investors:

- 10 years corporate tax holiday;

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[50] Ferrari,C.,Merk,O.,Bottasso,A.,Conti,M.,Tei,A.(2012),"PortsandRegionalDevelopment:aEuropeanPerspective", *OECD Regional Development WorkingPapers*,2012/07. OECDPublishinghttp://dx.doi.org/10.1787/5k92z71jsrs6-en

[51] SBEC, Nairobi Kenya, 2018

- 10 years withholding tax holiday for remittances to non-residents;
- Stamp duty exemption;
- Import duty and VAT exemption on raw materials and machinery;
- 100% investment deduction over a period of 20 years for building and machinery;
- Full operation under single license issues by EPZA;
- There are no forex controls implying that foreign currency accounts and offshore borrowing is allowed;
- There is unrestricted investment by foreign nationals;
- One-stop shop service for facilitation and after care;
- On-site customs verification and documentation;
- Ready-made factory building and office premises;
- Readily available services in the form of water, sewerage and sanitation, electricity and security.

EPZ specific incentives: These include:

- Export orientation where 80% of sales should be made to countries outside the EAC partner states;
- Local sales of up to 20% can be made subject to Ministerial and payment of all taxes;
- The investments should be new;
- The primary base of business is the EPZ;
- 100% foreign shareholding is allowed.

Incentives in Special Economic Zones (SEZs): These include:

- Reduced corporate income tax rates of 10% for the first ten years and 15% for the next ten years;
- Dividends received by licensed SEZ businesses, developers and operators are tax exempt;
- Withholding tax of 10% on professional services;
- 100% investment deduction allowance for capital expenditure on buildings and machinery;
- Supplies of taxable goods to licensed SEZ enterprises are tax exempt;
- Licensed SEZ enterprises are allowed work permits of up to 20% of their fulltime employees. Additional work permits are allowed upon approval;
- To qualify, the investment should be more than Kshs 200 million;
- Shipping investment deduction 40% is allowed;
- A feed-in tariff is allowed for power generated from renewable energy sources is allowed.

Guarantees to investors: The following investor guarantees are in place:

- The Constitution of Kenya (CoK) 2010 guarantees the sanctity of life and property;
- Kenya is a signatory to the Multilateral Investment Guarantee Agency (MIGA) which insures private investments against non-political risks;
- Kenya is also a signatory to the International Center for Settlement of Investment Disputes (ICSID) that guarantees dispute resolution between the government and investors in a third party country;
- The Foreign Investment Protection Act (FIPA) guarantees against expropriation of private property by government. However, if it happens it shall be for public good provision and compensation shall be paid promptly and at the prevailing market value.

SECTION VII

7 Conclusions and Recommendations

7.1 Conclusions

Maritime transport is a catalyst to world trade, and has been for thousands of years. Currently 80% of the international trade is by sea making maritime trade an axiom that no nation can afford to ignore in this era of globalization. Kenyan Maritime transport is handled by KPA, a statutory body under the Ministry of Transport established by an Act of parliament on 20th January 1978. It is responsible for the operation and management of the Port of Mombasa and other seaports along the Kenyan coastline and inland. However, due to changing demands of global trade the Kenyan ports are more than stop-over ports for loading and offloading cargo, they are complex and integrated and provide the full range of services extending from the shipping industry to the logistics value chain thus extending services from the origin of cargo to the destination. This has thus set the Kenyan maritime ports and harbours at a global competitive level and also steered up infrastructural development in the country such as good road and railway network. Beyond maritime trade logistics and providing goods for the country's hinterland, Kenyan ports are also transit points to landlocked countries of East Africa such as Uganda, Rwanda, Burundi, Democratic republic of Congo (DRC), South Sudan, Somalia and Ethiopia. It also serves the Great Lakes Region and the Horn of Africa. All these sub-sector activities are playing a major role, directly and indirectly including the provision of income for a large number of people and supporting other major sectors such as agriculture, mining and fisheries, *inter alia*.

The Kenyan Government, since independence, has overlooked the potential that exists in the Blue Economy. However, this oversight is not only by the Kenyan Government but also by the International Community who realized the potential of the Blue Economy after the 2012 Convention in Rio. Consequently, the paradigm shift has seen the improvement and investments in the sector. This led to Kenya hosting the 2018 Sustainable Blue Economy Conference in Nairobi (SBEC). The SBEC led to declarations and commitments by the participants which when realized will not only lead to an increase in the individual country's GDP but also the GDPs of other countries in the region. The studies being undertaken will provide a theoretical and analytical framework which is ideal for a better understanding of the ocean economy, its usage and exploitation, environmental conservation issues of the ocean ecosystem as well as the integration of the Blue Economy into the Ports, Harbours and Maritime Transport.

The exploitation of the Blue Economy potential ranging from fishing sustainably, port infrastructure, oil and gas, tourism, maritime transport and many more will see a direct positive change in the lives of the population not only in the coastal region of the country but also nationally and regionally. The potential of the ports,

harbours and maritime transport in the Blue Economy in the direct and indirect employment and income creation is very high. Its efficiency in service delivery like witnessed in the operations of the SGR and Naivasha Dry Port is commendable. The reduction in carbon emissions from the trucks and trailers transporting cargoes from the coast into the hinterland and vice versa is a plus on the measures to reduce environmental pollution. With the objectives, significance and recommendations given, this study hopefully assists in future policy developments, research and analysis of the values, potential and progress being made in the Kenya's Blue/ Ocean Economy and particularly in the ports, harbours and maritime transport sub-sector.

7.2 Recommendations

In order to further the contribution of ports, harbours and maritime transport to Kenya's economic development and further advance the Blue Economy benefits realized from the sector, the following recommendations are made:

a) There is need to undertake an administrative reform that ensures that the port is blended from a Service Port to both a Service Port and a Landlord Port. In addition, administrative, policy, legal and institutional coordination issues require urgent attention in order to optimize the contribution of ports, harbours and maritime transport to Kenya's GDP and to Kenya's BE;
b) Concerted efforts need to be made in order to measure the actual size of Kenya's blue economy overall including the size of the ports, harbours and maritime sub-sector in particular. Apart from the traditional sectors of fisheries and tourism, by and large, there is lack of disaggregated data that quantifies the economic and social value of Kenya's blue economy, ports, harbours and maritime transport included. In addition, there is need to add a blue economy sub-sectors' account into the KNBS national accounts in order to easily monitor the performance and contribution of ports, harbours and maritime transport to Kenya's GDP. This will also ease planning and investment decision making;
c) Expeditious and effective implementation of the ports infrastructural projects including the Mombasa Port Development Project including Dongo Kundu, LAPSSET Corridor Program and Lamu Port, etc; This is further underlined by the high economic viability of these projects;
d) The government of Kenya should expedite infrastructural developments of the hinterland through KeNHA to provide more connectivity between the ports, local population and the neighboring countries. This will lead to creation of employment opportunities, reduced overload of the Port of Mombasa and improvement in efficiency in cargo transportation corridors;
e) The Kenyan Government should strive to ensure that the security and safety of both persons and goods within the maritime transport, harbours and ports are guaranteed and is impeccable to encourage more investments and utility of the Maritime transport and its hinterland connections. Programs related to the development of maritime safety and security and the natural maritime environment in/out of the port need to be prioritized;
f) With regard to moving forward with the development of the ports, harbours and maritime transport sub-sector, there is need to bring on board all the relevant stakeholders in order to come up with an all-inclusive development strategy for the sub-sector;
g) KPA and related government agencies should effect the establishment of more well equipped centres of learning and research, including Institutes for Blue Economy and Oceans Studies whose main objective shall be to undertake research and offer technical assistance and capacity building in all matters relating

to the ocean, and the sustainable use of its resources. Capacity building needs for ports, harbours and maritime transport need to be enhanced; and,

h) A synthesis of the plans and expected outputs of the LAPSSET, Mombasa Master Plan, Vision 2030 flagship projects and other related projects should be undertaken in order to avoid duplication of effort and also help in the identification of low hanging fruits that can be exploited as we move forward with the implementation of investments in the ports, harbours and maritime transport sub-sector.

Annexes

Annex A: List of stakeholders Interviewed

1. Kenya Revenue Authority (KRA)
2. Kenya Maritime Authority (KMA)
3. National Environment Management Authority of Kenya (NEMA)
4. Kenya Ports Authority (KPA),
5. Kenya Bureau of Standards (KEBS)
6. Kenya Coasts Guard Service (KCGS)
7. Kenya National Shipping Line (KNSL)
8. Kenya Trade Network Agency (KENTRADE)
9. Kenya Ship Agents Association (KSAA)
10. National Treasury, Kenya

Annex B: List of Secondary Data Sources

1. Kenya Ports Authority Annual Reports 2015, 2020
2. Kenya Economic Surveys, KNBS 2018, 2019, 2020
3. LAPPSET Corridor Development Authority 2013
4. Northern Corridor Transport Observatory Reviews 2015, 2017
5. Mombasa Port Master Plan including Dongo Kundu 2015
6. Statistical Abstract 2018
7. Economic Survey 2020
8. World Bank Group, Doing Business 2018.
9. IMF – World Economic Outlook Database, October 2020

Annex C: Relevant Statutes

1. The Constitution of Kenya, 2010
2. The Constitution of Kenya (Amendment) Bill, 2020, international treaties/conventions and a limited use of case law.
3. Environment Management and Coordination Act No. 8 of 1999 (EMCA)
4. Merchant Shipping Act, 2009 preamble
5. Merchant Shipping Act, 2009 section 3(4)
6. Merchant Shipping Act, 2009 section 3(1)
7. Kenya Revenue Authority Act No. 2 of 1995 (KRA Act)
8. Kenya Maritime Authority Act No. 5 of 2006 (KMA Act)
9. National Environment Management Authority of Kenya Act (NEMA Act)

10. Kenya Ports Authority Act (KPA Act), Chapter 391 Laws of Kenya
11. Judicial decisions by the courts of Kenya

Annex D: Websites

1. http://en.wikipedia.org/economy_of_Kenya#_note 27
2. http://en.wikipedia.org/economy_of_Kenya#_note 31
3. http://en.wikipedia.org/economy_of_Kenya#_note 34
4. OECDPublishinghttp://dx.doi.org/10.1787/5k92z71jsrs6-en
5. https://www.imo.org/
6. https://www.lapsset.go.ke/#1461328856794-2dee9bba-e774
7. https://www.lapsset.go.ke/
8. https://www.businesschief.eu/leadership-and-strategy/government-approves-revival-kenya-national-shipping-line
9. https://knsl.go.ke/background-2/
10. https://knsl.go.ke/background-2/
11. 'Port Management Association of Eastern & Southern Africa' <https://www.pmaesa.org/> accessed 16 ibid.
12. https://www.kenyachamber.or.ke/about-kncci/
13. https://www.kifwa.co.ke/about.php
14. http://researchbank.rmit.edu.au/ as adapted from BITRE.
15. https://knsl.go.ke/background-2/
16. OECDPublishinghttp://dx.doi.org/10.1787/5k92z71jsrs6-en
17. https://www.transport.go.ke/index.php/state-departments/state-department-for-maritime-and-shipping-affairs-2
18. https://kilimo.go.ke/state-department-for-fisheries-aquaculture-and-the-blue-economy/
19. https://www.transport.go.ke/department/
20. https://www.kpa.co.ke/Pages/Default.aspx
21. https://www.kma.go.ke/
22. https://www.kra.go.ke/en/
23. https://www.kenha.co.ke/

Appendices

Appendix 1: % Growth in GDP by Activity at 2009 Constant Prices, 2011 - 2019

Industry	2011	2012	2013	2014	2015+	2016+	2017*	2018	2019
Agriculture,forestryandfishing	2.4	2.8	5.4	4.4	5.3	4.7	1.6	6.0	3.6
Growingofcrops.	2.1	2.2	6.6	5.9	7.2	6.7	2.0	7.2	3.8
Animalproduction	0.5	1.7	1.9	1.4	2.2	2.4	0.1	2.4	3.2
Supportactivitiestoagriculture	15.0	15.8	3.8	-6.9	1.9	-18.8	-2.7	1.5	0.3
Forestry&logging	4.6	7.9	5.0	3.3	1.0	8.2	4.4	2.1	3.3
Fishing&aquaculture	10.4	5.1	5.9	2.1	-8.6	-17.3	-1.7	8.4	1.8
Miningandquarrying	19.0	19.0	-4.2	14.9	12.3	9.5	4.5	7.0	5.7
Manufacturing	7.2	-0.6	5.6	2.5	3.6	12.6	9.6	4.3	3.2
Electricity and water supply	16.9	16.7	10.7	11.2	14.2	9.5	8.9	10.5	7.9
Construction	4.0	11.3	6.1	13.1	13.8	9.9	8.4	6.9	6.4
Wholesaleandretailtrade,repairs	8.2	7.0	8.4	6.9	5.9	3.7	5.8	6.9	6.6
Transportandstorage	**7.3**	**2.6**	**1.3**	**5.5**	**8.0**	**6.5**	**7.2**	**8.5**	**7.8**
Accommodationandfoodserviceactivities	4.1	3.1	-4.6	-16.7	-1.3	13.3	14.7	16.6	10.3
Informationcommunicationtechnology	22.1	2.6	12.5	14.5	7.4	9.9	11.0	11.3	8.8
Telecommunications	29.2	5.0	17.1	20.1	8.6	11.4	13.0	13.4	9.9
Financialandinsuranceactivities	4.6	6.0	8.2	8.3	9.4	6.9	2.6	5.3	6.6
Realestate	5.1	4.0	4.1	5.6	7.2	8.8	6.1	4.1	5.3
Publicadministrationanddefence	2.4	4.0	2.8	5.6	5.5	5.6	4.7	6.7	8.1
Education	7.5	11.1	6.3	7.8	4.9	5.3	5.2	5.8	5.4
Humanhealthandsocialworkactivities.....	-2.6	-2.8	7.7	8.1	5.8	4.8	4.3	4.4	5.8
Allindustriesatbasicprices	5.3	4.1	5.4	5.6	6.1	6.1	4.7	6.4	5.5
Taxesonproducts	12.5	7.7	9.5	3.4	2.8	4.4	5.7	5.6	4.4
GDPatmarketprices	6.1	4.5	5.9	5.4	5.7	5.9	4.8	6.3	5.4

Source: Statistical Abstract 2018 and Economic Survey 2020

Appendix 2: Percent Contribution to Gross Domestic Product by Activity, 2011 - 2019

Industry	2011	2012	2013	2014	2015+	2016+	2017*	2018+	2019*
Agriculture,forestryandfishing	26.4	26.2	26.4	27.5	30.2	32.1	34.6	34.1	34.1
Miningandquarrying	0.9	1.1	0.9	0.8	0.9	0.8	0.7	0.8	0.7
Manufacturing	11.7	11.0	10.7	10.0	9.4	9.1	7.9	7.8	7.5
Electricityand water supply	1.9	2.0	2.0	1.9	2.1	2.5	2.4	2.4	2.4
Construction	4.4	4.5	4.5	4.9	4.9	5.0	5.5	5.5	5.6
Wholesaleandretailtrade,repairs	8.1	7.8	8.0	8.0	7.5	7.3	7.6	7.5	7.6
Transportandstorage	7.1	8.0	8.0	8.6	8.1	7.8	7.3	8.1	8.5
Accommodationandfoodserviceactivities	1.3	1.3	1.2	0.9	0.8	0.7	0.7	0.8	0.7
Information and communicationtechnology	3.3	3.2	2.9	2.4	2.9	2.9	2.6	4.2	4.3
Financialandinsuranceactivities	5.7	5.9	6.6	6.8	6.7	7.0	7.4	6.3	6.0
Realestate	8.1	8.0	7.9	7.7	7.5	7.4	7.0	7.0	6.9
Publicadministrationanddefense	5.6	5.7	5.6	5.6	5.3	5.1	4.9	7.7	7.8
Education	5.3	5.4	5.3	5.2	4.9	4.3	3.9	4.3	4.2
Health	4.1	3.4	5.3	4.5	5.4	6.2	5.5	6.2	5.8
Taxesonproducts	10.1	10.1	10.1	9.6	8.9	8.5	8.2	8.4	8.5

Source: Statistical Abstract 2018 and Economic Survey 2020

Cargo by Type	**2010 (Mombasa)**	**2020 (Lamu)**	**2030 (Lamu)**
Bulk Cargo	3,897	2,603	4,682
Break-bulk Cargo	1,777	2,370	4,192
Livestock	---	18	45
Liquid Cargo	6,481	529	765
Refrigerated Cargo	---	64	95
Containerized Cargo	6,809	7,914	14,082
Total Port Cargo Volume	**18,934**	**13,500**	**23,860**
Laden Container (thous. TEU)	460	720	1,313
Empty Container (thous. TEU)	235	250	471
Total Container (thous. TEU)	**695**		**1,780**

Appendix 3: Cargo Volume Forecast of Lamu Port (thousand tonnes/year)
Source: LCDA, 2013

References

David Bigman (2002). Globalization and the Developing Countries: Emerging Strategies for Rural Development and Poverty Alleviation. CABI p. 136. ISBN 978-0-85199-575-5

Ferrari, C., Merk, O, Bottasso, A., Conti, M., Tei, A. (2012), "Ports and Regional Development: a European Perspective", OECD Regional Development Working Papers, 2012/07.

Gekara, V and Chhetri, P 2013, 'Upstream transport corridor inefficiencies and the implications for port performance: A case analysis of Mombasa Port and the Northern Corridor', Maritime Policy and Management

Joseph O. Rasowo, Paul Orina, Betty Nyonje, Salome Awuor & Robert Olendi (2020): Harnessing Kenya's Blue Economy: prospects and challenges, Journal of the Indian Ocean Region, DOI: 10.1080/19480881.2020.1825199

Kenya Start Up Ecosystem Overview: VC4A, April 2019

"Kenya Vision 2030". Kenya Government 2007

Business Chief EMEA, 'Government approves revival of Kenya National Shipping Line', May 29, 2020.

Mombasa Port Master Plan including Dongo Kundu, JICA 2015, pg. 21-22

PWC (2018) Strengthening Africa's gateways to Trade: An analysis of Port Development in Sub-Saharan Africa

Report On The Global Sustainable Blue Economy Conference 26th – 28th November 2018, Nairobi, Kenya, Prepared By SBEC Technical Documentation Review Committee At A Retreat Held At Lake Naivasha Simba Lodge, Kenya, December 5th – 9th 2018.

Report of the State Department for Fisheries, Aquaculture and the Blue Economy, Ministry of Agriculture

State Department for Fisheries, Aquaculture and The Blue Economy' (Ministry of Agriculture), April 2021

The Ocean Economy in 2030, OECD Publishing, 2016, Paris.

UNDP 2018. Leveraging the Blue Economy for Inclusive and Sustainable Growth, Policy Brief, Issue No 6/2018.

UNDP, "Leveraging the Blue Economy for Inclusive and Sustainable Growth," Policy Brief, Issue No: 6/2018, April, 2018, op. cit., p.2

UNCTAD, (2019) Maritime Profile for Kenya
UNCTAD/RMT/2018 Review of Maritime Transport, United Nations, Switzerland