The Republic of Kenya
Kenya Ports Authority
Kenya National Highways Authority
Kenya Electricity Transmission Company

DESIGN MISSION
FOR
MOMBASA SPECIAL ECONOMIC ZONE
DEVELOPMENT PROJECT

FINAL REPORT

June 2019

Japan International Cooperation Agency (JICA)

Nippon Koei Co., Ltd.
The Overseas Coastal Area Development Institute of Japan
Koei Research & Consulting Inc.

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Exchange Rate

March 2019

	USD	JPY	KES
USD	1	110	100
KES	0.01	1.1	1

The Republic of Kenya

Design Mission for Mombasa Special Economic Zone

Development Project

Final Report

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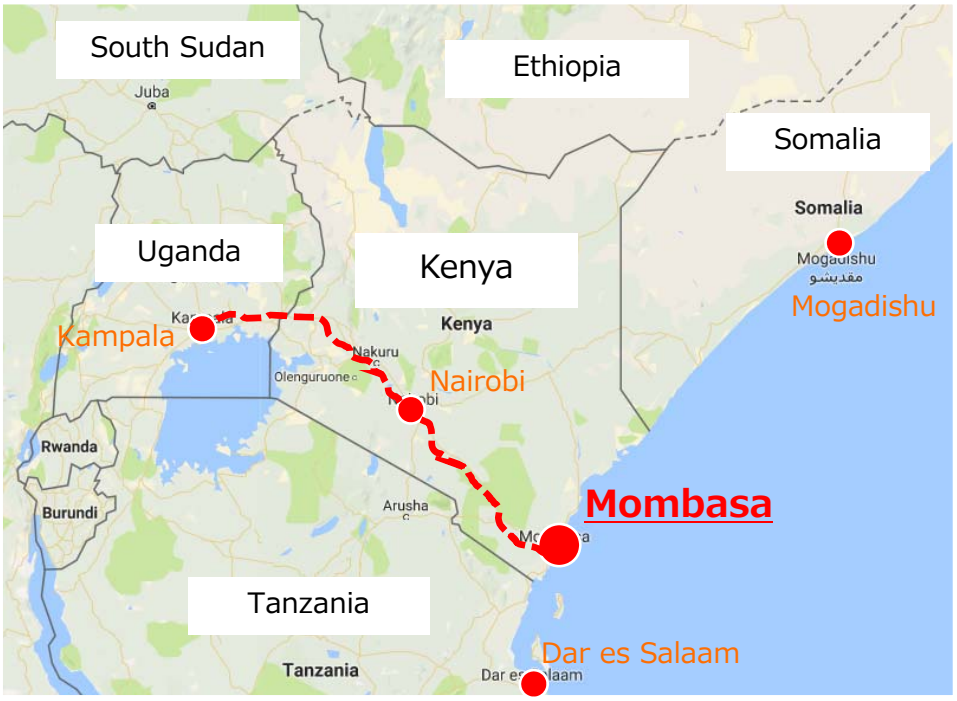
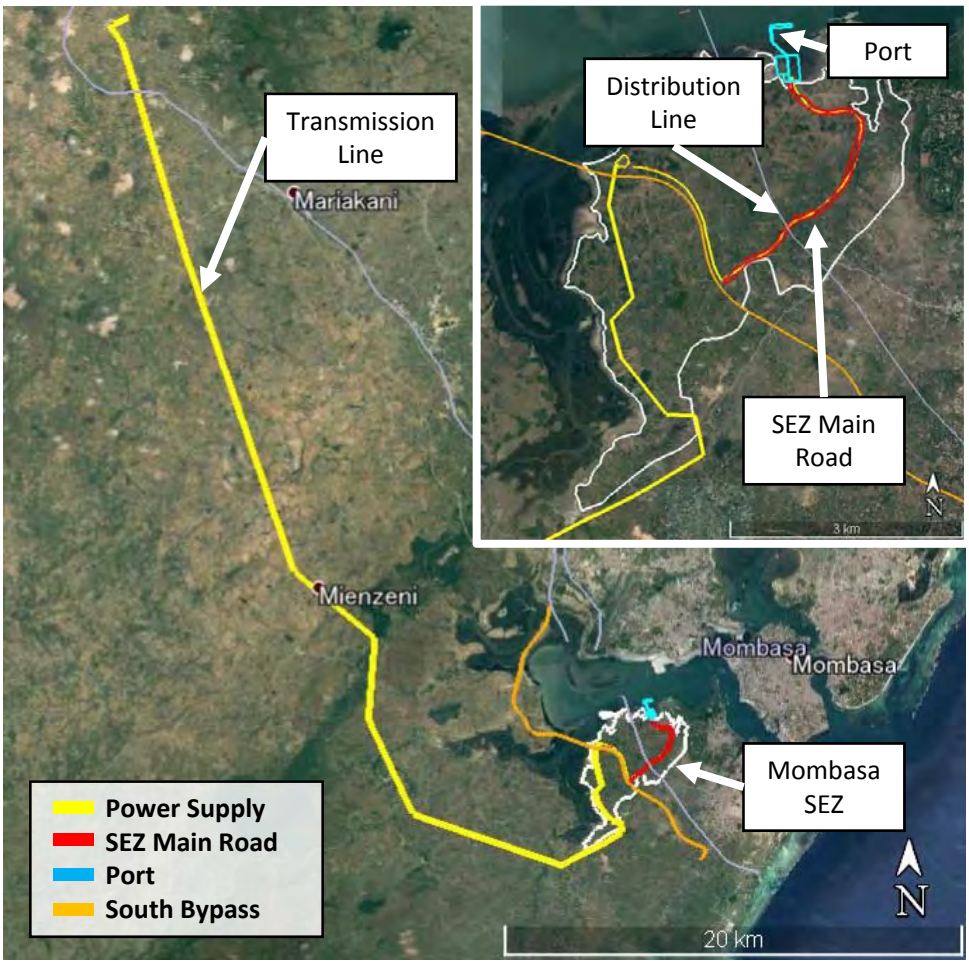
Abbreviations

Abbreviations	Formal Name
AFD	Agence Française de Développement
AGOA	African Growth and Opportunity Act
AIS	Air Insulated Substations
C/P	Counterpart
CAGR	Compound Annual Growth Rate
CDL	Chart Datura Level
CDM	Cement Deep Mixing
CWSB	Coastal Water Services Board
DHI	Danish Hydraulic Institute
DK-1	Dongo Kundu Berth No.1
DOC	Document of Compliance
EAC	East African Community
EACCMA	East African Community Customs Management Act
EIA	Environmental Impact Assessment
EIRR	Economic Internal Rate of Return
EPZ	Export Processing Zone
EPZA	Export Processing Zone Authority
ERC	Energy Regeneration Commission
FAO	Food and Agriculture Organization
FDI	Foreign Direct Invest
FIRR	Financial Internal Rate of Return
FTZ	Free Trade Zone
GBHL	Grain Bulk Handlers Ltd.
GDC	Geothermal Development Company
GDP	Gross Domestic Product
GIS	Gas Insulated Substation
GOJ	Government of Japan
GOK	Government of Kenya
HHWL	Highest High Water Level
HWL	High Water Level
ICT	Information Communication Technology
IEC	International Electro-technical Commission
IFC	International Finance Cooperation
IMF	International Monetary Fund
IMO	International Maritime Organization
IP	Industrial Park
IPP	Independent Power Producer
ISS	Integrated Security System
JDT	JICA Design Team
JICA	Japan International Cooperation Agency
JIS	Japanese Industrial Standards
KenGen	Kenya Power Generating Company
KeNHA	Kenya National Highway Authority
KenInvest	Kenya Investment Authority
KES	Kenya Shilling

KFS	Kenya Forest Service
KETRACO	Kenya Electricity Transmission Company
KMA	Kenya Maritime Authority
KOT	Kipevu Oil Terminal
KPA	Kenya Ports Authority
KPC	Kenya Pipeline Company
KPLC	Kenya Power and Lighting Company
KPRL	Kenya Petroleum Refinery Limited
KRA	Kenya Road Authority
KURA	Kenya Urban Roads Authority
KWAWASCO	Kwale Water and Sewerage Company
KWS	Kenya Wildlife Service
LAPSSET	Lamu Port-South Sudan-Ethiopia Transport
LCC	Life Cycle Cost
LLWL	Lowest Low Water Level
LNG	Liquefied Natural Gas
LWL	Low Water Level
M/P	Master Plan
MCG	Mombasa County Government
MHC	Mobile Harbor Crane
MOE	Ministry of Energy
MOI	Ministry of Industrialization and Enterprise Development
MOL	Ministry of Lands
MOT	Ministry of Transport, Infrastructure Development
MOWASSCO	Mombasa Water Supply and Sanitation Services Company
MOW	Ministry of Water and Sanitation
MPDP	Mombasa Port Development Plan
MSBR	Mombasa Southern Bypass Road
MWCS	Male Water Sewerage Company
NEMA	National Environment Management Authority
NLC	National Land Commission
NRW	Non-revenue Water
ODA	Official Development Assistance
OICA	International Organization of Motor Vehicle Manufactures
OP	Executive Office of the President
OSC	One Stop Center
OSS	One Stop Service
PAHs	Polycyclic Aromatic Hydrocarbons
PAPs	Project Affected Persons
PCC	Pure Car Carrier
POL	Petroleum, Oil and Lubricants
POPs	Persistent Organic Pollutants
PPP	Public-Private Partnership
RAP	Resettlement Action Plan
RC	Reinforced Concrete
RDB	Rwanda Development Board
REA	Rural Electricity Authority
RPF	Resettlement Policy Framework

RTG	Rubber Tired Gantry
RTK	Real Time Kinematic
ROW	Right of Way
SCF	Standard Conversion Factor
SEZ	Special Economic Zone
SEZA	Special Economic Zone Authority
SEZAR	Special Economic Zone Authority of Rwanda
SGR	Standard Gauge Railway
SPT	Standard Penetration Test
SPV	Special Purpose Vehicle
STS	Ship-to-Shore
TEU	Twenty-foot Equivalent Unit
TSHD	Trailing Suction Hopper Dredger
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
USDA	United States Development of Agriculture
VAT	Value Added Tax
WACC	Weighted Average Cost of Capital
WRA	Water Resources Management Authority
WB	World Bank
WDC	Water Distribution Center
WSB	Water Service Board
WSP	Water Service Provider
WWTP	Wastewater Treatment Plant





Location Map for the Infrastructure surrounded Mombasa SEZ

Chapter 1 Introduction

1.1 Background of the Project

Mombasa has an international port, which connects to Nairobi, Uganda, and Rwanda through the Northern Corridor and is the gateway port for the Democratic Republic of the Congo and South Sudan. So, Mombasa has a key role for Kenya and East Africa. According to the long-term development plan "Kenya Vision 2030", the Government of Kenya aims to be a middle-income country by 2030. The development of Special Economic Zones (SEZs) in Mombasa, Kisumu, and Lamu were proposed as one of the core instruments for the realization of the Kenya Vision 2030. The "Development of Dongo Kundu Free Port" and "Development of the Mombasa Special Economic Zone" are mentioned as priority projects. In addition to this, SEZ Authority was established as a regulator of SEZ based on SEZ Act, three industrial areas (Tatu City, Eldored and Uasin Gishu) were gazzetted as SEZs, required environment to implement SEZ is preparing by the Government of Kenya.

Meanwhile, the cargo handling volume of Mombasa port has been increasing and taking the current situation into consideration, it was required to formulate the Master Plan for the Development of Mombasa Port.

Based on these backgrounds, the Japan International Cooperation Agency (hereinafter referred to as "JICA") conducted "The Project on Master Plan for Development of Dongo Kundu, Mombasa Special Economic Zone" (hereinafter referred to as "Mombasa SEZ M/P") and the "Mombasa Port Master Plan including Dongo Kundu" (hereinafter referred to as "Mombasa Port M/P") in 2014 and 2015.

According to Mombasa SEZ M/P, in order to realize SEZ at the Dongo Kundu, its area, power supply, water supply, sewage, drainage, road, and port facility are required at an early stage. Since power is planned to supply from Mariakani substation and water is planned to supply from Tiwi well-field in short-term and Mwache Dam in mid/long-term, development of these external infrastructure is also important. In addition, Mombasa Port M/P recommends that it should be constructed earlier in view of the future cargo demand forecast. Therefore, in order to realize the SEZ and to deal with future cargo demand, project scheme and scheduling will be required.

1.2 Objective of the Project

In the course of the "Design Mission for Mombasa Special Economic Zone Development Project (hereinafter referred to as "the Survey")", the JICA Design Team, which is composed of three consulting firms/institutes, namely; Nippon Koei Co., Ltd. (NK), which is the leading firm in the Joint Venture, the Overseas Coastal Area Development Institute of Japan (OCDI), and Koei Research & Consulting Inc. (KRC), firstly proposes project components for Japanese ODA loans, grant aid, private investment and their schedule respectively. Then JICA Design Team surveyed and conducted basic designs on the necessary items for the appraisal for the Japanese ODA loan, such as the objectives, features, and a feasibility of the project including the study of alternatives, project costs, implementation schedule and methods, organizational structure for project implementation, organizational structure for operation and maintenance, and environment and social considerations.

1.3 Area of the Project

Mombasa, Kilifi and Kwale Counties, Kenya.

1.4 Scope of the Project

The scope of the Survey is to conduct basic designs of the selected infrastructures among the following components, which are to be developed under Japanese ODA loans, to realize early implementation of the Mombasa SEZ for Phase 1.

- Port facility (berth 1)
- Power supply facility (inside and outside SEZ)
- Water supply facility (inside and outside SEZ)
- Access road (inside SEZ)
- Drainage (inside SEZ)
- Free trade zone (FTZ) (inside SEZ)

1.5 Counterpart Organization

The JICA Design Team conducts the Design Mission with the support of the following Kenyan counterpart office and ministries:

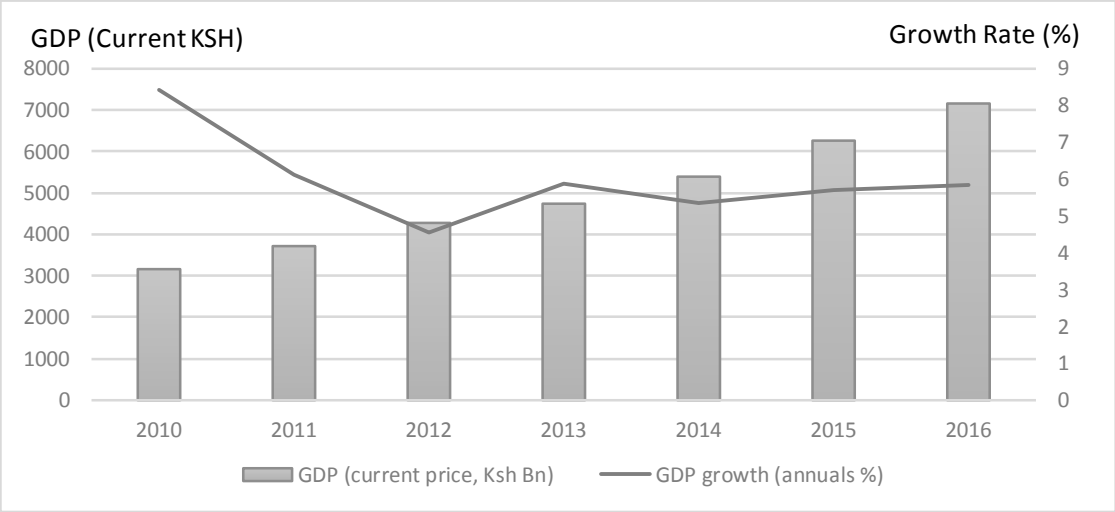
- Executive Office of the President
- Ministry of Transport and Infrastructure Development
- Ministry of Industrialization and Enterprise Development
- Ministry of Water and Sanitation
- Ministry of Energy
- Ministry of Lands and Physical Planning

Chapter 2 Economy and Industrial Sector

2.1 Situation of National Economy

2.1.1 National Economy and Growth Trend

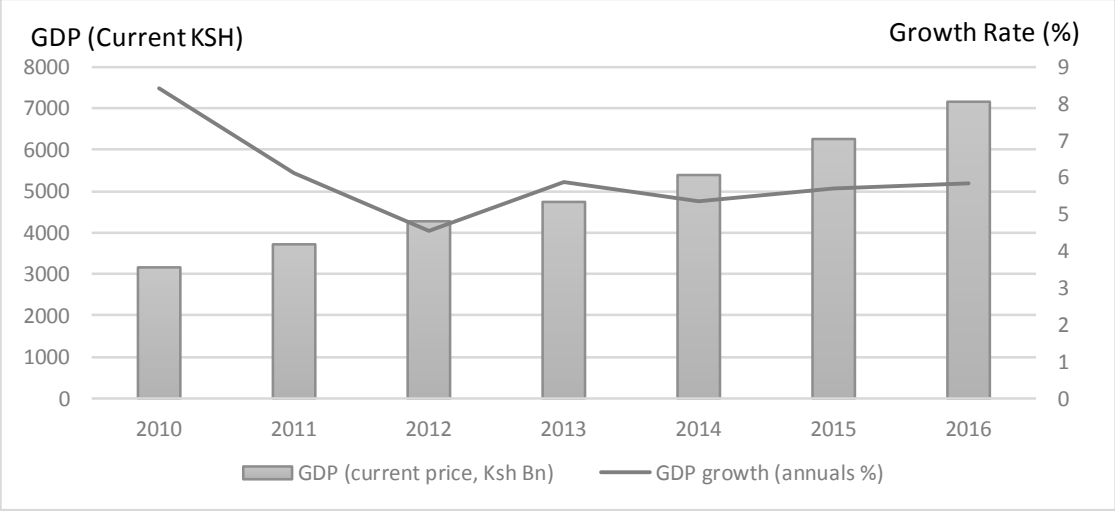
Kenya has been experiencing GDP growth after the big drop in 2008. From 2012 to 2016, the growth rate has been between 4.5 to 6 %. GDP in 2016 reached 7,159 billion Ksh (USD70.5 billion[1]).



Source: KNBS, Statistical Abstract 2017

Figure 2.1.1 GDP and Growth Rate[2]

GDP per capita of Kenya in the meantime has exhibited growth between 2012 and 2016. In 2015, GDP per capita exceed 140,000Ksh (USD 1376.7)[3]. Kenya entered the group of "lower-middle income" country in the World Bank classification.



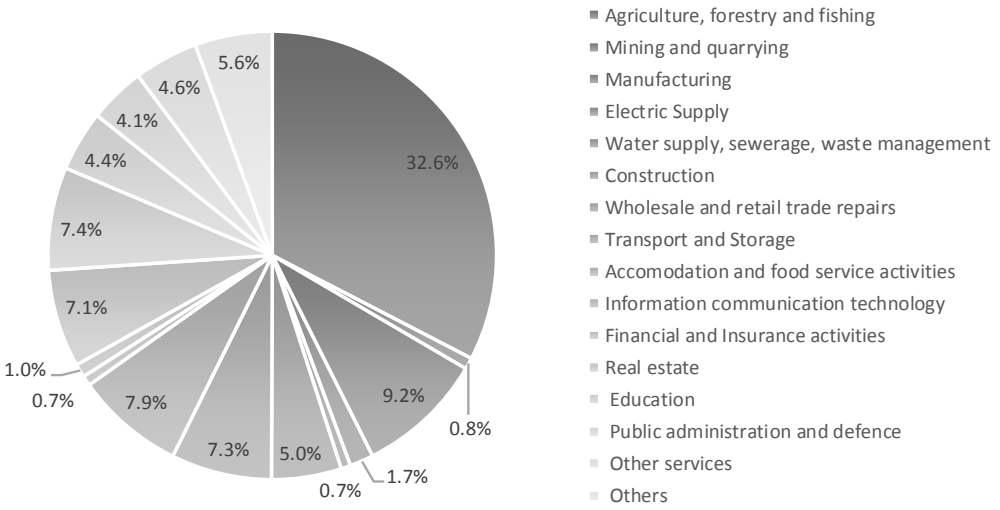
Source: KNBS, Statistical Abstract 2017

Figure 2.1.2 GDP per Capita in Current Price

[1] World Development Indicator, GDP current US dollar
[2] All the data related to GDP in 2016 are provisional.
[3] World Development Indicator, GDP per Capita in current US dollar

2.1.2 Industrial Structure and Trends

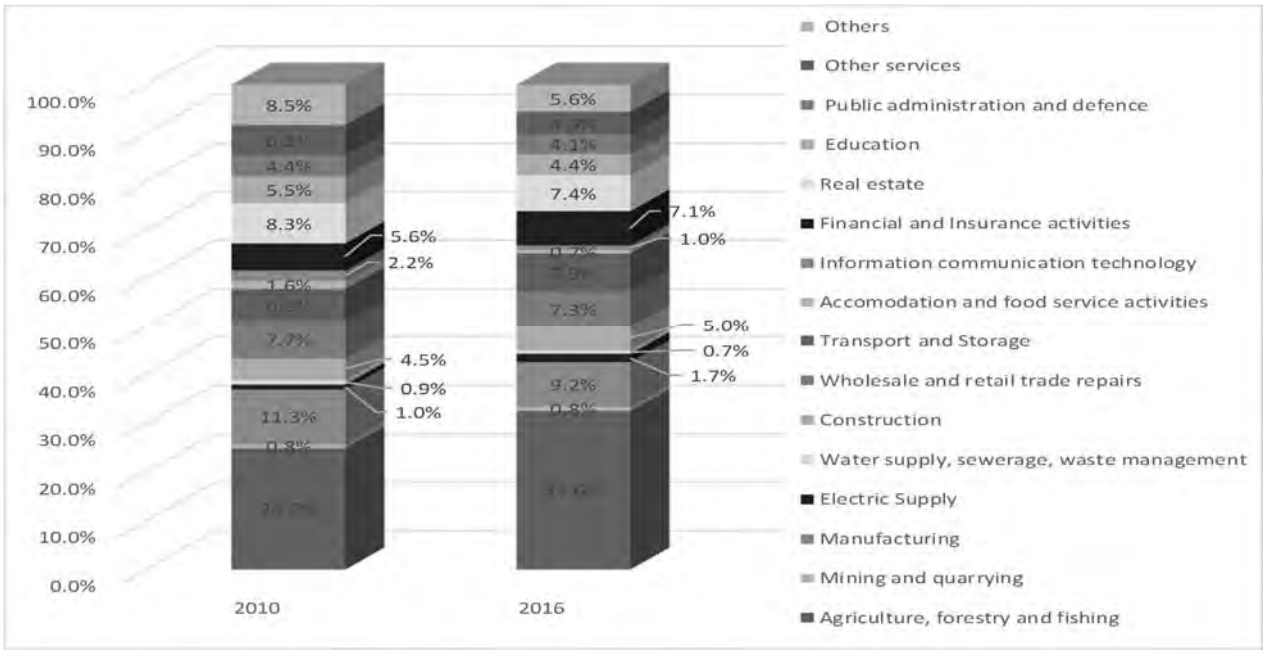
The Figure below shows the breakdown of GDP per economic activity in 2016.



Source: KNBS, Statistical Abstract 2017

Figure 2.1.3 Sector Share of the GDP (2016)

In recent years, over 50% of the GDP is borne by the services, whereas agriculture, forestry, and fisheries also grew from 24.9% in 2010 to 32.6% in 2016. The manufacturing sector reduced its share from 11.3% in 2010 to 9.2% in 2016. The service industry in general exhibited higher degree of growth relative to the major sectors such as agriculture and manufacturing. It is noted that the share of real estates declined overtime, whereas relatively substantial increase is observed in financial and insurance activities and transportation and storage.



Source: KNBS, Statistical Abstract 2017

Figure 2.1.4 GDP and Sectoral Share and Comparison between 2010 and 2016

2.2 Population, Demographics, and Labour Force

2.2.1 Population Growth and Population Distribution among Counties

The annual average growth rates of population calculated from the population census are as shown in the table below. Population growth is still high over 3% per annum, but the rate has diminished over year.

Table 2.2.1 Population and Annual Average Growth Rate in Census Years

Year	1962	1969	1979	1989	1999	2009
Total Population (1,000 persons)	8,636	10,943	15,327	21,448	28,687	38,610
Annual Average Growth Rate (%)	-	3.82	4.01	3.99	3.38	3.46

Source: National Population and Housing Census (2009), KNBS

The population is estimated to reach 46 million in 2015. In recent years, the population growth is estimated to be approximately 2.6% as shown in the table below.

Table 2.2.2 Population and Annual Average Growth Rate in Recent Years

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total Population (000 persons)	37,251	38,244	39,270	40,328	41,420	42,543	43,693	44,864	46,050
Annual Growth Rate (%)	2.62	2.63	2.65	2.66	2.67	2.68	2.67	2.64	2.61

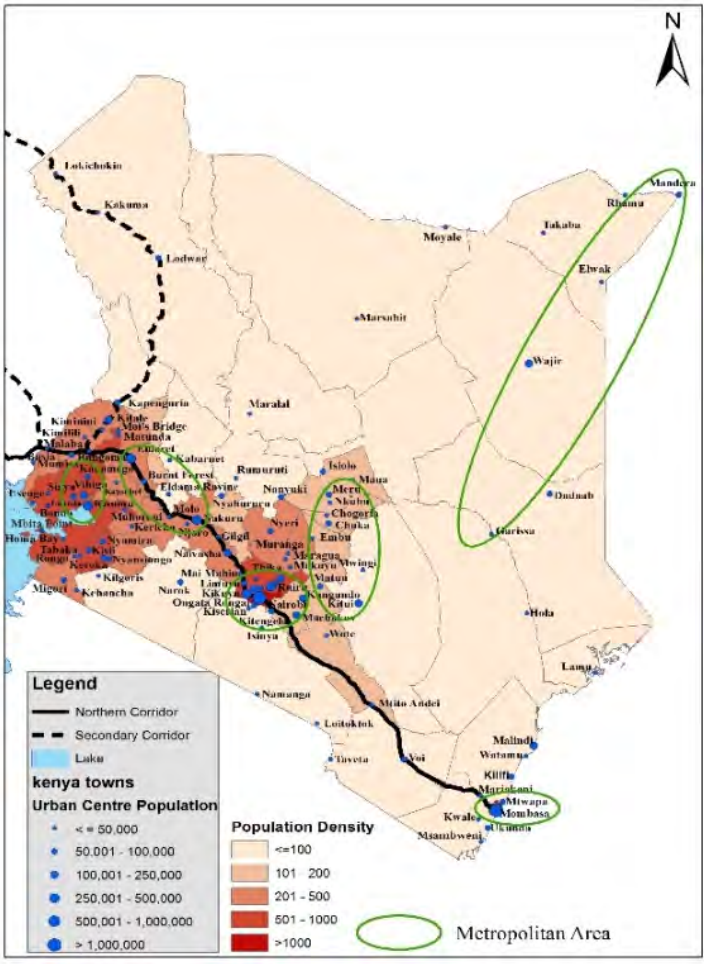
Source: World Development Indicator (WDI), World Bank

The results of the latest census confirmed that Nairobi City County is with the largest in 47 counties. Mombasa City County has a moderate population size due to its limited land size, but with second highest population density in the country.

Table 2.2.3 County Demographics in 2009

Counties	Population (1,000 persons)	Percentage Share (%)	Land Area (km^2)	Density (Persons per km^2)
Nairobi City	3,134	8%	695	4,509
Kisumu City	968	3%	2,086	464
Mombasa City	939	2%	219	4,288
KENYA in total	37,725	100%	581,313	65

Note: The data has been adjusted to the current country divisions.
Source: National Population and Housing Census (2009), KNBS



Note: "Metropolitan Area" indicates the areas indicated in the Vision 2030
Source: JICA Project on Logistics Development in Northern Economic Corridor

Figure 2.2.1 County Demographics in 2009

Over the last 10 years, Kenya has been experiencing a moderate urbanization. Between 2004 and 2013, the share of population in urban agglomeration of more than one million has increased by approximately 1%. Between the last two census years, 1999 and 2009, the population of Mombasa increased from 665,018 to 939,370 at an average annual growth rate of 3.51%, which is 0.8% higher than the national population growth rate.

2.2.2 Employment and Labour Force

In 2017, total labour force is 19.3 million. With the gradual increase of the population, the labour force has been growing over time[4]. It should be noted that the share of the informal sector in the employment is high: over 83% of the employment was estimated to be provided by the informal sector in 2016. In terms of the wage employment, out of 1.8 million wage employment of the private sector, 16.2% are engaged in agriculture, forestry and fishery. Following the primary industry, manufacturing, wholesale and retail, education, and construction consist of relatively large shares with 15.1%, 13.2%, 10.8% and 8.5%,

[4] World Bank, WDI

respectively. As for the public sector employment, due to the devolution, the employment at the county governments increased by 11.0% from 2014 to 2015[5].

The gradual population growth in urban area provides work force in urban area such as Mombasa and the vicinity.

2.3 Overview of Economic Activities

The resource and industrial basis available in Kenya are reviewed. Amongst the economic activities, the agricultural and manufacturing sectors are reviewed in this report.

2.3.1 Agriculture, Livestock, and Fisheries

(1) National Agricultural and Livestock Production

The major proportion of marketed agricultural and livestock products and the marketed values are as shown in the table below.

[5] KNBS, Economic Survey 2017

Table 2.3.1 Kenya's Marketed Agricultural Production (2016)

Crops and Products		Gross Marketed Production (KES million)
Cereals	Wheat	8,028.1
	Maize	7,891.2
	Rice	3,449.4
	Other Cereals	3,817.2
	Cereal total	**23,185.9**
Horticulture	Cut flowers	70,829.5
	Vegetables	23,366.8
	Fruits	7,317.3
	Horticultural total	**101,513.6**
Temporary industrial crops	Pyrethrum	37.9
	Sugarcane	23,917.2
	Cotton	66.4
	Tobacco	1,403.8
	Temporary industrial crops total	**25,425.3**
Other temporary crops	Pulses	52.3
	Potatoes	231.8
	Other temporary crops	265.7
	Other temporary crops total	**549.8**
Permanent crops	Coffee	16,192.3
	Sisal	4,176.8
	Tea	116,547.3
	Permanent crops total	**136,916.4**
Livestock & products	Cattle and calves for slaughter	84,701.2
	Sheep, goats and lambs for slaughter	5,364.4
	Pigs for slaughter	1,838.1
	Poultry and eggs	8,788.4
	Wool	0.2
	Hides and skins	1,286.5
	Dairy products	23,020.1
	Livestock and products total	**124,998.9**

Source: KNBS, Statistical Abstract 2017

(2) Fisheries

The share of the marine resources in the total fisheries sector production is limited. The major share of the production (and export) of fisheries products comprises fresh water harvested products, mainly from Lake Victoria. The share of marine fish and crustacean only accounts for around 6%.

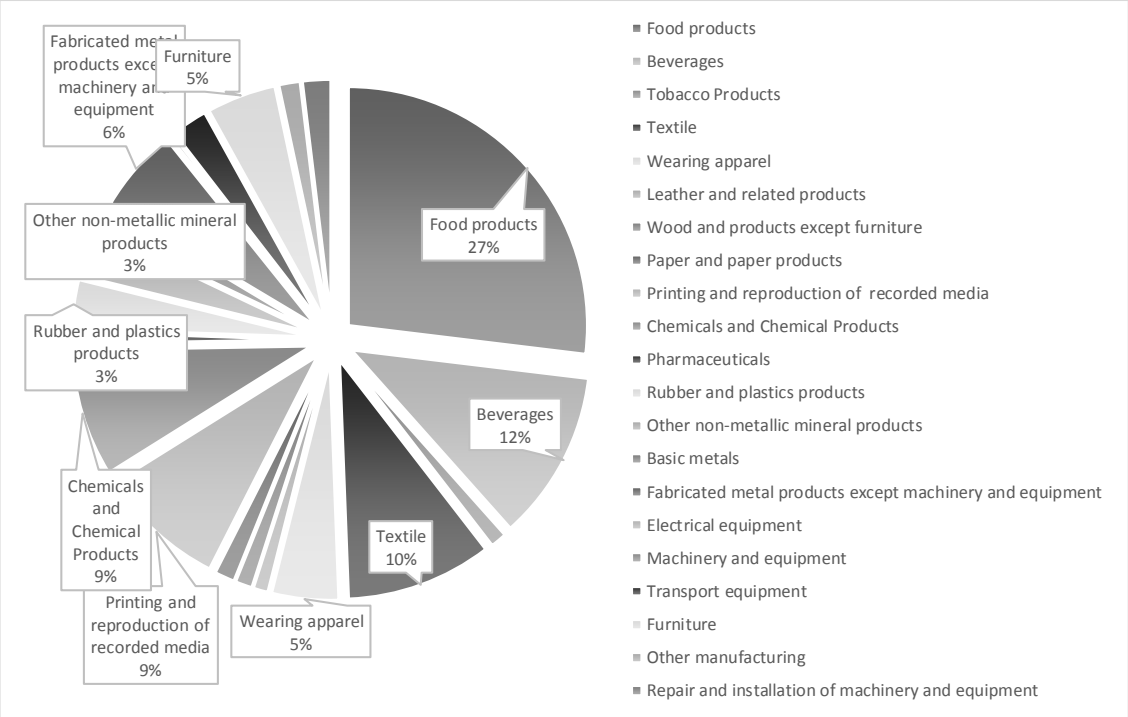
Table 2.3.2 Kenya's Fisheries Sector Composition

	Freshwater fish total	Marine fish, crustaceans and molluscs	Share of freshwater fish total (%)	Share of marine fish and crustaceans (%)
Quantity (t)				
2012	145,150	8,865	94.20%	5.80%
2013	154,253	9,136	94.41%	5.59%
2014	159,340	8,781	94.78%	5.22%
2015	136,396	9,929	93.21%	6.79%
2016	119,550	9,095	94.20%	5.80%
Value to Fishers (KES 1,000)				
2012	16,866,800	1,207,133	93.30%	6.70%
2013	19,984,330	1,298,173	93.90%	6.10%
2014	20,940,907	1,440,666	93.56%	6.44%
2015	18,983,000	1,876,516	91.00%	9.00%
2016	16,836,000	1,680,780	94.90%	5.10%

Source: JICA Design Team based on the data of KNBS, Statistical Abstract 2017

(3) Kenya's Manufacturing Sector

The large share of the manufacturing production is based on the manufacturing of food products and beverages (27% and 12%, respectively). Textile, printing and reproduction of recorded media, and chemicals and chemical products also accounts for relatively larger shares.



Source: KNBS, Statistical Abstract 2017

Figure 2.3.1 Share of Manufacturing Value Added per Activity in 2016

The results of the Census of Industrial Production indicate the share of imported raw materials of the Kenya's industrial sector in total including the mining and energy sectors is high with 47.6%.[6] Rubber and plastic products (83.9%), non-metallic mineral products (81.3%), fabricated metal products (73%). basic metals (70.3%), and tobacco (70.4%) exhibit especially high ratio. Some are with high share of imported raw materials with lower degree of value addition.

Table 2.3.3 Size of Production, Ratio of Imported Materials in the Raw Materials Degree of Value Addition of Manufacturing Activities

	Gross Value Added (KES billion)	Percentage Share of Import in Raw Materials (%)	% Value Addition (Gross value added/gross output)
Manufacture of food products	64,348	19.8	21.43
Manufacture of beverages	24,419	54.1	40.39
Manufacture of tobacco products	4,261	70.4	34.82
Manufacture of textiles	9,807	43.8	31.80
Manufacture of wearing apparel	7,629		47.70
Manufacture of leather and related products	6,148	39.3	45.44
Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	4,122	6.5	20.91
Manufacture of paper and paper products	7,303	56.3	27.71
Printing and reproduction of recorded media	25,804	38.3	49.33
Manufacture of coke and refined petroleum products	19,976		25.86
Manufacture of chemicals and chemical products	15,657	54.2	30.34
Manufacture of pharmaceuticals, medicinal chemical and botanical products	1,538	61.5	20.00
Manufacture of rubber and plastics products	11,195	83.9	23.09
Manufacture of other non-metallic mineral products	11,563	81.3	28.79
Manufacture of basic metals	1,4071	70.3	34.00
Manufacture of fabricated metal products, except machinery and equipment	15,449		35.84
Manufacture of computer, electronic and optical product	313	51.8	30.93
Manufacture of electrical equipment	2,325	73.5	26.74
Manufacture of machinery and equipment	2,181		16.27
Manufacture of motor vehicles, trailers and semitrailers		42.3	34.74
Manufacture of other transport equipment	123		14.85
Manufacture of furniture	914	54.8	6.84
Other manufacturing	3,944	34.4	41.07
Total	428,247		

Source: JICA Master Plan for Development of Mombasa SEZ based on the data of KNBS (2013) Census of Industrial Production

[6] KNBS (2013) Census of Industrial Production

(4) Mining Sector

Kenya has the production of such minerals as limestone, soda ash, and fluorspar. Some economic drivers of the economy may be titanium in Kwale and soda ash in the short-run, though the production of those two resources may face the problem of production either long-term or short-term. The latter faces the problem of contamination through it has been e contamination of the significant decline of the production though some counter measures has been in place. Opportunities may be identified in niobium and coal production in future[7].

2.3.2 Service Sector

(1) Tourism

The tourism sector is one of the major foreign currency earning industries of Kenya and is especially important for development of Mombasa. The economic impact is not limited to direct earning from transportation, accommodation and food, retail and other recreational services, but induced further external economic activities such as spending and housing of employees of the industries. Table 2.3.4 also shows the projection in 2024 where the amount of industry's direct contribution to GDP grow over 5% per annum.

Table 2.3.4 Kenya's Tourism Industry's Projection and Impact on the Economy

	2013		2024		Projected Annual Growth Rate (2013-2024)
	Actual	Share in Total (%)	Projection	Share in Total (%)	
Direct Contribution to GDP (KES billion)	183.4	4.8	314.1	4.7	5.2
Total contribution to GDP (KES billion)	426.8	12.1	791.4	11.8	5.2
Direct contribution to employment ('000 jobs)	226	4.1	284	4.0	2.3
Total contribution to employment ('000 jobs)	590	10.6	737	10.3	2.3
Visitor exports (KES billion)	161.3	17.3	272.1	12.2	5.2
Domestic spending (KES billion)	156.3	4.1	274.1	4.1	5.3
Leisure spending (KES billion)	207.8	3.1	350.1	2.9	5.2
Business spending	109.8	1.7	196.1	1.7	5.5
Capital Investment	55.8	7.6	96.2	7.4	5.4

Note: Shares in total indicate the share to the national total of the relevant indicators. Visitor export is shown relative to total export of goods and services. Domestic spending, Leisure spending and Business spending are expressed relative to whole GDP. Capital investment is relative to total domestic investment.

Source: World Travel and Tourism Council (2016), Travel & Tourism: Economic Impact 2014 Kenya

Mombasa is the leading tourist destination in Kenya. A mass of visitors and tourism-related industries can be also regarded as a market. In 2016, 620,000 visitors arrived at the Moi International Airport[8]. Although the number declined mainly due to security concerns, the amount of hotel bed-nights in the coastal beach

[7] JICA (forth coming), Final Report of the Project for Master Plan on Logistics in Northern Economic Corridor
[8] KNBS, Statistical Abstract 2017

and the coastal area in total accounted for 35.5% and 41.2% of the country's total, respectively[9]. Linkages may be expected from the tourism industries in terms of market provision, human resources in the hospitality industry, and procurement of various hotels, and tourism-related activities and other impact incurred by the locally-employed population.

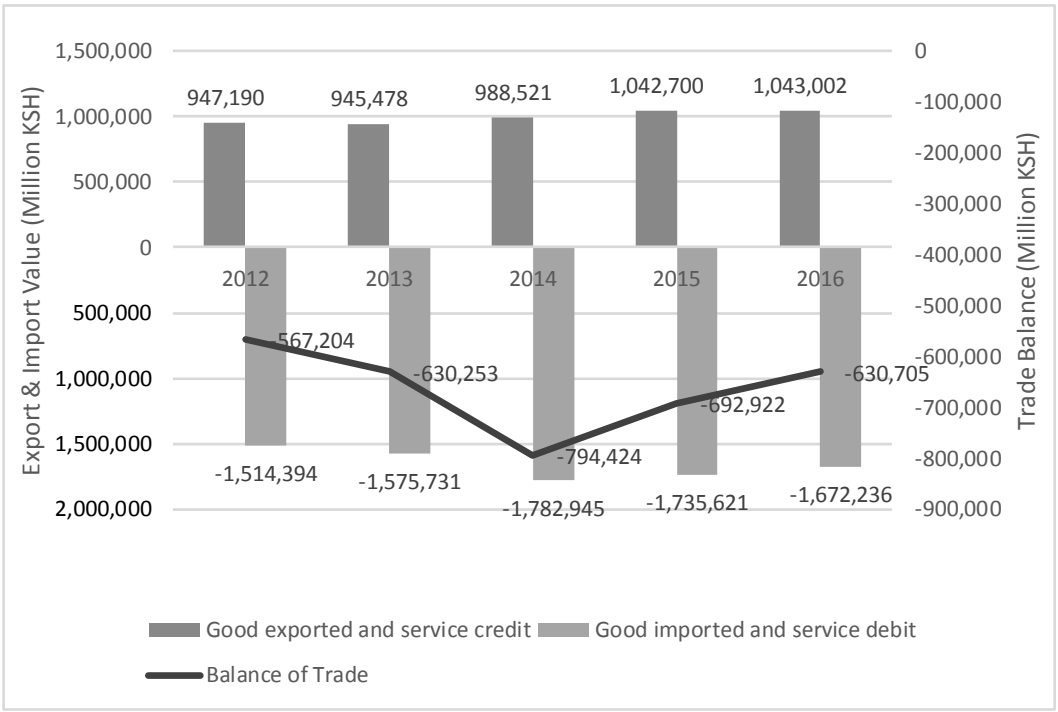
Opportunities are identified in untapped potentials such as eco-tourism, culture, conference and cruise. New set of clienteles should also be targeted, for example, domestic and regional tourists and international tourists from newly emerging economies.

On the other hand, current infrastructure, business environment, and human resources may be a weakness. In addition, security issues can be one of the major concerns[10].

2.4 Foreign Trade

2.4.1 Foreign Trade Structure

The export and import trend is shown in the figure below. In the recent years, the total value of export has been steadily growing but the growth rate of import has exceeded the degree of growth.



Source: KNBS, Economic Survey 2017

Figure 2.4.1 Trend of Export and Import in Kenya

[9] KNBS, Economic Survey 2017

[10] GOK, National Tourism Strategy 2013-2018

2.4.2 Kenya's Export and Import

(1) Export

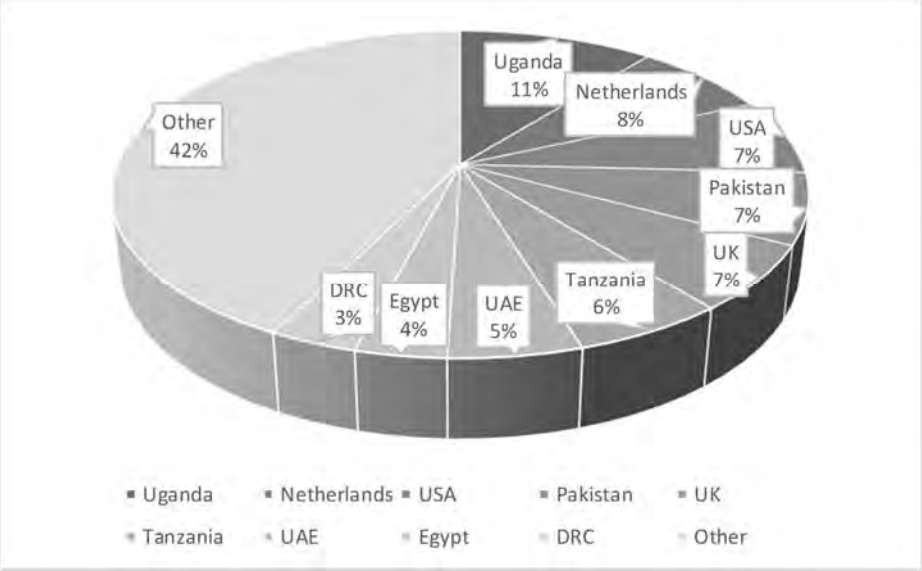
The table below shows the major exported goods from Kenya. Kenya relies most of its exports on commodity trade. The value of tea export is the largest. The manufactured goods are exported to neighbouring countries.

Table 2.4.1 Major Exporting Goods of Kenya and its Traded Values in 2016

Export	
Item	**Value (KSH million)**
Tea	124,497
Horticulture	110,338
Coffee	21,371
Tobacco and tobacco manufactures	14,574
Medical and pharmaceutical products	13,190
Iron and steel	13,183

Source: KNBS, Economic Survey 2017

The figures below show the major export's destinations. EAC and the regional market such as Uganda, Tanzania, and DRC are the major export destination of Kenyan products, whereas the Netherlands is the major market for the fresh produce accounting for 8% of the value of export. The United Kingdom (UK) remains one of the major destinations of tea, vegetables, and cut flowers. The United States of America (USA) is the major destination of garment produced in the export processing zones utilising the incentives provided by the African Growth and Opportunity Act (AGOA).



Source: KNBS, Economic Survey 2017

Figure 2.4.2 Major Destinations of Export and Their Share in Total Value of Export (2016)

(2) Import

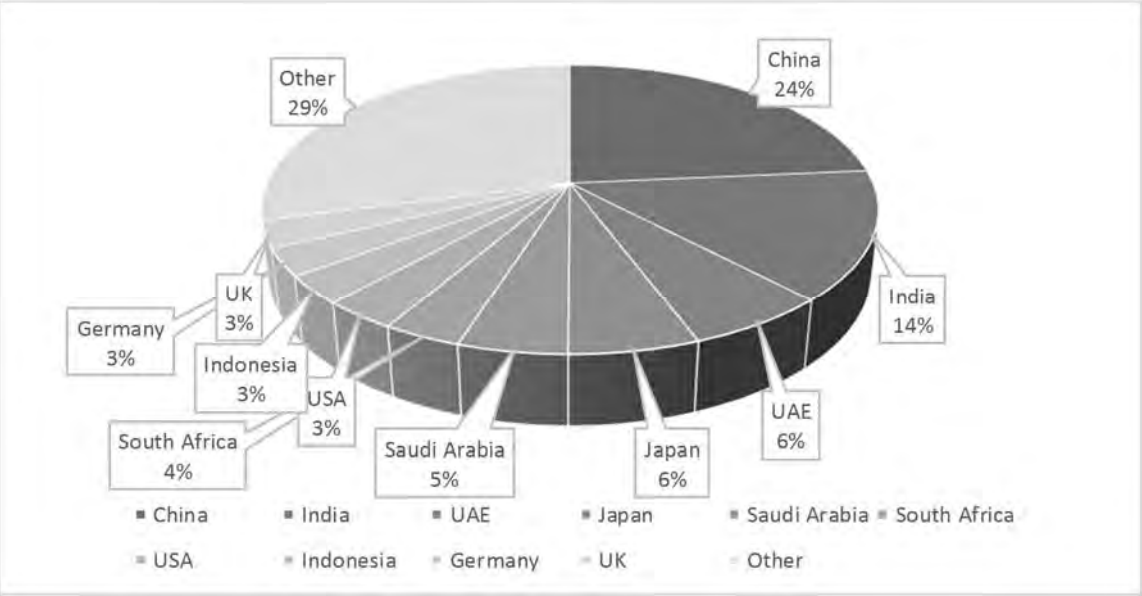
Kenya is a net importer of oil. The large share of imports is held by manufactured goods such as automobile, telephone sets and medicaments. The raw material such as palm oil and iron rolls also rely on import.

Table 2.4.2 Major Imported Goods of Kenya and Values in 2016

Import	
Item	**Value (Ksh million)**
Industrial machinery	253,541
Petroleum products	183,842
Road motor vehicle	85,838
Iron and steel	75,400
Medical & pharmaceutical products	60,455
Plastics in primary & non-primary forms	59,319
Paper and paperboard	30,065
Wheat, unmilled	28,883
Telecommunication	28,694

Source: KNBS, Economic Survey 2017

The share of Kenya's five major import origins account for more than 50% in the total import value. These include China, India, UAE, Japan and Saudi Arabia.

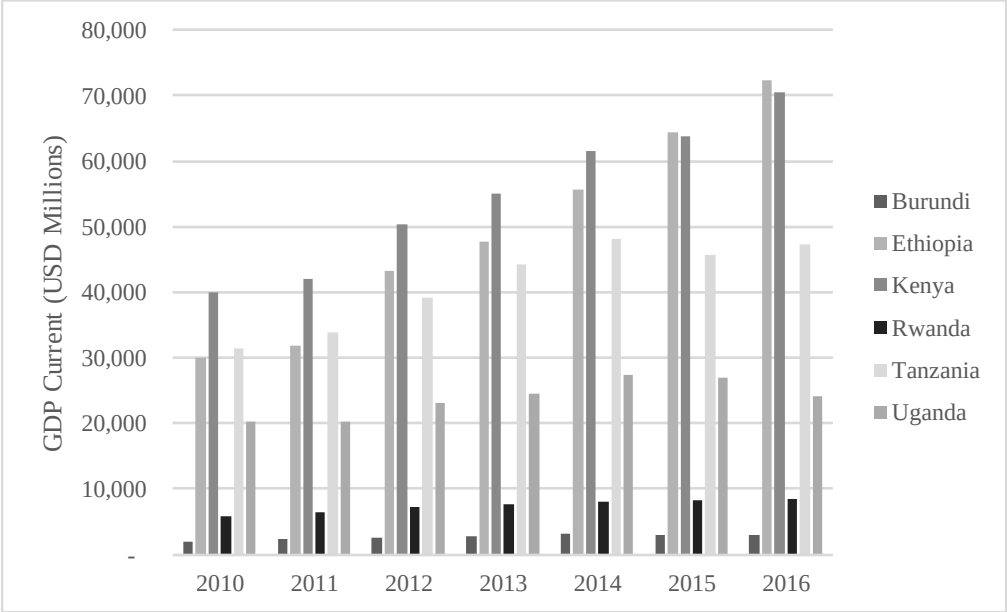


Source: KNBS, Economic Survey 2017

Figure 2.4.3 Major Origins of Import and Their Share in Total Value of Import (2016)

2.4.3 Trend of the National Economies of Neighbouring Countries

The level of GDP of selected neighbouring countries in East Africa are as shown in the figure below. In the dollar term, Kenya and Ethiopia have the largest GDP in this economic group.

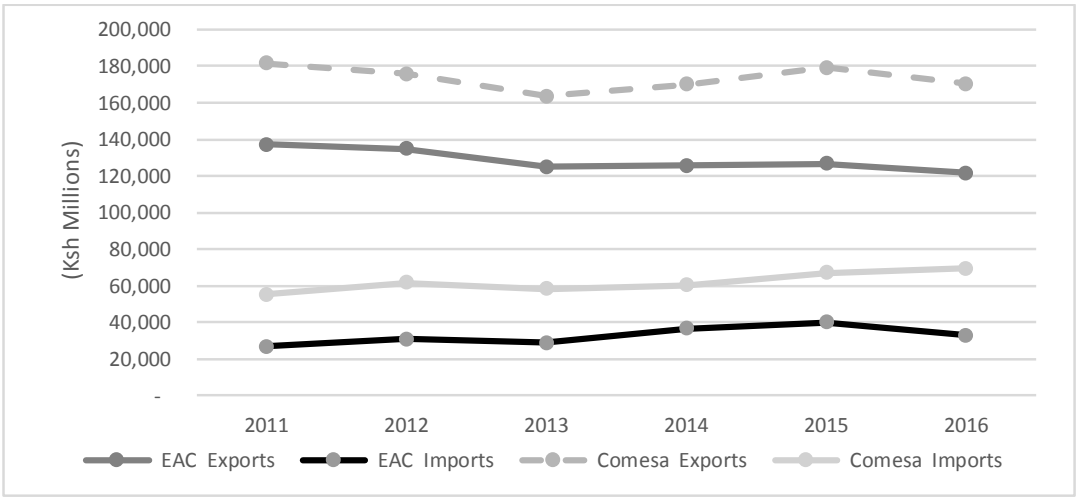


Source: World Bank, WDI

Figure 2.4.4 GDP of Kenya and Neighbouring Economies

2.4.4 Kenya's Trade with Neighbouring Countries

With the expanding economies in the region, trade volume has been increasing largely in the region. Although EAC and COMESA remain important trade partners especially for export, the ratios to the total value of export or import of Kenya are rather stagnant in recent years (see the figure below).



Source: KNBS, Economic Survey 2017

Figure 2.4.5 Ratios of Export and Import toward and from EAC and COMESA to Kenya's Total Export/Import

Chapter 3 Institutional and Legal Framework for SEZ

3.1 Overview of Institutional Framework for Special Economic Zone Development

3.1.1 National Economic Development Policies and SEZ

In this section, Kenya's policies on industrial promotion are reviewed as prerequisite information for understanding SEZ concept and institutional framework.

(1) Kenya Vision 2030

The Government of Kenya (GOK) prepared the Kenya Vision 2030 policy aims industrialisation and transforming Kenya into a middle-income country. The development of Special Economic Zones (SEZs) in the Kenyan towns of Mombasa, Kisumu, and Lamu were proposed as a one of the core instruments for the realisation of the Kenya Vision 2030.

(2) Kenya's Industrial Transformation Programme

Kenya's Industrial Transformation Programme (KITP) was published in April 2015. Its goal is to achieve 15% share of the manufacturing sector to GDP, creating employment for one million people, increased FDI to 5 times, and 50th or higher rank in the World Bank's Doing Business.

It aims at various industrial sector's development and SEZ is the major tool for its achievement. And in the pillar 2 to form food hubs, the Mombasa SEZ was specifically mentioned as a key infrastructure development together with the adjacent port facility development.

(3) Kenya Investment Policy (Draft)[1]

In achieving the goal directed by the Kenya Vision 2030, GOK has been reviewing the investment policy. The draft Kenya Investment Policy (KIP) shows its overall vision as "To be the investment hub of choice with a vibrant economy" and targets i) improve the World Bank Doing Business ranking to over 50th by 2020, ii) increased percentage of public and private investment to GDP to at least 32% and the private investment to 24%, iii) 50% of multinationals operating in Africa locate their base in Kenya, and iv) increased ratio of FDI and domestic investment to GDP. In this policy, investment promotion policy highlights the review of legal framework for investment promotion, incentive in line with the country's focus for investment promotion, and investment facilitation among other important policy directions.

(4) National Trade Policy

The National Trade Policy published in May 2017 aims at transforming the domestic economy for competitive and export-oriented and efficient economy. The policy sets the following principles: (a) the pursuit of a more open, competitive and export oriented policies that are compatible with the Country's National development objectives; (b) the creation of an enabling environment for trade and investment to thrive; and (c) the promotion of Counties as centres of trade and investment.

[1] Based on the draft dated in June 2017.

For international goods trade, some key policy directions and the measures are described in the policy. Some key policies are; elimination of non-tariff barriers and changing the structure of the common external tariff of EAC, support to products and market diversification through measures such as supply chain capacity building and trade financing, and trade facilitation, In addition to these policies, complementary measures are also enumerated. SEZ is raised as one of the measures to promote B2B E-commerce. For example, physical infrastructure development, strong industrial linkages between agriculture and manufacturing, and business service development are required.

3.1.2 SEZ Concept and Institutional Framework

The basic frameworks of the SEZ scheme is provided by the Special Economic Zone Act, No.16 of 2015 (hereinafter referred to as "SEZ Act"). The SEZ Act Section 4 defines SEZ as "the area declared by the Cabinet Secretary in charge of industrialisation (hereinafter referred to as "CS")" by notice in the Gazette as follows.

"a designated geographical area where business enabling policies, integrated land uses and sector-appropriate on-site and off-site infrastructure and utilities shall be provided, or which has the potential to be developed, whether on a public, private or public-private partnership basis, where any goods introduced and specified services provided are regarded, in so far as import duties and taxes are concerned, as being outside the customs territory wherein the benefits provided under this Act apply."

The concept of the national SEZ scheme together with the information in the SEZ Act indicates the following characteristics of the scheme in Kenya:

- The mechanism to provide (i) good business environment, (ii) quality infrastructure matched with the demand of targeted sector, and (iii) benefits only to be provided in the zone.
- Customs controlled area, i.e., outside of customs territory.
- Allow to host multiple sectors based on the area potentials.

In order to realise the concept above, the institutional design and the organizational structure as the implementation mechanism of the scheme is expected to cover the following issues:

- The structure and system for administrative service provision and regulatory functions to realise good business environment
- Regulatory and support system for physical infrastructure development management
- Regulatory mechanism to provide incentives.

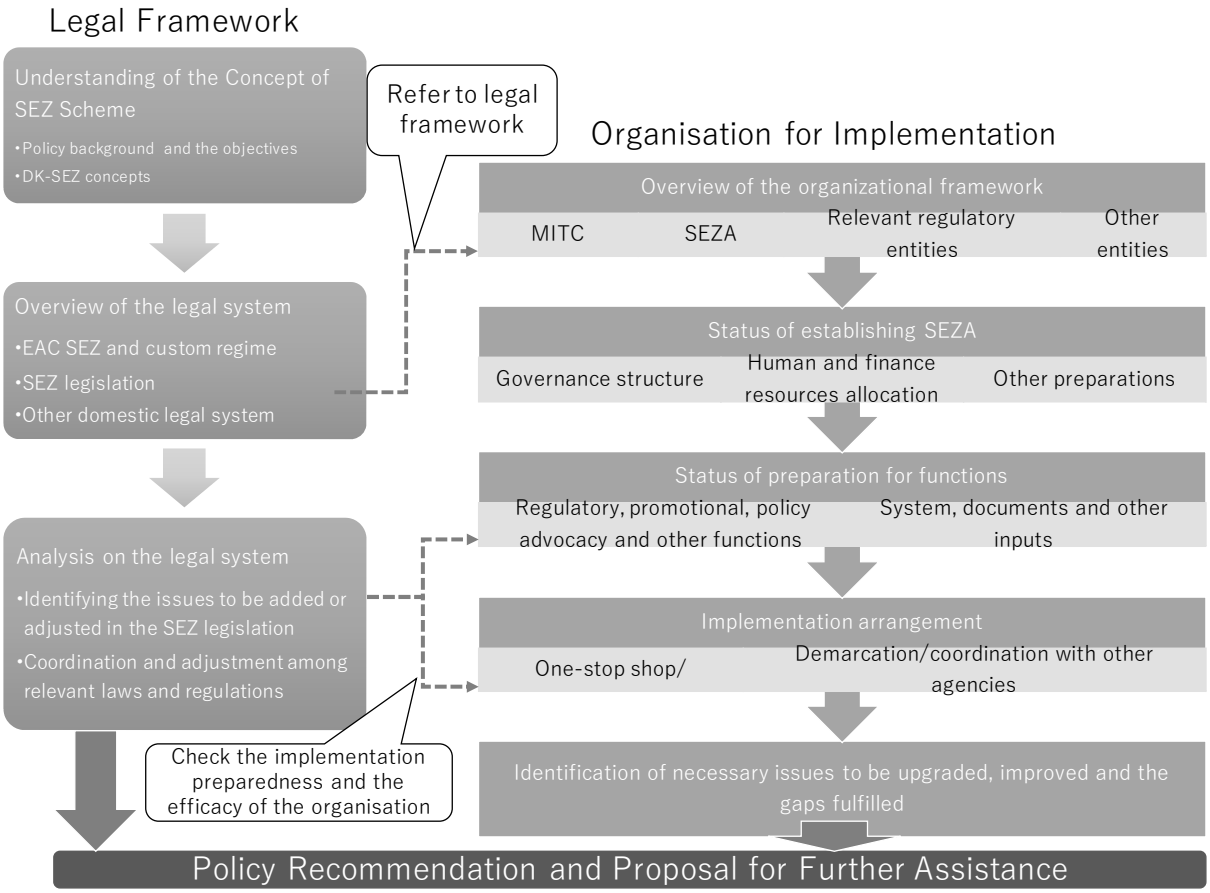
Establishing the Special Economic Zone Authority (hereinafter referred to as "SEZA") as the regulatory body of the scheme is also covered in the Act. The details for implementation of the SEZ Act is further regulated based on the regulations, the SEZ Regulations. The SEZ Regulations were promulgated in August 2016.

The customs regime which is another important factor of SEZ scheme is to follow the customs rules under the East African Customs Union, and administrative procedures related to customs management is done by

the domestic revenue authority (Kenya Revenue Authority: KRA) following the EAC customs-related laws and regulations.

3.1.3 Structure of the Analysis

Based on the understanding above, the analysis will be structured in the following steps.



Source: JICA Design Team

Figure 3.1.1 Flow of the Analysis for Institutional Development

The analysis will review the available legal system and the organizational framework whether they effectively function in line with the realisation of the SEZ concept. For that purpose, operational structures and implementation mechanism will be analysed based on the framework defined in the legal system. Situational analysis will first look at the current status of establishment of organisation and implementation mechanism. It will further look into the operational arrangement in order to deliver services and permit/approval and enforcement of regulations. Based on the analysis, the recommendations for the improvement of the issues will be drafted in order to fill the identified gap at the end of the Design Mission.

3.2 Overview of SEZ Legal System

3.2.1 Progress of Development of EAC's Institutional Framework for SEZ

(1) Structure of EAC Policy and Legal System for SEZ

In this section , the customs regime at EAC level will be reviewed.

The EAC Customs Union is formed based on the Protocol on the Establishment of the EAC Customs Union (hereinafter referred to as "the Protocol") signed in 2004 by Kenya, Uganda, and Tanzania originally. Based on the Protocol, EAC partner states adopted the East African Customs Management Act (EACCMA) as its customs law in EAC. The EAC Customs Management Regulations 2010 were further established for the implementation of EACCMA. Currently EAC-level available policy and regulatory mechanism are as shown in the table below.

Table 3.2.1 Legal Framework for SEZ within Various EAC Laws

Existing Legal Framework	Relevant Sections	Important Features and Summaries
EAC SEZ Policy	-	Review was made based on the draft as of 2014 that the Design mission had access.
The Protocol on the Establishment of the EAC Customs Union	Part F. Export Promotion Scheme Article 25(3): Principles of Export Promotion Schemes Article 29: Export Processing Zones (EPZ) Part G. SEZ Article 31: Freeports Article 32: Other Arrangements	Limit of sale from EPZ into customs territory of 20% of the annual production of the company. Partner states may provide for the establishment of EPZ, freeport, and other special economic arrangements.
	Annexes to the Protocol on the Establishment of the EAC Customs Union. Annex VII on EPZ Regulations Annex VIII on Freeport Regulations	Uniformity amongst partner states in the implementation of EPZ and freeport operations in ensuring transparency, accountability, and consistency with the provisions of the Protocol.
EACCMA 2004	Part XIV, Sections 167-170: EPZ and Freeport	Customs treatment of goods within EPZ and freeport including the exemption of duty in accordance with the Protocol.
	EAC Customs Management Regulations 2010 Part XIV, Sections 169-178: EPZ Part XV, Sections 179-186: Freeport	Control of goods within an EPZ and freeports.

Source: Based on the SEZ Policy, Draft as of April 2014, addition by JICA Design Team

The Protocol envisages SEZ scheme in Part G. However, the part only stipulates the framework of Freeports (Article 31), while it also allows other types of zones which serve for development of international trade and economic development of the member countries (Article 32). Apart from freeports and export processing zone (hereinafter referred to as "EPZ") scheme stipulated in the section mentioned below, the possibly diverse aspects embraced in SEZ scheme are not captured in the existing legal framework.

Apart from SEZ, the Protocol has a provision on the export promotion scheme in Part F with its principles. The schemes raised in Part F are: i) duty drawback scheme (Article 26); ii) duty and value added tax remission schemes (Article 27); iii) manufacturing under bond (Article 28), and iv) export processing zones schemes (Article 29).

(2) EAC Policy Formulation

EAC has been working on developing a common policy for the further institutional and regulatory framework development for SEZ scheme. The policy formulation was embarked based on the problems in the existing SEZ scheme and the legal framework. The draft policy in 2014 pointed out the following issues:
The issue of available legal frameworks covering only trade and manufacturing (freeports and EPZ schemes are only areas with EAC-level regulations)
Necessary coordination for incentive provisions and allowing SEZ firms to access to the EAC markets[2].
In terms of the types of SEZs, the draft policy lists 13 types of SEZ including free trade zone, free port, industrial part, information communication technology park (ICT Park), tourist and recreation centre and EPZs. The Kigali Resolution after the EAC Manufacturing Business Summit on 25 May, 2017 reiterated the importance of SEZ without mentioning the policy[3].
According to the interview conducted afterwards with MOI/SEZA, it was considering that the Regulations for the Protocol will be first developed in order to provide clear rules of the scheme, and to provide more concrete guideline for the SEZ scheme for the EAC Customs Union.

(3) SEZ Regulations in EAC Level

As mentioned earlier, regulatory frameworks for SEZ at EAC level has not provided the details except freeports. In terms of freeports, ANNEX VIII of the Protocol defines following nature of the scheme.

Table 3.2.2 Freeport Defined in the EAC Customs Union Protocol

	Description	Relevant Sections
Status of the Area	Outside of customs territory and not subject to the usual customs controls	Regulation 9
Activities	1. "~restricted only those activities that are required to preserve the goods, or to improve their packaging, preparation for shipment or marketable quality without changing the character of goods and shall exclude manufacturing or processing of goods". Warehousing and storage Labelling, packing and repacking Sorting grading, cleaning and mixing Breaking bulk Simple assembly Grouping of packages	Regulations 10
Geographical Location	2. "~may be established at seaport, river port, airports, and places with similar geographic and economic advantage."	Regulations 5

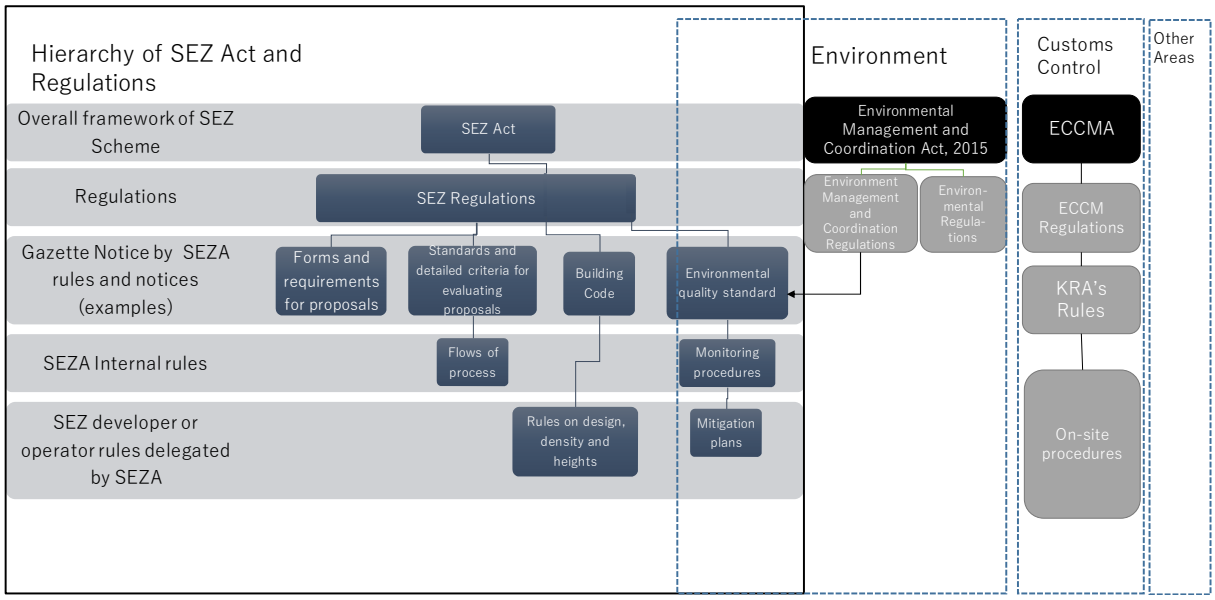
Source: JICA Design Team based on the EAC Annex Regulation

While the interim provision in this regulation indicates limitation in geographical locations of freeports, the types of activities comprise logistics and adjacent activities such as labelling and packing and repacking without major transformation of the materials and manufacturing.
As mentioned earlier, according to MOI/SEZA, the SEZ Regulations as an Annex for the Protocol will be developed. The member countries will submit the draft regulations based on their national-level laws and regulations for compilation. The draft will be submitted to SCTIFI (Sectoral Council on Trade, Industry, Financial and Investment) for approval.

[2] Draft EAC Special Economic Zone Policy (April 2014)
[3] Source: EAC press release (http://www.eac.int/news-and-media/statements/20170525/kigali-resolutions-manufacturing)

3.2.2 Structure of SEZ Institutional and Legal Framework in Kenya

The SEZ Act provides the legal background of SEZ and the outlines of institutional framework for the administration of the scheme. The designation, licensing and management of the SEZ scheme requires the detailed rules to administer the scheme as well as the individual SEZs. It also requires to cover broader areas under the jurisdictions of various ministries and government entities. The necessary statutory instruments should be developed in the level of regulations and gazette notice by the, administrative orders and internal rules by the government agencies. As explained in the following section, the SEZ Regulations further allows the individual operators to develop their own rules for operation and maintenance especially such areas as building controls. The figure below is the image of the hierarchy and relationship among rules and regulations. Jurisdictions or fields encompassed in the development and administration of SEZ scheme are as seen in the table in the latter part of this section. The figure below used environmental management and customs management as examples.



Source: JICA Design Team

Figure 3.2.1 Image of Hierarchy and Relationship of SEZ-Related Legislation and Rules

The table below shows some of key laws and regulations to be observed or coordinated for SEZ development. Apart from these laws and regulations, such areas as company registration under the Company Acts apart from the licensing at SEZA, investor protection, dispute resolution, and sectoral licenses are to be involved.

Table 3.2.3 Examples of Laws and Regulations and Relevant Government Entities for SEZ Operation

Issues	Key laws and regulations	Contents	Relevant government entities
National SEZ legislation	SEZ Act, No.16 of 2015	Overall national legislation on SEZ regulations, development and management	SEZA, MOI
	SEZ Regulations, 2016	First batch was promulgated. The contents include declaration of SEZ, licensing of SEZ developers, operators and enterprises, investment rules, and land use rules and building utility controls.	
Establishment and governance of SEZA	State Corporation Act	The law which provide rules for state corporation for its management.	State Corporation Advisory Committee
Fiscal Incentives	SEZ Act, relevant tax acts, legislated through Finance Acts	Fiscal incentives and the handling of customs, excises, and VAT are stipulated.	KRA
Customs management	Protocol on the Establishment of the East African Customs Union	Overall agreements on the customs union including rule regarding export promotion policy measures such as SEZ.	
	ANNEX IIIV of Protocol EAC	Regulations for establishment and customs management of freeports in SEZ.	
	East African Community Customs Management Act (EACCMA) and the Regulations	EAC-level customs rules and regulations.	
PPP-type development and management	PPP Act	Framework for PPP-type project procurement rules	National Treasury (PPP Unit)
	PPP Regulations	Detailed rules for PPP-type project procurement	
Financial transaction	Central Bank of Kenya Act and Banking Act	Payment and receipt of funds by SEZ enterprises	Central Bank of Kenya
Land acquisition and registration	Constitutions 2010	Property rights: 65. Property rights and principles of land are defined. Non-citizens of Kenya are allowed only the leasehold up to 99 years (i.e., not allowed to possess land.) Expropriation and land acquisitions: National Land commission is established under the Constitution (65.) Planning	National Land Commission
	Land Act		Ministry of Lands, National Land
	Land Rating Act		

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Issues	Key laws and regulations	Contents	Relevant government entities
	Land Registration Act, 2012		Commission County Government
	Survey Act	Rules on the qualification the surveyors and handling of survey records.	Survey of Kenya
Building and construction	Physical Planning Act	Regulate land use and control development.	Ministry of Lands. National Land Commission County Government
	National Construction Authority Act	Construction-related project has to be registered and levied. Approval and regulate the qualification of contractors is also done by the National Construction Authority (NCA). It is necessary to coordinate and demarcate the mandates between the SEZ Regulations, 2016 and NCA Act and regulations.	National Construction Authority
	(Building Code: Local government by-law)	According to the SEZ Regulations, 2016, SEZA can develop own building code, but not really mention on the permit and enforcement. It also requires coordination of existing standards.	County Government
Environmental management	Environmental Management Act		NEMA
	Environmental Management Regulations	There are the regulations for the specific issues such as air quality, noise, water quality, and waste management established in the various years.	
	Environmental (Impact Assessment and Audit) Regulations	Covering EIA and environment audit.	
Payment of Tax	Income Tax Act	Obtaining personal identification number (PIN) to process corporate and personal income taxes.	KRA
	Other tax acts	VAT, Excise Act,	
Labour	Employment Act	Define the minimum rights of employees.	Ministry of EAC, Labour and Social Protection
	Occupational Safety and Health Act	Standards for safety, health and welfare of works are defined.	National Council of Occupational Safety and Health
	Industrial Training Act	It requires contribution to the Industrial Training Levy if a company employs more than 20 employees.	National Industrial Training Authority
Immigration	Kenya Citizen and Immigration Act	Rules on the immigration and permits for foreigners.	Department of Immigration Foreign Nationals Management Section
	Kenya Citizen and Immigration Regulations	Procedures and forms for immigration-related processes.	
Social security	National Social Security Fund Act	Rules on the mandatory registration and contribution for social security fund.	NSSF

Issues	Key laws and regulations	Contents	Relevant government entities
	National Hospital Insurance Act	Rules on the mandatory registration and contribution for hospital insurance.	NHIF
Quality standards and metrology	Standards Act	Rules on the compulsory and voluntary standards.	Kenya Bureau of Standards
Plant and animal health	Plant Protection Act	Rules on importing plants, seeds etc.	Kenya Plant Health Inspectorate Service

Source: JICA Design Team

3.2.3 Overview of SEZ Act, No.16 of 2015 and SEZ Regulations

(1) SEZ Act

The SEZ Act, No.16 of 2015 consists of seven parts and 40 clauses with two schedules as shown on the table below.

Table 3.2.4 Overall Structure of SEZ Act, No.16 of 2015 and Key Provisions

Section	Title of Clause	Key Provisions
Part I – Preliminary		
Part II – The Special Economic Zones		
4	Declaration of the special economic zones	A designated geographical area where business enabling policies, integrated land uses and sector-appropriate on-site and offsite infrastructure and utilities shall be provided Outside of Kenya's customs area (customs controlled area)
5	Criteria for designating special economic zones	Project proposals are reviewed and approved as SEZs based on the nature of the project, geographical locations, land availability, proximity to resources, population centres and infrastructures, impact on the off-site infrastructure, environmental standards and requirement etc.
6~8	Customs Controlled Area arrangement	The goods and services are considered as imported from SEZ if removed from Kenya into SEZ, and exported from Kenya if brought in SEZ.
Part III – The Special Economic Zones Authority		
10~11	Establishment of the Authority	Outline of SEZA(power and functions)
12~16	Board of Directors	The organisation and power of the board of directors and CEO
17~20	Staff of the Authority	Rules on hiring, rules on operation are specified.
Part IV- Financial Provisions		
21	Establishment of the Fund	Establishment of fund for SEZ development.
22~25	Financial year	Budget planning, execution and financial management of SEZA
Part V –Regulatory Provisions		
26~27	Application and issue of license	License application, payment of fee, and time from the receipt of an application to approval of SEZ developers and operators are defined.
28~29	Qualifications of a special economic zone entities	Qualifications and criteria of SEZ developers, operators, and enterprises are defined.
30	Register of licenses	Information management of SEZA
Part VI – Rights and Obligations of the Special Economic Zone Entities		
31~34	SEZ enterprises	Activities permitted within a special economic zone, facilities, rights of special economic zone enterprises

Section	Title of Clause	Key Provisions
35	Benefits for SEZ entities	Fiscal incentives, work permits for foreign workers up to 20% of the total number of employees, other de-regulation
Part VII – Miscellaneous Provisions		
36	Power of the cabinet secretary	
37	Dispute resolution	
38	Exemption from stamp duty	
39	Regulations	
40	Transition	CS industry can approve infrastructure development and management projects as SEZ based on the certain conditions.
First Schedule Types of Special Economic Zones		
Second Schedule– Provisions as to the Conduct of Business and Affairs of the Board		

Source: SEZ Act, No.16 of 2015

(2) SEZ Regulations for Implementation of SEZ Act

The SEZ Regulations are expected to provide the necessary detailed rules for implementation of SEZ Act. The Act designates CS to make the regulations in the matter required in the Act. Section 39 (2) lists the contents of the regulations as shown in the Table below. The existing SEZ Regulations were promulgated in August 2016. In the items listed in Section 39 (2), designation criteria for SEZ in general is designated whereas the details of the sector-specific SEZs are not covered. The rules and conditions on entry of persons and the fee are yet to be published.

Table 3.2.5 Formulation of SEZ Regulations

(a) Regulations and the Contents Listed in Section	Availability of Regulations
(b) determine criteria for the designation and gazetting of all special economic zones;	*
(c) determine the application process, criteria, conditions, terms and procedures for designation of special economic zones and licensing of special economic zone developers, operators and enterprises;	✓
(d) determine the form of licences to be issued under this Act, and the procedures from amendment and revocation of the licences;	
(e) determine the general conditions of entry of persons into a special economic zone;	
(f) require information from special economic zone developers, operators and enterprises;	✓
(g) determine the rules pertaining to the establishment, functioning, operations, and procedures for the special economic zone one-stop-shops;	✓
(h) determine the rules for the special economic zone investment;	✓
(i) determine the rules of special economic zone land use, development and building controls, as well as utility provisions and operations.	✓
(j) determine the fees to be levied under this Act.	

Note: "✓" means the item is covered by the existing regulations,
Source: SEZ Act, No.16 of 2015, SEZ Regulations

The contents of the SEZ Regulations are as shown in the table below.

Table 3.2.6 SEZ Regulations Organisation

	Contents
Part I	Citation and interpretation
Part II	Administration of special economic zones and institutions
Part III	Designation and gazetting of special economic zones
Part IV	Licensing of special economic zone developers
Part V	Licensing of special economic zone enterprises
Part VI	Information requirements from special economic zones end users
Part VII	One-Stop Shop
Part VIII	Investment rules for special economic zones
Part IX	Land use rules and building and utility controls
Part X	Authority fund, sanctions and fees
Part XI	Implementation of the regulations

Source: SEZ Regulations

The legislative process for the regulations were as follows:

(a) Internal consultation in the Government of Kenya (hereinafter referred to as "GOK"): The draft regulations are to be reviewed by the relevant ministries and regulatory agencies of GOK. Necessary adjustment and coordination among the relevant regulatory frameworks are required.
(b) Public consultation: The draft is further reviewed by the relevant external stakeholders including the private sector.
(c) The draft is submitted to the Office of the Attorney General, reviewed and returned to the CS/MOI.
(d) The CS/MOI submits the application to the Committee of the Parliament (Finance, Planning and Trade) through the discussions with IFC.
(e) Assented by the Committee of the Parliament (Finance, Planning and Trade): After the Committee's approval, the regulations will be promulgated.

3.2.4 Key Contents of SEZ Scheme

(1) Definition of SEZ

i) Definition of SEZ

The definition of SEZ was as explained earlier in this chapter. Section 4 (6) lists the types of SEZ. The section indicates an SEZ to be single- or multiple sector SEZ with the following zones defined in Section 2.

Table 3.2.7 Types of SEZ in SEZ Act

	Type of SEZ	Definition
(a)	Free trade zone	SEZ customs controlled area where goods are off-loaded for transhipment, storage and may include bulk breaking, repacking, sorting, mixing, trading or other forms of handling excluding manufacturing and processing.
(b)	Industrial parks	A SEZ declared as such under section 4 with integrated infrastructure to facilitate needs of manufacturing and processing industries.
(c)	Freeport zone	Designated area placed at disposal of the SEZ or freeport authority where goods introduced into the designated area are generally regarded, in so far as import duties are concerned, as being outside the customs territory.

	Type of SEZ	Definition
(d)	Information communication technology parks	A SEZ declared as such under section 4 to facilitate the information communication technology sector, its services and associated activities.
(e)	Science and technology parks	A SEZ declared as such under section 4 to facilitate the science and technology sector, its services and its associated activities
(f)	Agricultural zone	A SEZ declared as such under section 4[4] to facilitate the agricultural sector, its services and associated activities
(g)	Tourist and recreational zones	A SEZ declared as such under section 4 to facilitate tourism and recreation sector, its services and associated activities,
(h)	Business service parks	A SEZ declared as such under section 4 to facilitate the provision of services including but not limited to regional headquarters, business processing outsourcing centres, call centres, shared service centres, management consulting and advisory services and other associated services.
(i)	Livestock zones	A SEZ declared as such under section 4, in which the following activities are carried out: livestock marshalling and inspection; livestock feeding or fattening, abattoir and refrigeration; deboning; value addition; manufacture of veterinary products, and other related activities.
(j)	Convention and conference facilities	This category was added by the Finance Act, 2016 without definition.

Source: SEZ Act, No.16 of 2015

As explained earlier, the type of SEZ with detailed customs regulations in EAC level are limited to Freeports and, possibly, Free Trade Zone may be in the category based on the definition.

EPZ is not included in the list. SEZ Regulations stipulates that EPZ developers, operators and enterprises may convert themselves to SEZ developers, operators or enterprises if they apply for and obtain SEZ entity licenses compliant with the SEZ Act and SEZ Regulations. It requires confirmation on the status of converted entities and more detailed rule (Regulation 17, SEZ Regulations).

ii) Treatment of Customs Duty

As clearly stipulated in Section 2 and 4 (6), SEZ is to be outside of customs territory: SEZ is regarded as the customs controlled area[5]. Therefore, if the goods are taken out from the customs territory and brought into SEZs, it is regarded as "exported". If the goods are brought from SEZ into the customs territory, it is considered as "imported". Likewise, service provided from SEZ to the customs territory is also deemed to be "imported" (Section 6, and 7). It should be noted that the entire SEZ areas are designated as customs controlled areas.

(2) Development and Management of Land

In terms of development and management of land, although it is not stipulated in the SEZ Act, the SEZ Regulations stipulates that SEZA is responsible for ensuring all the proposed master plans and zonings by SEZ developers or SEZA (in case SEZA develops a master plan) do not conflict with existing land use controls for the area surrounding SEZs. While the SEZA is obliged to undertake necessary collaboration

4 Section regarding the declaration of SEZ in the SEZ Act, 2015.

5 Customs controlled areas are defined as where certain enterprises carry out customs controlled operation. Customs territory is defined as "the geographical areas of the Republic of Uganda, the Republic of Kenya and the United Republic of Tanzania and any other country granted membership of the East African Community under Article 3 of the Treaty for the Establishment of the East African Community, **but does not include a special economic zone**." (Section 2)

with the county governments, (3) states that "the master plan and zoning order made by the Authority (SEZA) shall supersede any previous conflicting land use controls for the same land" (Regulation 38.). SEZA are to enter the service level agreements (SLA) with the relevant ministries and government entities for the execution of the control or service provision (e.g., Regulation 26 (4) on license and permit for SEZ enterprises, Regulation 39. on the land registry).

(3) Definition of Relevant Entities and Organisation for Regulatory Functions

SEZ Act identifies the regulatory body as i) "the Cabinet Secretary (CS) for the time being responsible for matters relating to industrialization" (Section 2), ii) SEZA, and iii) other relevant institutional bodies as CS responsible for finance, the Commissioner of Customs and the Kenya Revenue Authority, the National Land Commission. Some of them are also listed as the member of the board of SEZA[6]. The overall organizational framework of SEZ development will be explained in 3.4.

The SEZ Act also defines the major SEZ entities as follows:

"**Special Economic Zone Developer**" means a corporate body which is engaged in or plans on developing, and which may or may not also operate or plan to operate, a Special Economic Zone under this Act;

"**Special Economic Zones Operator**" means a corporate body engaged in the management of a Special Economic Zone, and designated for such under the provisions of this Act;

"SEZ Enterprise" means a corporate body, which has been licensed under this Act (SEZ Act).

Further to these categories, SEZ Regulations also provides the definition of the collective concept of SEZ entities and all other actors who may enter and undertake economic activities in SEZ.

"SEZ End Users" means (a) holder of special economic zone expatriate entry authorisation, (b) special economic zone enterprise, (c) special economic zone investor, (d) special economic zone worker, or (e) special economic zone visitor.

According to the SEZ enterprises' rights and obligation, SEZ enterprise are enterprises operating in SEZs for various activities such as service provisions, production and processing, and sales for exporting outside of SEZs or those in SEZs, but not as the SEZ operators. It may be considered as "tenants" of SEZs.

(4) Business Environment Improvement and Incentives

i) Key Features for Improving Business Environment through SEZ Scheme

The SEZ scheme envisages improved business environment. The licensed SEZ enterprises are to be provided full protection of property rights against nationalization or expropriation and rights to fully repatriate all capital and profits. While the right to export and sell the good and services in the customs territory is ensured, the right can be accessed in accordance with the customs laws of East African Community (Section 34).

[6] Unless it is specified, "CS" in the subsequent part in this chapter refers to the CS in charge of industrialization.

ii) Benefits Provided to SEZ Developers, Operators and Enterprises

Table below shows the incentives stipulated in the SEZ Act and reflecting the amendment made by the Finance Act 2015 and 2017 as well as some further adjustments by the Finance Act 2016[7].

Table 3.2.8 Benefits for Investors to SEZ by SEZ Act, No.16 and Finance Acts

Reference	Section Item	Contents	Relevant Laws
SEZ Act	35	(1) All licensed special economic zone enterprises, developers and operators shall be granted tax incentives as specified in respective tax laws.	Respective tax laws
		(2) Subject to subsection (1), the licensed special economic zone enterprises, developers and operators shall be granted the following exemptions from- ・Stamp duty ・Foreign Investments and Protection Act ・Statistics Act ・Payment of advertisement fees and business service permit fees (levied by the respective country governments' finance acts) ・General liquor licenses and hotel liquor license under Alcoholic Drinks Control Act, 2010 ・Manufacturing license under the Tea Act ・License to trade in unwrought precious metals under the Trading in Unwrought Precious Metals Act ・Filming license under the Films and Stages Plays Act ・Rent or tenancy controls under the Landlord and Tenant (Shops, Hotels and Catering establishments) Act	Respective laws
		(3) The licensed Special Economic Zone Enterprises, Developers and Operators shall be entitled to work permits of up to twenty per cent of their full-time employees;	
Finance Act, 2015	5	<VAT Exemption> VAT exemption for the supply of taxable goods to special economic zone enterprises, developers and operators licensed under the Special Economic Zone Act	Third Schedule Head B Rate of Tax, Paragraph 2. Corporate Tax
		VAT exemption for Supply of taxable services to special economic zone enterprises, developers and operators licensed under the Special Economic Zone Act	Schedule A of Part II (Exempted Services) Paragraph Article 24
	16	<Income Tax on dividends > Exemption of income tax on income accrued by dividends (inserting the words "special economic zone enterprises, developers and operators licensed under the Special Economic Zone Act" after venture capital company)	Finance Act 2015 Part III Income Tax Act Cap. 470 First Schedule (Exemption of Income Tax) Paragraph 46 (h)
	18	<Income Tax rate reduction> For a special economic zone enterprise, developer and operator, ten percent for the first ten years from date of first operation and thereafter fifteen percent for another ten years	Third Schedule Head B Rate of Tax, Section 2. Corporate Tax After sub-paragraph 2, (h)

[7] In terms of the fiscal incentives, the Finance Act, 2016 amended the description of section 35 (1) from ”(…shall be granted exemption from) all taxes and duties payable under the Excise Duty Act, the Income Tax Act, East African Community Customs Management Act and the Value Added Tax Act, on all special economic zone transactions” to “~tax incentives as specified in respective tax laws”.

Reference	Section Item	Contents	Relevant Laws
		In case of a special economic zone enterprise, developer and operator in respect of payments other than dividends made to non-residents at the rate of ten percent	Section 3 (non-resident tax rate), (n)
Finance Act, 2017	15	<Income Tax exemption for dividends for non-residents> Exemption of income tax on the dividends paid from special economic zone enterprise, developer and operator to any non-resident person	Finance Act 2017 Part IV Income Tax Act Cap. 470 First Schedule (Exemption of Income Tax) Paragraph 55
	17	<Investment deductions> 100% investment deduction for capital expenditure incurred on the construction of a building or on the purchase and installation of machinery by or for a special economic zone enterprise for use by the enterprise in carrying out the business activities for which it was licensed. Deduction is against the gains or profits of that enterprise in the year in which the building or machinery is first used.	Finance Act 2017 Part IV Income Tax Act Cap. 470 Second Schedule Part IV Investment Deduction Paragraph 24C and 24D
		150% investment deduction for capital expenditure incurred on the construction of a building or on the purchase and installation of machinery by or for a special economic zone enterprise located outside Nairobi and Mombasa Counties.	
	18	＜Withholding Tax rate reduction for non-residents> Non-resident tax for services, royalty, and interest payments paid to a special economic zone enterprise, operator and developer from non-resident persons is 5% (otherwise 10 to 25%).	Finance Act 2017 Part IV Income Tax Act Cap. 470 Third Schedule Head B inserting Item 3 (a)~(c)
	58	Exemption of export levies	Finance Act 2017 Part VI Miscellaneous Fees and Levies Act, 2016, First Schedule Part A
	59	Exemption of import declaration fee (IDF)	Finance Act 2017 Part VI Miscellaneous Fees and Levies Act, 2017, Second Schedule Part A

Source: JICA Design Team based on SEZ Act, 2015 and Finance Act, 2015, 2016, and 2017

In addition to these incentives, Finance Act 2016 provides the VAT exemption for construction materials (purchased locally and imported) for construction of more than 100 acres of industrial parks. Finance Act, 2107 also provided the reduced income tax for motor vehicle assemblers for 5 years[8].

iii) Improvement from EPZ Scheme

In Kenya, similar scheme of SEZ, export processing zone (EPZ) scheme, was introduced in 1990's accommodating more than 90 EPZ enterprises to date[9]. The number of zones were drastically increased from 56 in 2015 to 65 in 2016. The number of EPZ companies has been rather slowly increased in recent years: it was 82 in 2012 and 91 in 2016 (i.e., 2 to 3 more EPZ enterprises per year).

The major issues on the viability of EPZ scheme may be pointed out as follows[10]

[8] 15% for 5 years. Another 5 years in case with local contents of 50% of ex-factory value.
[9] According to the Economic Survey 2017, 65 zones were to be gazette hosting 91 companies (provisional data).
[10] Based on the interviews with the EPZ enterprises.

- The ceiling of exporting into the customs territories which include EAC market set at 20% by the EAC Customs Union Protocol. It is difficult to secure the market for certain industries outside of EAC market as they had targeted the regional market when they invested. It was also pointed out that the EPZ companies need to cope with the demand fluctuation of the global market[11].
- Small and many zones which are mainly single-factory EPZs. It is especially prominent in Mombasa. The scattered nature of the zones makes it difficult to provide administrative services efficiently.

On the other hand, the major differences of the EPZ and SEZ schemes may be summarised as follows.

- In the SEZ scheme, expanded range of industries can be located (EPZ is for value addition such as processing and manufacturing and packaging).[12]
- In the SEZ scheme, possibility of future expansion exists (EPZ companies are not allowed to expand beyond the boundary once gazetted).
- Despite the absence of gazetted numeric threshold, the SEZ Act and the SEZ Regulations maintain a zone must be with the capacity of hosting certain amount of industries with well-facilitated infrastructure.
- However, the point of the ceiling of the sales to the customs territory may be confirmed with MOI[13].

(5) Implementation Procedures for SEZ Development

In this section, the procedures of declaration of SEZ sites, licensing of developers, operators and enterprises are explained.

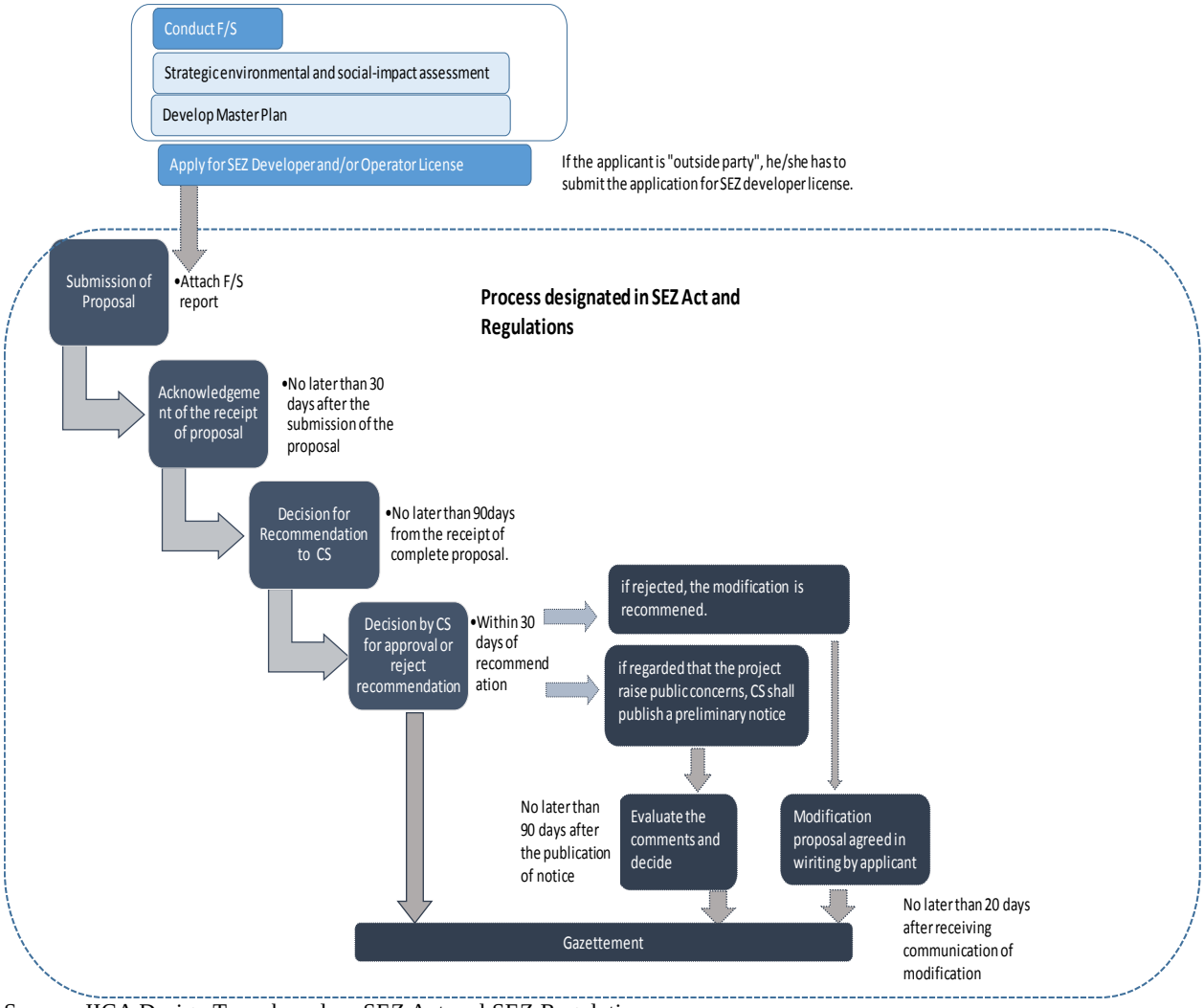
i) Declaration of the Special Economic Zones

A SEZ has to be demarcated and officially gazetted based on the declaration by CS of industrialisation with the recommendation of SEZA and with the consultation with the CS of the National Treasury (SEZ Act, Section 4). The flow to the declaration and the date benchmarked in SEZ Act are as indicated in the figure below.

[11] The President Kenyatta announced to lift the ceiling to 40%, but the actual implementation has yet to be confirmed (Source: Business Daily, http://www.businessdailyafrica.com/news/EPZ-firms--local-sales-quota-raised-to-40pc/539546-3910518-gui6okz/index.html)

[12] The adding land for expansion is mentioned in Regulation 15 of the SEZ Regulation.

[13] During the M/P Study, it was confirmed that SEZ will be the different scheme from EPZ which has clear regulatory provisions in the EAC Customs Union Protocol.



Source: JICA Design Team based on SEZ Act and SEZ Regulations

Figure 3.2.2 Process of SEZ Declaration

The figure above includes the prior process of the application for SEZ declaration. A few points should be noted regarding the process.

It should be noted that an "outside party" is required to apply for the developer licence upon the application for the SEZ designation. An "outside party" is defined as the entities other than SEZA[14]. The application process of the developers will be described in Clause 4.3.2.

Public and Private Partnership ("PPP") projects are required to follow the directions and rules provided to PPP projects by the Public Private Partnership Act, No.15 of 2013 and its Regulations (Public Private Partnership Regulations, 2014).

A proposal for designation of SEZ is required to be accompanied with the feasibility study report. The Regulation Paragraph (1) of 11 lists the necessary contents of the study as following:

(a) market-demand analysis,"
(b) a schematic master plan,
(c) economic impact assessment,

[14] The Regulation 2 of SEZ Regulation defines as "a party not within the Authority, but includes all other government, private-sector, foreign governmental and non-governmental entities".

(d) a strategic environmental and social-impact assessment in accordance with the Regulations;
(e) any other information necessary for the Authority to evaluate the project under each of the criteria set out in Section 5 of the Act.

The criteria set out in Section 5 of the Act and the conditions enumerated in the regulations are as listed as follows:

Table 3.2.9 List of Criteria and Conditions for Designating SEZ in SEZ Act and Regulations

Criteria for SEZ Designation in SEZ Act (Section 5)	Conditions for SEZ Designation in SEZ Regulations (13)
(a) nature of the proposed project (b) intended size and perimeter of the proposed special economic zone (c) availability of land and unencumbered land titles (d) geographical location and topography (e) proximity to resources, population centres and infrastructure (f) infrastructure and other utility requirement from national and county governments including water, power, sewage, telecommunication, solid waste and waste water management (g) provision of medical, recreational, security fire safety, customs, and administrative facilities (h) impact on off-site infrastructure, utilities and services (i) approvals of land uses and zoning requirements to special economic zones (j) environmental standards and requirements (k) any other criteria as may be prescribed in the regulations	(a) land availability: land sufficiency and room for possible expansion (b) industrial economics and dynamics criteria presence of business activities (c) accessibility and connectivity criteria access to means of major transportation and to raw materials and labour (d) infrastructure criteria availability of water, waste water treatment, social infrastructure etc (e) socio-environmental criteria compliance with socio-environmental requirements under any relevant laws, abilities to relocate population in a socio-economically acceptable manner if population displacement is involved, relocation and agricultural, commercial and other industrial activities (f) topographical and construction constraints (g) development impact potential skill development, employment creation etc

Source: JICA Design Team based on SEZ Act and SEZ Regulations

The table above shows that CS can also designate the types of special economic zones based on the market demand, policy goals, and the request from the developer and so on (Section 14(2)). As mentioned earlier, various types of SEZ are assumed. The specification such as criteria and standards to designate certain type shall be published by the notice of the Gazette by SEZA (Regulation 14(3), SEZ Regulations).
Though the SEZ Regulations provide details which may correspond with the criteria in the Act, it should be noted that the regulation does not provide the clear standards (e.g, numerical threshold). The regulations indicate that the details will be able to be published in the Gazette by CS.
As explained in 3.4.2, the formats for the application of designation of SEZ have not been developed. According to the interview with MOI/SEZA, the applicants of already existing SEZs prepared the necessary items for application as designated in the SEZ Act. The application review has also followed the rules in the SEZ Acts and SEZ Regulations 2016 as well as the technical knowledge of the board members and MOI.

ii) SEZ Developer's and Operator's License

i Eligibility Criteria for SEZ Developers and Operators

Section 28 of the SEZ Act lists the criteria and requirement specific to SEZ developers as listed below. As the rights and obligation mentioned later, the section primarily indicates that it is for developers. However, there is no separate section for operators.

(a) a company incorporated in Kenya, for undertaking special economic zone activities;
(b) have financial capacity, technical and managerial expertise, and associated track record of relevant development or operation projects, required for developing or operating the special economic zones; and
(c) own or lease land or premises within the special economic zone as stipulated under the Special Economic Zone (Land Use) Regulations

This section indicates securing land either by owning or leasing is prerequisite for a SEZ developer license. The designation of the land as the SEZ, on the other hand, can be processed simultaneously with the SEZ developer license application as mentioned in the previous section.

The SEZ license for developers and operators are granted based on the developer's or operator's agreements between the developers/operators and respective entities depending on the type of development scheme[15]. The SEZ Regulations assumes the combination of SEZ developers and operators as shown in the table below. SEZ developers and operators can be assigned by the project owners or SEZA and come conclude agreements with the owners or SEZA.

Table 3.2.10 Types of SEZ Developers and Operators

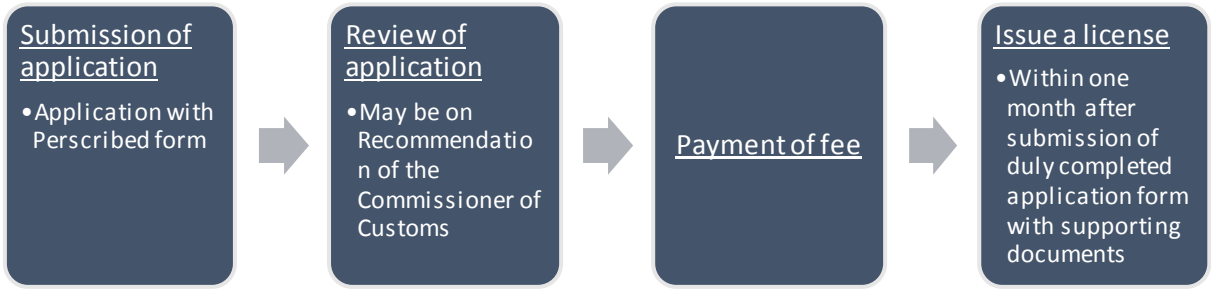
Types of projects	Developers	Operators
Public sector-led Developer-led PPP project	SEZ developer is to be selected by SEZA and conclude an agreement with SEZA SEZ developers develops the project with SEZ developer license	SEZ developer undertakes operation with SEZ operator license. A separate SEZ operator concludes an agreement with SEZ Developer If declined by SEZ Developer for selection of SEZ operator, SEZA selects and concludes an agreement.
Operator-led	SEZ operator selects and concludes an agreement with a SEZ developer.	-
Existing SEZ	-	SEZA select SEZ operator and concludes an agreement.

Source: JICA Design Team based on the SEZ Regulations 2016

ii Process of Issuing SEZ License

In order to develop, operate SEZ or provide or maintain activities or facilities within SEZ, SEZ licenses is required to be issued by SEZA (Section 26, SEZ Act). The general flow of the licensing described in the SEZ Act is as depicted in the following diagram.

[15] Regulation 21, SEZ Regulations

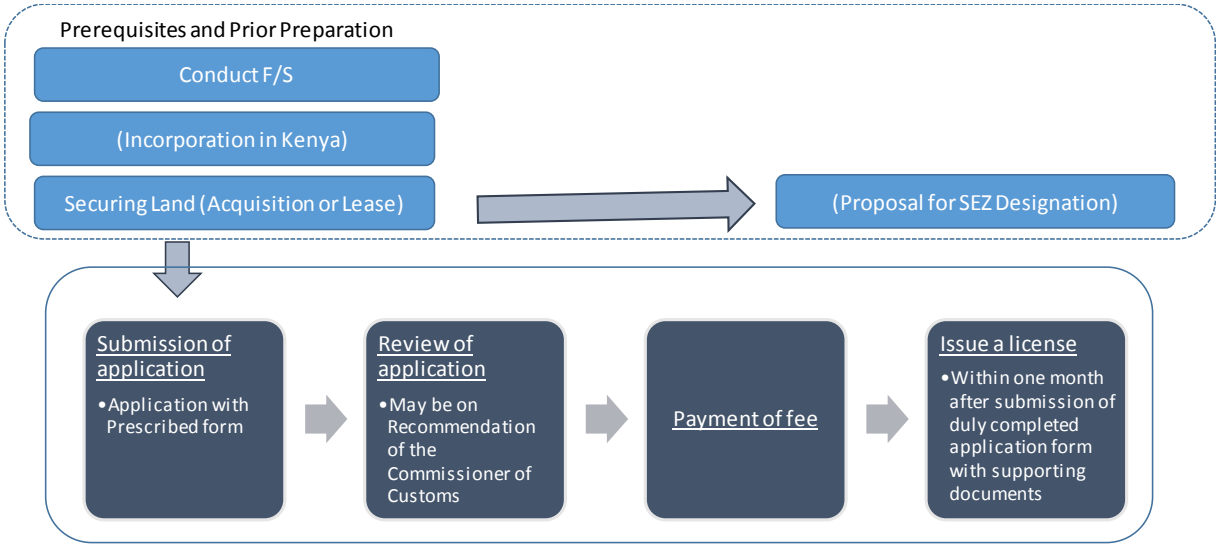


Source: JICA Design Team based on SEZ Act

Figure 3.2.3 Process of Issuing SEZ License

The SEZ Act defines the time from the submission of duly prepared application until the decision of issue of license as one month. In the license the information such as specific activities to be carried out under the license, valid period, and other conditions is to be filled in the prescribed form. The evaluation procedures and criteria for evaluating applications is expected to be developed and published by SEZA. The SEZ Act lists such aspects as "specific engineering and financial plans, financial viability, and environmental and social impact of the applicant's proposed special economic zone project" (Section 27 (3)).

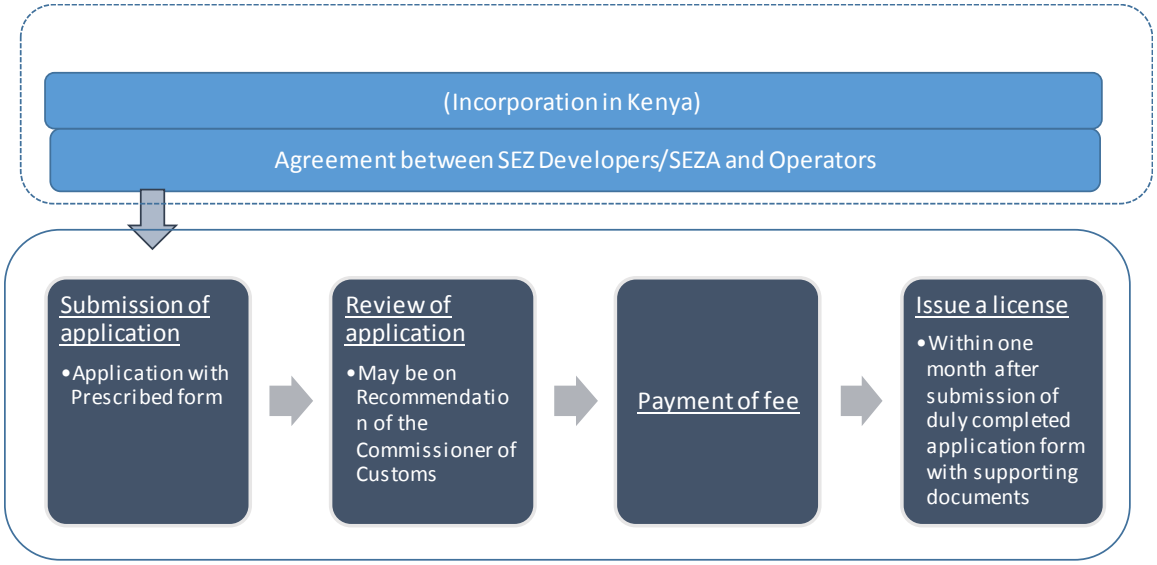
The figure below shows some major steps for obtaining a SEZ developer license. As mentioned later, the issue of licenses for developers and operators requires i) agreements as a developer and/or an operator with respective entities depending on the type of development scheme, and ii) payment of fees for issue of license. Apart from these points, some prerequisites mentioned in the earlier sections are also included. It should be also noted that the process involves public procurement process based on the PPP Act if it is PPP project. Incorporation and acquisition of land may depend on the situation of the applicants.



Source: JICA Design Team based on SEZ Act

Figure 3.2.4 Process of Issuing SEZ Developer License

The figure below is the flow for SEZ operators. Operators may first conclude the agreement of provision of services either with the developer or SEZA. Then the SEZ developer who developed the specific zone can also become an operator for the zone.



Source: JICA Design Team based on SEZ Act

Figure 3.2.5 Process of Issuing SEZ Operator License

The procedures and criteria for review of the application as well as the fee for licensing are to be announced by notice in the Gazette by SEZA (SEZ Regulations 20 and 21).

iii Duration of Validity of Licenses

It is infinite unless (i) SEZ land lease or concession term expires, (ii) SEZ developer's or operation agreement terms expires, or (iii) license is revoked by the Authority (SEZ Regulations 21(3)).

iv Rights and Obligation SEZ Developers and Operators

The rights and obligations of SEZ developers stipulated by SEZ Act are as listed below. While Section 33 (1) specifies the section for SEZ developers, the rights and obligations actually contain operator's as well. Moreover, there is no separate section for operators regarding the same issue.

Table 3.2.11 Rights and Obligations of SEZ Developer and Operator

33.	(1)	A Special Economic Zone Developer shall have the right to- (a) act or appoint a Special Economic Zone Operator to undertake management and administration of the Special Economic Zone on its behalf subject to Subsections (2), (3) and (4) of this Section, Section 28(b) and such other licensing requirements as may be prescribed; (b) lease, sub-lease or sell land or buildings to licensed Special Economic Zone Operators and Enterprises, and charge rent or fees for other services that may be provided; (c) acquire, dispose or transfer Special Economic Zone lands or other assets; (d) develop, operate and service special economic zones lands and other assets in conformity with applicable law and its license (e) provide utilities and other services in the Special Economic Zone, in accordance with its license, and to charge fees for such services; (f) provide utilities and other services outside the Special Economic Zone in conformity with applicable law; (g) enjoy the benefits that may accrue under the provisions of this Act; (h) enter into contracts with private third parties for the development, operation, and servicing of Special Economic Zone lands and other assets, including on-site and off-site infrastructure; (i) enter and freely participate in international financial markets, without any legal impediments or restrictions, to obtain funds, credits, guarantees, and other financial resources; and (j) advertise and promote the Special Economic Zone for which it holds a license to potential investors and service providers.
	(2)	A Special Economic Zone Developer shall, in such manner as may be prescribed- (a) perform such physical development works or make such improvements to the Special Economic Zone site and its facilities as may be required according plans approved by the Authority; (b) provide adequate enclosures to segregate the zone area from the customs territory for the protection of revenue together with suitable provisions for the movement of persons, conveyances, vessels and goods entering or leaving the zone; (c) provide or cause to be provided, adequate security on the site, as maybe determined by the Authority in its license; (d) adopt and enforce such rules and Regulations within the Special Economic Zone that promotes safe and efficient business operations; (e) maintain adequate and proper accounts, and other records in relation to its activities, employment statistics, business and report on zone activities, performance and development to the Authority on a periodic basis or as required by the Authority; and (f) register all leases with the Authority.

Source: SEZ Act

iii) Rules for SEZ Management

The SEZ Regulations further defines rules for SEZ developers and operators in exercising their rights and obligation. Especially, Regulation 23 (1) and (2) indicates SEZ developers and operators' obligation in coordination for setting up one-stop shops with SEZA and some power to set up internal regulations to manage SEZs.

(6) SEZ Enterprises License

i) Eligibility Criteria for SEZ Enterprises

Section 29 of the SEZ Act lists the criteria and requirement specific to SEZ developers as follows. While the foreign investors can invest without having Kenyan capital share, the company incorporation is necessary.

(a) a company incorporated in Kenya whether or not it is one hundred percent foreign owned;
(b) proposes to engage in any activities or activities eligible to undertaken by a special economic zone enterprise in the special economic zone; and
(c) does not have a negative impact on the environment or engage in activities impinging on national security or presenting as health hazard; and
(d) conducts business in accordance with the laws for the time being in force save for any exemptions under this Act.

ii) Process of Issuing SEZ License

The SEZ Regulations further indicates the approval process involving the screening of the proposal based on the negative lists, sectors with the concerns of issues such as health, safety, environment, national security, consumer rights, culture and financial stability (Regulation 28).

For new investors with no prior similar business operation in Kenya, various licenses and permits may be required depending on the industries. The management of SEZ scheme envisages setting up one-stop shop and the electronic registration for ease of doing business of SEZ entities. While such systems may require some time period before being fully operational, accurate and updated information on licenses and permits and coordination of relevant government entities including county governments is necessary to project the time period required to complete the entire start-up period.

iii) Rights and Obligations of SEZ Enterprises

Rights of SEZ enterprise are stipulated in the SEZ Act as shown in table below.

Table 3.2.12 Rights of SEZ Enterprise

34. A licensed Special Economic Zone enterprise shall enjoy:- (a) the full protection of its property rights against all risks of nationalization or expropriation; (b) the right to fully repatriate all capital and profits, without any foreign exchange impediments; (c) the right of protection of industrial and intellectual property rights, in particular patents, copyrights, business names, industrial designs, technical processes and trademarks; (d) the right to admit into the Special Economic Zone for which it is licensed, to export and sell in the customs territory all classes or kinds of goods and services in accordance with the Customs laws of the East African Community; (e) the right to transact and carry on business with a non-Special Economic Zones enterprise; (f) right to transact and carry on business with non-special economic zones enterprise (g) the right to contract with any other enterprises, to buy, sell, lease, sublet or otherwise exercise, manage, or transfer land or buildings within a Special Economic Zone, subject to the said enterprise's own property rights; (h) the right to contract with any other enterprise, to buy sell, lease, sublet, or otherwise exercise, manage, or transfer land or buildings within a Special Economic Zone subject to the provisions of the East African Community Customs Management Act and applicable regulations in respect of the activities of such enterprise within the special economic zone;

(i) the right to determine the prices of any of its goods or services sold inside or outside the Special Economic Zone for which it is licensed;
(j) the benefits in the national context of an open, free competitive investment environment, including the right to freely engage within the Special Economic Zone for which it is licensed in any business, trade, manufacturing or service activity not prohibited by this Act; and
(k) all other rights and benefits granted to licensed Special Economic Zone Enterprises under this Act.

Source: SEZ Act

It ensures good business environment for the protection of property rights. It also allows free repatriation of capital and profits.

While there is no designated section for obligation of SEZ enterprises in the SEZ Act, the SEZ Regulations, 2016 raises the requirements such as technical health or safety requirements, policy requirements for the protection of public health, national or public security, labour, safety, consumer protection, and environmental protections (Regulation 27.).

3.3 Progress of Development of SEZ Scheme Legal System

Although the SEZ Regulations defines SEZA formulates operational rules for SEZ declaration, licensing SEZ developers, operators and enterprises and relevant rules for SEZ development, residents and operation, the areas needed to be covered in future are summarised in the table below. Further to these rules, the operational procedures and internal rules are also necessary for licensing and enforcement. The table also shows the areas requiring coordination with various laws described in Table 3.2.3 and entities for implementation.

Table 3.3.1 Progress of Development of SEZ Rules and Regulations

Major procedures and criteria required	Applicable SEZ Act/ Regulations (1)	Other laws & regulations specified in SEZ Act, Regulations (2)	Further Necessary Rules Indicated in SEZ Regulations 2016 (3)	Necessary Coordination with other Laws/Regulations and Rules and implementation arrangement
SEZ Declaration				
Required contents of F/S	R2016			
Standard for proximity-based criteria for the location of the SEZs	R2016 13. (1), (2)		Gazette notice by CS	Coordination required with laws and regulations on physical planning, public utilities, environment. Necessary to confirm the relationship with the County Governments' rules.
Criteria to classify types of SEZ, necessary standard services and infrastructure	R2016 14. (1) (2) (3) (5)		Gazette notice by SEZA	Coordination required with laws and regulations on physical planning, public utilities, environment. Necessary to confirm the relationship with the

Major procedures and criteria required	Applicable SEZ Act/ Regulations (1)	Other laws & regulations specified in SEZ Act, Regulations (2)	Further Necessary Rules Indicated in SEZ Regulations 2016 (3)	Necessary Coordination with other Laws/Regulations and Rules and implementation arrangement
				County Governments' rules.
Proposal review for PPP projects	R2016 11. (2)	PPP Act, No.15 of 2013		
Licensing SEZ developers and operators				
Procedures and criteria for the review of applications for licenses	R2016 20		Gazette notice by SEZA	
Procedures for suspension, revocation and reinstatement of the licenses	R2016 21. (4)		Gazette notice by SEZA	
Selection criteria and procedures for the operator agreement	R2016 19. (5)		Gazette notice by SEZA	
Licensing SEZ enterprises				
Negative list	R2016 28		Gazette notice by CS	
Necessary information for resignation of residents and licensing SEZ enterprises	R2016 26.(1)		Gazette notice by SEZA	
Standards to be observed for such issues as public health, public security, safety, consumer protection, general financial matters (for financial and insurance sectors), environmental protection, cultural and financial stability.	R2016 27	Relevant international standards		Laws and regulation related to public health, consumer protection, environmental protection, financial stability
Master Plan and Land Use				
Procedures and criteria for rejecting land use master plans and zonings	R2016 38.(4)		Gazette notice by SEZA	M/P shall be considered and finalised with the collaboration with relevant county government officials in charge of planning.
Information of map and data in terms of the real property.	R2016 39. (2), (3)		Gazette notice by SEZA	It may be done with SLA with other ministries (e.g., land)
Building and utility controls				
Building code, construction permits, certificate of occupancy, procedures and	R2016 40		Gazette notice by SEZA	The permits are assumed to be issued by authorities including the County governments according to Regulation 40. (2) and (3).

Major procedures and criteria required	Applicable SEZ Act/ Regulations (1)	Other laws & regulations specified in SEZ Act, Regulations (2)	Further Necessary Rules Indicated in SEZ Regulations 2016 (3)	Necessary Coordination with other Laws/Regulations and Rules and implementation arrangement
criteria for approval of construction works				
Environmental management				
Environment permits	R2016 41	Environmental Management and Co-ordination Act (Environmental Regulations)	Initial standards and maximum load capacities for specified pollutants, applicable to SEZ project sites	NEMA will enforce environment-related regulations for SEZ developers and operators. Other standards specified in 2016 Regulation 44.(4) include ISO140001, 18001, Social Accountability SA8000, UN Convention on the Rights of Persons with Disabilities
A list of activities that do not require special economic zone environmental permits	R2016 42		Gazette notice by SEZA	
Requirement for environmental and social management system	R2016 44.(5)	Environmental Management and Co-ordination Act (Environmental Regulations)	Gazette notice by SEZA	
EIA requirement	R2016 45. (4)	Environmental Regulations	Gazette notice by SEZA	Consultation necessary with NEMA
Enforcement	R2016 47			NEMA may also undertakes inspection and audit.
Public health				
Protection of public health	R2016 49.(4)			
Procedures for inspection	R2016 49.(2)	Relevant laws and regulations	Issue the procedures by SEZA	Procedures have to be developed with the consultation of relevant ministries. SLA may be concluded with the relevant ministries and authorities.
Animal and plant health			Issue the procedures by SEZA	Procedures have to be developed with the consultation of relevant ministries. SLA may be concluded with the relevant ministries and authorities.
Paying tax				
Tax registration, paying tax etc	Relevant tax act			County-level levies should be also taken into consideration.
Fiscal Incentives	SEZ Act, Relevant tax			The actual procedures to be taken to ensure the SEZ entities to benefit fiscal

Major procedures and criteria required	Applicable SEZ Act/ Regulations (1)	Other laws & regulations specified in SEZ Act, Regulations (2)	Further Necessary Rules Indicated in SEZ Regulations 2016 (3)	Necessary Coordination with other Laws/Regulations and Rules and implementation arrangement
	act (Finance Acts)			incentives should be decided.
Customs				
Customs management	SEZ Act	EAC Customs Union Protocol and the Regulations, EACCMA, EAC Customs Regulations SEZ Act (Customs Controlled Areas)		The implementation rules and regulations in line with the EACCMA should be identified where the EAC rules and regulations are not available. The coordination should be made with KRA and KPA for the procedures and handling from the port to the SEZ and the management of movement of goods and services.
Immigration and work permits				
Work permits			Regulations or any operational rules	Kenya Citizenship and Immigration Act shall be observed and coordinated.
Labour				
Occupation and health permit and enforcement				Only labour reporting and inspection are mentioned under OSS. Coordination of the actual procedures for permit and enforcement requires coordination with the Ministry of EAC, Labour and Social Protection.
Registration of Residents				
Necessary information for registration and procedures	R2016 26. (1)			Need to coordinate with the country governments

Source: JICA Design Team based on SEZ Act and SEZ Regulation

Among the rules and regulations under (3), those with "Gazette notice by SEZA" are already instructed by the SEZ Act or the Regulations. The three SEZs shown in Table below are declared as of May 2019.

Table 3.3.2 SEZ Declaration by July 2017

Location	Date of declaration	Area Width*
Eldoret & Uasin Gishu*	13 April, 2017	899 acre (about 363 ha)
Kiambu	18 May, 2017	2,426.7 acre (about 980 ha)
Machakos	30 June, 2017	100 acre (about 40 ha)

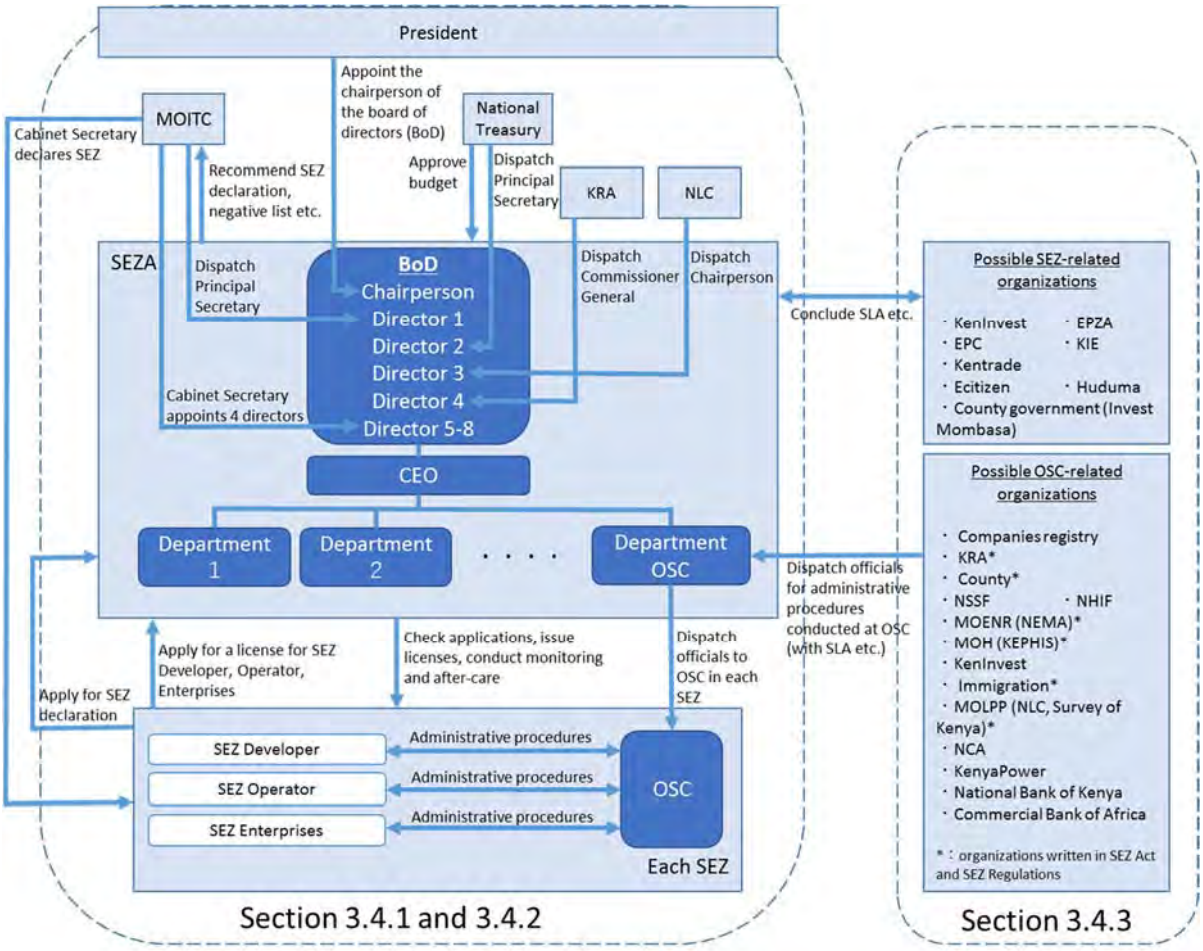
Note: * The area width is the total of 3 sites approved by the same declaration, the width is in acre with the ha in parenthesis (1acre=0.404ha)
Source: The Kenya Gazette, Gazette Notice No. 3810, No. No. 4892, and No. 6404

However, in order to operate SEZ scheme, some gaps should be filled in terms of the rules and regulations as well as the organizational development including the capacity building of SEZA for licensing, enforcement, and service provision. According to the interview with MOI/SEZA, among the three, only the first on the list (Eldoret SEZ) applied and granted an SEZ developer license.

3.4 Status of Organizational Development of SEZ-related Organizations

3.4.1 Overall Organisational Structure for Implementation of SEZ Scheme

Based on the SEZ Act and the SEZ Regulations, 2016, the implementation structure to make the special economic zone (SEZ) scheme operational can be illustrated as below.



Source: JICA Design Team based on SEZ Regulation

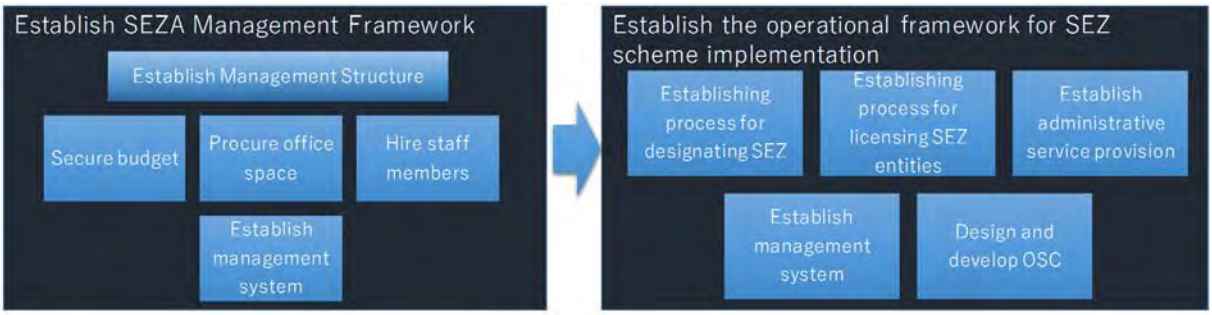
Figure 3.4.1 Implementation Structure of SEZ

The structure clearly shows that the scope of the organizational development should consider not only the internal organization comprising SEZA and MOI but also those ministries, departments and agencies (MDAs) which carry mandates of regulating and providing necessary services related to the government services and other administrative processes for SEZ declaration and operation of SEZ developers, operators and enterprises. The following section first review the status of the preparation of management and operational basis of the implementation of SEZ scheme. The organisational development of SEZA as the

regulatory agency and the prime driving force for implementation of SEZ scheme will be reviewed. The formation of entire implementation framework with relevant MDAs are further reviewed.

As it can be seen from the structure, SEZA is to function as it is and coordinate various MDAs and actors for SEZ scheme management. The SEZ Act established SEZA under MOI and states a function of SEZA is to "regulate, implement, monitor and supervise all aspects of the special economic zones regime set forth in this Act"[16]. Also, the SEZ Regulations gives SEZA "the powers to administer, investigate, enforce and sanction any activity in order to ensure compliance with the Act"[17].

The steps to make SEZA operational was as shown in the figure below. SEZA should first establish its management framework with the proper resource allocation. Based on the management framework, further capacity for operation should be established.



Source: JICA Design Team

Figure 3.4.2 Flow of Organisational Development for SEZ Scheme Implementation

The table below shows the progress of organisational development per important steps for operationalisation of the implementation of SEZ scheme depicted in the figure above[18].

Table 3.4.1 Current Progress on Organizational Development for Implementation of SEZ Scheme

Item	Current Status
Establish the SEZA operational basis	
Establish management structure	
Appoint chairperson & directors	The first chairperson was assigned. The successor has been appointed in May 2018. Four directors were also appointed and gazetted as of October 2016.
Appoint the Chief Executive Officer (CEO)	The Acting CEO was appointed (Deputy Director – Directorate of Industry in MOI) as of May 2019.
Establish the Board of Directors (Board)	The induction was done as of March 2017.
Authorize organizational structure, function of departments, and job description	The organizational structure is not published. Recruiting staff will be progressed based on FY2019/2020 budget.
Secure budget	

[16] Section 11 paragraph (o) of the SEZ Act.
[17] Section 5 Paragraph (1) of the SEZ Regulations.
[18] Based on the situation confirmed by JTD by March 2019.

Item	Current Status
Budget	The development budget of 650 million Ksh was allocated in FY 2017/2018, but current budget for overhead cost was not allocated. The development budget for FY2018/2019 is 900 million Ksh.
Procure office space	
Procure office space	Procurement of office space is not yet commented as of May 2019, however, the budget allocation is ensured in FY2018/2019. Office space is expected to be secured.
Establish human resource system, recruitment and human resource development	
Define a salary system and establish a performance evaluation system	In terms of salary system, salary scale categorization by Salaries and Remuneration Commission (SRC) for state corporation is necessary. The application was submitted to SRC, waiting for its approval.
Recruit staff	Because salary system is not yet established as of May 2019, recruitment is not started, but the budget for staff recruitment is allocated in the yearly budget.
Establish the operational framework for SEZ scheme implementation	
Establish the mechanism of process for declaration of SEZs	
Develop necessary operational procedures and the documents such as Standard Operating Procedures (SOP), internal rules, and various forms for review and approval process.	In terms of administrative procedure for license application, three SEZs were declared without operational rules established. According to the Acting CEO of SEZA, the list of the rules necessary to establish is available, though it was not confirmed in the mission.
Establish system for managing licenses and SEZ entities	
Develop necessary operational procedures and documents such as Standard Operating Procedures (SOP), internal rules, and various forms for licensing and administrative process.	In terms of administrative procedure for license application, license for an SEZ developer was given without operational rules established. According to the Acting CEO of SEZA, SOP is under drafting, though it was not shared with the Design Team.
Arrange and establish the administrative and service provision structure and process	
Set up social and environmental management, information management, payment, and online management systems	The preparation by SEZA on establishing administration system was not confirmed. According to the Acting CEO of SEZA, SEZA and Kenya Investment Authority (KenInvest) are discussing one-stop centre (OSC).
Make necessary arrangement with the relevant MDAs on the arrangement for service provisions and processing of administrative requirements enforced to SEZ end users.	Immigration, NEMA, KRA and County Governments are listed as major MDAs. The Acting CEO of SEZA mentioned possible cooperation with KenInvest.
Conclude the agreements or MoUs.	Current situation is not confirmed.

Source: JICA Design Team

The details of each item are described in the following sections.

3.4.2 Progress of Organisational Development of SEZA

(1) SEZA's Functions

The SEZA is established as per prescribed by Section 10 of the SEZ Act and its functions are stipulated in Section 11 in the SEZ Act. The functions can be categorized based on its roles, namely advisor, regulator, promoter, implementer (general and OSC), supervisor, and collaborator as below.

Table 3.4.2 Functions of SEZA by Category

Category	Functions of SEZA
Advisor	(a) make recommendations to the Cabinet Secretary on all aspects of designation, approval, establishment, operation and regulations of special economic zones; (l) recommend to the Cabinet Secretary a negative list of activities that are prohibited in the special economic zones including an additional set of restricted activities under the regulations made thereunder; (m) recommend to the Cabinet Secretary to suspend or cancel the licenses of a special economic zone enterprise or a special economic zone developer which is in the violation of this Act, the East African Community Customs Management Act or the Value Added Tax Act;
Regulator	(d) determine investment criteria including investment threshold; (e) undertake or approve the development, operation or maintenance, as well as finance, appropriate infrastructure up to the perimeter of, or within, select special economic zones, as and when deemed necessary; (f) review applications and grant licenses to special economic zone developers, operators and enterprises; (n) regulate the access of non-licensed service providers from the customs territory as may be required in order to service individual enterprises; (o) regulate, implement, monitor and supervise all aspects of the special economic zones regime set forth in this Act;
Promoter	(g) promote and market special economic zones to potential special economic zone developers, operators, or other investors;
Implementer (General)	(b) implement the policies and programs of the Government with regard to special economic zones; (c) identify, map and, where necessary, procure or avail to developers and operators the areas of land to be, or which have been, designated as special economic zones; (i) exclusively perform under time-bound conditions as may be prescribed, all administrative business regulations and services functions in relation to the designated special economic zones;
Implementer (OSC specific)	(h) administer a "one-stop" centre through which special economic zone enterprises can channel all their applications for permits, approvals, licenses and facilities not handled directly by the Authority, coordinating with such other Government or private entities as may be necessary through agreements with the entities or procedures defined in implementing regulations or such other prescribed procedures;
Supervisor	(j) maintain current data on the performance of the programme in each individual special economic zone and enterprise; (p) maintain a register of enterprises and residents domiciled in the special economic zones;
Collaborator	(k) establish and enhance inter-agency collaboration among relevant State agencies to ensure compliance with all applicable laws, procedures and other applicable requirements;
Others	(q) any other functions as may be directed by the Board.

Source: SEZ Act

As an advisor, or rather as an actor for policy formulation, SEZA makes the direction of the SEZ scheme in consultation with and with approval from MOI. Furthermore, SEZA as a regulator, develops and

implements various rules and regulations required to operate the SEZ scheme. After promoting and creating SEZs, SEZA implements and supervises them in collaboration with other relevant organisations.

(2) Establish the SEZA Management Framework

i) Establish the Management Structure

As Section 12 of the SEZ Act defines that "the Authority shall be administered by a Board of Directors", the SEZA cannot be functioned without setting up a Board of Directors (Board). The first step to form the Board is to appoint its members.

i Appoint chairman and directors for the Board of Directors

The Board consists of members shown in Table 3.4.3[19].

Table 3.4.3 Members of the Board of Directors

12.	(1)	The Authority shall be administered by a Board of Directors which shall consist of - (a) a Chairperson to be appointed by the President; (b) the Principal Secretary of the Ministry for the time being responsible for matters relating to industrialization and trade or his designated alternate; (c) the Principal Secretary to the treasury or his designated alternate; (d) the Chairperson of the National Land Commission or his designated alternate; (e) the Commissioner General of the Kenya Revenue Authority or his designated alternate; (f) four other directors appointed by the Cabinet Secretary, from the private sector or any other public institution being persons who have distinguished service, relevant experience, and expertise; (g) the Chief Executive Officer who shall be an *ex-officio* member.

Source: SEZ Act

Among the members of the Board, the chairperson should be appointed by the president and four directors should be appointed by the Cabinet Secretary (CS) for MOI.

The first chairperson of the Board was appointed by the President with effect from the 21 October 2016 in the Gazette Notice No. 8725, in THE KENYA GAZETTE Vol. CXVIII – No. 132 published by 28 October 2016. The CS for MOI appointed four other directors for a period of three years, with effect from the 21 October 2016 in the Gazette Notice No. 10685 in The Kenya Gazette Vol. CXVIII – No. 164 published by 23 December 2016. According to the interview with MOI/SEZA in July 2017, the chairperson resigned and new one has been already identified.

ii Appoint the Chief Executive Officer (CEO)

The SEZ Act defines that the CEO shall (i) be the secretary to the Board and (ii) subject to the directions of the Board, be responsible for the day to day management of the affairs and staff of the Board[20]. In this regard, the CEO is a key position for SEZA to be operational, who shall be appointed competitively by the Board. He/she is also an *ex officio* member of the Board. At the fourth Joint Committee held in April 27, 2017, JICA Design Team was informed that the Acting Chief Executive Officer of SEZA was appointed.

[19] Section 12 of the SEZ Act.
[20] Section 16 Paragraph 3 of the SEZ At.

iii Establish the Board of Directors (Board)

Section 12 of the SEZ Act defines that "the Authority shall be administered by a Board of Directors", and Section 14 of the act prescribes that "the Board shall have all power necessary for the proper performance of the functions of the Authority". To be specific, the Board has powers necessary for SEZA to execute functions as shown in Table 3.4.4[21].

Table 3.4.4 Powers of the Board Stipulated in the Special Economic Zones Act

14.	(1)	The Board shall have all powers necessary for the proper performance of the functions of the Authority under this Act.
	(2)	Without prejudice to the generality of the foregoing, the Board shall have power to-
		(a) control, supervise and administer the assets of the Authority in such manner as best promotes the purpose for which the Authority is established;
		(b) determine the provisions to be made for capital and recurrent expenditure and for the reserves of the Authority
		(c) receive any grants, gifts, donations or endowments and make legitimate disbursements therefrom
		(d) open such banking accounts for the funds of the Authority as maybe necessary
		(e) invest any of the funds of the Authority not immediately required for its purposes in the manner provided in section 25
		(f) perform all such other acts or undertake any activity as may be incidental or conducive to the attainment or fulfilment of any of the functions of the Authority under this Act.

Source: SEZ Act

The members of the Board, except for the chairperson, four directors, and CEO, are clearly defined by the SEZ Act. The Board of SEZA was officially formed, when chairperson and four directors were appointed by the president and the CS for Trade, Industry, and Cooperatives, respectively, in October 2016.

The Board may also establish committees when "it may deem appropriate to perform such functions and responsibilities as it may determine"[22]. The chairperson of a committee shall be appointed amongst the directors of the Board and the Board may co-opt any person to attend the deliberations of any of its committees[23]. All the decisions by the committees shall be ratified by the Board[24].

According to the SEZA/MOI, SEZA has set up sub-committees for human resources, finance, audit and risk management, general purpose and technical issues for spearhead the organisational development.

i Define vision, mission, strategy, and activity plan

IFC organized the induction of the Board and training for the Board to understand the SEZ scheme and how to operate it from 22 to 24 March 2017 where the strategy and activity plan of SEZA were to be discussed.

ii Draft organizational structure, function of departments, and job description and authorize them

The organisational structure, the function of each department, and job descriptions were under draft by the human resource sub-committee with the technical input of board members with the expertise of the human

[21] Section 14 of the SEZ Act
[22] Second Schedule Section 3 Paragraph 1 of the SEZ Act.
[23] Second Schedule Section 3 Paragraph 2 and 3 of the SEZ Act.
[24] Second Schedule Section 3 Paragraph 4 of the SEZ Act.

resource management. As SEZA is a state cooperation, and it is mandatory to have an approval on the operational structure from the Public Service Commission (PSC). Regarding job description, some departments of SEZA will require technical staff with specific job descriptions which may be not in line with the PSC tendency on rather generalised job description. Therefore, the Board may be required to justify the reasons why SEZA needs specific job descriptions and convince PSC to let SEZA have specific job description for some positions. Only after the approval from PSC, the Board can approve it and the structure will be officially established.

ii) Secure Budget

i Estimate revenue and expenditures

According to the SEZ Act Section 23, it is the Board to cause to be prepared estimates of the revenue and expenditure of the Authority at least three months before the commencement of each fiscal year, which means at the end of every March.

In FY 2019/2020, MOI estimated a recurrent expenditure for the SEZ[25] as below.

Table 3.4.5 FY 2019/20 Financial Summary of SEZA Estimated by State Department for Industry

Analysis of Semi-Autonomous Government Agencies (SAGA) by Economic Classification (Ksh Millions)							
Economic Classification	Baseline	Requirement			Allocation		
	2018/19	2019/20	2020/21	2021/22	2019/20	2020/21	2021/22
Current Expenditure	**9.27**	**300**	**350**	**350**	**25.27**	**25.27**	**25.27**
Compensation of Employees	0	25	30	35	0	0	0
Use of Goods and Services	9.27	275	320	315	25.27	25.27	25.27
Grants and Other Transfers	0	0	0	0	0	0	0
Other Recurrent	0	0	0	0	0	0	0
Capital Expenditure	**0**	**1000**	**3500**	**3500**	**0**	**200**	**200**
Acquisition of NonFinancial Assets	0	0	0	0	0	0	0
Capital Grants to Government Agencies	0	0	0	0	0	0	0
Other Development	0	1000	3500	3500	0	200	200
Summary of the Expenditures and Revenue Generated							
Gross	**9.27**	**1300**	**3850**	**3850**	**25.27**	**225.27**	**225.27**
AIA - Internally Generated Revenue	0	0	0	0	0	0	0
Government Grants - Current	9.27	300	350	350	25.27	25.27	25.27
Capital	0	1000	3500	3500	0	200	200
Other Resources	0	0	0	0	0	0	0
Net Exchequer	9.27	1300	3850	3850	25.27	225.27	225.27

Source: Report for General Economic and Commercial Affairs (GECA) Sector, Nov 2018

[25] Please note that the summary says “SEZ” not “SEZA”. JICA Design Team couldn’t confirm whether SEZ in this table means SEZA or not.

Table 3.4.6 SEZA Projects and Target by State Department for Industry

Programme 1: Promotion of Industrial Development and Investment Outcome: Increased Contribution of the Manufacturing Sector to the GDP, Employment, FDI and Export									
Programme	Delivery Unit	Key Outputs	Key Performance Indicators	Targets 2017/18	Actual Achievement 2017/18	Target Baseline 2018/19	Target 2019/20	Target 2020/21	Target 2021/22
SP 1.1 Promotion of Industrial Development	SEZA	Resettlement of squatters for Dongo Kundu land	No of squatters resettled for Dongo Kundu	N/A	N/A	0	500	1000	N/A
		Establishment of the Special Economic Zones Authority	No. of staff recruited or seconded	N/A	N/A	2	10	N/A	N/A
			Office Unit leased	N/A	N/A	N/A	1	N/A	N/A
			No of operation procedures developed	N/A	N/A	0	1	1	N/A

出典：Report for General Economic and Commercial Affairs (GECA) Sector, Nov 2018

Due to the time constraint for the Board to estimate the revenue and expenditure of the fiscal year 2017/18, the MOI placed initial cost for the establishment of SEZA on a budget for the fiscal year. The Budgets Statement of FY2017/2018 by the PS National Treasury in March 2017 supported that "with the SEZ Authority fully operational, the Government has started rolling out Special Economic Zones (SEZs) in key urban areas including Mombasa, Lamu and Kisumu, as part of the Kenya Vision 2030 goal to diversify manufacturing activities, create employment and boost Kenya's investment profile".

Whereas Ksh 650 million was allocated for the development expenditure of SEZA/SEZ in the FY 2017/2018 budget, the recurrent expenditure might not have been allocated at all. The overhead budget allocation is indispensable in order to expedite the process of institutional building while the projects may be implemented concurrently.

ii Approve the estimate and Allocate budget

The approval of the estimate by the Board will be made upon the confirmation of the budget. On the other hand, it should be also confirmed how the finance gap can be filled. The supplementary budget at any time in the FY2017/18 or any other external support may be required.

iii) Procure Office Space

The search of the office space should be started with the confirmation of the budget allocation. As the office space has not been secured, all the other activities to be followed have not been implemented yet. Although FY2018/2019 budget ensures a budget for office spaces, SEZA does not procure the office as of May 2019.

iv) Hire Staff Members

i Establish the salary structure with the designated salary scale, and establish a performance evaluation system

In terms of the salary scale, all the state corporations have to follow the rules stipulated by the Salaries and Remuneration Commission (SRC) and SEZA is no exception. Although MOI/SEZA has been placed the

request for the classification of SEZA in the SRC-designating salary scale, the notification from SRC has not been issued.

ii Recruit staff and Provide training

Until budget allocation as well as the decision on a salary system and organizational structure are established, it is not possible to start hiring staff members.

v) Set up Management Systems

To make SEZA operational, it is important to set up management systems in several administrative areas. While the development of the data processing and management system for specific administrative process will be further explained in the later part of this section, it is necessary to establish information management system for managing various issues as application and licensed projects, payment and other internal management of SEZA.

(3) Establish Operational Framework for SEZ Scheme

i) Develop Necessary Operational Procedures for SEZ Designation and Licensing

The SEZ Regulations states that SEZA "shall take the appropriate measures to establish simple, flexible and transparent procedures for the registration of special economic (zones) end users" (Note: "(zones)" was added by JICA Design Team) and defines the outline of the application process, criteria, conditions, terms and procedures for designation of SEZs and licensing of SEZ developers, operators, and enterprises. In order to make the flows work, SEZA needs to define detailed applications processes, criteria, and standard operating procedures (SOP). The below is the examples of procedures, criteria and the forms mentioned in the SEZ Regulations which requires to be published. It should be further noted that further field of administrative procedures are to be covered by the forthcoming SEZ regulations.

Table 3.4.7 Procedures, Criteria and Forms to be Developed and their Corresponding SEZ Regulations

Major procedures and criteria required	Corresponding Regulations	Forms to be developed
SEZ Declaration		
・ Criteria to classify types of SEZ ・ Procedures and criteria for rejecting land use master plans and zonings	14. (1) (2) (5) 38.(4)	
Licensing SEZ developer and operator		
・ Procedures and criteria for the review of applications for licenses ・ Procedures for suspension, revocation and reinstatement of the licenses ・ Selection criteria and procedures for the operator agreement	20. 21. (4) 19. (5)	Application for SEZ developer Application for SEZ operator
Licensing enterprise		
・ Necessary information for resignation of residents and licensing SEZ enterprises ・ Standards to be observed for such issues as public health, public security, safety, consumer protection, general financial matters (for financial and insurance	26. (1) 27.(1)	Application of SEZ enterprises

Major procedures and criteria required	Corresponding Regulations	Forms to be developed
sectors), environmental protection, cultural and financial stability.		
Registration requirement and performance monitoring	29.	
Land use rules and building and utility controls		
・ Required information to develop maps and registry of property ・ Building code, construction permits, certificate of occupancy, procedures and criteria for approval of construction works	39. (3) 40.	Registry of SEZ maps, surveys, deeds and leases
Environmental management		
・ A list of activities that do not require special economic zone environmental permits ・ Environmental quality standards, procedures and standards for environmental management ・ Requirement for environmental and social management system ・ EIA requirement	42 43. 44. (5) 45. (4)	Application for the conduct of restricted activity
Public health, human, animal and plant protection		
・ Procedures for inspection	49. (2)	

Source: SEZ Regulation

Table 3.4.8 Other Formats Required to be Created

- License of SEZ developer and operator (19)
- Agreement with SEZ developer and operator (19)
- License for SEZ enterprise (26)
- License for SEZ end user (29)
- SEZ resident registration (32)
- Related licenses or certifications for SEZ end users (32)
- Zoning order (38)
- Development and construction permits (Section 40)
- Certificates of occupancy (Section 40)
- A special economic zone environmental permit (Section 42)

Note: ( ) indicates number of the SEZ Regulations referring the respective forms
Source: SEZ Regulation

According to the interview with MOI/SEZA, three SEZs which were already declared submitted the application based on the SEZ Act and SEZ Regulations, but not with the designated formats which should be developed and published. One of them has been granted with the SEZ developer license, which means the format seems to be developed and the license was physically provided[26]. Based on the sections in the SEZ Regulations, the technical sub-committee of SEZA will make detailed applications processes, related internal rules, and standard operating procedures (SOP). Though MOI/SEZA informed JICA Design Team that their draft was started, the actual document or draft have not yet been shared.

ii) Make Necessary Arrangement of Service Provision and Processing of Administrative Requirement

As development and operation of SEZ end users involves various regulatory and administrative areas which may be controlled by various MDAs and respective county governments. Therefore, the need of clear

[26] JICA Design Team has not been physically confirmed as of December 2017.

demarcation and coordination with them naturally arises. It is essential for SEZA first to commence consultation with these MDAs and county governments, agree on the roles of both parties and the implementation structure and rules for the handling of mandatory and regulatory control as well as for avoiding duplicated activities at each organization. Furthermore, it may be able to create a synergy effect among organizations.

The SEZ Act indicates two points which require inter-agency collaboration and coordination: First, establishment and operation of OSS; and for compliance of all applicable laws and regulations (SEZ Act Section 11).

The SEZ Regulations states the cooperation with other organizations in different sections as below.

Table 3.4.9 Mode of Collaboration with MDAs and Country

Principle and mode of collaboration	Regulations
For implementation of the SEZ Act, enter into the Service Level Agreement (SLAs) for cooperation for such tasks: ・ Processing permits, licenses, registration and other approvals ・ Payment fees and fines collections ・ Monitoring, inspection and enforcement in the coordinated manner ・ Training for staff members of OSS ・ SEZA's regulation on the staff member deployed to SEZ ・ Regular meetings and information sharing.	53.
SEZA may take measures in case of no form of SLAs addressing the necessities or non- or limited fulfilment of SLAs	
Share necessary information among SEZA and relevant government entities	5. (6)
Condition of delegation of authority ・ Effectiveness enhancing, cost-efficient, no increase of burden on the regulated entities, no conflict of interest, no contradiction to public interest	9. (2)
・ Deployment of staff members (for various issues)	Various parts
・ SEZ developer and operator licensing process: ➢ Required recognition of other government entities on the right of SEZ end users ➢ Provision of access to the areas and infrastructure both by the other government entities and SEZA ➢ Possible Service Level Agreement (SLAs) for coordination of infrastructure and utility delivery	24.
・ SEZ enterprise licencing process: ・ SLAs to coordinate information sharing, consolidation of application procedures, and support regulatory functions of other government entities for their activities in SEZ	26.(4)
OSS	
・ SEZA shall request staff deployment for performing the required roles	31. (2)
・ OSS perform inspections and other enforcement activities or coordinate enforcement activities with the relevant government entities;	32.
・ Announcement of all fees and charges on SEZ end users by SEZA and possible one-stop payment arrangement	52.

Source: SEZ Regulation

iii) Draft a Service Level Agreement or MoU with the Organizations and iii) Conclude the Agreements or MoUs

The SEZ Regulations stipulate that all the relevant government entities shall cooperate with SEZA for implementation of SEZ scheme by entering into SLA with SEZA[27]. The Regulation also indicates SEZA can delegate some specific functions to other MDAs in charge of the fields by SLAs upon the confirmation of the conditions fulfilled[28].

As explained in 3.3, there are some areas which requires coordination with other MDAs for the regulatory and public service delivery functions. In the meantime, by prioritizing the areas, SEZA can start consulting with the entities in charge of the prioritized issues. The SEZ Regulations mention on the collaboration and possible SLAs with specific organisations as below. It should be also noted that some of the regulations touches on the possible deployment of the staff members.

Table 3.4.10 Issues for Collaboration with Governmental Entities in SEZ Regulations

Issues	Government organizations mentioned in the Regulations	Relevant Regulations
Land use rules ・ Master plans and zoning orders ・ Maps, surveys deeds and lease registry ・ Regulation of construction activities	・ County government (land use and planning Department) ・ Ministry responsible for matters relating to lands	38. 39. 40
Environmental regulations ・ Environmental permit, waiver, monitoring, inspection, audit and enforcement	・ NEMA	41.
Public health ・ Human, animal and plant protection procedures, inspection and control	・ Government entities responsible for public health, entities in charge of animal and plant protection	50.
Coordination, information sharing, and deployment of staff members for technical matters	Ministries responsible for environment, water and natural resources	50.
Collection of fees, charges and levies ・ Information dissemination of fees and charges ・ Payment processing	All the regulatory and administrative bodies for such procedures as company registration, environmental impact assessment (EIA), visa, social security, insurance etc..	52.

Source: SEZ Regulation

i) Establish Systems for Managing Licenses and SEZ Entities

To make SEZA operational, it is important to set up management systems in several administrative areas. The SEZ Regulations stipulate some specific management systems, including, but not limited to social and environmental management, information management, and financial management system to be established before its operation as below.

[27] SEZ Regulations 53 (1), (2)
[28] Conditions of delegation are stipulated in the Regulation 9. (2).

Table 3.4.11 Social and Environmental Management of SEZ Stipulated in the SEZ Regulations

Areas of Management	Regulations
Social and environmental management system	43.
・ Setting the standards	44.
・ Gazettement of necessary rules on standards, guidelines for baseline and impact assessment, information dissemination	45. 46
・ Data management	47
・ Approval, and issuance of environmental permit, monitoring, inspection and enforcement	
・ Action plans and implementation procedures for mitigation of negative impact	

Source: SEZ Regulation

Table 3.4.12 Information Management of SEZ in the SEZ Regulations

Areas of Management	Regulations
SEZ enterprise licensing: Coordination of information sharing for licensing SEZ enterprises with the relevant national government entities.	26.
Maps, surveys, deeds and lease data: ・ SEZA to establish the registry within one year of its operationalization. ・ Gazettement of required information from SEZ end users ・ Data should be accessible to public	39.
Information sharing on environment, water and natural resources:	50.

Source: SEZ Regulation

Table 3.4.13 Payment and Financial Management Stipulated in the SEZ Regulations

Areas of Management	Regulations
Licensing fee collection	21, 29
Fee collection for regulatory and administrative procedures, one-stop payment, fee collection	33, 52

Source: SEZ Regulation

Also, as SEZA is supposed to design an electronic system to facilitate the registration process and other administrative matters under the Act or these Regulations[29], an online system has to be developed. When it is developed, it is important to be in line with a recent trend of e-governance implemented by other governmental organizations (e.g. Business Licensing Portal by Ministry of Finance and Invest Mombasa Portal by Mombasa County) to have synergic effect among governmental entities. Any of the systems haven't developed yet as related rules and SOP haven't made yet.

ii) Design and Develop OSC

Based on the provision of the SEZ Regulations, OSCs should be designed. The functions are designated by the Regulation 32 (the details are as explained in 3.4.3.) An initial discussion with Kenya Investment Authority (KenInvest) was taken place to seek the possible collaboration of service provision utilising KenInvest's OSS.

[29] Section 25 (1) of the SEZ Regulations.

3.4.3 Establishing Operational Framework with Other Governmental Organizations

(1) Service Provision through OSC

i) Framework of OSC

As mentioned in 3.4.2 (2), a critical amount of work is to be implemented under the coordination and cooperation with various governmental entities including county governments. It is vital for SEZA to carefully consider how the collaboration and cooperation should be structured in the actual implementing mechanism. Based on the comprehensive list of regulatory and administrative procedures for SEZ end users, SEZA start designing the structure of processing of registration, permits, and licenses as well as the monitoring and enforcement.

SEZ Regulations Article 32 lists up services that OSC shall offer. JDT identified the main competent agencies providing the services with the country as below.

Table 3.4.14 Functions to be provided at OSCs in the SEZ Regulations

Item	Functions to be provided at OSCs	Main competent entities
(a)	Process special economic zone resident registration and business licensing documents and related reporting information required of special economic zone end users, and issue related licenses or certifications	・ State Law Office and Department of Justice (Registrar General Division)[30] ・ Kenya Revenue Authority (KRA) ・ National Social Security Fund (NSSF) ・ National Hospital Insurance Fund (NHIF) ・ County government ・ KenInvest (if applicable) * entities in immigration, construction, and environment are included in (b), (c), (d) below. * Need to identify competent agencies for sector specific licenses and permits if OSCs are willing to provide some of these.
(b)	Process and issue work visas and permits for expatriates operating within the special economic zones	・ Ministry of Interior and Coordination of National Government (Directorate of Immigration and Registration of Persons)
(c)	Process and issue development and construction permits and certificates of occupancy	・ Ministry of Lands ・ National Construction Authority ・ Ministry of EAC, Labour and Social Protection (Directorate of Occupational Safety and Health Services) ・ County government
(d)	Process and issue environmental permits in accordance with the Regulations and the requirements of the Authority	・ National Environmental Management Agency
(e)	Evaluate proposals to designate areas as special economic zones	-
(f)	Evaluate registration applications for special economic zone developers and operators	-
(g)	Facilitate tax and customs administration requirements for special economic zone end users on behalf of KRA	・ KRA

[30] Former the Office of Attorney General and Department of Justice. The name was changed by Executive Order No 1 of 2016.

Item	Functions to be provided at OSCs	Main competent entities
(h)	Facilitate labour reporting obligations	・ Ministry of EAC, Labour and Social Protection
(i)	Perform inspections and other enforcement activities or coordinate enforcement activities with the relevant government entities	・ Possible competent agencies are: Ministry of EAC, Labour and Social Protection (Directorate of Occupational Safety and Health Services), and NEMA etc.
(j)	Provide prompt answers to all questions regarding all government requirements or services	--
(k)	Receive payments, applications and requests on behalf of the Authority or other relevant government entities	・ Possible competent agencies are: KRA, banks etc.
(l)	Respond to complaints by special economic zone end users in relation to special economic zones	-
(m)	Assistance with start-up, operation, and closing of economic activities within the special economic zones	-
(n)	Technical assistance programmes for new and young entrepreneurs	・ Any relevant entities including technical training and education institutions
(o)	Business training, general assistance, and counselling	・ Any relevant entities for business development services
(p)	Feasibility studies and markets research	・ Any relevant entities
(q)	Financial advisory services and grant assistance	・ Possible competent agencies are: Industrial Development Bank and other BDS providers
(r)	Information on production, marketing, operating plans, finance, export opportunities, recruitment, and training	・ Possible competent agencies are: Kenya Industrial Research and Development Institute, private business schools etc.
(s)	Financial support for domestic small businesses	・ Possible competent agencies are: Kenya Industrial Estates, Micro and Small Enterprises Authority, and other financial institutions

Source: JICA Design Team based on Regulation 32 of SEZ Regulation
Note: "-"means no applicable entities.

The functions listed above include i) window functions of processing licensing, permit, registration and other regulatory and administrative requirement, ii) service functions including provision of information, training, business development services and finance, and iii) monitoring, inspection and enforcement or coordination of them for regulatory and administrative requirements.

It should be noted that two types of OSCs are envisaged in the SEZ Regulations, namely an OSC for each SEZ and the central coordinating OSC at the headquarters of SEZA (Regulation 31. (1)). It should be also noted that while the overall agreement and coordination per issues should be agreed by each competent MDAs for OSC to play any roles, it is also necessary to select the efficient mode of operation and what roles SEZA and other MDAs will play for implementation.

ii) Functions to be included in OSC

Apart from the functions listed in the SEZ Regulations, some other aspects are also raised for the potential services offered through OSC. For example, according to eRegulations[31], the basic business set up flow and related organizations can be illustrated as below.

Source: JICA Design Team based on eRegulations.

Figure 3.4.3 Flow to start business in Kenya

Some aspects left out from the list may be identified for the additional areas to be included in the OSC's scope of services. Such areas will be, for example, company registration, connections for utilities connection, and licenses and permits for specific sectors.

(2) Arrangement with Other Government Entities for OSC Operation

There can be 3 different types to be considered for SEZA to build collaboration with these organizations.

Table 3.4.15 Types of Collaboration with Relevant Organizations

Type	Advantage	Disadvantage	Example
Dispatch officials from relevant organizations to OSC	- Easy to start operation once SLA/MOU is concluded.	- The quality of the officials is not the best. - Difficult to manage the dispatched officials	OSC at KenInvest (see column 1)
Temporarily transfer officials from relevant organizations to SEZA	- No need for SEZA to bear the salary of the officials from relevant organizations.	- Need an agreement among the highest level of all the relevant organizations.	Huduma Kenya Service Delivery Programme (see column 2)
Delegate part of decision-making authority from the relevant organizations to SEZA	- Easy to manage officials in charge.	- May encounter strong resistance from the relevant organizations - Need training for SEZA officials	Integrated One Stop Service at Investment Coordinating Board in Indonesia (see column 3)

Source: JICA Design Team

Column 1

KenInvest has been preparing for the establishment of OSC at its headquarters in Nairobi since 2013. It already requested 14 government organizations to **send the officials to the OSC** of KenInvest. There

[31] Regulations is an online database which KenInvest, with support from UNCTAD, designed to make rules and procedures fully transparent and to facilitate business, trade and investment in Kenya. The database shows the procedures step by step. It includes information on all the details for each step (where to go, what to bring, how much to pay, how long to wait, what to obtain etc.). It can be accessed at https://kenya.eregulations.org/?l=en

are 6 organization[32] that KenInvest obtained an official agreement (e.g. MoU and SLA) from. KenInvest maintained the good management of OSC with the officials dispatched from different organizations.

Source: The interview from KenInvest

Column 2

Huduma Kenya Service Delivery Programme was started in 2013 in order to promote one stop centre for all the public service delivery. Five main activities and its function are described as below.

i) Huduma centre: 66 administrative procedures (from birth to death) from 26 different ministries and agencies are available at the centres. As of 2017 when interviewed, there are 45 centres in 41 counties and 6 more centres in 6 remaining counties are under construction.

ii) Huduma payment gateway and Huduma payment card: The programme issues a Huduma card which has all the information necessary for citizens to receive public services (e.g. ID, driver license No., National Insurance No. etc.). The card also has an information on bank accounts so that the payment to the government can be done through the card.

iii) Huduma contact centre: this centre receives all the inquiries of public service delivery. Citizens with Huduma card can even ask the progress of a service applied at a Huduma centre.

iv) Huduma mobile platform: This is a platform which allows citizens to receive public services via mobile phone.

v) Huduma on-web: This is a platform which allows citizens to receive public services via PC.

In the programme, the Service Delivery Summit, chaired by the President and comprised of CSs of all the relevant ministries, is responsible for developing the vision and overall policy for the transformation of the public service delivery. Under the Service Delivery Summit, the Technical Committee, comprised of PSs of all the relevant ministries, is created to coordinate and implement Huduma Kenya Service Delivery Programme including sourcing and development of relevant management information systems and information communication and technology infrastructure. With directions from the Technical Committee, the Huduma Kenya Secretariat implements day to day operation. All the relevant ministries and agencies including county governments **temporally send officials to the Huduma Kenya Secretariat**. The officials works as a Huduma secretariat though their mother organization bears their salaries.

Source: The interview from Huduma Secretariat

Column 3

In Indonesia, the Regulation of Chairman of Investment Coordinating Board No. 12/2009 aims to establish integrated one-stop service (Pelayanan Terpadu Satu Pintu: PTSP) under the Investment Coordinating Board (Badan Koordinasi Penanaman Modal: BKPM) to "provide licensing and non-licensing services by **receiving the delegation of authority from institutes or agencies** having the licensing and non-licensing authority, ranging from the process of applying for licenses to the process of issuing documents in one place". In 2013, the regulation was fully revised as the Regulation of Chairman of Investment Coordinating Board No. 5/2013 and based on the revised regulation, PTSP

[32] NSSF, NEMA, KRA, Companies Registry, Immigration, and Kenya Power.

officially started its operation in 2015. According to JETRO Indonesia Office, 118 out of 147 procedures are delegated to BKPM at the beginning of the operation[33].

Source: Project Office for JICA Investment Promotion Policy Advisor (http://www.pma-japan.or.id/) and JETRO trade PR papers dated February 10 2015

In addition, SEZA should discuss how to integrate SEZA's management system (e.g. application system) because some licenses and permits identified above can be applied online in Kenya. For example, company registration at Companies Registry, tax registration at KRA, and work permit at immigration can be processed online in countrywide. Also, single business permit can be applied online in some counties including Mombasa.

It should be also noted that collaboration with organisations which have similar functions to SEZA's (e.g. KenInvest and EPZA) is effective. Though such areas as investment promotion is less prioritised than the one for OSC operation, this area may be facilitated with synergy effects of collaboration among the organisations when they make policies and conduct investment promotion activities. It has been informed by MOI/SEZA officials that they have some informal communication with KenInvest for the collaboration for OSC operation.

Until now, how SEZA collaborates and integrates with these organisations could not be discussed with nor presented to MOI/SEZA because there were no meetings held. On the other hand, KenInvest in their interview with JDT witnessed that it usually takes time to make an agreement with each organisation. The strong leadership and effective coordination are vital to make it success.

3.5 Observed Issues on the SEZ Scheme and the Areas for Clarification

It is noted that the critical legislation is still awaited to be in place while three SEZs have already designated. Key issues should be first reviewed among the necessary stakeholders under the leadership of MOI and SEZA in order to make the full-fledged and effective operation of the SEZ scheme. One of the declared SEZs has been the project which have progressed and started hosting investors as well as other urban functions as residential areas. It would be therefore an urgent issue to clarify the regulatory framework as well as the implementation mechanism of enforcement and administrative service provision. The key issues are identified for expediting the development of the Mombasa SEZ as well as the overall institutional development for management of the SEZ scheme as explained below.

3.5.1 Issues on Legal Framework

(1) Rules and Regulations as Basic Framework for SEZ Scheme Management

i) Overall Structure of Legal Framework for Implementation of SEZ Scheme

For SEZ declaration and SEZ licensing, the SEZ Act and SEZ Regulations were established to indicate further required operational rules such as SEZA regulations. The provision of basic rules such as the policies on customs regime at EAC level and formulation of a negative list that requires decision of CS, which could show the future predictability for the investors, are urgently required. Formulation of SEZA regulations shown in the SEZ Regulations is also necessary. On the other hand, the rules relevant to the business

[33] Please be noted that the information is only from the official documents and actual implementation structure is not known.

management in the SEZs are not sufficiently handled by the laws and regulations available as of May 2019. Including this point, it is necessary to reviewing consistency with the rules and regulations handled by different organizations, identifying what kind of legislative documents are needed to formulate and clarifying the process and responsible party to formulate if it is the case.

In terms of SEZ Regulations, the regulations for SEZ declaration and development were formulated. Regarding the regulations for important rules and administrative procedure in the SEZ operation, including human resource management and immigration control, despite that the MOI/SEZA recognized its responsibility for formulating rules in this area, it did not mention the formulation plan of the target sector and time schedule. In the meantime, it is expected that the investors request to clarify the rules of SEZ development and coordinate when moving into the already declared SEZs. As the SEZ Regulations already regulate, the necessity of the rules relevant to the operations in SEZ and the licenses and rules for economic activities in SEZ are pointed out. However, in terms of the provision of administrative procedure and the enforcement (monitoring and inspection) after approval of licenses, necessary coordination among relevant laws and responsible organizations, progress of establishing the systems and duties of responsible organizations in providing the services and enforcing the rules are not confirmed sufficiently.

Also, the detailed policy on customs management, especially, the final policy of EAC on the treatment of bonded goods are required. Since detailed rules for customs regime regarding SEZ scheme are not existed, good amount of and in close discussions with KRA is necessary for the specific rules of tariff and customs.

Further, existing SEZ Act defines the whole SEZ area as the customs controlled area, which is the non-EAC customs controlled area. This application is same as the customs regime of the EPZ products[34]. Comparing the foreign and domestic investment demands in Kenya, and if there will be no changes in application of customs controlled area, it is necessary to examine the most attractive measures by considering effective utilization of the SEZ scheme.

While the basic legal framework for the implementation of SEZ scheme has been established with the SEZ Act and SEZ Regulations, it was also noted that some areas are still left out. It is still not clear whether the remaining issues requires regulations, or whether any other form of statutory instruments are planned to be in place. Insufficiently developed regulatory framework leaves great uncertainty to the investors and reduce the attractiveness of SEZ investment. The quick comparison of some examples of the rules and regulations on the Asian SEZ scheme are done in the table below. A simple comparison of the laws and regulations across the countries should not be done without due consideration of the difference on the overall governance structure, legal structure and the institutional structure of the special zone schemes. These two

[34] The access to EAC market by the EPZ products is limited to the 20% of annual production cost due to the Protocol on the Establishment of the EAC Customs Union. For SEZ, detailed rules are not formulated including this kind of restrictions. On the other hand, it is reported that the President Uhuru Kenyatta said that the apparel manufacturers operating from the EPZs will now be allowed to sell up to 40% of their goods. (Daily Business http://www.businessdailyafrica.com/news/EPZ-firms--local-sales-quota-raised-to-40pc/539546-3910518-gui6okz/index.html) However, official comment of the EAC secretariat is not confirmed. Meantime, The EAC Sectoral Council on Trade, Industry, Finance and Investment (SCTIFI) decided 1 year extension of the 20% restriction and 0% of common external tariff (CET) of the apparel manufacturing in the EPZ based on the GOK request (Source: Ministry of EAC, Labour and Social Security noticed on July 3rd, 2017).

examples are rules/regulations promulgated under the national-level act/law, and it may provide insights for the further institutional development.

Table 3.5.1 Examples of Areas covered by SEZ Rules and Regulations in Philippines and Myanmar

Issues Covered	Philippines	Myanmar
General provisions with detailed definitions of terms	✔	✔
Establishment of regulatory/implementation institutions for SEZ scheme		✔
One-stop service arrangement and implementation framework		✔
Basic rights and guarantees (protection of investors' property rights, remittance etc)	✔	
Application and registration of SEZ enterprises, developers and operators	✔	✔
Land acquisition, rights of foreigners for leasing	✔	
Criteria for SEZ designation	✔	✔
Documentary requirement for application	✔	✔
Required permits other than licenses and the procedures of issuance	✔	✔
Tax and duty treatment and the procedures applied for the import/export of SEZ entities as well as services	✔	✔
Quarantine procedures		✔
Movement of goods to enter into /exit from SEZs	✔	✔
Defence, security and firefighting forces	✔	
Incentives and conditions and obligations of access to incentives	✔	✔
Immigration and work permits for foreigners	✔	✔
Labour management and dispute settlement	✔	✔
Environmental protection	✔	✔

Source: JICA Design Team based on the Rules and Regulations to Implement Republic Act No.7916 (Special Economic Zone Act of 1995) and SEZ Rules of Myanmar SEZ

These parts comprise (i) descriptions on the prevailing laws and regulations and the responsible entities which develop rules and regulations in case they are stipulated as necessary, and (ii) regulatory bodies which provide permits and undertake monitoring of specific operational issues. It is also noted that each part specify the responsible entities who provides guidelines and sub-rules for operationalisation of the rules.

In case of existing SEZ scheme of Kenya, a few levels are left unclear in the overall legal frameworks. First, EAC customs related legal framework is the concern. Another is the areas to be decided by CS. For example, the negative lists and detailed criteria for designating types of SEZs has not been published by CS Industry. According to the summary of the situation showed in 3.3, it is especially noted that many rules and regulations areas are first necessary to be developed as a form of SEZA gazette notices. Even in the areas with the regulations, the supporting rules referred in the Regulations are not in place. The situation without guidance and some streamlined structure of processing various regulatory and administrative requirements causes significant unpredictability for SEZ investors.

Therefore, the overall structure of the legal framework including regulation, rules and other supplementing orders and so forth should be first clarified by MOI and SEZA according to the mandates.

Based on the legal framework, MOTIC and SEZA should further develop the schedule of the development of such statutory or administrative instrument. Development of any statutory instrument should be also planned with the expected timeframe for establishing it with the consideration of the due processes.

ii) Rule-Making as the Platform for Establishing Administrative Arrangement

The process of establishing rules and regulations can function to clarify the demarcation between various government entities and streamlining of the responsibility as well as service provision. The review of the SEZ Regulation revealed that some of the regulations cover such important issues. Environmental management and land registration, for example, identify those rules to be based on, regulatory bodies to provide the permits, and the enforcement mechanism.

It is also expected that the administrative procedures incurred to manage existing SEZs may guide the institutional development to some extent. It is important to monitor the progress and, if necessary, provide the necessary technical advices in order to match with the nature and concept of the Mombasa SEZ.

(2) EAC-Level SEZ Policy and Rules on Customs Management

The discussions at EAC level on the SEZ policy, rules and regulation including customs management issues as of July 2017 were updated by MOI/SEZA. Though the development of the SEZ regulation annexed to the EAC Customs Union Protocol may clarify, it is noted that some critical issues on the customs management for SEZs should be confirmed.

Another issue may require not only the EAC-level, but also Kenya's internal decision. Whether SEZs are classified as the customs controlled area or not should be possibly guided by EAC-level customs related laws, but the institutional design by GOK largely influence the actual arrangement. Under Kenyan SEZ Act, customs duties on imported goods are exempted in SEZs which are assumed to be "customs controlled areas". Its exportation to the domestic customs territory and EAC single customs territory attract the import duty. The EAC's common external tariff structure with zero-rated or lower tariff rates for raw materials and semi-finished goods. Therefore, the range of investors who find SEZ scheme attractive may be limited because those services and products processed or assembled in SEZs and exported to the EAC countries including Kenya attract the same import duty as imports from the outside of EAC. Those activities which may be promoted to be in industrial parks, part of IT and business service parks may be those affected depending on their target markets.

More important issue on EAC-level decision is the detailed customs management procedures. There are only partial regulations in the EAC Customs Management Regulations on the treatment of good imported to and exported from SEZ. During the Study for the Mombasa SEZ M/P, the issue of restriction on bonded arrangement was raised. Under the EACCMA, 2004, the bonded goods are required to be removed within 29 days as stipulated as follows in Section 60.

(1) Goods entered for home consumption or sold in accordance with this Act shall be removed from the warehouse within fourteen (14) days after such entry or sale as the case may be.

*(2) Where goods are entered for export such goods shall be removed from the warehouse or bonded factory and **exported within thirty (30) days** or within such further period, not exceeding thirty (30) days, as the Commissioner may, in any particular case, allow.*

Since the details of the customs management for SEZ scheme requires to be published in EAC level, confirmation of the updated information may be required by monitoring the situation on SEZ scheme to be discussed in EAC level.

3.5.2 Issues on Organizational Development to Operationalise SEZ Scheme

(1) Progress on the SEZA Organizational Development

Though the leadership was once established with the appointment of all members of the board of directors and the acting CEO, the chairperson was resigned and replaced with the successor. Establishing management structure has commenced, and the budget plan was submitted to the National Treasury. These works have been supported by the technical committee members and MOI team.

However, the process should be expedited with the proper management structure of SEZA supported by the necessary human resource allocation with technical personnel. While initial work may be supported by the SEZ-Delivery Unit in MOI, the major part of the organisational development together with the development of regulatory instruments as well as establishing operational basis should be driven by SEZA management.

900 million Ksh of budget has been allocated as FY 2018/19 for SEZA. Based on this and budget for FY 2019/2020, required human resource is intended to allocate.

(2) Establishing the Implementation Mechanism

The implementation mechanism of the SEZ scheme should be established in order to function fully and effective for regulating and managing development and operation of SEZ. As mentioned earlier, such mechanism requires clear rules, demarcation, coordination and allocating necessary resources by responsible entities.

For the actual implementation, the detailed organisational structure and procedures are to be developed and agreed by various entities. In the course of the preparation of such mechanism, OSC's main and rational functions and mode of operation as well as the roles of other relevant government agencies and SEZA's OSCs vis-à-vis the limitation of resources and capacity should be critically reviewed. Further, the measures on defining roles and responsibility among entities may be subsequently selected. SLAs are one of the measures which are stipulated in the SEZ Regulations, but, possible types of arrangement should be first agreed.

By prioritizing the types of admirative procedures, the process of establishing implementation mechanism shall be expedited.

3.5.3 Issues on Organizational Development of Mombasa SEZ

The types of the administrative procedures, enforcement mechanism adopted to the local situations, and services to be provided on-site may be different depending on the type of the industries and economic activities to be hosted in the SEZ. The design concept of the Mombasa SEZ is required to be scrutinized and finetuned matching both GOK's concept and the investment demand. It requires active communication and consultation with the GOK' key entities.

3.6 Roadmap to Operationalise SEZ Scheme

3.6.1 Overall Road Map for Operationalisation of SEZ Scheme

The next figure shows the overall roadmap for operationalisation of SEZ scheme. The key aspects explained in the following sections are considered in the road map. It should be noted that development requires to fulfil premises before starting the following tasks. Appointment of board members and key personnel of SEZA and budget allocation should be at least completed. While initial budget allocation may be done by MOI, the administrative capacity of SEZA for budget planning and human resource management should be also expedited to accelerate operationalisation.

The figure is developed based on the premises that some of the important tasks such as development of rules and operational document have not been completed. However, it is possible that with the possible cooperation with EPZA and other external development partners, the preparatory status may be progressed. In that case, the time requires should be much shorter especially for the establishment of operational framework.

Actions	Responsible Entities	Current Status	Time Frame: Year 1	Year 2	Year 3
EAC Rules and Regulations					
Establish the operational basis					
Management structure					
Appoint chairman & directors	MOITC	△			
Appoint the Chief Executive Officer (CEO)	SEZA Board	△			
Establish the Board of Directors (Board)	MOITC/SEZA	□			
Define vision, mission, strategy, and activity plan	SEZA Board	△			
Authorize organizational structure, function of departments, and job description	SEZA Board, CEO	△			
Budget					
Estimate, receive, and disburse the budget from the government	SEZA CEO/MOITC	△			
Office space					
Human Resource					
Define a salary	SEZA/MOTIC	△			
Recruit staff	SEZA	-			
Provide training	SEZA	-			
Establish evaluation system	SEZA				
Management system					
Set up information management for administration	SEZA	-			
Set up financial management	SEZA	-			
Establish the operational framework					
Designation of SEZs and licensing SEZ end users					
Determine application processes for declaration of SEZ and licensing SEZ end users	SEZA＊	△			
Process to declare a SEZ	SEZA/MOTIC	□			
Process to issue a license for a SEZ Developer	SEZA	□			
Process to issue a license for a SEZ Operator	SEZA	□			
Process to issue license a SEZ Enterprise	SEZA	□			
Process to administer othe SEZ end users	SEZA/MDA	□			
Develop necessary operational documents (rules, formats, SOP etc.)	SEZA＊	△		Prioritise and start utilisation partially when ready	
Formulate rules for the applications including application processes, criteria, necessary documents etc	SEZA＊				
Authorize the work flow of the application processes	SEZA/MOITC/MDA				
Make formats for the applications	SEZA				
Define standard operating procedures for the applications	SEZA＊				
Licensing, approval and permits issueance		△			
Approval and designation of SEZ	SEZA/MOITC	○			
Issue a license for a SEZ Developer	SEZA	□			
Issue a license for a SEZ Operator	SEZA	-			
Issue license a SEZ Enterprise	SEZA	-			
Setting up One Stop Centre (OSC) at SEZA	SEZA＊				
Decide which licenses and permits (environmental, building, work permits etc) to be provided at OSC	SEZA/MDA	-			
Decide which services (custom clearance, security, dispute resolution etc) to be provided at OSC	SEZA/MDA	-			
Identify all the competent entities providing the above licenses, permits, and services	SEZA/MDA	-			
Establish collaborative scheme (delegation of functions etc) with the entities to operate OSC at SEZs	SEZA/MDA	-			
Discuss and decide the delegation of functions between SEZA and the entities					
Conclude SLAs or MoUs with the entities					
Assign officials to OSC of SEZs					
Develop necessary operational documents (rules, formats, SOP etc.)	SEZA	-			
Formulate rules for licenses, permits, and services issues or provided at OSC of SEZs					
Authorize the work flow of the process of issuing licenses and permits and providing services within SEZs					
Make formats for the processes					
Define standard operating procedures for the processes					
Operate OSC at SEZs	SEZA	-			
Monitoring investment projects	SEZA				
Set up a series of indicators to monitor the progress of investment projects	SEZA	-			
Compliance with the SEZ rules and regulations					
Compliance with standards within SEZs					
Compliance with requirements within SEZs					
Develop necessary operational documents (rules, formats, SOP etc.)	SEZA	-			
Formulate rules to monitor compliance					
Authorize the work flow of monitoring compliance					
Make formats for the monitoring					
Define standard operating procedures for the monitoring					
Monitor the progress of investment projects	SEZA	-			
Promote investment in SEZs					
Identify government entities which are conducting investment promotion activities	SEZA	-			
Establish collaborative scheme (delegation of functions etc) with the entities to do investment promotion	SEZA	-			

○: Completed and official documents confirm
□: Completed according to MOITC/SEZA
△: Not completed but some progress has been made
-: Not started or no information
＊ : Tasks are mainly done or coordinated by SEZA

Source: JICA Design Team

Figure 3.6.1 Roadmap to Operationalise SEZA

3.6.2 Strategy for Implementation

In order to expedite the process, it is recommended to employ the strategy as listed below.

(1) Reinforce Functions of SEZA and MOI for Preparatory Works

It is necessary first to establish and operationalise the bodies which drives the institutional development as a whole. For that purpose, the SEZA technical committee supports and provides advises for the technical

matters. While strong leadership for direction setting should be expected from the board of directors, process management should be expected from the managerial personnel of SEZA.

Though it may require a good exit strategy, MOI also needs some basic capacity of managing legislative process of necessary statutory instruments and liaison with other MDAs for setting up the operational mechanism for SEZ declaration and licensing as well as processing of other regulatory and administrative requirement.

(2) Establishing Rules and Regulations with the Involvement of Key Entities

Necessary rules and regulations are categorized as a few types, namely regulations which has to be legislated at the parliament level, rules which can be drafted and gazette by SEZA or any MDAs in charge, and further operational rules and procedures. The first category requires MOTIC to play important roles. The second category requires management decision making and technical capacity of SEZA.

It is necessary to form the working groups with the officers of relevant regulatory and administrative entities in order to agree on the basic and working rules, mode of operation and necessary arrangement such as SLAs.

The prioritization will be necessary regarding the limited human resources and time-consuming adjustment tasks.

(3) Establishing Key Regulatory Functions of SEZA

Regarding the situation where a few SEZs was declared, key regulatory tasks should be established as early as possible. While the development works may take time for some of SEZs, some have tenants in the site already. Licensing of SEZ entities and the administrating SEZ end users are critical functions of SEZA which should be first prioritised for establishment.

While budget and human resources are vital prerequisites to make SEZA fully operational, there are tasks that can be started without meeting the prerequisites. Identifying SEZ-related organizations and finding a way to collaborate with them is especially essential as it will take time to conclude SLA and/or MoU with them.

3.7 Review of Expected Industries

3.7.1 Expected Industries for SEZ

Although eleven(11) potential industries for the Mombasa SEZ was proposed in SEZ M/P, it is reviewed based on 1)results of interview survey (see Chapter 6) which shall be done in this mission, and 2)required water demand on each industry since water resource for the Mombasa SEZ is limited.

Table 3.7.1 Review of Potential Industries for the Mombasa SEZ

Industry	Potential industry in SEZ M/P	Interview survey (*to be updated)	Required water demand
Agro-processing	○	○	×
Fish and marine resource processing	×	×	×
Textile and clothing	○	○	△
Leather and leather products	×	×	○
Chemical industry	○	×	×

Industry	Potential industry in SEZ M/P	Interview survey (*to be updated)	Required water demand
Pharmaceuticals	×	×	×
Petroleum products	○	×	×
Energy	×	×	×
Rubber and plastic	○	×	△
Paper and paper products	△	◎	×
Printing	△	◎	○
Construction materials	○	×	×
Iron and steel	○	×	○
Metal fabrication	×	×	×
Machinery and equipment	×	×	×
Electrical appliances and equipment	×	×	×
Motor vehicles	×	○	○
Cut flower and fresh produce	×	×	×
Infrastructure development services	×	×	×
Logistics and services	△	○	○
ICT	×	×	○
MICE	○	○	○

Note: Potential industry: ○: High potential, △: Potential, ×: Less potential
Interview survey: ◎: Has strong interest, ○: Has interest, ×: Has less interest
Required Water demand: ○: Low(m^3/d/ha), △: Medium, ×: High demand
Source: JICA Design Team

As a result, following industries are listed as updated potential industries;

(a) High potential industry:
Printing, Iron and steel, Metal fabrication, Motor vehicle, Logistics and services, and MICE

(b) Medium potential industry (In case that the tenants use less water):
Agro-processing, Fish and marine resource processing, and Rubber and plastic

3.7.2 Population

Full development of the Mombasa SEZ provides employment of 30,156 people, and residential zone for 4,680 people. The phasing development is summarized as below;

Table 3.7.2 Development Framework

	Phase-1	Phase-2	Phase-3	After Development
Labor population	1,935	10,899	25,969	30,156
Residential population	524	2,792	3,730	4,680

Source: JICA Design Team

Chapter 4 Natural Conditions

4.1 Overview of the Natural Conditions Surveys

Natural conditions surveys of this project include following 5 items.

- Current, Tide level survey
- Seabed material survey
- Seabed monitoring survey
- Geotechnical investigations
- Topographic survey

Overview of the natural conditions surveys is shown in Table 4.1.1.

Table 4.1.1 List of Natural Conditions Surveys

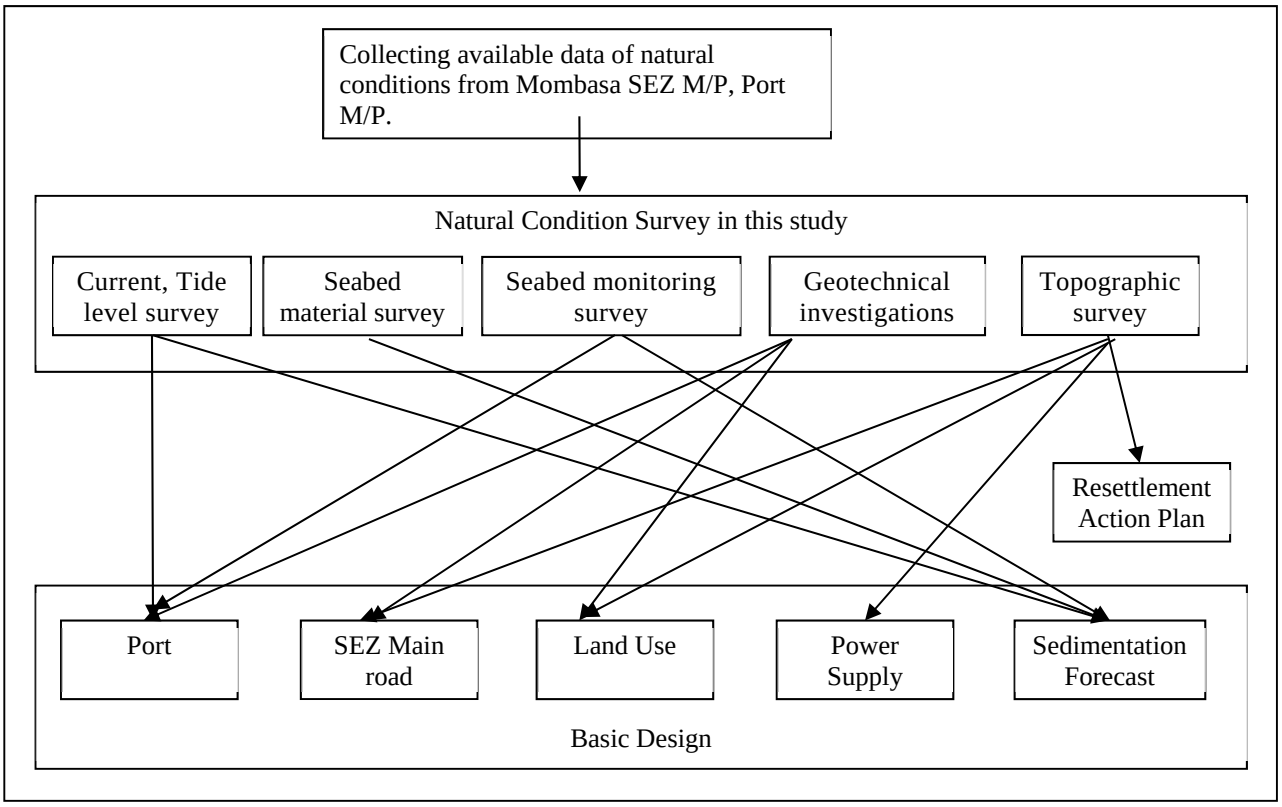
Facility	Item	Contents of Survey	Survey Period	Detail description
Port Facility	Current, Tide level survey	Purpose：To confirm the characteristics of the current and tide level at the site of port To collect data used for the current forecast Item：Current speed, direction and tide level（1 month） Method：Electronic current meter, tidal gauge, and turbidity meter were placed on the sea bed. The survey period should include spring tide. Location：Current 2 points in Port Reitz Tide, turbidity 1 point in Port Reitz	January 27th-March 8th, March 14th-March 16th	Chapter 4.2 (Refer to Chapter 5 Sedimen-tation Forecast)
	Seabed material survey	Purpose：To confirm sedimentation in Port Reitz Item：Sediment material Method：Diver picked up the materials from the seabed by hand Location：In front of the new container berth 12 points In front of Dongo Kundu 9 points	January 28th-January 31st,	Chapter 4.3 (Refer to Chapter 5)
	Seabed monitoring survey	Purpose：To confirm sedimentation in Port Reitz Item：Longitudinal survey (distance: 1.0 km, 5 lines) Method：Bathymetry survey by sounding instrument Location：In front of the new container terminal	January 29th	Chapter 4.4 (Refer to Chapter 5)
	Geotechnical investigations	Purpose：For the basic design of consolidation and ground improvement. Item：Type of soil, grain size, thickness of layer (location of bed rock), unit weight, consolidation etc. Method：Boring exploration, Standard penetration test, Laboratory test	May 11th – August 3rd	Chapter 4.5 (Refer to Appendix 3)

Nippon Koei Co., Ltd.
The Overseas Coastal Area Development Institute of Japan
Koei Research & Consulting Inc.

Facility	Item	Contents of Survey	Survey Period	Detail description
		Location：3 points at DK1 berth in Dongo Kundu area		
SEZ Main Road	Geotechnical investigations	Purpose：For the basic design of embankment and roadbed. Item：Type of soil, grain size, thickness of layer (location of bed rock), unit weight, consolidation etc. Method：Boring exploration, Standard penetration test, Laboratory test, CBR test Location：4 points (Boring exploration) 3 points (CBR test)	January 30th-March 21st May 11th – August 3rd	Chapter 4.5 (Refer to Appendix 3)
SEZ Main Road	Topographic survey	Purpose：For the basic design of the SEZ Main Road Item：Plan view, Longitudinal and a crossing surveying (20 m interval) Method：Survey was carried out along planned SEZ Main Road (width: 150 m). And temporary benchmark was placed at appropriate locations. Location：SEZ Main Road at the Dongo Kundu (4.4 km)	May 18th – September 28th	Chapter 4.6 (Refer to Appendix 4)
Power Supply Facility	Topographic survey	Purpose：To use the basic design of the power supply facility Item：Plan view, Longitudinal and a crossing surveying (100 m interval) Method：Survey was carried out along planned power line (width: 60 m). And temporary benchmark was placed at appropriate locations. Location：Between Mariakani Substation and inside SEZ substation (54 km)	May 18th – September 28th	Chapter 4.6 (Refer to Appendix 4)
	Geotechnical investigations	Purpose：To confirm the depth of bed rock for the tower Item：Type of soil, grain size, thickness of layer (location of bed rock), unit weight, and ability of consolidation Method：Boring exploration, Standard penetration test, Laboratory test, CBR test Location：2 points at both sides of the creek	January 30th-March 21st	Chapter 4.5 (Refer to Appendix 3)
	Bathymetry survey	Purpose：To use the basic design of the tower Item：Longitudinal survey and a crossing surveying Method：Bathymetry survey by sounding instrument Location：The creek area between Rabai Substation and the entrance of SEZ (3 km)	February 1st	Chapter 4.4.6 (Refer to Appendix 2)

Facility	Item	Contents of Survey	Survey Period	Detail description
SEZ Site	Geotechnical investigations	Purpose：To calculate the volume of the disposal soil; the soil can be used as landfill material Item：Type of soil, grain size, thickness of layer (location of bed rock), unit weight, consolidation etc. Method：Boring exploration, Standard penetration test, Laboratory test Location：4 points in the SEZ site	January 30th-March 21st May 11th – August 3rd	Chapter 4.5 (Refer to Appendix 3)
	Topographic survey	Purpose：To use the basic design of the power supply facility and FTZ Item：Plan view (21ha) Method：Survey was carried out at 2 locations, FTZ area (Land1) and Substation area (Land2). And temporary benchmark was placed at appropriate locations. Location：In the SEZ site, Dongo Kundu area	May 18th – September 28th	Chapter 4.6 (Refer to Appendix 4)

Source: JICA Design Team



Source: JICA Design Team

Figure 4.1.1 Flow Chart of Natural Conditions Surveys

4.2 Current, Tide Level Survey

In order to confirm the characteristics of the current and tide levels at the planned site of the port, comparison of the results of the current forecast, current, turbidity, and tide level survey were implemented for a month.

Current and tide level were measured at the same period in order to confirm the relationship of current and tide level. The survey area is in the creek, more than 6 km inner side from the outer sea. And all the rivers streaming in the Port Reitz are dried up or have little water except in the rainy season. Therefore, the current at the survey area is mainly produced by the tidal condition.

In this survey, current survey was implemented at two locations considering the difference of water depth. However, the equipment at one location was lost. This is because fisherman who came from far area at night may have caught the survey equipment by the fishnet. In order to compensate for the lost data, current survey was carried out in only two days at the location where the equipment was lost. In order to prevent relapse, it is necessary to surround the fence around the survey equipment or to monitor them round-the-clock.

4.2.1 Equipment

Equipment used for this survey is shown in Table 4.2.1.

Table 4.2.1 List of Survey Equipment

Name	Item	View	No.
INFINITY-EM	Electromagnetic current meter		2
U20L02	Water level logger		1
INFINITY-CLW	Turbidity meter		1

Source: JICA Design Team

4.2.2 Survey Area

The survey area is shown in Figure 4.2.1. At Location C1 (Depth = - 8.5 m), one current meter and turbidity meter were installed. At Location C2 (Depth = - 16.0 m), one current meter was installed.

Source: Google, JICA Design Team

Figure 4.2.1 Survey Area for Current, Tide Level Survey

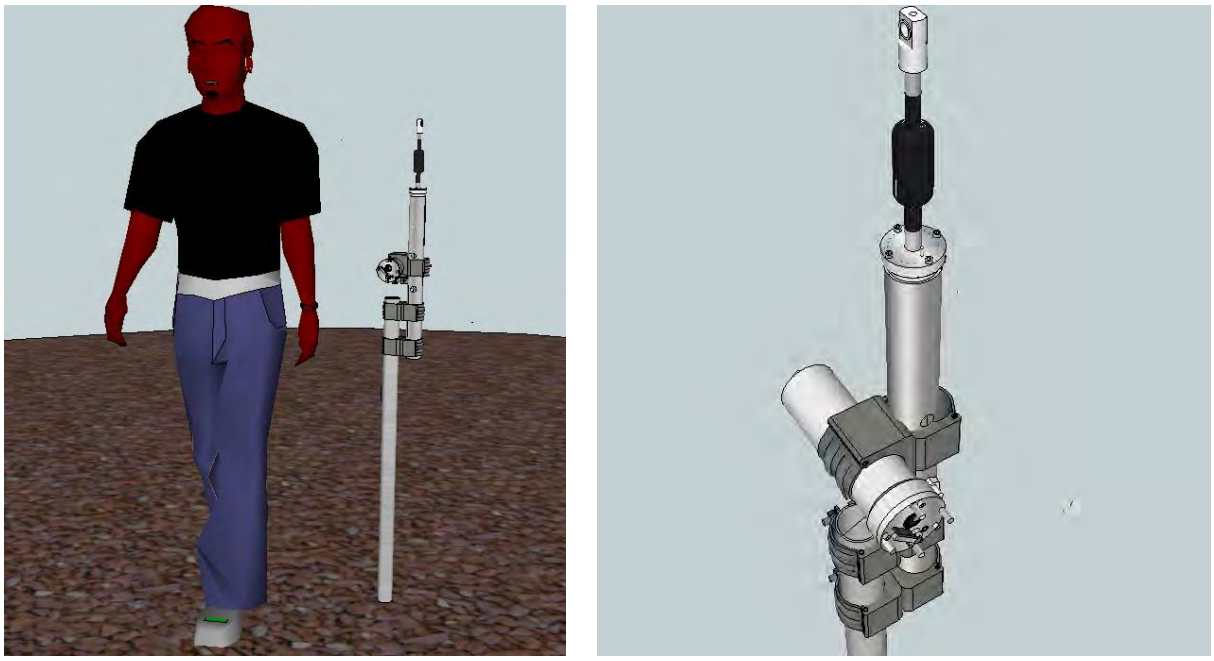
4.2.3 Survey Period

Field works were carried out as follows:

- January 27th – March 8th: Measurement at C1 (lost), C2, and tide level
- March 14th – March 16th: Measurement at C1 and tide level

4.2.4 Methodology

Image of the survey materials is shown in Figure 4.2.2. Steel pipes were installed 1.5 m into the seabed firmly by divers at C1 and C2. Then, the current and turbidity meters were attached to the pipes. The tide level logger was installed at the pillar of the jetty (depth = -3 m). Then the survey equipment continued to measure the data for a month. After the measurement period, the survey equipment and steel pipes were removed from the seabed by divers. Measurement mode of the survey equipment is shown in Table 4.2.2.



Source: JICA Design Team

Figure 4.2.2 Image of the Survey Materials on the Seabed

Table 4.2.2 Measurement Mode of the Survey Equipment

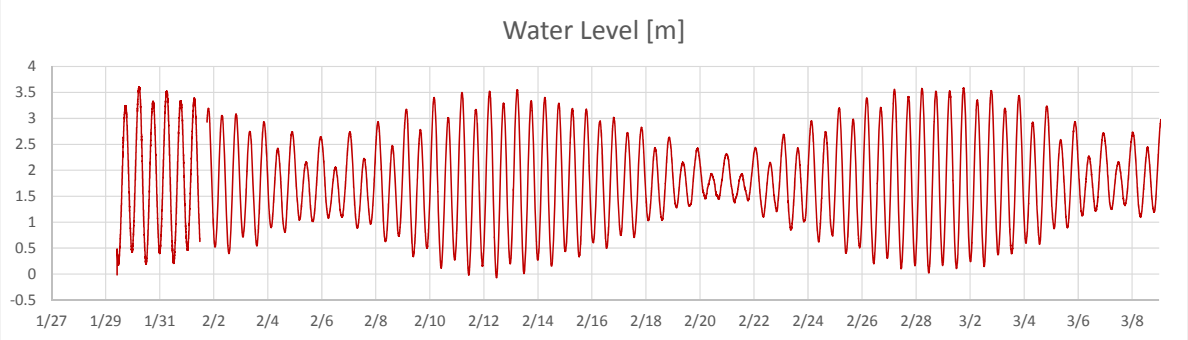
Location	Content	Survey Equipment	Measurement Mode
C-1	Current speed, Direction	INFINITY-EM	2 min / per 1 hr Sampling interval / 1.0 sec
	Turbidity	INFINITY-CLW	
C-2	Current speed, Direction	INFINITY-EM	2 min / per 1 hr Sampling interval / 1.0 sec
Front of KPA Building	Tide level	HOBO	Per 5 min

Source: JICA Design Team

4.2.5 Results

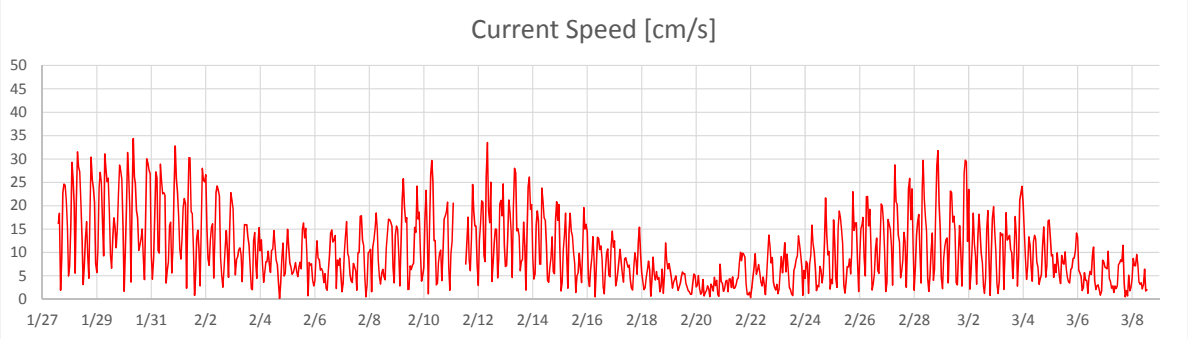
The results of the water level and current speed of C2 during the period from January 27th to March 9th are shown in Figure 4.2.3 and 4.2.4. The results of the current speed of C2 for east and north directions are shown in Figures 4.2.5 and 4.2.6. Based on Figures 4.2.3 and 4.2.4, the current speed corresponds to the tide level. The current speed for the east is stronger than the north. That is why the creek at the survey area is stretching the east to the west. Therefore, the current from the east to the west is prominent.

The water level at February 1st and the current at February 11th cannot be measured. This is because the survey equipment is covered with the litter like plastic bags.



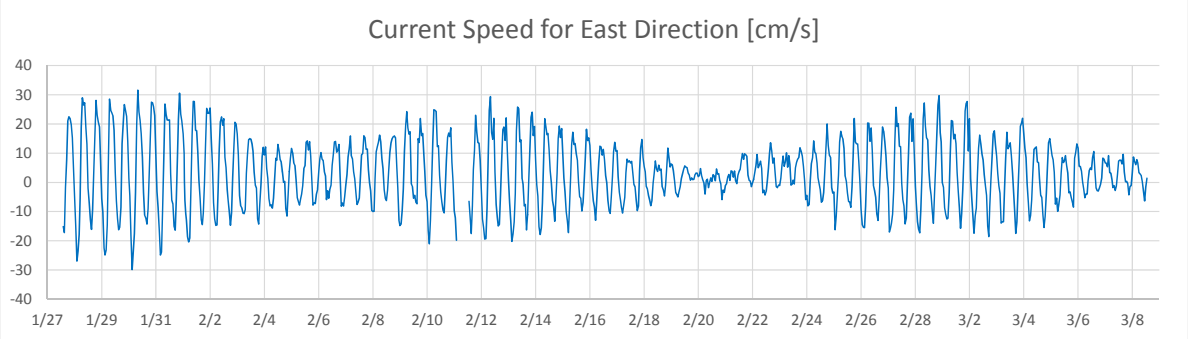
Source: JICA Design Team

Figure 4.2.3 Water Level of C2



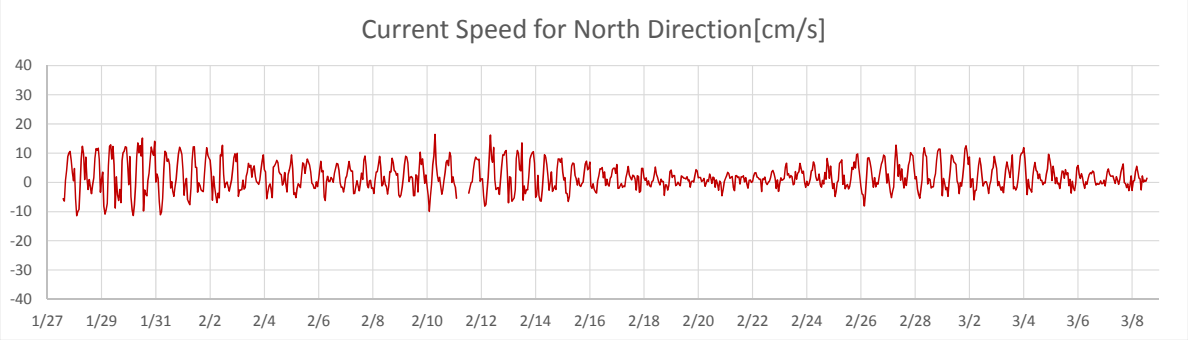
Source: JICA Design Team

Figure 4.2.4 Current Speed of C2



Source: JICA Design Team

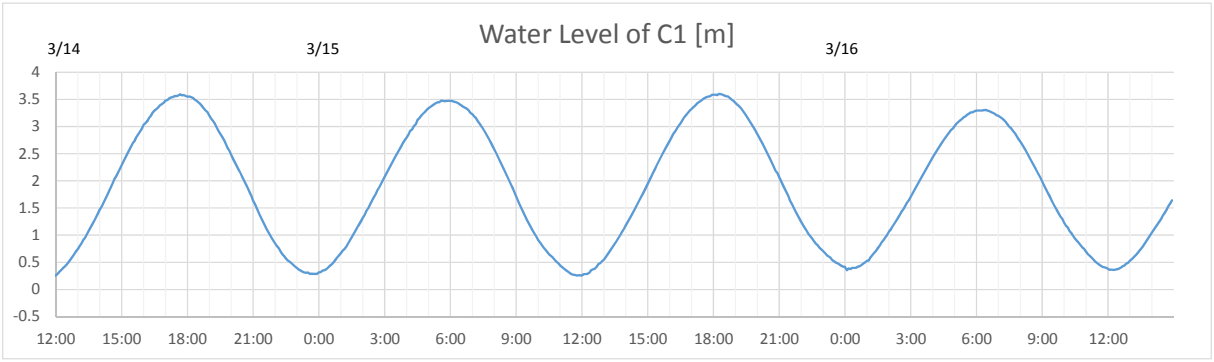
Figure 4.2.5 Current Speed for East Direction



Source: JICA Design Team

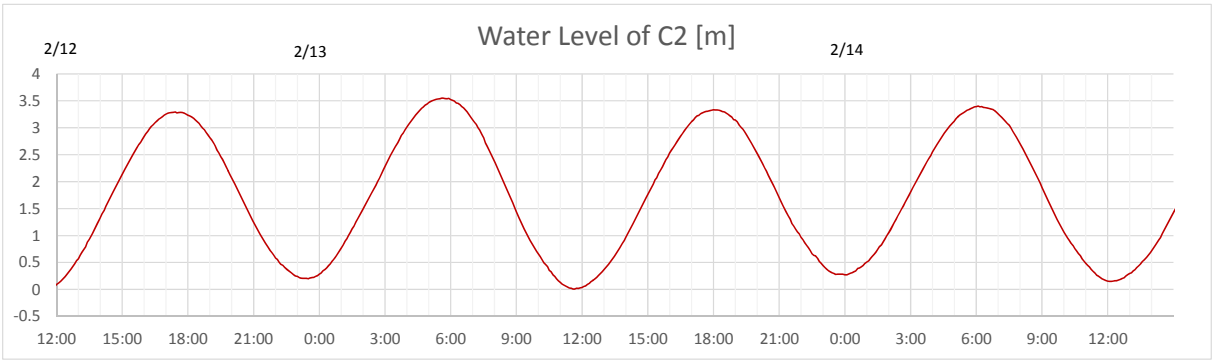
Figure 4.2.6 Current Speed for North Direction

Next, the results of the water level and current speed of C1 during the period from March 14th to March 16th are shown in Figures 4.2.7 and 4.2.9. The results of the water level and current speed of C2 during the period from February 12th to February 14th are shown in Figures 4.2.8 and 4.2.10. Based on Figures 4.2.7 – 4.2.8, the tidal conditions are almost the same. However, the conditions of current speed are different. Based on Figures 4.2.9 – 4.2.10, the current speed of C1 is two times larger than C2. Moreover, the current speed in ebb tide is two times larger than in flooding tide.



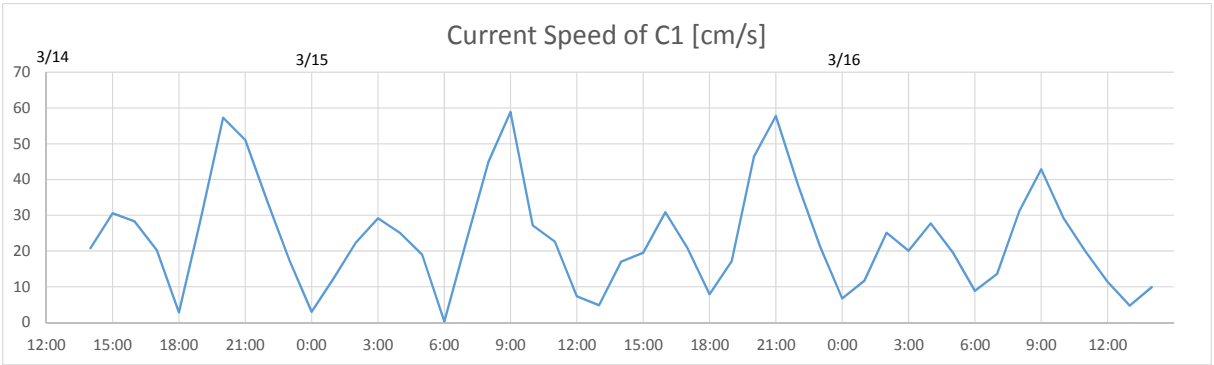
Source: JICA Design Team

Figure 4.2.7 Water Level of C1



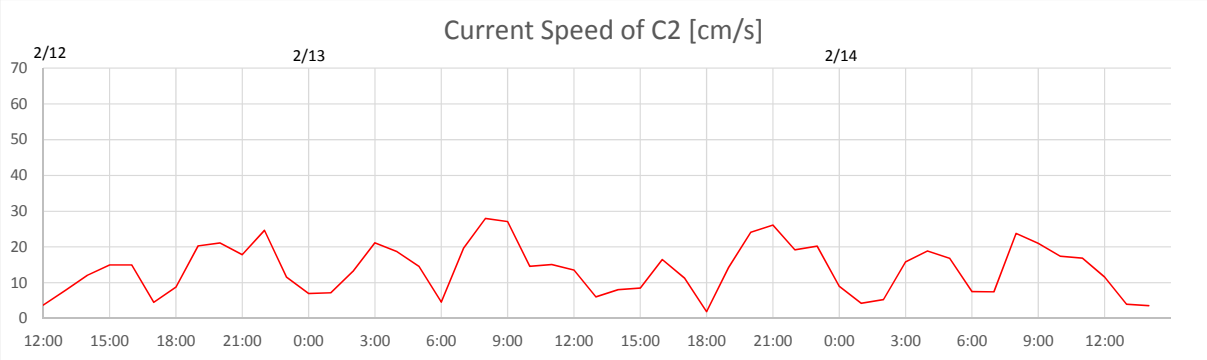
Source: JICA Design Team

Figure 4.2.8 Water Level of C2



Source: JICA Design Team

Figure 4.2.9 Current Speed of C1

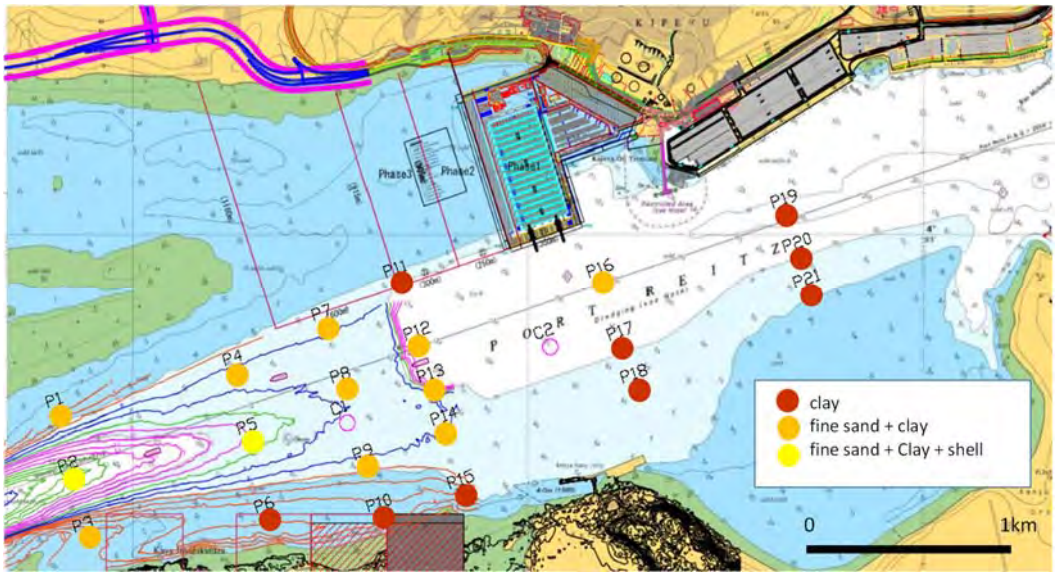


Source: JICA Design Team

Figure 4.2.10 Current Speed of C2

4.3 Seabed Material Survey

With respect to sedimentation condition at the project site, a seabed sampling was conducted. In the seabed sampling, a diver collected the seabed materials directly at 21 points. Survey locations are shown in Figure 4.3.1. The results and considerations are described in Chapter 5.



Source: JICA Design Team

Figure 4.3.1 Survey Area for Seabed Material Survey

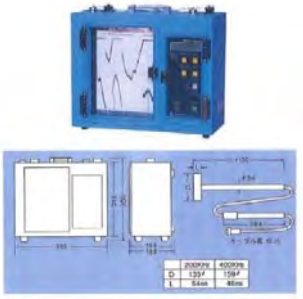
4.4 Seabed Monitoring Survey

In order to compare the changes in dredged channel profile with past data, a seabed monitoring survey was also implemented with bathymetry survey equipment. In this chapter, the method of survey, survey period, survey area and result are described. Considerations of sea bed monitoring are described in Chapter 5.

4.4.1 Equipment

Equipment used for the seabed monitoring survey is shown in Table 4.4.1. In the seabed sampling, special equipment was not used.

Table 4.4.1 List of Survey Equipment

Name	Item	View	No.
PDR1300	Depth Sounder		1
Trimble SPS356	Global Navigation Satellite System		1

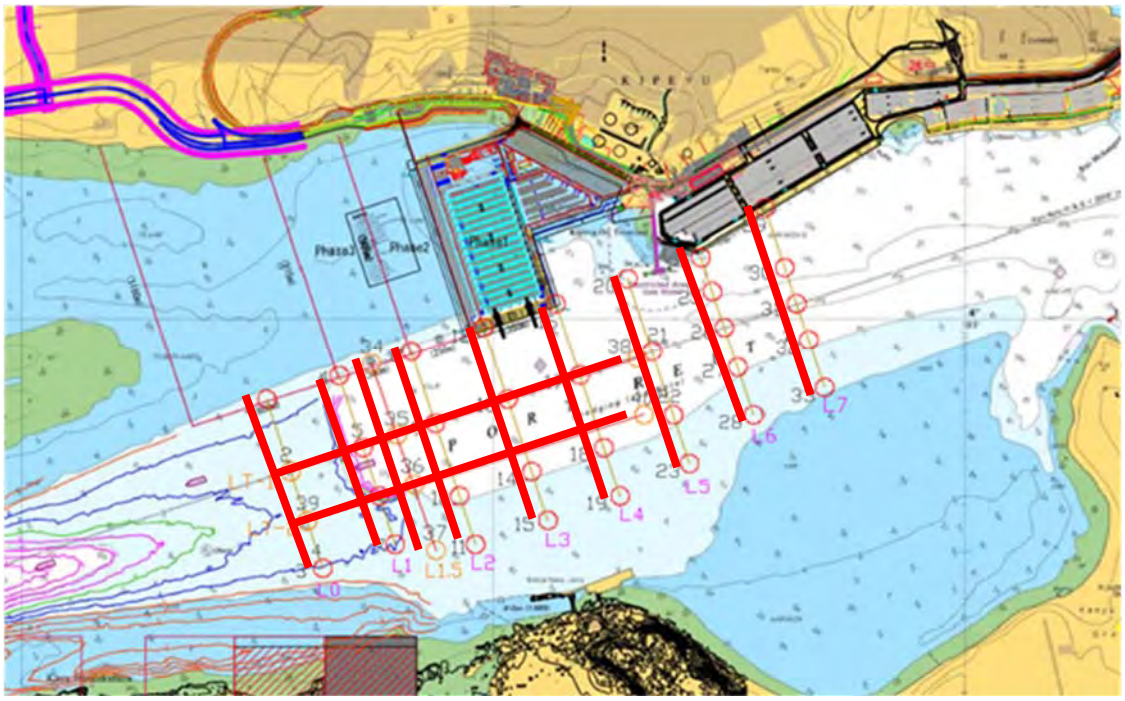
Source: JICA Design Team

4.4.2 Survey Period

Field works were carried out on January 29th and 30th, 2017.

4.4.3 Survey Area

The survey area is shown in Figure 4.4.1. Seabed monitoring survey was done along the eleven lines (shown by red line).



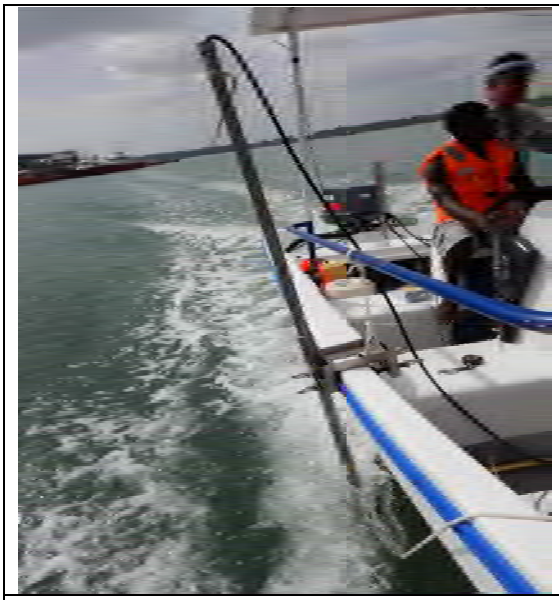
Source: JICA Design Team

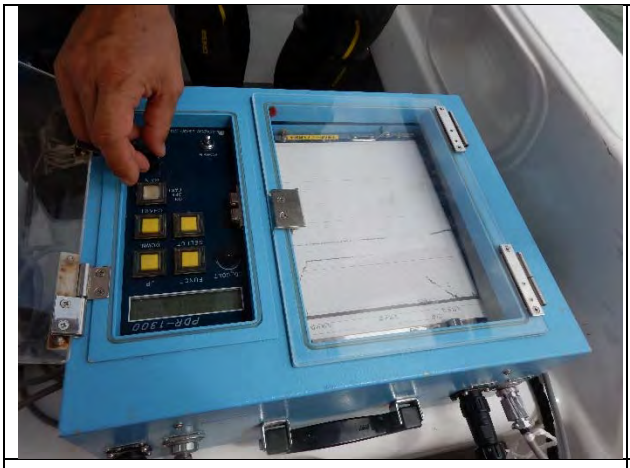
Figure 4.4.1 Survey Area for Seabed Monitoring Survey

4.4.4 Methodology

Photos during the survey are shown in Table 4.4.2. In the seabed monitoring survey, bathymetric equipment (Global Navigation Satellite System and Bathymetric Sensor Logger) was installed on the small ship. Then the survey ship went along the monitoring survey lines by measuring the depth data with ultrasonic wave and coordinate information by GPS at the same time. The data is corrected to chart datum by the tide level gauge and atmospheric pressure gauge.

Table 4.4.2 Photos during the Survey

	
(a) Bathymetric Sensor	(b) Global Navigation Satellite System



(c) Depth Sounder (Logger)

(e) Passenger Sign for the Diver Work

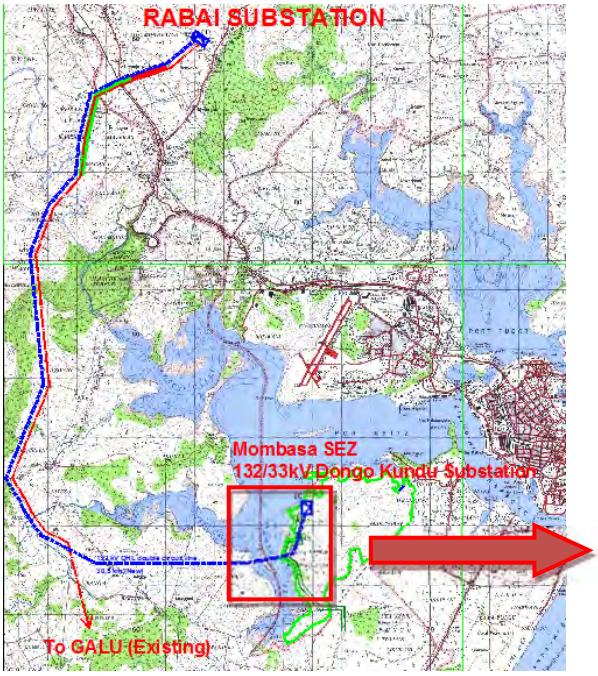
Source: JICA Design Team

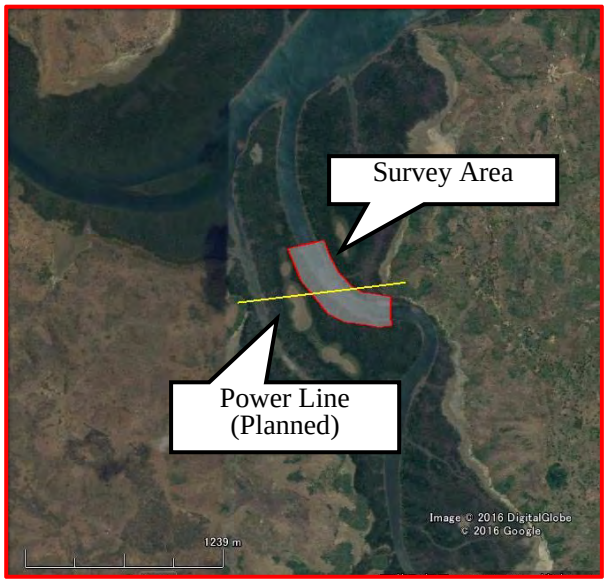
4.4.5 Results

Details of the result and considerations are shown in Chapter 5.

4.4.6 Bathymetry Survey

To use for the basic design of the power transmission line facility, a bathymetry survey was implemented at the Bombo Creek. Equipment used for the bathymetry survey was the same as in the seabed materials survey. Field works were carried out on January 31st 2017. Survey area is shown in Figure 4.4.2. The length of the survey area is 600 m and the width is 100 m. The result of this survey is shown in Appendix 2.





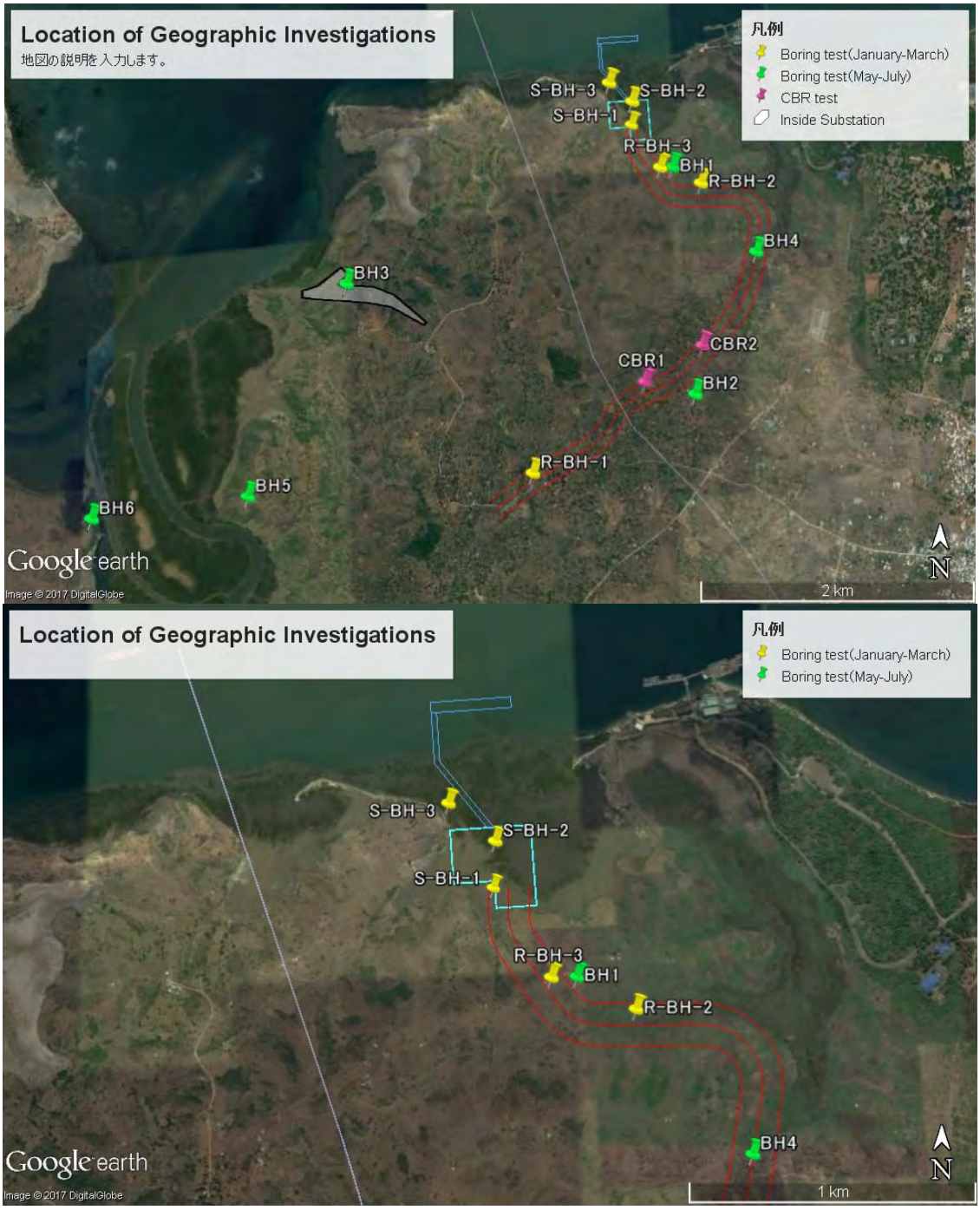
Source: Google, JICA Design Team

Figure 4.4.2 Survey Area for Bathymetry Survey

4.5 Geotechnical Investigations

In this study, geotechnical investigations were carried out 2 times because of the modification of the project scope. The first time was from January 30th to March 21st, 2017, the second was done from May 11th to August 3rd, 2017. The main contents of geotechnical investigations are boring exploration and standard penetration test (at 12 sites) and CBR test (at 3 sites).

The survey area is shown in Figure 4.5.1. And the details of the boring site are shown in Table 4.5.1 and Appendix 3.



Source: Google Earth, JICA Design Team

Figure 4.5.1 Boring Sites

Table 4.5.1 Details of the Boring Site

No.	Name	Survey Items	Objective	Depth	Survey Period
1	BH1	Boring Exploration Standard Penetration Test	SEZ site（FTZ）	20m	1st Survey 30th January, 2017 - 21st March, 2017
2	BH2	Boring Exploration Standard Penetration Test	SEZ site	27.5m	
3	BH3	Boring Exploration Standard Penetration Test	SEZ site（Inside substation of SEZ）	20m	
4	BH4	Boring Exploration Standard Penetration Test	SEZ Main Road	30m	
5	BH5	Boring Exploration Standard Penetration Test	Power Supply Facility（Not used）	30m	
6	BH6	Boring Exploration Standard Penetration Test	Power Supply Facility（Not used）	30.5m	
7	RBH-1	Boring Exploration Standard Penetration Test	SEZ Main Road	20m	2nd Survey 11th May, 2017 – 3rd August, 2017
8	RBH-2	Boring Exploration Standard Penetration Test	SEZ Main Road	20m	
9	RBH-3	Boring Exploration Standard Penetration Test CBR Test	SEZ Main Road	20m	
10	SBH-1	Boring Exploration Standard Penetration Test	Port	20m	
11	SBH-2	Boring Exploration Standard Penetration Test	Port	40.5m	
12	SBH-3	Boring Exploration Standard Penetration Test	Port	50m	
13	CBR-1	CBR Test	SEZ Main Road	2m（Height 54m、Road Elevation 52m）	
14	CBR-2	CBR Test	SEZ Main Road	2m（Height 54m、Road Elevation 52m）	

Source: JICA Design Team

4.5.1 Boring Exploration and Standard Penetration Test

(1) Equipment

The photo of survey site is shown in Figure 4.5.2. Boring machine which is rotary double tube sampler named Koken rig, was mobilized.

Source: JICA Design Team

Figure 4.5.2 The photo of survey site

(2) Core Sampling

Core samples were obtained from the core barrels with the best samples being obtained by using double tube swivel type core barrels. Once the sample is acquired, the orientation of the sample was noted and then stored in boxes ready for analysis and logging.

(3) Undisturbed Sampling

Open drive undisturbed (U100) sampling, in accordance with BS5930, was carried out at 1.5 m intervals, where the formation was appropriate for the undisturbed sampling, starting at 1.5 m depth. They continued to be taken until the ground became too hard (generally more than 50 blows of standard hammer were required to being effect of the penetration). A total of three of these samples were attempted.

Source: JICA Design Team

Figure 4.5.3 Undisturbed Sample

(4) Disturbed Bag Sampling

Disturbed bulk samples were taken from boreholes bored with boring tool with casing at depths of every 1 m. These samples were then put into 25 kg heavy duty polythene sacks and secured by double tying the mouth. A label in water proof lining was inserted between the two string knots and the bags were labeled indicating the project, borehole numbers, and the depth from which the samples were taken.

(5) Small Disturbed Jar Sampling

In this case, samples are collected when the sampler was driven into the ground by dynamic means, using a sliding hammer, the standard penetration test. The standard penetration test sample is then compressed into the sampler with the sampling head allowing the sample tube to be filled without the risk of damaging the sample. The samples from the split spoon sampler of the standard penetration test equipment were collected as disturbed samples in airtight 0.5 kg screw – topped glass jars. To minimize moisture loss, these jars were dipped in wax to seal the lids.

(6) Standard Penetration Test

Standard penetration tests were carried out in the boreholes during boring. Tests were carried out at 1.0 m intervals to the depths with automatic trip hammer where hard strata were encountered and “refusal” was recorded using the split barrel standard penetration tests sampler. Tests were carried out in accordance with BS 1377. The standard penetration test “N” value is the total number of blows required to cause the sampler to penetrate 4 x 75 mm. Where in any one of the five penetration steps the blow count reaches 50, the test stopped and the results are recorded as refusal.

4.5.2 Laboratory Tests

Laboratory tests were implemented by the test sample. The items of the laboratory tests are as follows:

- Grain size analysis of soils
- Test for specific gravity of soils
- Test of moisture content of soils
- Unit weight of wet soils
- Unconfined compression test
- Atterberg limits
- Consolidation test
- Compaction test
- Slaking test
- Water absorption test
- Differential free swell test
- One dimensional swell pressure

4.5.3 CBR Test

CBR tests were carried out at 3 locations. Table 4.5.2 shows the objective of CBR tests at each location. At the CBR1,2, undisturbed sample was picked up and brought to the laboratory. At the CBR3, test was carried out with the shale sample picked up at the RBH3.

Table 4.5.2 CBR Tests

Name	Objective
CBR1	For basic design of SEZ Main Road of roadbed
CBR2	For basic design of SEZ Main Road of roadbed
CBR3	For basic design of SEZ Main Road of embankment

Source: JICA Design Team

4.5.4 Results

The results of the boring explorations are shown as follows. Boring log of each boring explorations are attached at Appendix 3.

i) At Port area（SBH1,2,3）

At port area, boring explorations are carried out at 3 locations. In this area, the rock layer exists very deep, in case of SBH3, the rock layer is encountered at 50 m from the surface. And there is very soft clay layer about 5 or 10 m from the surface. The clay layer has accumulated mainly, but there are sand layer and layer includes organic matter.

ii) At SEZ site（BH1,2,3）

BH1,3 are on the steep hill land, surface of which is covered with black cotton soil. BH2 is on the gentle hill land, surface of which is covered with reddish brown sand. According to the survey, the rock layer is encountered at 3 or 4 m from the surface in BH1,3. On the other hand, in BH2, there is dense sand or silt layer about 10 or 15 m from the surface.

iii) At SEZ Main Road area（RBH1,2,3、BH4）

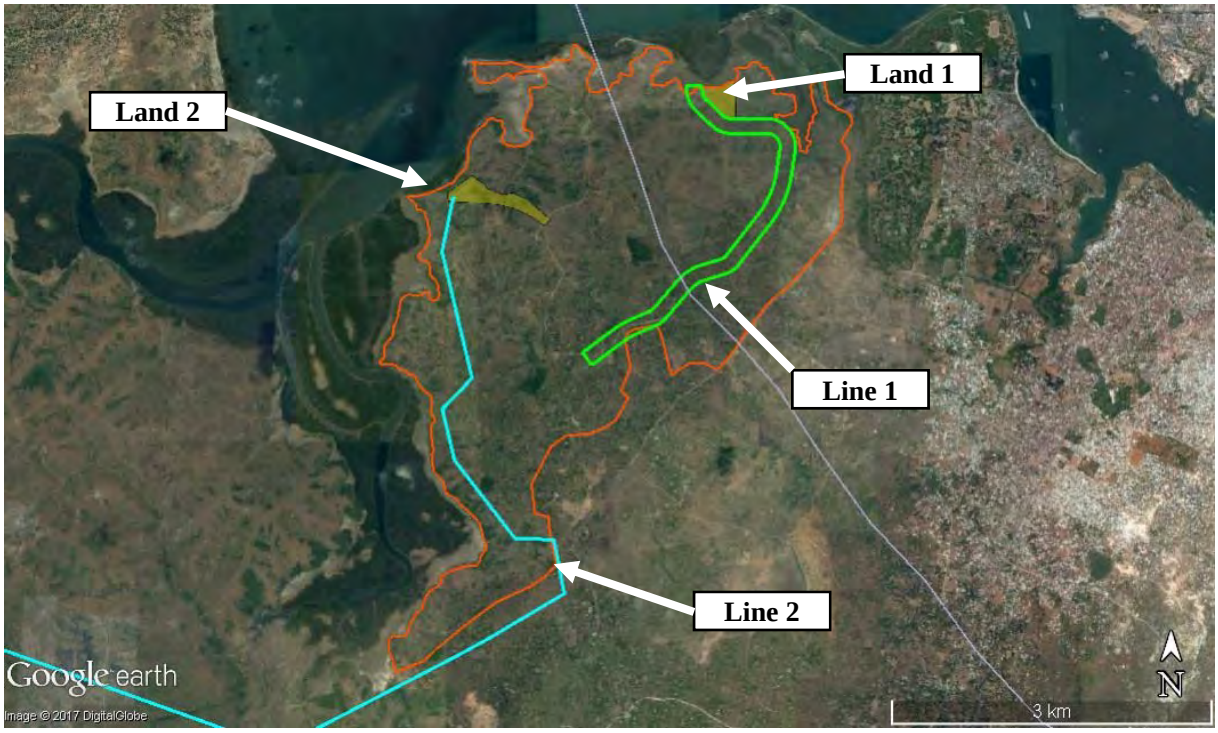
SEZ Main Road will be constructed by cutting the hill near the port yard, and pass through the low wet land at the middle point. At the hill area, there is RBH3, the rock layer is encountered at 5m from the surface,

and rock layer continues to the planned road height. At the wetland, there is clay layer about 10 or 15 m from the surface. This clay layer is not particularly soft layer, so the N value of this area is more than 20. From the results of the geotechnical investigations, the following could be confirmed.

- Possibility of using the sand generated during construction of the SEZ site as landfill material
  →It is difficult to divert the sand as a landfill material because black cotton soil is accumulated in the site of SEZ, shale is present in a shallow layer from the surface of the earth.
- The height of SEZ site
  →There is a layer of shale near the surface of the ground at the FTZ planned site, harbor yard rear back. So, it is necessary to drill the shale rock.
- For consideration of ground improvement method
  →At the port yard, a very weak layer lasts 5 to 10 meters, so there is a possibility that the period of consolidation will last for a long time at the time of construction.

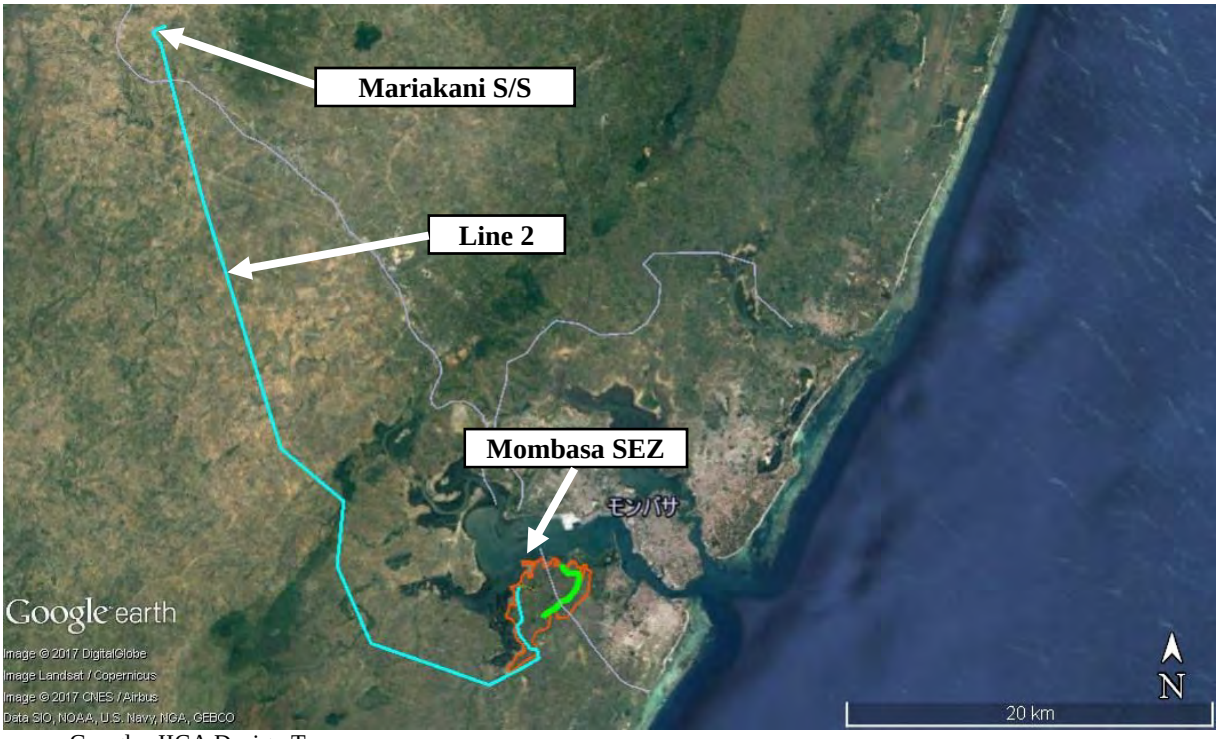
4.6 Topographic Survey

A topographic survey was carried out at 4 locations, Line 1, Line 2, Land 1, Land 2, and started from 18th May to 28th September, 2017. The survey location and object are shown in Figure 4.6.1 and 2 and Table 4.6.1.



Source: Google, JICA Design Team

Figure 4.6.1 Survey Area of Topographic Survey (1)



Source: Google, JICA Design Team

Figure 4.6.2 Survey Area of Topographic Survey (2)

Table 4.6.1 List of Survey Areas

Name	Location	Area (Length)	Objective
Line1	Dongo Kundu area, between MBSR and port yard	4.4 km	Basic design of SEZ Main Road
Line2	Between Mariakani Substation and Inside SEZ substation	54 km	Basic design of Power line
Land1	Dongo Kundu area, FTZ	10 ha	Design of FTZ
Land2	Dongo Kundu area, Inside SEZ substation	11 ha	Basic design Inside SEZ substation

Source: JICA Design Team

4.6.1 Methodology

The basis of elevation is applied CDL in order to match the Mombasa Port M/P, and New container terminal at the opposite shore. So, the additional survey control points were established by a short traverse from the existing benchmark at the New container terminal. The equipment used for this survey were two total stations and a RTK kit. Figure 4.6.3 shows the survey equipment. Coordinates and elevation data were collected from the equipment, and converted to the plan view by software. Compliant ellipsoid and coordinate system used for this survey are shown in Figure 4.6.2 and 4.6.3.

Table 4.6.2 Compliant Ellipsoid

Compliant ellipsoid	
Spheroid	WGS 84
Datum	WGS 84
Semi major axis (a)	6 378 137.000 m
Semi minor axis (b)	6 356 752.314 m
Inverse flattening (1/f)	298.257223563
Eccentricity2 (e2)	0.081819190842622

Source: JICA Design Team

Table 4.6.3 Coordinate System of This Survey

Coordinate System	
Projection	Universal Transverse Mercator (UTM)
Zone	37 South
Longitude of Central Meridian	39° E
Latitude of Origin Projection	0° N
False Easting	500 000 m
False Northing	10000000 m
Scale Factor	0.9996
Units	International Meters
Convergence	World Standard
Unit of Measure	International Meters

Source: JICA Design Team

(a) RTK Kit

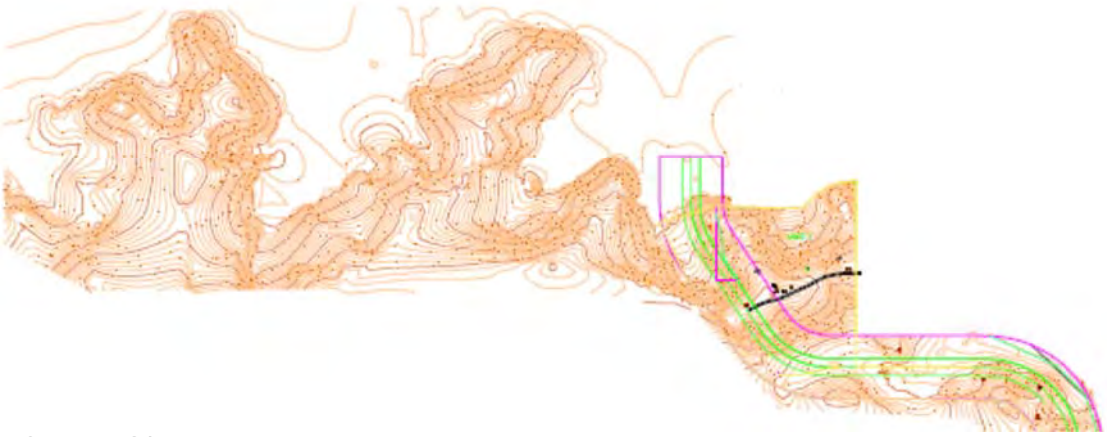
(b) Total Station

Source: JICA Design Team

Figure 4.6.3 Equipment for Topographic Survey

4.6.2 Results

Example of the plan view is shown in Figure 4.6.4. This figure is combined the topographic data of Mombasa Port M/P with the topographic data of this survey. Contour lines are described at each 1 m. And the houses, existing roads, water area etc are shown in plan view. Other survey results are shown in Appendix 4.



Source: JICA Design Team

Figure 4.6.4 Plan View（Port area, FTZ, SEZ Main Road）

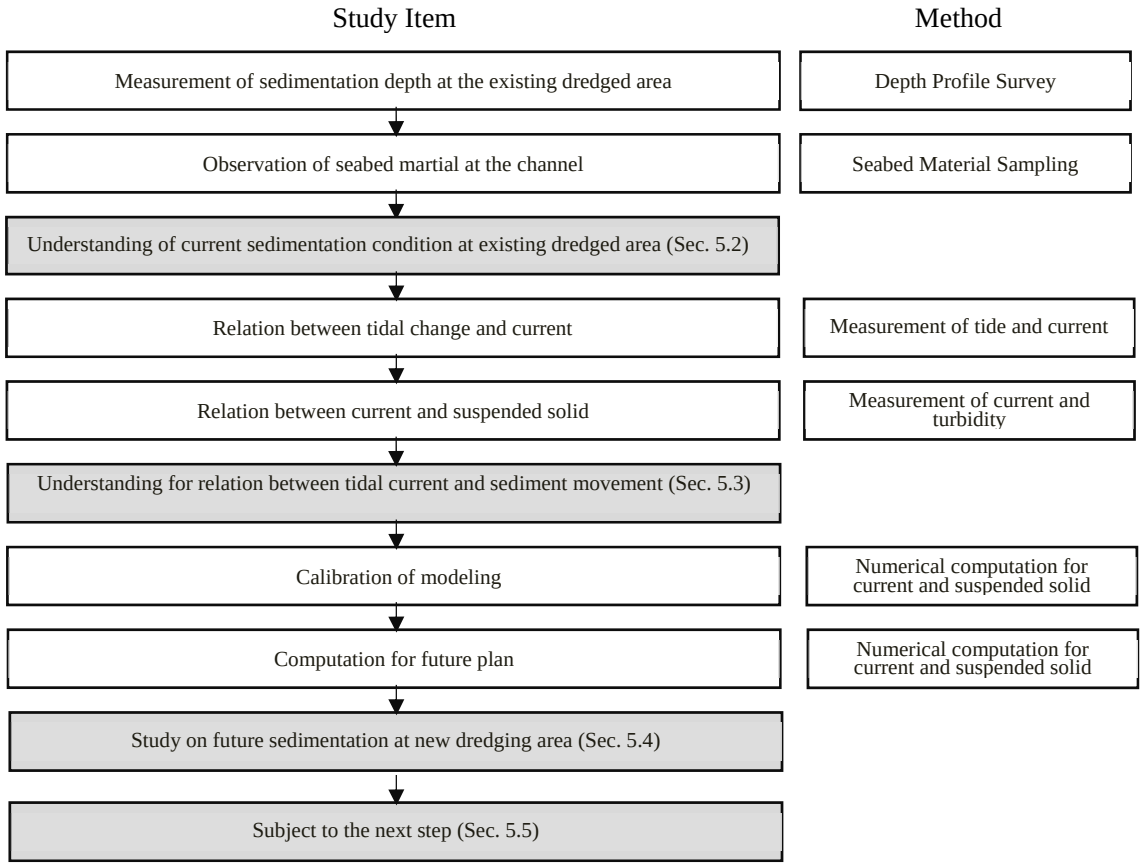
Chapter 5 Study on Sedimentation at the New Dredging Area

5.1 Outline

The planned port area is located around 10 km upstream from the entrance of the channel with no significant impact due to ocean waves. The impact due to the supply of sediments from the Mwache River, which flows into the creek of Port Reitz, may also be insignificant because of a limited flow area of approximately 3,000 km^2, thus a low river flow rate. From the given reasons, sedimentation at the navigation channel and the existing port area basin is expected to be mainly caused by mixing, convection, and resettling of the surrounding seabed materials due to tide-induced current.

Dredging in front of the new container berth (Berth Nos. 20 to 23) was executed in 2012 to secure the water depth of -15 m (partially to -12 m). It is very useful to know the current condition of sedimentation at the existing channel and the port basin after the dredging in order to examine the extent of sedimentation at the new dredging area for Dongo Kundu Port. On the other hand, the area to be dredged has very shallow water compared to the dredged area. Therefore, there might be differences in the current distribution between the dredged area and the planned area.

Taking into account the discussion above, a study on sedimentation at the new dredging site was conducted based on the three steps described in Figure 5.1.1.



Source: JICA Design Team

Figure 5.1.1 Flow for Study on Sedimentation at the New Dredging Area

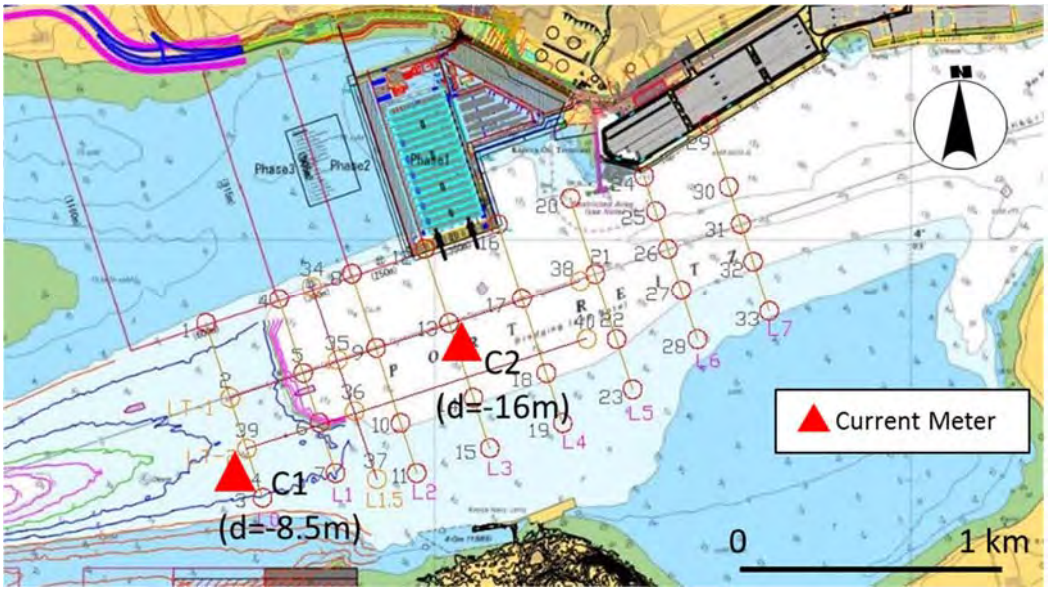
5.2 Current Sedimentation Condition at the Existing Dredged Area

5.2.1 Measurement of Sediment Depth at the Existing Dredged Area

Figure 5.2.1 shows the location map for bathymetric monitoring survey lines which help to know the current condition of sedimentation at the existing dredged area. Nine cross-section lines and two longitudinal-section lines were taken in the water surrounding the new container berth, and the change in channel profile was observed in three periods. These were before dredging (2008), just after dredging (April 2012), and the present (January 2017). Figure 5.2.2 shows the variation of channel profiles for nine cross-section lines, while Figure 5.2.3 shows the variation of channel profiles for two longitudinal-section lines. Here, 0 means the position of center (normal) line for navigation channel, + sign in the x-axis indicates the north side (existing port side), while the – sign indicates the south side (new port side). From these results, Figure 5.2.4 presents the average sedimentation thickness taken from the center of the navigation channel along the normal line of the channel for each 200 m distance from Line No. L0 to the port entrance direction.

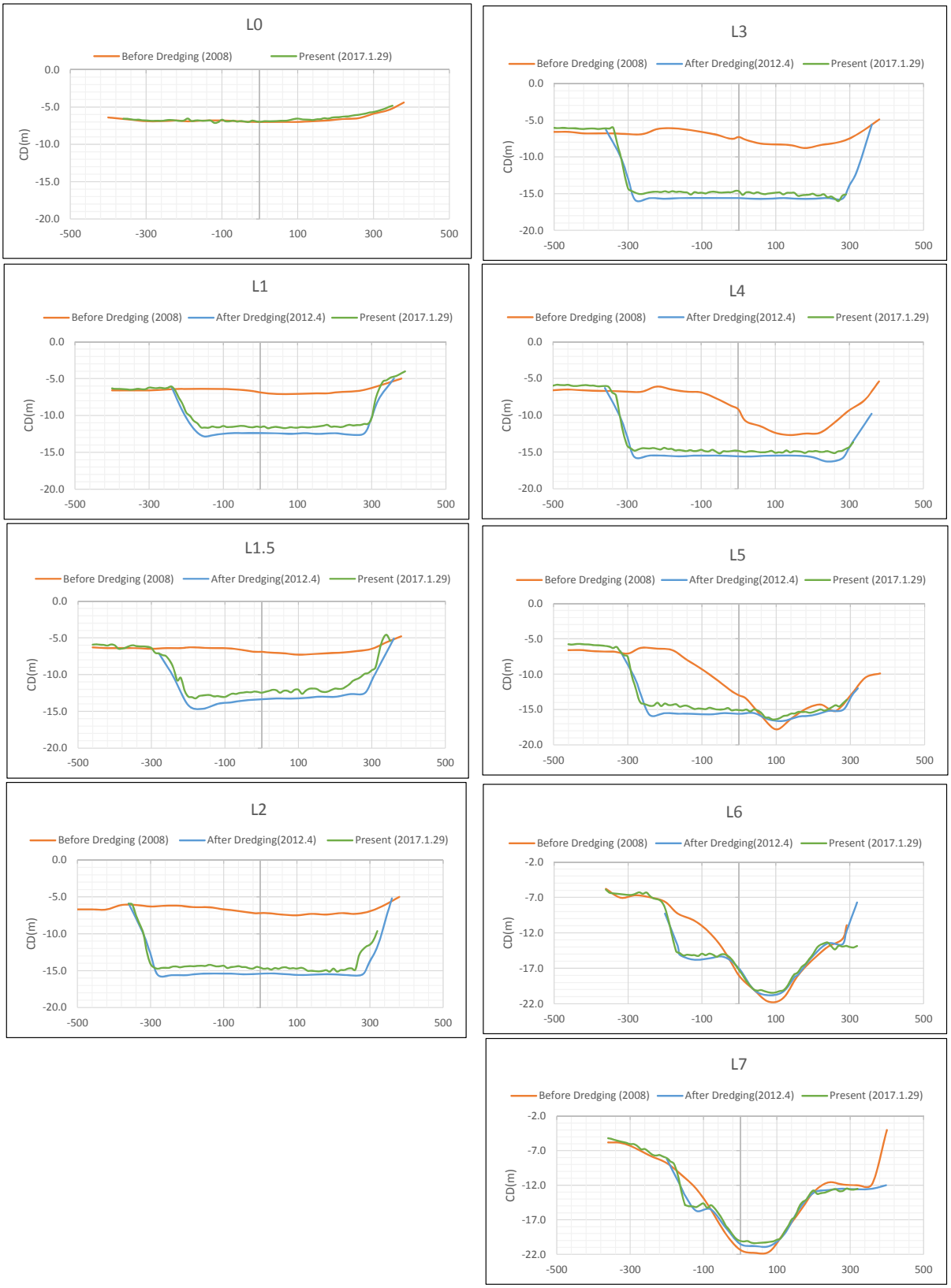
- The seabed was deepened from the original -6 m depth to -15 m at the inner port area of Line No. L2 and L3 by dredging. The dredging depth was about 9 m. On the other hand, the original water depth at the port entrance side of Line No. L5 to L7 was deeper than that at the inner port area. Here, dredging was undertaken only at a limited area, so the dredging depth was consequently small.
- As shown in Figure 5.2.4, the sedimentation thickness at the existing dredged area for almost five years from the completion of dredging (April 2012 to January 2017) was distributed from 0.5 m to 1.3 m. In total, it was not a very significant sedimentation thickness. The degree of sedimentation was bigger at the inner port area than at the port entrance side. The sedimentation depth is roughly 1 m at the inner port area and 0.5 to 0.7 m at the port entrance side. The sedimentation at the south side from the normal line of the navigation channel was greater than that of the north side. From the results, it is thought that the seabed material at a shallow water area of the outer dredging zone might flow into the deep dredging area.

Figure 5.2.1 shows the calculated sedimentation volume from April 2012 to January 2017 for several cross sectional areas. The total sedimentation volume was calculated at about 750,000 m^3 for five years (an average of 150,000 m^3/year for 5 years).



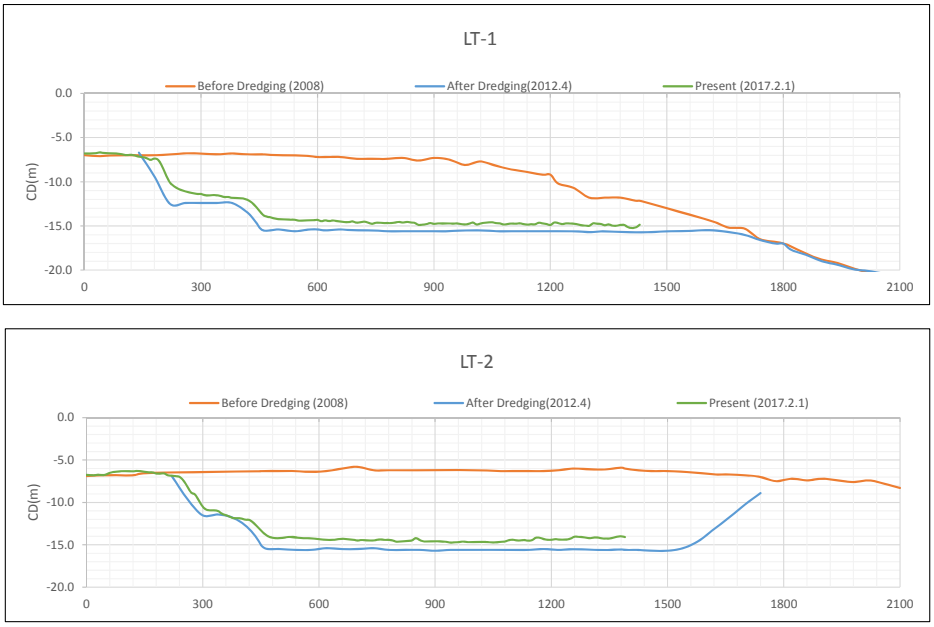
Source: JICA Design Team

Figure 5.2.1 Location Map for Monitoring Survey Line at the Existing Dredged Area



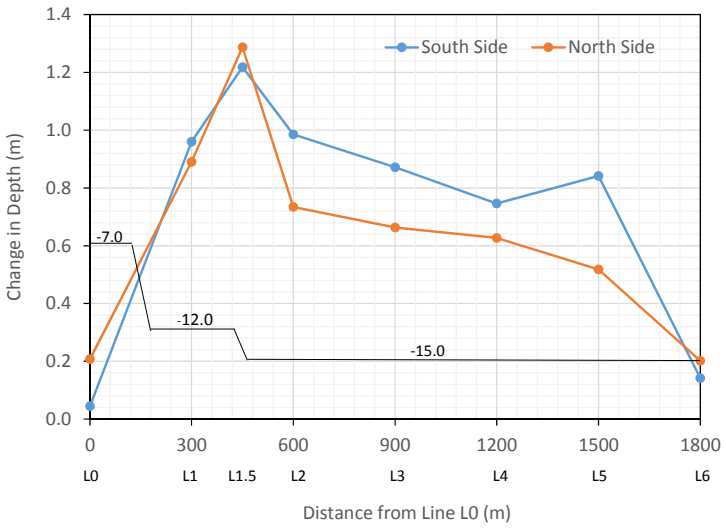
Source: JICA Design Team

Figure 5.2.2 Comparison of Channel Profile (before dredging, just after dredging, and present) at Each Cross-section Line



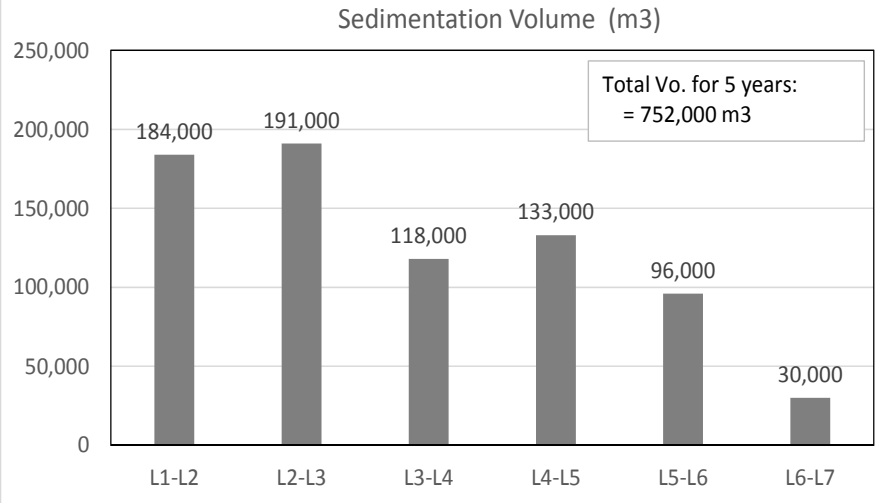
Source: JICA Design Team

Figure 5.2.3 Comparison of Channel Profile (before dredging, just after dredging, and present) at Two Longitudinal Section Lines



Source: JICA Design Team

Figure 5.2.4 Sedimentation Thickness for Each Cross-section Line

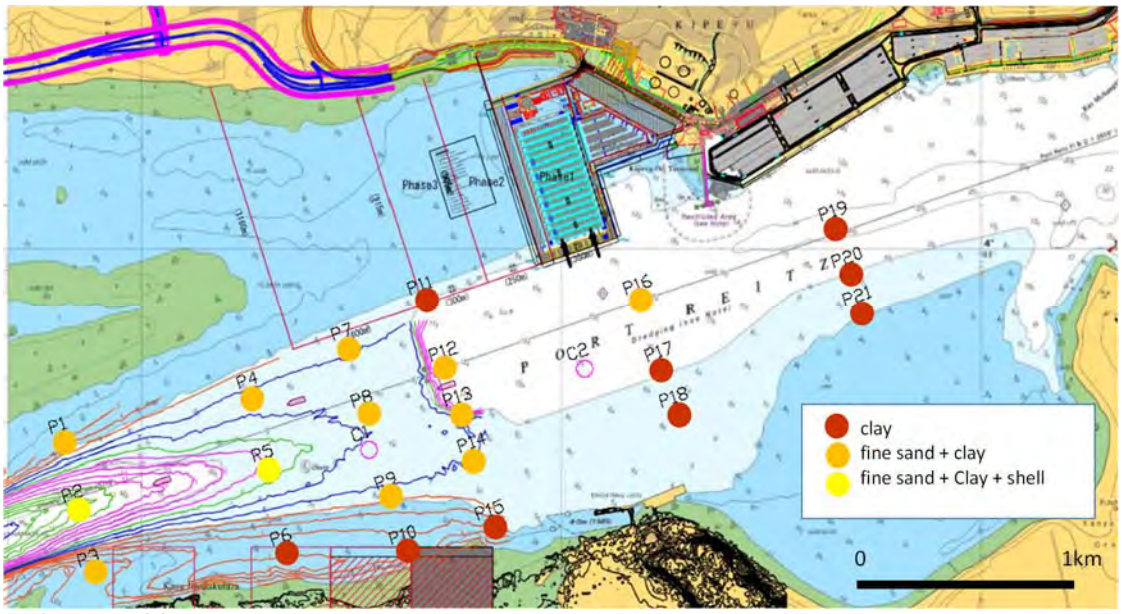


Source: JICA Design Team

Figure 5.2.5 Calculated Sedimentation Volume for Each Section

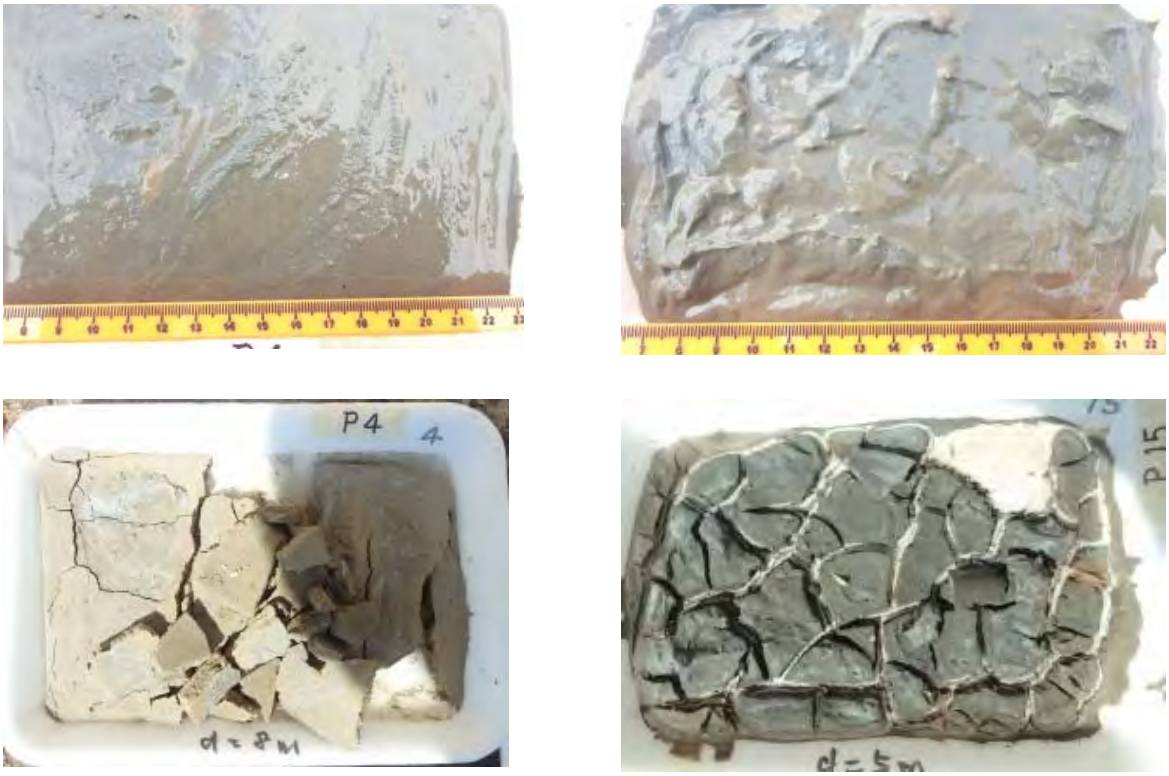
5.2.2 Observation of Seabed Materials at the Channel

Sampling on the surface of the seabed at the existing dredging area was carried out in order to know the characteristics of sedimentation materials at the planned dredging zones. The locations for sampling and their resulting category are presented in Figure 5.2.6. Most of the materials obtained consist of fine sand and silt. Moreover, the materials taken at the port entrance side (P17～P21) and the planned area (P6, P10, and P15) are cray contents. Figure 5.2.7 shows the condition of soil before and after drying with two typical samples. Before drying, both samples seem to be similar and slim-like with a lot of water content. After drying, both samples became solid, and significant cracks were observed due to shrinking. Furthermore, significant shrinking was observed on the P15 sample. The contents of which only consisted of silt. This property of significant shrinking and expansion is one of the common characteristics of cotton soil.



Source: JICA Design Team

Figure 5.2.6 Location and Obtained Results of Seabed Bottom Sampling



Source: JICA Design Team

Figure 5.2.7 Soil Condition Before and After Drying (upper: before drying, lower: after drying)

5.2.3 Understanding of Current Sedimentation Condition

The understanding obtained from the results of the sedimentation depth measurements and sea bed material observation are as follows:

- The sedimentation depth at the existing dredged area was insignificant. Data shows about 0.5 m to 1.3 m (0.7 m in average) in the span of five years. However, the original depth of this area before dredging was around -6 m. On the other hand, the present depth at the planned dredging area is more shallow, with about -2 m to -4 m of sedimentation where silt contents are significant. From the results, there is a possibility of greater sedimentation at the new dredged area compared to the existing dredged area.
- According to the survey result, the most significant sedimentation was observed at line No. L1.5, with a depth of 1.3 m in a span of five years. It is then anticipated that the sedimentation at the new dredged area may be more than 1.2 m for the next five years.
- The slope of the existing navigation channel is 1:4. Based on the technical guideline for navigation channels, the slope of a channel is recommended to be from 1:4 to 1:5 for soil and from 1:6 to 1:8 for mud or silt. The construction of a mild slope for the new dredged area is an improvement that can be done to reduce the effect of sedimentation. It is then recommended that the new dredged area give a milder channel slope than the existing channel.

5.3 Relation between Tidal Change and Sediment Movement

5.3.1 Relation between Tidal Change and Current

To examine the relation between the tidal change and water current in the port area, observations were taken using a tide level logger and a bottom mounted type current meter. The current meter was installed at two points. The first one is placed at -8.5 m (C1) and the second one at -16 m (C2). These were taken in order to know the different water current characteristics at the two depths as indicated in Figure 5.2.1. At the same time, the tide level logger was attached to the existing pier in Port Reitz.

Originally, the water current at both points was planned to be measured simultaneously for one month during high tide . However, the current meter at C1 was lost due to an unforeseen reason, and the simultaneous measurements were not carried out. Thus, the current meter at C2 was reinstalled at C1 after the completion of the month-long schedule for C2.

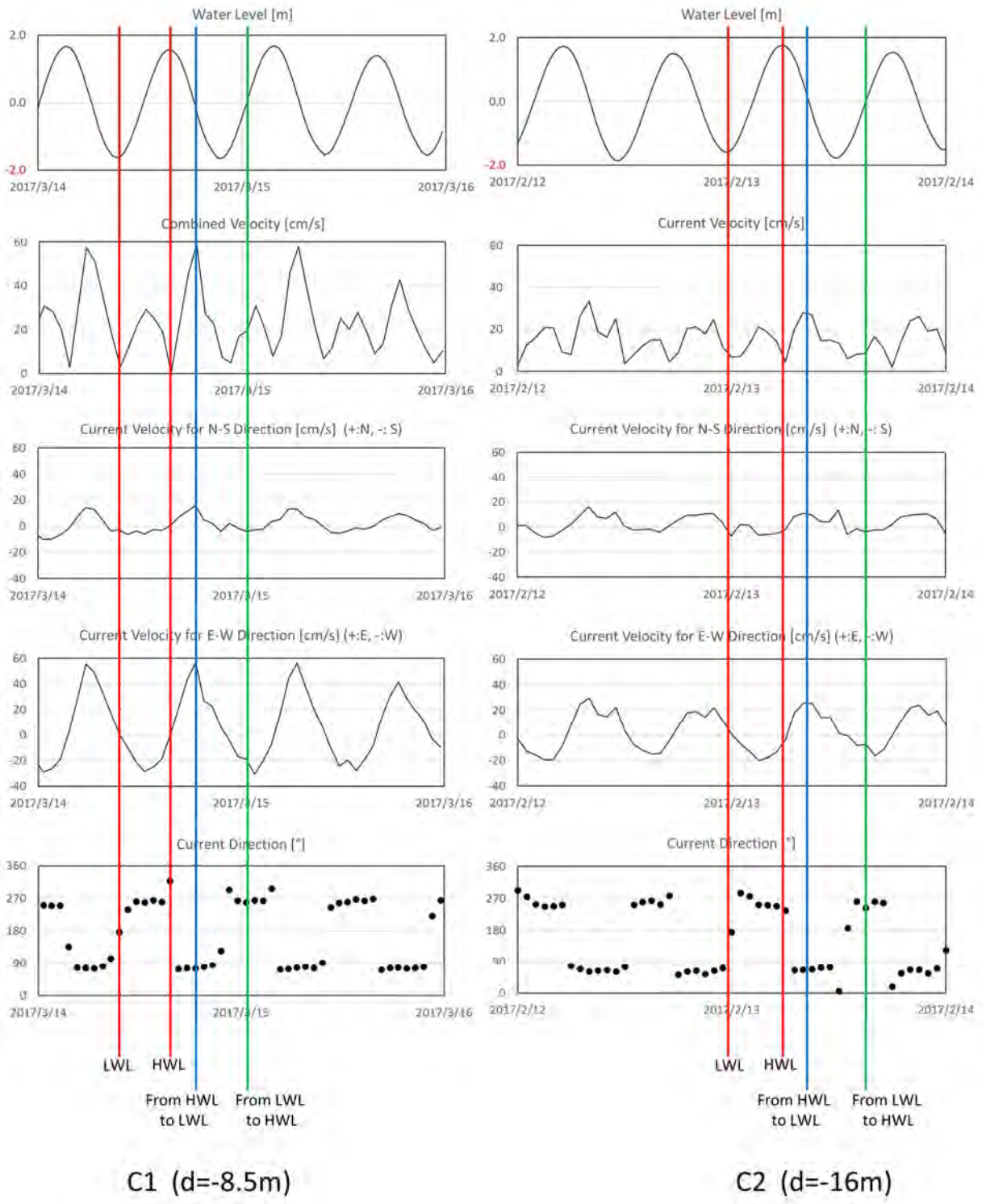
Figure 5.3.1 shows the relation between tide change and current speed and direction for both points in the same high tide condition. Two components of water current were measured. These were currents for the N-S direction and the E-W direction. The current speed was shown for each component and then for their resultants. The red line in the figure shows when the tide is at its lowest and its highest situation. The blue and green lines show the timing when the tide level is even from high to low and from low to high, respectively. The tidal change and the current pattern were well-synchronized at both points. When the tide was at its highest or lowest point, the current speed became zero and the direction reversed. From these results, it is established that the current in the port area was formulated mainly by the tidal change. A strong current was observed when the tide level was even from high to low (blue line in Figure 5.3.1). The current speed at C1 (d = -8.5m) was stronger than at C2 (d= -16m), which was at about double the value.

5.3.2 Relation between Current and Suspended Solid

To examine the relation between the current and the suspended solids, which will induce the sedimentation in the channel, a turbidity meter was also installed at C1 together with the current meter. However as mentioned above, the equipment was unfortunately lost, and the relation between the current and suspended solid was not obtained.

5.3.3 Understanding for Relation between Tidal Current and Sediment Movement

Two factors are presumed to cause sedimentation in the existing dredging area, which are 1) the tidal current and 2) the inflow from the Mwache River. However, the observation period was during the dry season, and the inflow from the Mwache River did not exist. Further investigation is required to examine the effect of inflow.



Source: JICA Design Team

Figure 5.3.1 Relation of Tidal Change and Current for Both C1 and C2 Points

5.4 Study on Future Sedimentation at the New Dredging Area

5.4.1 Calibration of the Modeling

A numerical analysis was conducted to examine the future sedimentation at the new dredging area. The model employed in this study was "MIKE21," which is a well-known siltation model to compute the 2-dimensional current field and sedimentation due to suspended solids. The mathematical equations for current and sedimentation are shown below.

Current

$$\frac{\partial \zeta}{\partial t}+\frac{\partial p}{\partial x}+\frac{\partial q}{\partial y}=\frac{\partial d}{\partial t}$$

$$\frac{\partial p}{\partial t}+\frac{\partial}{\partial x}\left(\frac{p^2}{h}\right)+\frac{\partial}{\partial y}\left(\frac{pq}{h}\right)+gh\frac{\partial \zeta}{\partial x}+\frac{gp\sqrt{p^2+q^2}}{C^2\cdot h^2}-\frac{1}{\rho_w}\left[\frac{\partial}{\partial x}(h\tau_{xx})+\frac{\partial}{\partial y}(h\tau_{xy})\right]-\Omega_q-fVV_x+\frac{h}{\rho_w}\frac{\partial}{\partial x}(p_a)=0$$

$$\frac{\partial q}{\partial t}+\frac{\partial}{\partial y}\left(\frac{q^2}{h}\right)+\frac{\partial}{\partial x}\left(\frac{pq}{h}\right)+gh\frac{\partial \zeta}{\partial y}+\frac{gq\sqrt{p^2+q^2}}{C^2\cdot h^2}-\frac{1}{\rho_w}\left[\frac{\partial}{\partial y}(h\tau_{yy})+\frac{\partial}{\partial x}(h\tau_{xy})\right]+\Omega_p-fVV_y+\frac{h}{\rho_w}\frac{\partial}{\partial xy}(p_a)=0$$

$h(x, y, t)$	water depth (= ζ -d, m)
$d(x, y, t)$	time varying water depth (m)
$\zeta(x, y, t)$	surface elevation (m)
$C(x, y)$	Chezy resistance ($m^{1/2}/s$)
$f(V)$	wind friction factor
$V, V_x, V_y(x, y, t)$	wind speed and components in x- and y- directions (m/s)
$p_a(x, y, t)$	atmospheric pressure ($kg/m/s^2$)
$\tau_{xx}, \tau_{xy}, \tau_{yy}$	components of effective shear stress

Sedimentation (Advection – Diffusion Model for Suspended Solid

$$\frac{\partial \bar{c}}{\partial t}+u\frac{\partial \bar{c}}{\partial x}+v\frac{\partial \bar{c}}{\partial y}=\frac{1}{h}\frac{\partial}{\partial x}\left(hD_x\frac{\partial \bar{c}}{\partial x}\right)+\frac{1}{h}\frac{\partial}{\partial y}\left(hD_y\frac{\partial \bar{c}}{\partial y}\right)+Q_LC_L\frac{1}{h}-S$$

$\bar{c}$	depth averaged mass concentration (kg/m^3)
u,v	depth averaged flow velocities (m/s)
D_x, D_y	dispersion coefficients (m^2/s)
h	water depth (m)
S	accretion/erosion term ($kg/m^3/s$)
Q_L	source discharge per unit horizontal area ($m^3/s/m^2$)
C_L	concentration of source discharge (kg/m^3)

Erosion

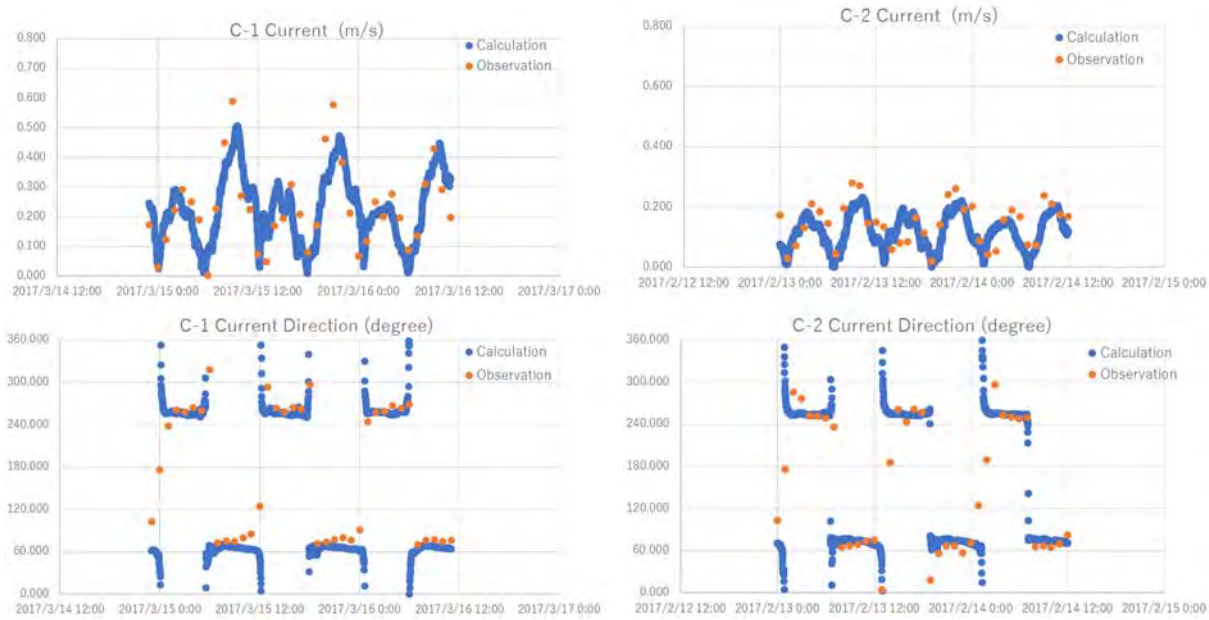
$$\begin{cases} E=P_wM\left(\frac{\tau_b}{\tau_{ec}}-1\right), \tau_b \geq \tau_{ec} \\ E=0, \tau_b < \tau_{ec} \end{cases}$$

Deposition

$$\begin{cases} D=W_s(1-\tau_b/\tau_{dc})C_{bd}, \tau_b \leq \tau_{dc} \\ D=0, \tau_b > \tau_{dc} \end{cases}$$

The current field was calculated using the time series of water elevation as input condition, and the computed result was compared with the actual observed results to clarify the validity of the model. Figure 5.4.1 shows the comparison between computed and observed current speed and direction at both points of C1 and C2. The solid blue line shows the computed result, and the yellow dot shows the observed results. Even though some differences are identified between the computed and observed values of the current speed, especially for their peak values, the results show good consistency. In this case, however, the

eastward wind with a constant speed of 5 m/s was used in the computation to reconcile the computed result with the observed one, even though it was not the actual phenomena on site. Further detailed study is required to enhance the accuracy between the computed and the observed results with a realistic condition.

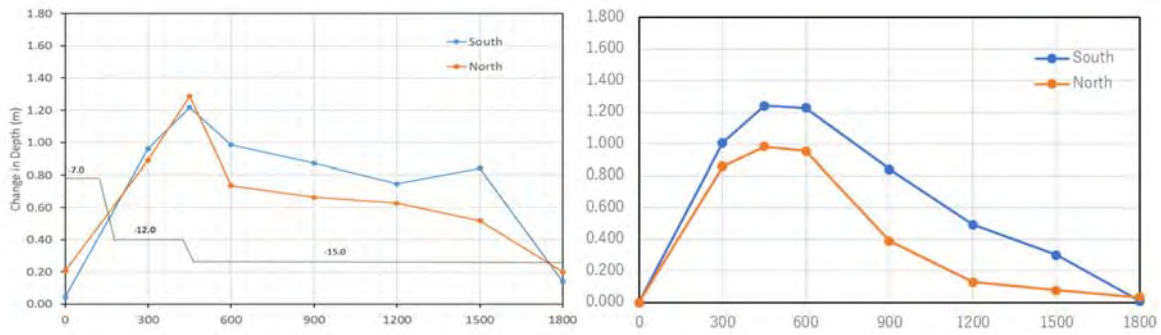


(1) Point C1 (-8.5m) (2) Point C2 (-16m)

Source: JICA Design Team

Figure 5.4.1 Comparison of Current Speed and Direction at Points C1 and C2

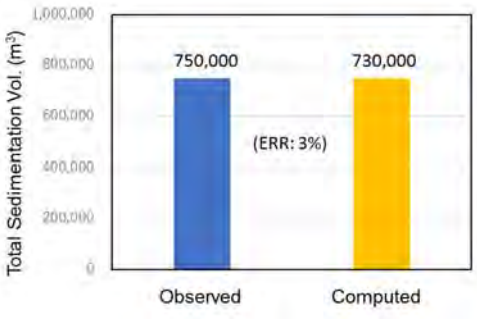
The sedimentation model was calibrated to compare results for five years of sedimentation. Several parameters, which are set in the computation, were adjusted to reconcile the computed total sedimentation volume at the existing dredged area with the observed value. Figure 5.4.2 shows the comparison between the computed and the observed sedimentation thickness for five years at the north and south line in the existing dredged area. Even though a certain degree of difference is identified in both cases, the same tendencies for sedimentation could be obtained. As a result of the adjustment of parameters, the computed total sedimentation volume for five years at the existing dredged area nearly coincided with the observed value as shown in Figure 5.4.3.



(1) Observed (2) Computed

Source: JICA Design Team

Figure 5.4.2 Comparison of Sedimentation Thickness for FiveYears at the Existing Dredged Area



Source: JICA Design Team

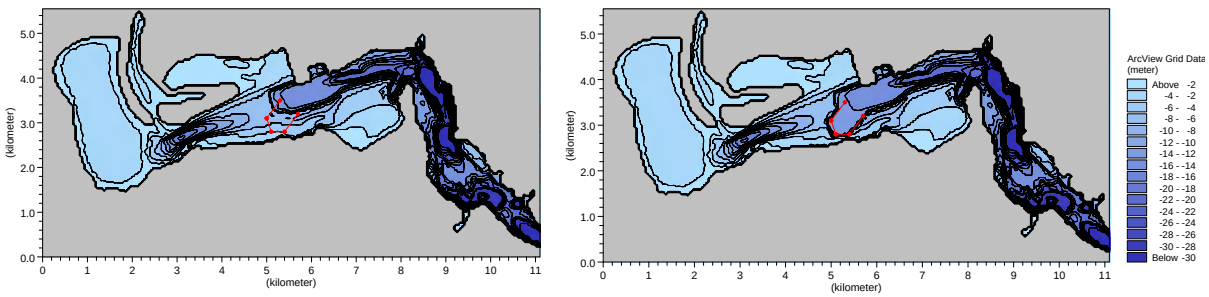
Figure 5.4.3 Total Sedimentation Volume for Five Years at the Existing Dredged Area

5.4.2 Computation for Future Plan

Using the calibrated model, sedimentation for the future plan was computed. The tendency of sedimentation was also analyzed with and without the new dredging at Dongo Kundu Port. The dredging depth is assumed at -13 m, and the dredging areas for the new navigation channel and the basin are shown in Figure 5.4.4.

Source: JICA Design Team

Figure 5.4.4 Dredging Area for New Navigation Channel and Basin (-13m)

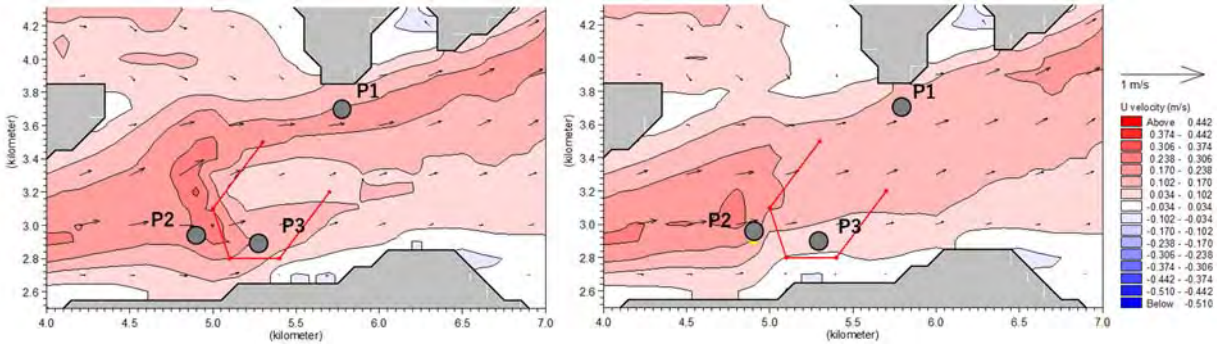


(1) Case-1 (without new dredging) (2) Case-2 (with new dredging)

Source: JICA Design Team

Figure 5.4.5 Contours of Bathymetry for Computation

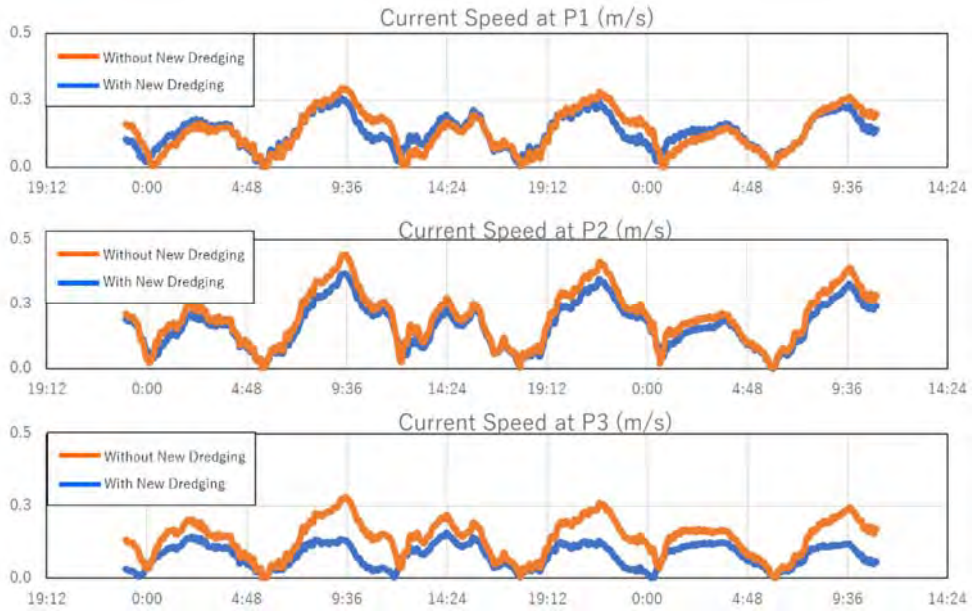
Figure 5.4.5 shows the contours of bathymetry which was employed in the computation for both cases of with (Case-2) and without (Case-1) the new dredging. Calculation of the current field for the future plan was done by considering the tidal current under the spring tide condition. However, the river flow was not considered in this computation. Figure 5.4.6 shows the computed spatial distribution of current for both cases, where the counter color indicated the strength of the current speed. Here, three representative points, which are the north side point from the center line of the existing dredged area (P1), the upstream side point from the new dredging area near C1 (P2), and the inner point of the new dredging area (P3), are selected to check the differences of currents with and without the new dredging area. The current speed at P1 for Case-2 was smaller than that of Case-1.



(1) Case-1 (without new dredging) (2) Case-2 (with new dredging)

Source: JICA Design Team

Figure 5.4.6 Spatial Current Distribution for Both Cases

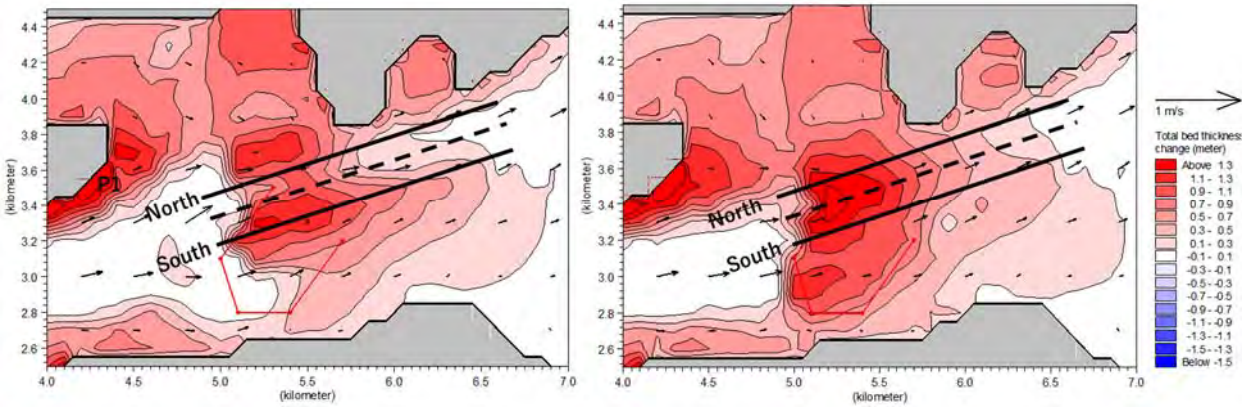


Source: JICA Design Team

Figure 5.4.7 Comparison of Current Speed at Representative 3 Points

The comparison for the computed current speed of the three representative points in both cases are clearly shown in Figure 5.4.7. The graphs clearly show a decrease in the current speed for P1. This might be caused by the change in pattern of the current distribution due to the existence of the new dredging area at the south zone. The current speeds at P2 and P3, which are positioned upstream and

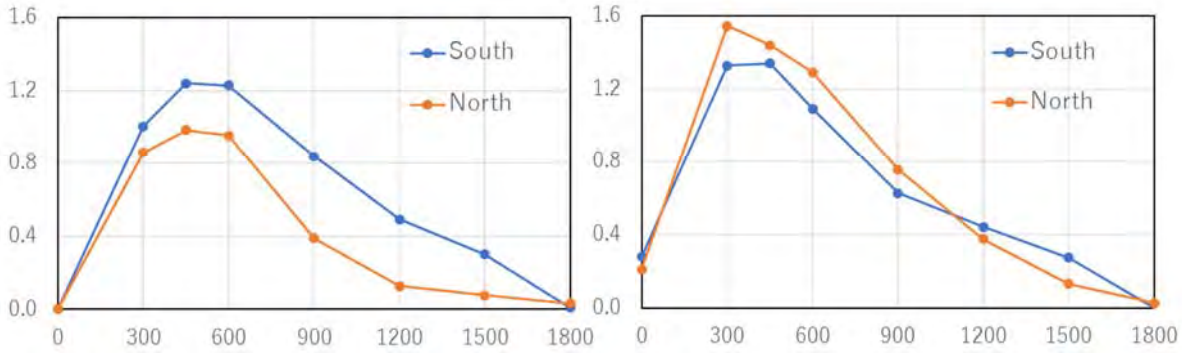
on the inner side of the new dredging area, are also decreased by the deepening of seabed due to new dredging. The current speed at P3 is greatly decreased to about half the value of the data without new dredging. Such change of current speed is almost similar to the observed result at C1 (d=-8.5 m) and C2 (d=-16 m) that is presented in Figure 5.3.1.



(1) Case-1 (without new dredging) (2) Case-2 (with new dredging)

Source: JICA Design Team

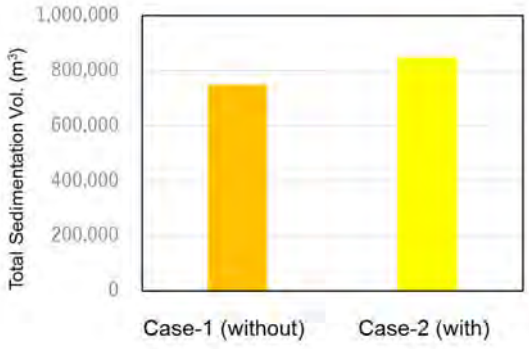
Figure 5.4.8 Spatial Distribution of Predicted Sedimentation Thickness for Five Years



(1) Case-1 (without new dredging) (2) Case-2 (with new dredging)

Source: JICA Design Team

Figure 5.4.9 Predicted Sedimentation Thickness for Five Years at the Existing Dredged Area



Source: JICA Design Team

Figure 5.4.10 Predicted Total Sedimentation Volume for Five Years at the Existing Dredged Area

Figure 5.4.8 shows the spatial distribution of the predicted sedimentation thickness for five years. Furthermore, Figures 5.49 and 5.4.10 show the comparison of sedimentation thickness at the representative north and south lines in the existing dredged area (shown in Figure 5.4.8) and the resulting total sedimentation volume in the existing dredged area are described in Figures 5.4.9 and 5.4.10, respectively. Due to the decrease of current speed at the existing dredged area, as shown in Figure 5.4.6, sedimentation thickness at the north line for Case-2 (with new dredging) is greater than that of Case-1 (without new dredging). As a result, the total sedimentation volume at the existing dredged area for Case-2 is increased by 13% (850,000 m^3) compared with that of Case-1 (750,000 m^3).

Finally, the predicted sedimentation thickness and the total volume of sedimentation at the new dredging area (red line in Figure 5.4.4) are shown in Table 5.4.1. Here, both cases of average and maximum value are presented. The observed data for the existing dredged area is also presented in the table for reference. From the calculations , the predicted sedimentation thickness at the new dredging area is 1.2 m on average with a maximum thickness of 1.7 m. The resulting total volume of sedimentation is 470,000 m^3 (94,000 m^3/year) on average with a maximum volume of 680,000 m^3 (170,000 m^3/year). It is a common understanding that there is an uncertainty in the prediction of sedimentation using a numerical model. Sometimes the predicted value was significantly far from the actual value (up to one order difference). From this point of view, the computed result using the limited information at this time is only the reference. However, it can be said that the sedimentation at the new dredging area of Dongo Kundu Port will be greater than that of the existing dredged area in Port Reitz.

Table 5.4.1 Predicted Sedimentation Thickness and Volume for Five Years at the New Dredging Area

Setimentation for 5 years		New Dredging Area (Predcition)	(Ref.) Existing Dredging Area (Ovservation)
Thickness (m)	Avarage	1.2	0.7
	Maximum	**1.7**	1.3
Total Volume (m^3)	Avarage	470,000	-
	Maximum	**680,000**	
	Actual	?	750,000

Source: JICA Design Team

5.5 Subject to Next Study

The numerical prediction in this study was carried out using limited information. In order to produce a more reliable outcome in future studies, the following information and methodology is required:

- The bathymetric data employed in this computation is shown in Figure 5.4.5. However, as there was no data at the upstream side, the depth used was assumed to be kept the constant slope from river

mouth at upstream point (depth is 0 m) to downstream point (depth was known). Specific bathymetric data covering the whole computation area is required in the next study.

- Information regarding the quantity of sediment inflow from the upstream side (from the Mwache River) was not clear. Even though it might be difficult to identify the quantity of sediment inflow, further study is required.
- The numerical model applied in this study is a 2-dimensional model. One of the possibilities that may cause differences between the observed and the computed currents might be this 2-dimentional model. The actual phenomenon of the current action on site has both horizontal and vertical distributions. It is recommended to apply a 3-dimensional or quasi 3-dimensional model for future studies.
- The relationship between current and turbidity was unfortunately not studied in this stage due to unforeseen reasons. To be able to have a clearer grasp on the process of sedimentation due to tidal currents, further observation for current and turbidity is recommended.
- Even if the abovementioned information and methodology was utilized, it will still be difficult to accurately predict sediment behavior without data on the actual sedimentation at the target area. Considering this weak point on the prediction of sedimentation for the port project, the construction of a test pit and its continuous monitoring was conducted before the start of the actual port construction. It is recommended to consider the addition of such trial into the implementation schedule and plan.

Chapter 6 Demand Forecast of the Mombasa SEZ

6.1 Overview of Investment Demand Forecast for the Mombasa SEZ

The investment demand for the Mombasa SEZ was reviewed in order to identify potential demand for the SEZ in Mombasa's Dongo Kundu (DK) area and to provide a frame of reference for further technical and financial analysis for the planning of the Mombasa SEZ Development. The investment demand was analysed from the following angles, namely: which sectors and companies are potentially interested in operating in the new SEZ and whether development companies would be interested in the construction of the SEZ.

In order to ascertain the potential demand for the SEZ a survey was conducted among firms operating in key economic sectors identified by the Kenyan government in the country's Vision 2030. A similar survey was conducted in 2014; however, due to the lapsed time since that survey, new data was required. In addition, the 2014 survey did not fully capture the investment demand of Kenyan firms and the foreign investment already in the country.

6.1.1 Methodology

The research required both quantitative and qualitative research methods, including open source and field research, in both the collection of the data and the analysis of the findings using the following work flow:

Table 6.1.1 Summary of Methodology and Work Flow

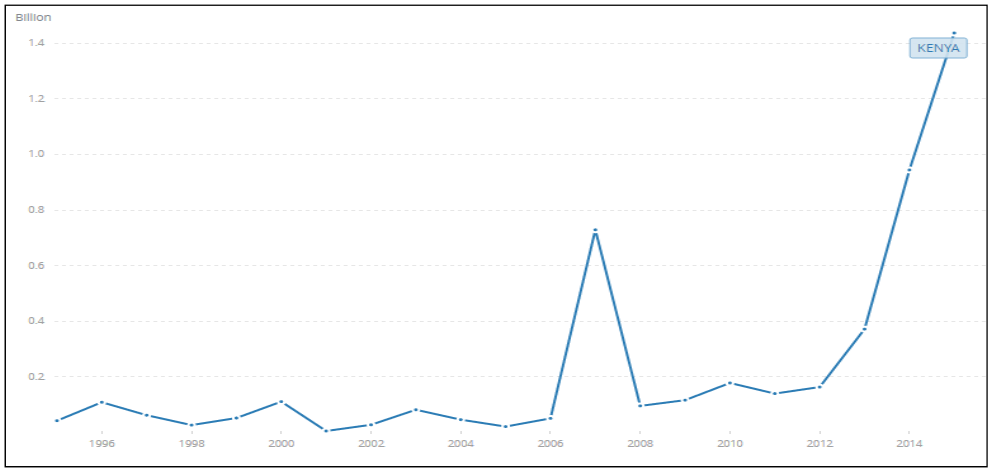
	Objectives and Tasks	Methods	Output
SEZ Enterprise Demand Survey	1) Identify potential sectors which have demand for investing in locating facilities in SEZ.	Literature review (policies and the Mombasa SEZ M/P).	The list of industrial sectors to be surveyed.
	2) Identify the status of the industries and their demand for investment. 3) Required conditions to locate in Mombasa SEZ.	Structured interview survey.	Industrial sectors which may be interested in new investment possibly locating in Mombasa.
SEZ Developer and Land Demand Survey	1) Identify the demand of real estate sectors for development of multi-purpose industrial sites. 2) Identify the real estate demand for industrial site in Kenya.	Structured interview survey to developers.	Analysis on the situation of investment demand

Source: JICA Design Team

6.2 Current Situation of Investment Demand and the Related Issues

6.2.1 Current Situation of Foreign and Domestic Investment

Kenya is currently experiencing a robust influx of Foreign Direct Investment (FDI). According to the World Bank and the United Nations Conference on Trade and Development (UNCTAD), net inflows of FDI into the Kenyan economy reached a record US$1.435 billion in 2014. This is an increase of over US$1 billion in annual FDI flows to Kenya in three years. In 2014, Kenya surpassed the previous record for FDI flows, which was just under US$730 million in 2007. This is clearly illustrated in Figure 6.2.1.



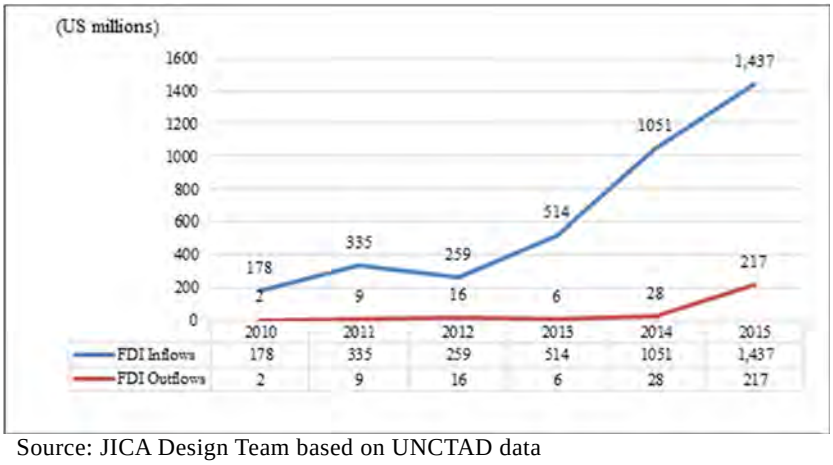
Source: World Bank

Figure 6.2.1 Kenya's FDI Net Inflows (BoP, current US$) 1995-2015

According to the Foreign Investment Survey 2015, which was compiled by the Kenya National Bureau of Statistics (KNBS), the Central Bank of Kenya, and KenInvest, the major beneficiaries of FDI in recent years were the following sectors:

- Wholesale and retail trade;
- Automobile industry (particularly in parts and repairs)
- Finance and insurance
- Manufacturing

These four industries accounted for over 50% of FDI inflows in 2013. Notably Kenya's FDI outflows have also increased in recent years, indicating that local businesses are performing well enough domestically to begin expanding regionally and internationally. However, importantly FDI inflows far exceed outflow ensuring that Kenya is a net investment beneficiary. This is illustrated in Figure 6.2.2.

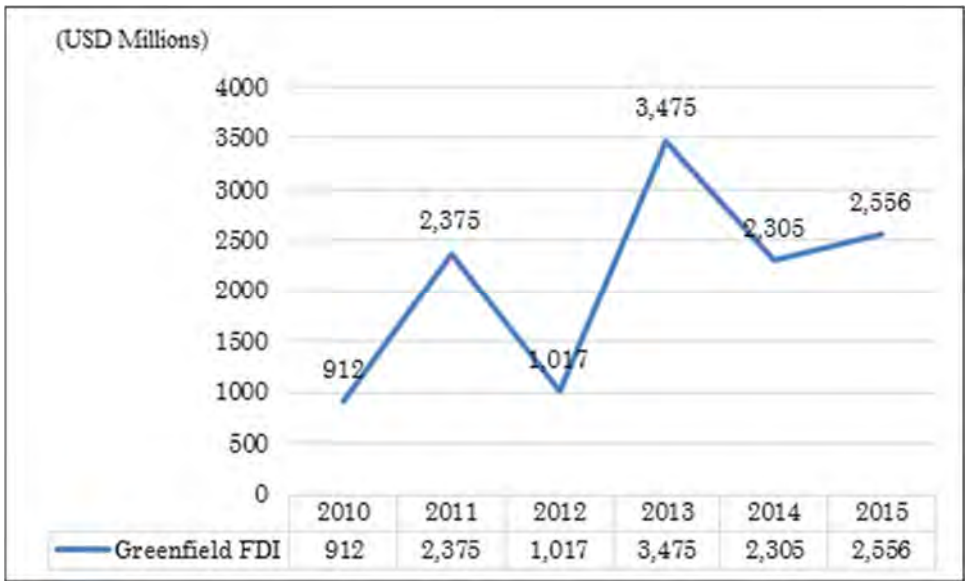


Source: JICA Design Team based on UNCTAD data

Figure 6.2.2 FDI Inflows in Kenya

Another import observation made by UNCTAD in its World Investment Report 2016 is the continued growth in announced greenfield investments (when an investor develops operations entirely as opposed to purchasing a local business) in recent years. As can be seen in Figure 6.2.3 there has been an aggregate

increase in greenfield FDI since 2010, with a notable spike in 2013. It should be noted that this represents announced greenfield investment and not necessarily actual investment, which can take longer to implement. However, it indicate the international community's growing positivity about the potential of the Kenyan economy to grow and develop businesses and industries. It can be also assumed that the increased greenfield investment in 2013 should currently be beginning to realise in operations starting and showing dividends.



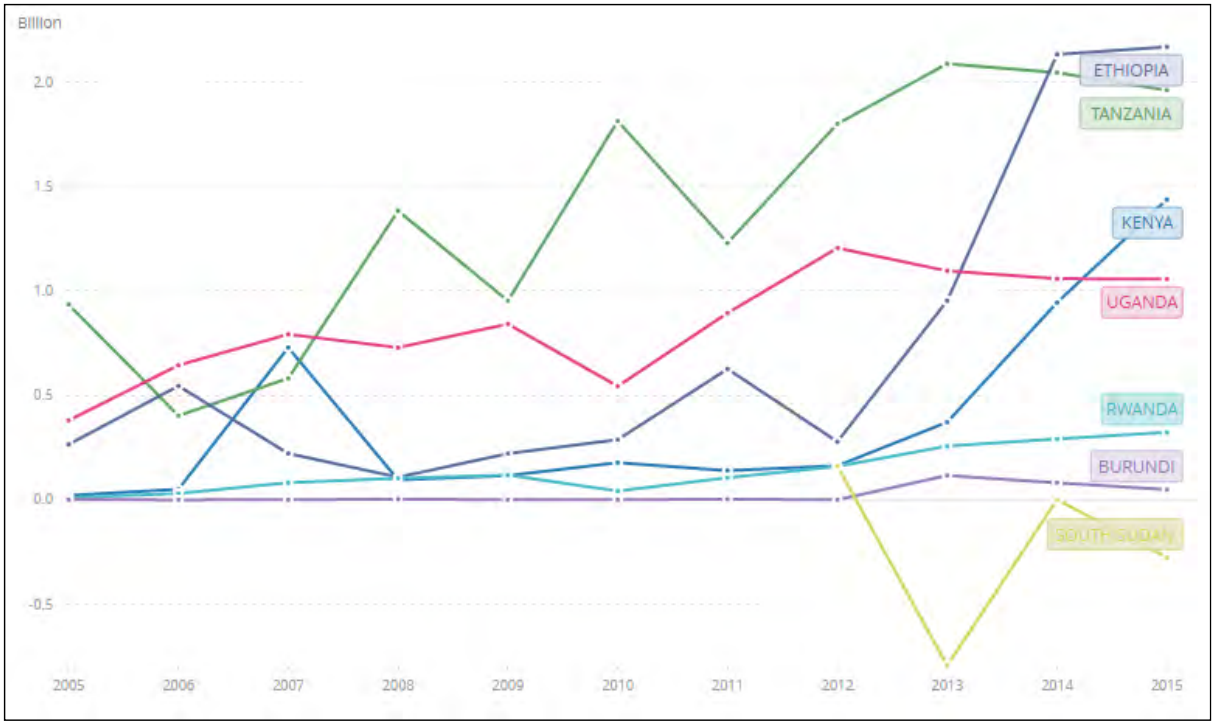
Source: JICA Design Team based on UNCTAD data

Figure 6.2.3 Value of Announced Greenfield FDI

The recent improvements in FDI and greenfield inflows are partly due to Kenya's continued efforts to improve the business and investment climate. Due to efforts by the national government, Kenya has managed to achieve significant improvements in its World Bank's Doing Business ranking in the past few years, rising from 136 in 2015 to 80 in 2018. This has been driven by a variety of reforms, notably improving the ease of starting a business, which has also made greenfield investment easier.

In addition, Kenya now allows 100% foreign-owned companies to list on the country's stock exchange to encourage further capital inflows into the country and improve its attractiveness as a business hub. UNCTAD has highlighted Kenya's SEZ Act which encourages investment by offering tax incentives and additional work permits for foreign employees.

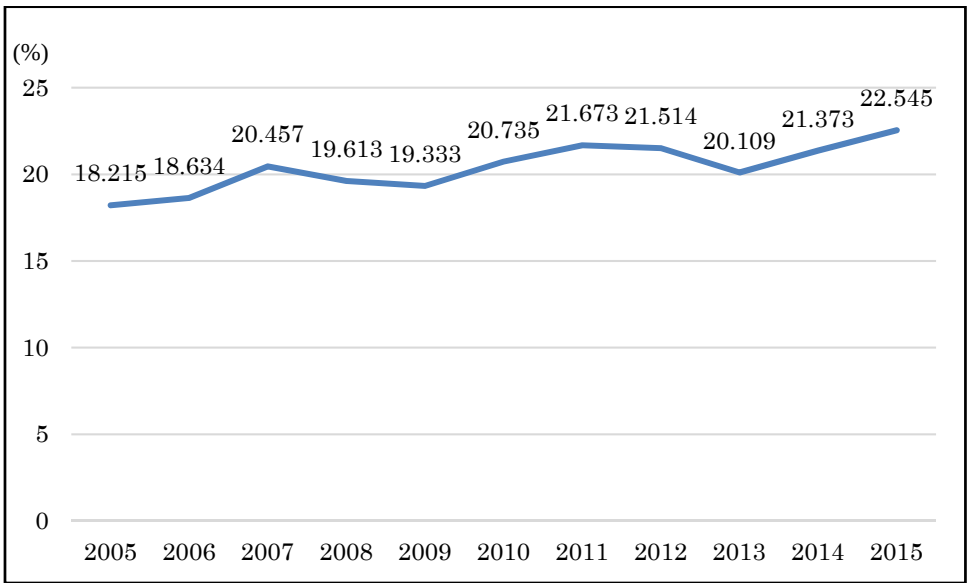
Regionally, East Africa has witnessed a marked increase in FDI inflows in the past ten years. This growth has been led by Ethiopia, Tanzania, and Kenya. The only negative performers in the East African Community (EAC) have been Burundi and South Sudan which have been affected by poor governance and civil conflict. It should also be noted that in the context of its small population, Rwanda has also experienced a notable increase in FDI. The below Figure 6.2.4 illustrates the FDI inflows of the EAC.



Source: World Bank

Figure 6.2.4 EAC Foreign Direct Investment Net Inflows (BoP)

Kenya's domestic investment environment is less robust than the incoming FDI. However, it has witnessed a gradual improvement in the last ten years improving. According to the financial and economic reporting organisation, Economy Watch, domestic investment as a percentage of GDP has grown from just over 18% of GDP to 22.5% of GDP (see Figure 6.2.5) in this period. Furthermore, it should be noted that as Kenya's economy has been growing at over 5% annually in recent years, the quantitative amount of domestic investment in Kenya has been growing.



Source: Economy Watch

Figure 6.2.5 Domestic Investment as % of GDP

In general the investment climate in Kenya is currently in a healthy state with the country enjoying positive investment trends in terms of both domestic investment and FDI. These positive trends are expected to continue in the near term at least.

6.2.2 Import and Export Trends via the Port of Mombasa

According to figures released by KPA, Kilindini Harbour has recorded a steady increase in both imports and exports in the six-year period from 2011 to 2016 (see Table 6.2.1). The port, however, has been primarily used for imports recording 23.116 million of deadweight tonnes (DWT) of imports in 2016 compared to 3.659 DWT of exports. The cause of this imbalance is quite simple; firstly, due to the Kenyan economy's emphasis on primary resource production and agriculture, there is a need to import developed value-added goods. In addition, Kenya needs to import expensive capital goods for its economic and infrastructure development.

This widening balance of trade deficit is listed by the Kenyan government as one of the four key reasons for the introduction of the National Export Development Strategy. The other three are the oscillating export performance - which can be seen in the fluctuations in table 6.2.1; the need for market diversification due to Kenya's export markets relative concentration; and product diversification due to the fact that Kenya's export product base remains narrow with the top five exports accounting for 52.17% of total exports in 2016.[1]

Table 6.2.1 Mombasa Port Performance

('000' DWT)

	2011	2012	2013	2014	2015	2016
Imports						
Containerised Cargo	5,226	5,954	5,974	6,524	6,955	7,146
Conventional Cargo	1,298	1,302	1,726	1,830	2,143	1,846
Dry,Bulk	3,807	4,811	4,913	5,231	6,350	6,447
Liquid,Bulk	6,607	6,665	6,537	7,192	7,232	7,677
Total	16,938	18,732	19,150	20,777	22,680	23,116
Of which are transit goods	5,166	6,201	6,196	6,691	7,167	7,217
Exports						
Containerised Cargo	2,337	2,626	2,690	2,791	2,803	2,880
Conventional Cargo	171	153	128	108	113	122
Dry Bulk	122	106	65	422	578	606
Liquid Bulk	158	160	100	45	40	51
Total	2,788	3,045	2,983	3,366	3,534	3,659
Of which are transit goods	430	425	513	508	500	531
Total Imports & Exports	19,726	21,777	22,133	24,143	26,214	26,775
Transshipment	227	143	174	732	518	589
Total Throughput	19,953	21,920	22,307	24,875	26,732	27,364
Container Traffic (in TEU)	770,804	903,463	894,000	1,012,002	1,076,118	1,091,371
Total Vessel Calls (No.)	1,684	1,763	1,768	1,832	1,694	1,607

Source: KPA Annual Report 2015 & 2016

[1] National Export Development and Promotion Strategy for Kenya 2017 -2022

A large amount of Kenya's exports goes to other countries in the region, which uses land transportation. Some major exported commodities such as cut flowers are exported by air.

(1) Export Trends

According to the Kenya National Bureau of Statistics (KNBS) in its Economic Survey 2017, Kenya exported Ksh 581 billion (USD5.62 billion) worth of goods and services in 2015 and Ksh 578 billion (USD5.59 billion) in 2016. The country's leading exports in terms of US dollar value were tea, horticulture, apparel and clothing, and coffee accounting for over 56% of exports earnings. Kenya's largest export destinations were in the rest of Africa with 40.6% of total exports in 2016; over half of which went to members of the East African Community (EAC). The next biggest export destination was Europe, which accounted for 24.5% of total exports.

As the largest port in the country, Mombasa Port is the country's largest export portal, particularly for agricultural and bulk mineral exports. Table 6.2.2, below derived from the KPA's Annual Reports for 2015 and 2016, displays the major commodities exported from Kenya through Kilindini Harbour. The majority of exports in quantity are from the agricultural and agro-processing sector, with tea and coffee being the two largest agricultural exports with a combined total of over 790,000 DWT. However, both have recorded a decline in output over the past three years, likely due to the drought caused by the El Niño weather phenomenon which has effected much of sub-Saharan Africa over the past few years.

In the mineral resources and energy sector, titanium is the largest export which also dominates the country's dry bulk cargo exports with 589,000 DWT in 2016. Titanium was also the single largest export from Kilindini Harbour in 2016, having increased exports by 22,000 DWT since 2014.

i) Anticipated Trends

Short Term

In the short term, despite a potential increase in demand for agriculture exports from Kenya for the European market, such exports through Mombasa port are expected to be stagnant, or possibly even decrease. This is due to the ongoing drought affecting much of the sub-Saharan African region. Exports which are likely to continue to be affected by the drought include: tea, coffee, cashew nuts, maize, beans, tobacco, cotton, hides and skins, and fruit.

Long Term

In the long term, Kenyan agriculture and horticulture exports are expected to improve given that the drought will eventually break and that economic recovery in Europe and Asia is expected to lead to increased demand for these exports. Extrapolating from the steady growth in cloths exports as illustrated in Table 6.2.2, based on data from the KPA, this is expected to continue leading to a likely increase in the export of manufactured goods, notably apparel, in the coming years; however, this is dependent on the United States continuing the Africa Growth and Opportunity Act (AGOA) upon which much of Kenya's garment industry is dependent to export to the US and with which the current US administration has indicated dissatisfaction.

Table 6.2.2 Mombasa Principle Exports

('000' DWT)

Commodities	2011	2012	2013	2014	2015	2016
Tea	433	450	541	554	528	548
Soda Ash	444	372	423	336	223	269
Coffee	230	210	264	256	262	271
Maize	4			2		
Fish & Crustacean	17	23	16	20	18	15
Tobacco & Cigarettes	37	33	28	27	24	24
Beans, Peas, Pulses	13	27	34	19	25	39
Iron & Steel	9	5	6	12	4	5
Cloths	19	21	23	30	29	30
Oil Seed	16	15	28	39	39	26
Cotton	7	4	4	2	3	5
Hides & Skins	20	26	22	28	24	31
Sisal				2	1	3
Cement (in bags)				1		
Cashew Nuts	1	1	1			
Rice	11	10	7	20	25	17
Tinned Fruits, Vegetables & Juices	90	71	93	99	109	116
Titanium (in bags)				7	15	14
Others	624	604	578	543	504	638
Total General Cargo	1,975	1,872	2,068	1,998	1,833	2,051
Titanium (in bulk)				363	544	589
Soda Ash (in bulk)	15					
Cement (in bulk)						
Flour spar	107	106	65	59	34	17
Other Dry Bulk						
Total Dry Bulk	122	106	65	422	578	606
Bunk Oils	95	98	62	19	23	36
Bunkers	63	62	38	26	17	15
Total Liquid Bulk	158	160	100	45	40	51
Grand Total	2,55	2,138	2,233	2,465	2,451	2,708

Source: KPA Annual Report 2015 & 2016

(2) Import Trends

According to the KNBS's Economic Survey 2017, Kenya imported Ksh 1,431.7 billion (USD13.85 billion) worth of goods and services in 2016 through all of the country's entrance points. This marked a 9.2% decrease from 2015's imports which were worth Ksh 1,577.6 billion (US$15.26 billion).

In the latest figures released by the KPA, 23,736,000 DWT of imports were brought into Kenya through Mombasa Port in 2016.

Kenya's largest imports were clinker, iron and steel, foodstuffs and value added goods, particularly vehicles and machinery. Clinker is a major input in the production of cement, one of Kenya's major products, which is why it is the largest single principle import commodity recorded by the KPA at 2.92 million DWT. Iron and steel naturally reflect larger DWT figures when compared with the volume imported in than other products. Therefore, it is important to highlight the large number of basic foodstuffs imported into Kenya. In particular, wheat (1.896 million DWT), rice (572,000DWT) and sugar (356,000 DWT). This is necessary for three reasons, firstly, Kenya currently cannot produce enough food to supply its market; secondly, the same issue is faced by Kenya's landlocked neighbours who need to import food through Mombasa Port;

and lastly, due to the recent drought the region as a whole has seen food production fall leading to a general increase in food imports.

The need to import machinery and capital goods is fueled by the combination of Kenya's lack of capacity to develop and build machinery locally and the country's need for these goods brought about by the country's economic growth.

i) Anticipated Trends

Short Term

No major changes are expected in the short term. Kenya is expected to continue to need to import food to address the regional food shortage relating from the ongoing drought. Kenya is also expected to continue to import necessary production inputs such as iron and clinker as, in the short term, there are unlikely to be major changes. Furthermore, capital goods and machinery will continue to be needed to be imported as Kenya is unlikely to have the capacity to produce these goods itself.

Long Term

In the long term Kenya is expected to increase local clinker production. This will notably decrease the amount of imported clinker into the country. Given the massive amount of clinker Kenya imports this could potentially greatly change the demands on Mombasa Port and the harbour's dry bulk handling capacity. In addition, the current drought is expected to eventually end and the region to recover – this should lead to a decrease in the amount of agricultural products which need to be imported into the country.

Table 6.2.3 Mombasa Principle Imports

('000' DWT)

Commodities	2011	2012	2013	2014	2015	2016
Iron & Steel	833	854	1,192	1,367	1,773	1,594
Rice	298	340	465	651	610	572
Sugar	140	102	207	231	316	356
Chemicals and Insecticides	213	200	254	390	429	366
Plastic	265	218	398	662	798	683
M/Vehicles & Lorries	293	332	366	463	465	313
Paper & Paper Products	265	196	300	503	509	451
Cereal Flour	91	41	41	49	66	48
Fertilizer	110	52	80	102	99	120
Clothing	71	40	132	253	264	216
Ceramic	246	125	260	415	481	454
Edible Vegetables	26	30	29	57	65	31
Vehicle Tyres & Spares	30	11	52	103	112	84
Tallow & Oil (in cases & drums)	16	15	33	84	89	88
Malt	9	1	9	2	4	1
Maize (in bags)	50	32	16	37	31	27
Wheat (in bags)	13	7	8	9	2	2
Machinery	8	6	10	12	14	6
Other Cereals (in bag)	8	22	2	19	7	11
Others	4,337	5,433	4,792	3,704	4,141	4,189
Total General Cargo	7,322	8,057	8,646	9,113	10,275	9,612
Wheat (in bulk)	1,443	1,559	1,401	1,908	1,838	1,896
Clinker	1,368	2,268	2,228	2,065	2,920	3,084
Fertiliser (in bulk)	380	336	603	360	529	560
Coal	346	291	296	436	509	455

Commodities	2011	2012	2013	2014	2015	2016
Other Cereals (in bulk)	58	104	156	184	162	104
Maize (in bulk)	107	33				
Others	105	220	229	278	392	348
Total Dry Bulk	3,807	4,811	4,913	5,231	6,350	6,447
P.O.L	5,783	5,898	5,637	6,286	6,473	7,636
Other Liquid Bulk	824	767	900	906	759	41
Total Liquid Bulk	6,607	6,665	6,537	7,192	7,232	7,636
Grand Total	17,736	19,533	20,096	21,536	23,857	23,736

Source: KPA Annual Report 2015 & 2016

(3) Trends by Sector

i) Agriculture and Horticulture

As outlined above, the agricultural and horticultural industries are expected to continue to import significant amounts of basic food stuffs in response to the region's lack of production capacity which has been exacerbated by the ongoing drought. Even when the drought eases, the region's growing population and the effects of climate change on East Africa will likely lead to a continued need for food imports through Kilindini Harbour, this trend is expected despite the expected possible increase in local production following the end of the current drought.

However, when the anticipated drought relief does occur Kenya's exports of tea, flowers, and other horticultural products are expected to recover and potentially even increase. In addition, there are plans to redevelop the country's cotton sector which could potentially lead to increased exports of bulk cotton as well as processed cloth, linen and garments.

ii) Manufacturing and Manufactured Good

Due to Kenya's still relatively underdeveloped manufacturing sector, the country will still need to import the majority of its manufactured goods. In addition, as the country develops its manufacturing sector it will need to import capital goods and automotive equipment.

Kenya will also continue to import the majority of the vehicles bought in the country, thus requiring the port to maintain roll-on roll-off (ro-ro) facilities. However, some companies such as Volks Wagen are considering developing an assembly plant in Kenya which will lead to an increase in the import of vehicle parts into the country and the potential export of completed vehicles and engines through Mombasa Port.

Although AGOA has been renewed until 2025, the current US administration has indicated a desire to review the US's various multilateral trade agreements, which could result in AGOA being threatened in the medium-term. If the agreement is scrapped, this could devastate certain sectors of Kenya's manufacturing sector, in particular the garment industry.

iii) Chemicals and Fertiliser

Kenya has imported increasing amounts of chemicals and insecticides in recent years, more than doubling imports of chemicals and insecticides in five years. The KPA recorded 213,000 DWT of imports in 2011 and 429,000 DWT in 2015. Mombasa also recorded an annual increase of 149,000 DWT of fertiliser during the same period. These trends are expected to continue as the Kenyan economy grows and requires more chemicals, insecticides and fertiliser in the coming years. Accordingly, the port will need to maintain bulk-handling and chemical facilities.

iv) Minerals and Energy

The largest expected impact on the trade trends of minerals in Kenya lies in plans to increase local production of clinker which could dramatically reduce the amount of clinker needed to be imported through Mombasa Port, which could reduce pressure on the port's bulk-handling capacity.

Kenya is expected to continue to need to import the majority of its energy supplies, particularly oil. These needs are also expected to increase as the economy grows. The harbour will need to maintain oil and petroleum storage and processing facilities to cope with these needs. It is also possible that, if the price of natural gas increases, Kenya's natural gas industry could increase production and would require improved facilities in the harbour.

In addition, current local titanium production is only expected to have a medium-term life span left in the operations. When viewing Mombasa Port's long-term trends, it should be deemed possible that the amount of titanium exported through the harbour will gradually decrease and dwindle resulting in a potential decrease of 500,000 DWT of trade volume.

6.2.3 Priority Sectors in Economic Development Policy

(1) Kenya Industrial Transformation Programme

In pursuit of improved economic growth and development Kenya launched the Kenya Industrial Transformation Programme (KITP) in 2015. This is intended to provide a blueprint for the country's ambition to transition to a middle-income nation and to become an industrial and economic powerhouse in sub-Saharan Africa. To achieve this the programme identified a 'five-point strategy', which entails the following:

- Launch sector-specific flagship projects in agro-processing, textiles, leather, construction services and materials, oil and gas, mining and ICT sectors that build on Kenya's comparative advantages.
- Develop Kenyan Small and Medium Enterprises (SMEs).
- Create an enabling environment to accelerate industrial development through industrial parks/zones along infrastructure corridors, technical skills, supporting infrastructure and ease of doing business.
- Create an Industrial Development Fund.
- Drive results through a newly formed Ministerial Delivery Unit.

The most relevant of these five points to the SEZ (which itself falls under point 3) is the sector specific flagship projects which the KITP divides into four pillars, as seen in Table 6.2.4.

Table 6.2.4 KITP Pillars and Sectors of Focus

Pillar	Pillar 1	Pillar 2	Pillar 3	Pillar 4
	Grow major exports,	**Improve Food Processing forming food hub**	**Build local content for resource and infrastructure investments.**	**Enhance non-industrial job-creating sectors.**
Sectors of Focus	Tea Coffee Horticulture Agro-processing Textile and apparel Leather	Agro-processing Fish processing	Construction services and materials (cement, steel, oil and gas)	ICT Tourism and hospitality Wholesale and retail

Source: Kenya Industrial Transformation Programme

The KITP industries closely link with those identified by the Vision 2030 and this survey for potential target sectors for the SEZ. At the same time, it should be noted that the KITP envisaged a food-processing hub in Mombasa utilising agro-imports.

(2) National Export and Promotion Strategy

In the National Export and Promotion Strategy for Kenya 2017–2022 the Kenyan government proposed the following priority sectors and sub sectors for improved development.

Table 6.2.5 Priority Sectors of the National Export Promotion Strategy 2017-2022

Priority Sector	Sub-sectors
Livestock and Livestock Products	Beef, Mutton, Goat Poultry meat Dairy Products Hides and Skins
Agriculture	Tea Coffee Sugar Pyrethrum Horticulture Pulses
Fisheries	Marine Aquatic fish Inland Fish
Manufacturing	Textile and Apparels Leather and leather products General Manufactured Goods Handicrafts
Handicrafts	Decor, gift items Lifestyle accessories
Service Sectors	Tourism Transport, Communication, Logistics and Maritime Services Professional Services Banking and Financial Services Information Technology Sports and Performing Arts
Emerging Sectors	Mining and Minerals Oil and Gas Power
Cross Cutting Issues	Export Financing Export Guarantee Schemes
Source: The National Export Development and Promotion Strategy for Kenya 2017-2022	

MoI identified these priority sectors using the following criteria that the sectors needed to meet.

- Labour intensiveness
- Growing international demand and markets
- Kenya's policy positions outlined in Kenya 2030 and the Medium-Term Plans (MTPs)
- Factor abundances, particularly in raw material and human resource skill availability
- Kenya's comparative and competitive advantages in the sector

(3) FY2017/2018 Budget Statement

Budget Statement for 2017/18 fiscal year (FY) highlighted the importance of the leather, textile, and agro-processing sectors to the country's industrialisation. However, it also raised the importance of the motor vehicle and pharmaceutical industries. It paid special attention to the role of the manufacturing sector, highlighting its importance to the country's development ambitions. It also explained the government was working towards improving the business environment for manufacturers, particularly regarding challenges faced at customs when importing inputs, in order to make local manufacturers more competitive.

6.3 The Results of Investment Demand Survey

6.3.1 Overview

(1) Sector Identification for Survey

Using the sectors identified by relevant policies such as the Kenya Vision 2030 and its medium term plan, Kenya's Industrial Transformation Programme (KITP) and the National Export Development and Promotion Strategy for Kenya 2017-2022, along with the trend of trade summarised in the KPA's Annual Reports, as a guide, JDT identified industry sectors to survey for the study. In section 6.2.3 of this chapter the MoI's priority export sectors and sub-sectors are outlined in Table 6.2.4.

However, although the majority of sectors surveyed during the study are identified in the government policy, the results of the survey as tabulated in Section 6.3 of this chapter are organised slightly differently. This is due to the fact that this study is focused on the potential demand for the Mombasa SEZ and not the overall export potential of the Kenyan economy. The two are naturally related, but the specific focus on the SEZ gave different weighting to certain sectors and sub-sectors. A good illustrative example of this is in the broad sector of agriculture – naturally the SEZ will not host actual farms or plantations, and as such the focus will be in the related sectors of agro-processing, exporting, storage and packaging. Furthermore, the importance of the tea industry in Kenya and its potential key value to the SEZ meant that it was identified by the research team as a sector by itself with the primary focus here on tea warehousing and packaging.

Further, the nature of the study was to ascertain demand, hence, while the initial sectors and companies were identified based on the government's policy direction shown in the documents such as Kenya Vision2030, KITP and the Export Development and Promotion Strategy, as the study progressed additional sectors were identified by the respondents themselves. This is due to the interconnected nature of business and industry – major sectors rely on suppliers and producers, and are in turn relied upon by their clients. Thus ancillary sectors and companies were also identified and included in the study. A key example of this would be how the agro-processing and tea sectors identified the packaging industry as a key industry to which they need access and, accordingly, the study evolved to include packaging as a key sector to be surveyed.

Once the relevant industry sectors were identified, companies operating in these relevant sectors were identified in order to be interviewed. These companies operate in Mombasa and Nairobi and are predominantly Kenyan businesses. The market for these companies include a mix of those domestically focused, notably those which import goods and inputs, and those which are export orientated companies, many of the export focused firms were identified through their operations in Export Promotion Zones (EPZ)'s.

In total 159 companies were identified. Of these 159 companies, 123 agreed to interviews and 36 declined. These were broken down by the following sectors:

Table 6.3.1 Interviewee Per Sector

Sector	Approached	Interviewed	Declined
Agro-processing	21	16	5
Manufacturing	26	17	9
Cotton	1	1	0
Tea	4	4	0
Property Development/Construction	17	14	3
Maritime Service	1	1	0
Apparel	11	7	4
Logistics	15	13	2
Realtors	6	5	1
Packaging	10	5	5
Cereal Storage	1	1	
Automobiles	11	10	1
Tourism	8	8	
Oil & Gas Storage	2	1	1
Chemicals	6	5	1
ICT	9	6	3
Pharmaceuticals	10	9	1
Total	**159**	**123**	**36**

Source: JICA Design Team

(2) Contents of Questionnaire Survey for SEZ Enterprise Demand Survey

After identifying potential industrial sectors, potential respondents were identified. They include those firms operating in Export Promotion Zones (EPZs) as the EPZ arrangement is similar to the SEZ in nature in terms of the customs management. The questionnaire survey was designed to collect information as per the table below.

Table 6.3.2 Contents of Interview Questionnaire Aims

Interview Questionnaire	
Section	Aim
Part1	Measuring the respondents' optimism in their economic sector and establishing the current demand for their products/services as well as establishing the sector's perceived strengths and weaknesses.
Part 2	Establishing the respondents' knowledge of the Mombasa SEZ and demand for the SEZ's proposed incentives.
Part 3	Gaining a detailed understanding of the respondent and their potential interest in the SEZ. Including, but not limited to: • Infrastructure and facility demands • Role as a developer or tenant • Desired SEZ neighbours • Spatial demands

Source: JICA Design Team

6.3.2 Result of the Interview Survey

(1) Interview with Trade associations

Prior to interviewing the companies in the relevant sectors, business associations operating in some sectors were also interviewed. In the course of this research several trade associations were contacted, operating in the tea, shipping, agro-industry and transport sectors. The tea and shipping associations had largely the same views as the firms surveyed in those sectors.

The transport association represents freight truck operators in Kenya, ranging from large fleet operators to small single truck operators. The association was attracted by the idea of the SEZ, and felt its members would benefit from the development of the SEZ. It is a client driven industry, but some operators may be interested in relocating to the SEZ. It should also be noted that due to the lack of space elsewhere in Mombasa, several transport operators have already relocated to areas near Dongo Kundu. The transport association also suggested that it could be beneficial to have an automated weigh-bridge system allowing weighing to happen some distance from the port and to have more than one weigh-bridge to reduce traffic.

The Kenya Agribusiness and Agro-industry Alliance (KAAA) was positive about the SEZ, and in particular identified the tea, coffee, beef, and fisheries sectors as potential investors in the SEZ.

Lastly, the Kenya Association of Hotelkeepers and Caterers expressed optimism about the future of the sector but raised concerns about poor infrastructure and the difficulty for their clients in terms of easy airport access.

Several shipping companies were interviewed in a meeting organised and attended by the Kenya Ships Agents Association. This sector was not positive about the SEZ and the Freeport. This is due to concerns these companies have over the need to “double call” offloading cargo at both the Freeport and Mombasa port. This would lead to increased pilot and tugging fees which the companies would then pass onto the SEZ-based clients. They suggested there should be a system to allow the offloading of all cargo at the SEZ’s berths and then transporting the cargo not intended for the SEZ by road and rail. However, these companies did say that they are a client driven industry and they will ship wherever the client requests, as long as the client is willing to accept the costs involved.

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(2) Overall Outcome

A concerning trend which emerged in the course of this research was the lack of awareness of the planned SEZ in Dongo Kundu. Respondents in both Mombasa and Nairobi who were identified as potential investor or tenants for the SEZ were unaware of the planned development. This is particularly noteworthy because as illustrated in table below only 53 respondents were aware of the proposed development but 90 respondents were interested in the opportunities it offers once they were informed of the project’s existence.

Table 6.3.3 Awareness and interest in the SEZ

Awareness and Interest in SEZ	No. Of Affirmative Respondents (out of 123)
Aware of what an SEZ is	86
Aware of planned Dongo Kundu SEZ	53
Planning on relocating or expanding	99
Interested in Mombasa SEZ	90

Source: JICA Design Team

As can be seen in the table below many of those surveyed were interested in pursuing a developer role in the SEZ. In other words, outside of the surveyed property developers, they preferred to develop their own facilities rather than buy pre-built facilities. The highest number of respondents preferred to be a regular tenant.

Table 6.3.4 Preferred Role in SEZ

Role	No. Respondents (out of 123)
Developer	34
Operator	13
Regular Tenant	52
None	25

Source: JICA Design Team

The majority of respondents do not object to sharing geographical space with other role players in their sector, illustrating a potential demand for sector based Industrial Parks within the SEZ.

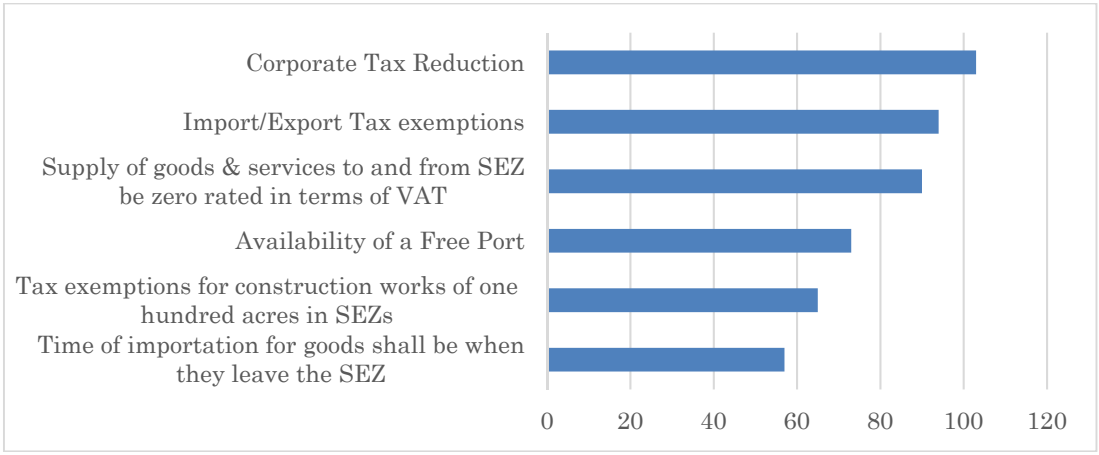
Table 6.3.5 Interest in Sharing SEZ Park with Sector

Interest in Sharing Park with Same Sector (out of 123)	
Yes	51
No	20
Do Not Care - N/A	51

Source: JICA Design Team

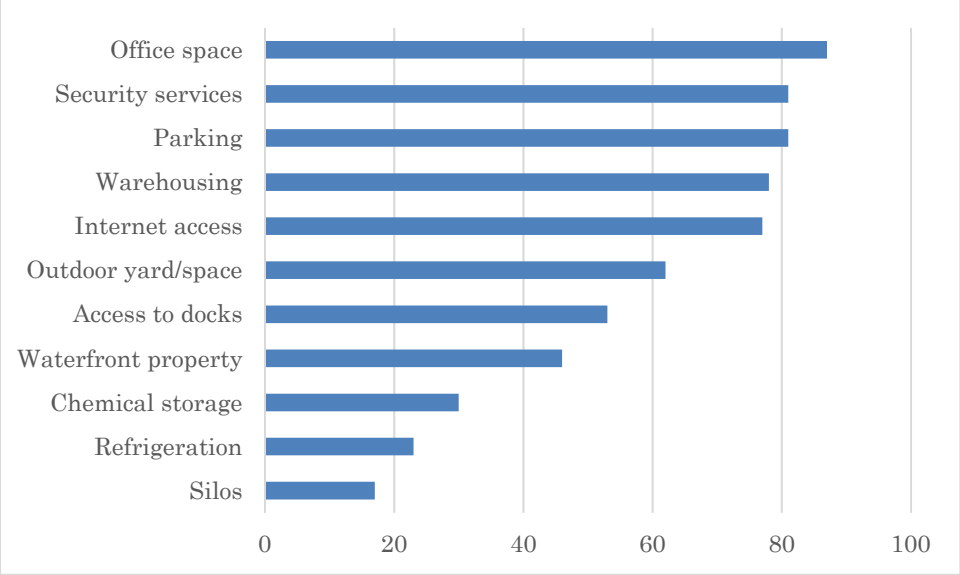
The Kenyan government has identified several incentives to encourage investment in the country's SEZs; the respondents' demand for the incentives is listed in table below.

Figure 6.3.1 Demand for Incentives



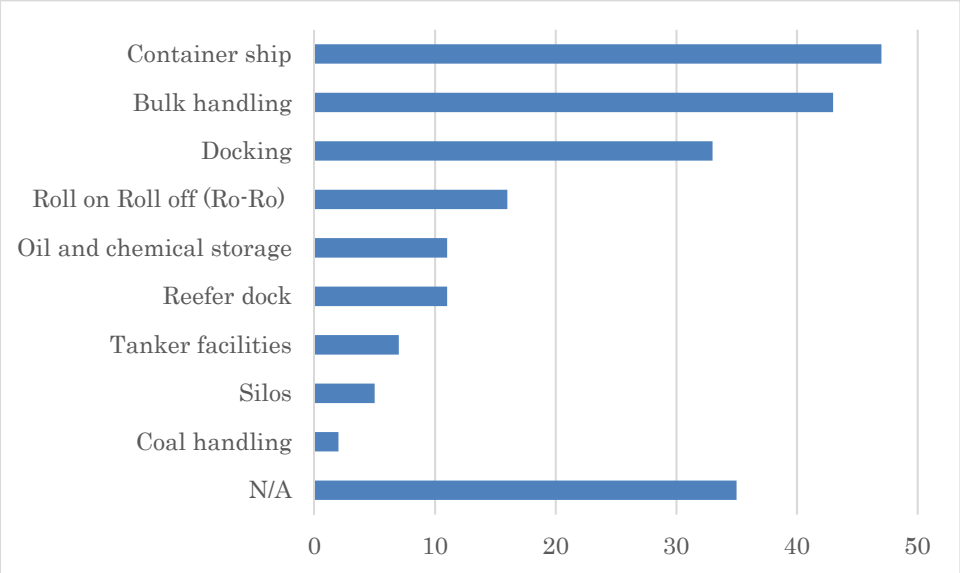
Source: JICA Design Team

Figures 6.3.2 and 6.3.3 illustrate the respondents' demand for facilities needed inside the SEZ and at the freeport. However, given the high number of respondents that wish to develop their own facilities, this demand could be somewhat self-fulfilling. However, the port will need to be developed independent of SEZ tenants.



Source: JICA Design Team

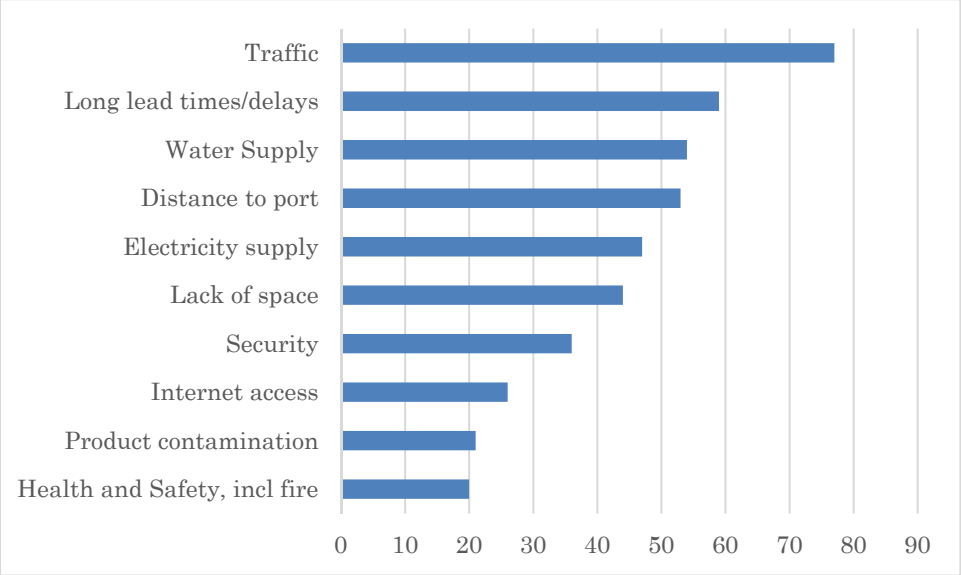
Figure 6.3.2 Demand for SEZ Facilities



Source: JICA Design Team

Figure 6.3.3 Demand for Port Facilities Adjacent to SEZ

Figure 6.3.4 below further illustrates the challenges that operators are currently facing at their present locations. As shown, the largest challenges are traffic and the long lead times and delays faced when importing and exporting goods. Similarly, reliable electricity and water supply are a common concern.



Source: JICA Design Team

Figure 6.3.4 Challenges at Current Operating Location

6.3.3 Sectors and Free Answers Obtained from Interview Survey

The summary of the free answers during the interviews is as stated in Appendix 5.

6.4 Provision and Demand for Industrial Sites

6.4.1 Overview

It was clear from interviews that there is a growing demand for industrial sites in Kenya as whole and Mombasa in particular. This demand is especially high in areas such as Island, Likoni, and Changamwe, which have proximity to the harbour and Moi International Airport. The demand in neighbouring Kilifi county is somewhat less.

In response to the demand for industrial sites in various locations in the country, there are other industrial park and SEZ developments taking place. Since the SEZ Act was signed into law in 2015 the Kenyan government has set up SEZ designated areas in Eldoret, Athi River, Naivasha, Kisumu, Mombasa, Nairobi, and Lamu, with an additional designation being planned for Voi and (potentially) Kitui. These areas are already among Kenya's industrial hubs with EPZs and industrial parks already in existence.

Some of these SEZs are particularly advanced in their development (See Chapter 3). Some other projects of industrial site development are as listed below:

Kenya and Korea have also signed an agreement for Korea to develop a 790,000m² industrial complex, provisionally named Portland Industrial Complex in Athi River In addition, Korea is funding the development of a Technology Development Centre, also in Athi River. (Korea Trade-Investment Promotion Agency).

Planned development called the Infinity Industrial Park (Infinity Park) in the suburbs of Nairobi has been announced. The park is estimated to be valued at Ksh 12.5 billion (USD 121.5 million) and will accommodate between 800 and 1000 small and medium sized industrial tenants.

According to the KNBS Economic Survey 2017, there were 56 EPZs in 2015 and expected to be increased to 65 in 2016. In the reality, the number of new EPZs gazetted in 2016 that the JICA Design Team could identify was five. The total area gazetted in 2016 was 9.8 ha. Out of five, one was from Kilifi but others were in various counties in the country, but not in the Coast area. However, in 2017, the Kenyan government announced that the town of Voi in Taita-Tabeta County, located 156km from Kilindini harbour had been identified as a location for a future EPZ.

6.4.2 Interview Result of Property and Property Development

The commercial and industrial property development industry in Kenya is still in its nascent stage with most industries choosing to develop their own properties and lease out any excess space. The property consultants and realtors surveyed raised concerns about a rapid price increase of the land in the SEZ fueled by speculation which could deter potential tenants. In addition, they cited the government's interest rate capping policies as a challenge to growing demand in the sector. However, property developers interviewed were interested in the possibilities offered by the SEZ. Some stated that they would prefer to be approached by a client wanting to develop facilities but others identified potential opportunities in developing warehousing, office space, and even hotels for which they expect a demand. It should be noted that the developers in particular were reluctant to commit to specifics until further details relating to the SEZ such as land cost and utility provision have been confirmed.

In the course of conducting the survey interviews three key sectors have been identified as industries with notable potential investment demand for the opportunities offered by the SEZ. These sectors are, the steel manufacturing industry, the tea warehousing and trading industry, and the automotive sector. These have been identified based on the responses by the companies surveyed. In particular these sectors were selected based on the following criteria: giving an affirmative response to the survey question on whether or not they would be interested in the SEZ; the significant amount of space required – all three of these sectors indicated that they would need substantial amount of land for their operations; a willingness to operate in a potential 'sector hub' where respondents indicated they would like to have similar companies based nearby; and the fact that these sectors have a variety of sectors which are affiliated with their own and would thus attract suppliers and other affiliated industries to the SEZ.

6.4.3 Steel

The steel sector in Kenya is expanding and looking for development opportunities. One of the companies interviewed is looking into developing a new facility and the SEZ would be ideal for this. This new smelter and steel manufacturing facility would require at least 200 acres of space and would be a significant investment into the SEZ.

Importantly, such a major development would also attract other firms which have associated businesses; these could include

- Logistics firms
- Other types of manufacturers
- Engineering and construction firms
- Transportation

The development of a steel manufacturing plant would also lead to significant water and power demands. In the process of developing such a facility it is likely that steel companies would be willing to engage in a joint venture in developing a power plant to meet these needs. This could in turn solve many of the power supply concerns of the manufacturing and agro-processing sectors, thus further encouraging firms in those sectors to relocate to the SEZ.

In addition, a steel producer in the SEZ would justify ensuring that the port had bulk handling facilities, which would appeal to companies operating in the mineral resources sector to consider utilising the SEZ and the port. Furthermore, the client driven service providers such as trucking and shipping would follow their clients to the SEZ and would then service the SEZ and the port, creating further incentives for smaller players in other sectors to enter the SEZ

6.4.4 Tea

The Kenyan Tea industry, in particular the storage, distribution and second-stage packaging sector, is looking to develop a centralised tea hub where it can build more effective facilities and reduce issues surrounding product contamination. Such a facility would be valuable to the SEZ as it would bring several players in the tea industry into the SEZ and create a high profile for the SEZ as Mombasa's tea hub. Further, these facilities would require over 20 acres, making this a significant tenant.

A tea hub would also attract associated industries to the SEZ which would want to have operations near a tea centre. These include:

- Packaging firms
- Logistics and clearing agents
- Wholesalers
- Export companies
- Warehousing
- Tea auctioneers
- Tea brokers

As previously mentioned packing companies would follow the tea industry into the SEZ and could potentially justify the companies using the SEZ's benefits to relocate their non-tea related business to the SEZ as well. If this were to happen, the presence of major packaging firms and a dedicated tea hub could potentially incentivise players in the agro-processing sector to also relocate to the SEZ to have proximity to packaging firms and to pursue a similar contaminant free environment; this would particularly appeal to the fruit processing industry.

The presence of at least two major tenants would also begin to attract smaller service providers aimed at targeting those employed in the SEZ. This could potentially include, consumer and business banking, supermarkets, and residential developers. The tea industry in particular would cause hotel developers to consider the SEZ for future projects.

6.4.5 Automotive

The automotive industry is a significant economic sector in Kenya and one of the largest importers in the country. This includes new and used vehicles, as well as vehicle parts. In addition, there is a growing

industry of imported knock-down kits and semi-knock down kits, in which vehicles are imported as a kit containing all necessary parts which then require to be assembled in-country. The majority of the automotive sector respondents surveyed for this study stated that the industry has increasing potential and that they feel positive about the future of their sector.

The respondents based in Mombasa seemed most interested in the opportunities offered by the SEZ. In particular the space available in Dongo Kundu is attractive to this sector which has significant demand for operating and storage (parking) area. Furthermore, the second-hand car traders which import used cars overseas to be sold in the Kenyan and EAC market are also attracted by the incentive outlined in the SEZ Act in which the time of importation will be when the goods leave the SEZ. This will enable them to import cars that have not already been pre-sold, thus allowing them to take advantage of more cost-effective strategies and economies of scale.

Due to the integrated nature of this industry, there is opportunity for an automotive sector, or industrial park in the SEZ. The second-hand car importers also want to be located near the spare parts suppliers. These suppliers also benefit from being located near the new vehicle importers and vehicle assembly plants.

In addition to the increased space, this sector would also benefit from the availability of the port as the sector is dominated by imported goods. Even the locally assembled vehicles are mostly assembled from imported knock-down kits.

According to the respondents surveyed, the automotive industry in Kenya is expected to increase, as local demand is anticipated to rise; accordingly, there is opportunity for players in this sector to look at expanding and investing in new operations.

However, pragmatically the demand for the SEZ in this sector would almost exclusively come from the second-hand car importers. Car assembly firms have mostly already developed expensive facilities which will not exceed capacity for several years. In fact, some respondents which operate assembly plants, have indicated that currently the demand for new vehicles, while expected to grow in the long term, is currently insufficient for the assembly capacity. These firms also indicated that some assembly plants are standing idle due to the lack of demand for new vehicles. Under these conditions the development of new assembly plants is likely unfeasible in the short term due to the prohibitive costs and current capacity is sufficient for Kenya's needs.

6.4.6 Logistics (Warehousing)

Multiple respondents stated that they would desire the SEZ to have logistics firms operating within the industrial parks as they are reliant on these services in order to conduct their business. The logistics firms surveyed also indicated an interest in operating in the SEZ, but most said that they would follow their core clients into the SEZ.

However, this surveyed did identify warehousing facilities and services as a potential sub-section of the logistics industry which is a potential key sector for the SEZ. Figure 6.3.2 shows that 78 respondents - almost two-thirds of those surveyed - stated that they would need warehousing facilities. Furthermore, individuals and companies surveyed highlighted the fact that while Kenya and Mombasa has a lot of B-grade warehousing space, there is a notable shortage of A-grade warehousing. An A-Grade warehouse has been certified to meet industry best standards relating to operations, inventory control, storage, security, and quality of the warehousing management system. There are plans to build significant amounts of A-

grade warehousing in Nairobi; however, there are currently no widely known plans to develop A-grade facilities in Mombasa. Accordingly, the Mombasa SEZ will need A-grade warehousing to remain competitive with other industrial hubs like those in Nairobi. In addition, the existence of A-grade warehousing managed by professional logistics services could potentially also attract tenants to the SEZ who are in demand for these services.

6.4.7 Other Potential Demand

Other than the above-mentioned three key potential anchor tenants there is a widespread demand among other sectors for the SEZ services.

Businesses currently operating in EPZs will be very interested in relocating if the SEZ allows for the same tax exemptions and allows them to distribute locally, including to the EAC.

Agro-processing firms have expressed interest in the SEZ if it has more reliable water and power supply; the intermittent supply in Mombasa's other industrial areas is harming their business.

Similar to the tea hub, there is potential for a coffee hub servicing the coffee warehousing and exporting industry. There are concerted efforts to revive Kenya's cotton industry and the SEZ could stand to benefit from these efforts by encouraging the establishment of a ginning operation in the SEZ. This would not only attract the cotton producers wanting to export, but would potentially also incentivise textile, and apparel manufacturers to the SEZ. The unification of these three industries into a single industrial space is highly desirable, as it will enable apparel manufacturers to be more responsive to global trends rather than having to wait for textiles to be shipped from Asia.

6.5 Obstacles and Perceived Issues on Investment Promotion

In the course of the interviews, several obstacles and issues have been identified.

(1) Business Environment

There is concern that the SEZ development could be delayed due to the ongoing political instability in Kenya relating to the 2017 elections. Corruption and unnecessary bureaucracy have long been challenges to investment in Kenya and could potentially still cause challenges to the SEZ project

(2) Finance for Relocation

It is also noted that the lack of funding is a major deterrent to develop industrial property for rental. In addition, many firms interested in the SEZ currently cannot afford to develop new facilities without financial assistance.

(3) Maintaining Comparative Advantage with Infrastructure Development

The lack of effective infrastructure in and around Dongo Kundu is a concern for firms which are interested in the SEZ. The Mombasa SEZ will also face stiff competition from other industrial areas in Kenya; in particular, the development of the standard gauge railway (SGR) which connects Nairobi and Naivasha to Mombasa port might cause industry to be attracted to the cheaper land rates in the centre and choose to be located there rather than in Mombasa. Accordingly the functioning of the freeport will be key to ensuring that the Mombasa SEZ's comparative advantage remains competitive with the inland SEZs.

(4) SEZ Development Process

There are also concerns over issues regarding the relocation of communities currently living in Dongo Kundu site in terms of the possible times and other risks.

(5) Treatment of EPZ Enterprises

EPZ operators will be reluctant to relocate to the SEZ unless a clear mechanism is set up which will allow them to transfer the license from an EPZ license to an SEZ one. In addition, many of the smaller manufacturers are interested but will be unable to make the move without some form of loan or financial assistance.

(6) Recognition of SEZ Scheme among Potential Investors

Another concern is the large percentage of firms which are unaware of the planned Mombasa SEZ: of the 123 companies surveyed only 53 knew that an SEZ was planned in Dongo Kundu. This is a particular concern as 90 out of 123 companies expressed interest in the SEZ once they were informed about it. MoI as well as SEZA will need to increase efforts at informing and educating potential SEZ tenants about the planned Mombasa SEZ.

6.6 Conclusion

There is a clear demand for the Mombasa SEZ across Kenya's economic sectors. This is underscored in Table 6.3.2 which illustrates that of the 123 companies surveyed, 90 expressed an interest in the SEZ. This demand is driven by optimism in the Kenyan economy and the future of the respective industries as well as by the difficulties of doing business in Mombasa's overly concentrated industrial areas. The respondents appeared to be particularly interested in the opportunities offered by the increased operational space and serviced land available in the planned SEZ.

Many respondents, however, seemed reluctant to be the first investors in the SEZ, instead preferring there to already be anchor tenants or developments present if they were to move. This is owing to the fact that many of these companies would not be able to justify the cost of development. In addition, many of these firms are value-added and service industries and would prefer to follow major sector players and their customers into the SEZ.

Accordingly, if a targeted approach were to be undertaken, this study also identified three major sectors which have significant demands for space and could potentially make ideal anchor tenants: i) tea warehousing and trading sector, ii) the iron and steel manufacturing industry, and iii) the automotive industry - comprising the interrelated industrial sectors of both importing and assembly. These three sectors would require large amounts of land and would enable smaller players and associated industries to justify relocating to the SEZ.

The major features expected by potential to be installed in the SEZ electricity and water provision, road infrastructure, and internet infrastructure. The SEZ also faces many challenges and obstacles to its development, such as the financial challenges faced by companies relocating. However, a notable (and relatively easily rectifiable) concern is the lack of awareness about the planned SEZ and the benefits of relocating there. The fact that the number of firms that expressed interest in the SEZ is greater than the number which were aware of the planned development also illustrates that there is a robust demand for the SEZ, even among companies only being made aware of it for the first time.

Chapter 7 Future Demand Forecast of Mombasa Port

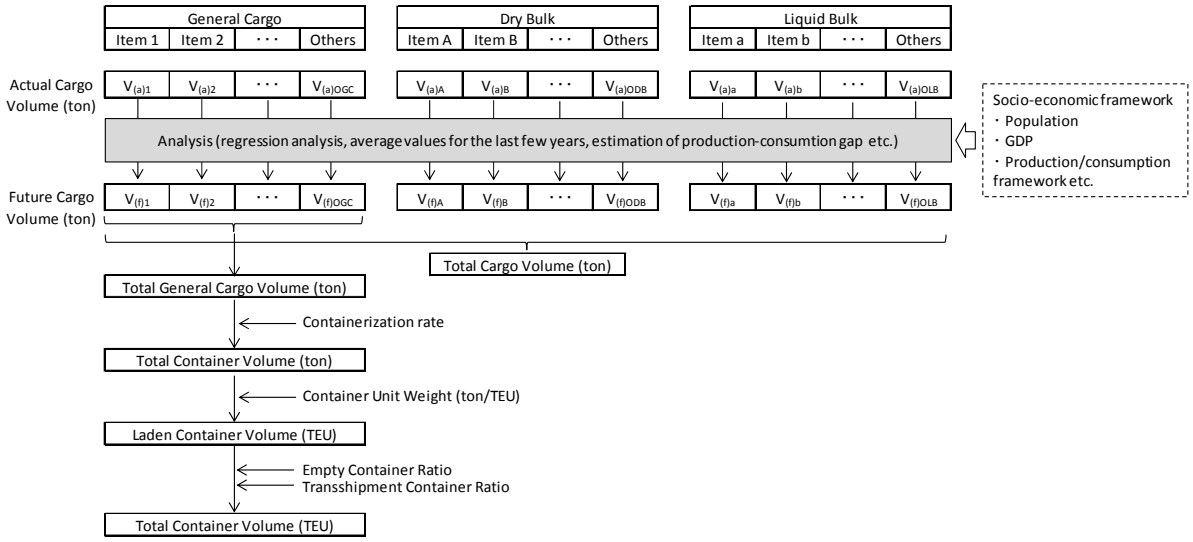
7.1 Overview of Demand Forecast

This chapter shows the demand forecast of Mombasa Port up to the year 2035, as the basis for the dimension of port facilities as well as the economic and financial analysis for the port development in Mombasa Special Economic Zone (SEZ).

According to "KPA Annual Review and Bulletin of Statistics", import/export cargo is divided into 'General Cargo' composed of container cargo and conventional cargo, 'dry bulk' and 'liquid bulk', and each of them is further divided into specific commodities. In this demand forecast, the total cargo throughput (ton) is calculated, by aggregating the projected amount of each commodity which has been estimated through a suitable method such as the regression analysis, average values for the last few years, estimation of production-consumption gap, and so on.

The container throughput (TEU) is calculated through the following process: 1) the amount of container cargo (ton) is estimated by multiplying the amount of general cargo (ton) by containerization ratio, 2) the number of laden containers (TEU) is determined by dividing the container volume (ton) by container unit weight (ton/TEU), and 3) the container throughput (TEU) is counted by adding the number of empty containers and transshipment containers to the number of laden containers (TEU).

The flow of demand forecast is shown in Figure 7.1.1.



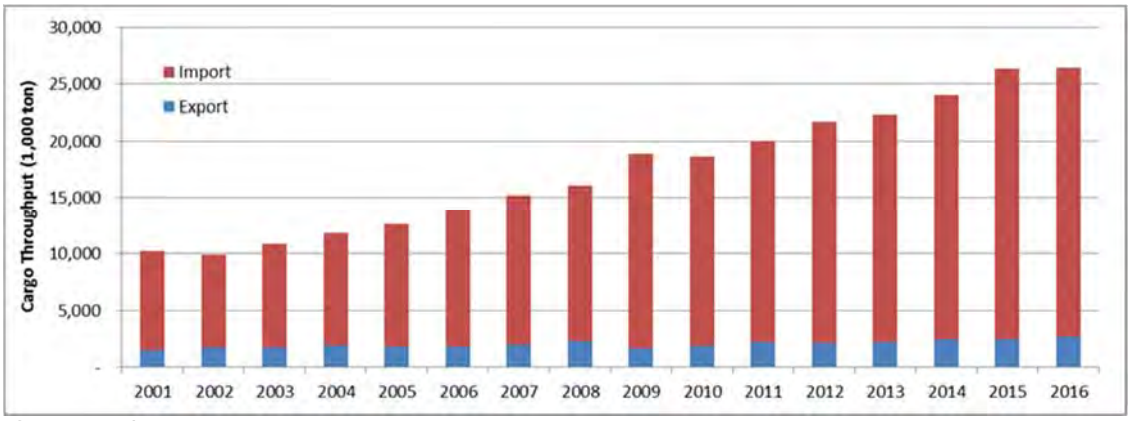
Source: JICA Design Team

Figure 7.1.1 Flow of Demand Forecast

7.2 Present Situation and Circumstances of Cargos at Mombasa Port

(1) Cargo Throughput

The cargo volume at Mombasa Port has been steadily increasing, and the compound annual growth rates (CAGR) for imports, exports, and the total during the period of 2001 to 2016 are 6.9%, 3.9%, and 6.5% respectively. The shares of imports and exports are 89.8% and 10.2%, respectively, and the imports largely exceed the exports (see Figure 7.2.1.).

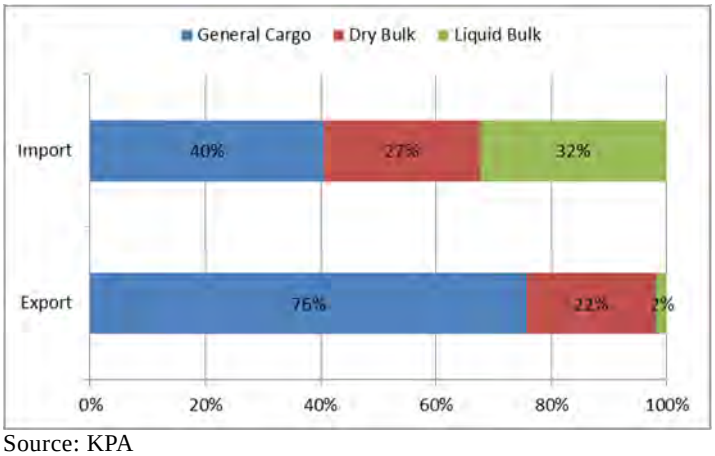


Source: KPA

Figure 7.2.1 Evolution of Cargo Throughput at Mombasa Port

(2) Major Commodities

More than half of the imports at Mombasa Port is bulk cargo (dry bulk and liquid bulk), whereas most of the exports are general cargo (see Figure 7.2.2). A few kinds of commodities cover most of the exports; ilmenite and rutile (although they are categorized as 'Titanium' in the KPA Annual Review and Bulletin of Statistics), tea, coffee, and soda ash accounted for 62% of the total exports in 2016 (see Table 7.2.1).



Source: KPA

Figure 7.2.2 Composition of Export/Import Cargo at Mombasa Port

Nippon Koei Co., Ltd.
The Overseas Coastal Area Development Institute of Japan
Koei Research & Consulting Inc

Table 7.2.1 Major Export and Import Commodities at Mombasa Port

	Import	Export
General Cargo	Iron and steel, plastic, rice, paper and paper products, chemicals and insecticides, sugar, motor vehicle and lorries, etc.	Tea, coffee, soda ash, tinned fruits, vegetables and juices etc.
Dry Bulk	Clinker, wheat, fertilizer, coal etc.	Titanium etc.
Liquid Bulk	POL etc.	Bulk oils, bunkers

Source: KPA

(3) Major Trading Partners

The major export/import trading partners of Mombasa Port are shown in Table 7.2.2. China is the top in both export and import. South Asia (India and Pakistan) and the Middle East countries are also prevailing. Japan is ranked 6th in the import trading partners. In addition, European countries and the United States of America (USA) are included in the export trading partners.

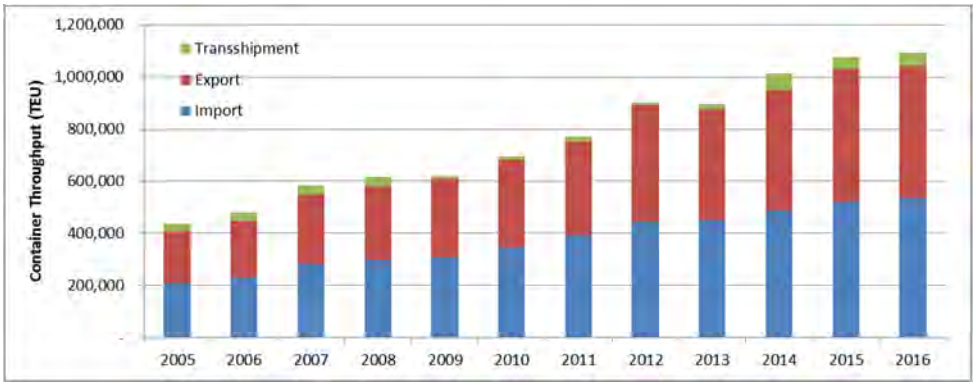
Table 7.2.2 Top 10 Trading Partners of Mombasa Port

Import		Export	
Country	Share	Country	Share
China	17.7%	China	21.2%
UAE	16.8%	India	11.1%
India	14.7%	Pakistan	8.6%
Saudi Arabia	9.2%	UAE	4.1%
South Africa	4.8%	Egypt	4.0%
Japan	4.7%	USA	3.8%
Russia	3.4%	UK	3.7%
Oman	3.1%	Germany	3.2%
Indonesia	2.6%	Thailand	3.1%
Pakistan	2.4%	Italy	2.7%

Source: KPA

(4) Container Cargo

The container volume handled at Mombasa Port has been rapidly increasing at CAGR of 8.7% during the period of 2001 to 2016. Transshipment containers accounted for 4.4% of the total container volume in 2016 (see Figure 7.2.3). Since export containers are much less than import containers, empty containers accounted for 74.6% (2016) of the export containers (see Table 7.2.3).



Source: KPA

Figure 7.2.3 Evolution of Container Volume at Mombasa Port

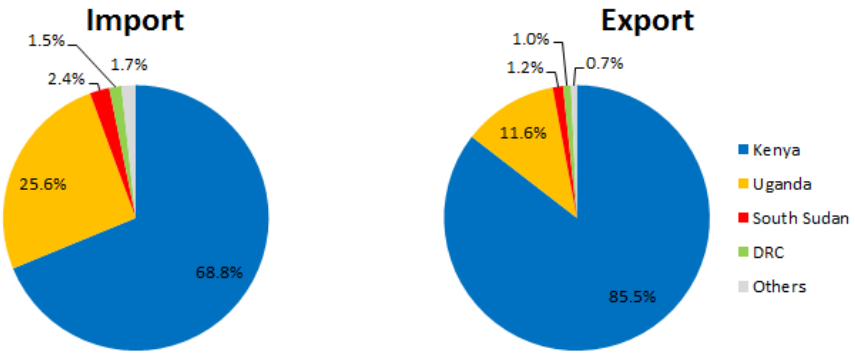
Table 7.2.3 Empty Container Ratio at Mombasa Port (2016)

	Import	Export
Laden	527,816	128,913
Empty	8,167	378,444
Total	535,983	507,357
Empty Ratio	1.5%	74.6%

Source: KPA

(5) Transit Cargo

At Mombasa Port, 68.8% of imports are consumed in Kenya, whereas 85.5% of exports are produced in the country. The remainder is transit cargo to/from neighboring countries. For both exports and imports, approximately 80% of the transit cargo is from/to Uganda, and the remaining are for South Sudan, DRC and other countries such as Rwanda, Tanzania, Burundi, Somalia (see Figure 7.2.4).



Source: KPA

Figure 7.2.4 Transit Market Share of Mombasa Port

7.3 Future Demand Forecast of Mombasa Port

7.3.1 Demand Forecast of Export Cargo

The evolution of commodity-wise volume of export cargo at Mombasa Port is shown in Table 7.3.4. The future demand of each commodity was estimated through the following process:

(1) Tea

The tea export has been steadily increasing at CAGR of 2.8% during the period of 2001 to 2016. The volume of tea export is expected to increase, since Kenya is striving to expand the tea export in new markets such as Russia, Europe and the USA. According to the report entitled “World Tea Production and Trade - Current and Future Development” by the Food and Agriculture Organization (FAO), the tea export from Africa is expected to increase at CAGR of 2.2% during 2013 to 2023. Therefore, CAGR of 2.2% was applied in the demand forecast of tea export for the period of 2017 to 2035. The result is shown in Table 7.3.1.

Nippon Koei Co., Ltd.
The Overseas Coastal Area Development Institute of Japan
Koei Research & Consulting Inc

Table 7.3.1 Result of Demand Forecast (Export - Tea)

Unit: 1,000 ton

2016 (Actual)	2020	2025	2030	2035
548	598	667	743	829

Source: JICA Design Team

(2) Coffee

The volume of coffee export slightly increased during 2001 to 2016 at CAGR of 1.4%, although the volume has been fluctuating depending on the weather as well as the socio-economic situation. With respect to Kenya which is said to produce nearly 20% of coffee exported through Mombasa Port, the large coffee plantations in the suburbs of Nairobi are giving way to real estate developments, but the national and county governments have initiated coffee programs which are geared towards opening up new production areas and the rehabilitation of abandoned farms. On the other hand, in terms of coffee industry in Uganda which accounts for approximately 80% of coffee exported through Mombasa Port, no information was found which implies substantial change in production volume. Under these circumstances, the coffee export at Mombasa Port can be expected to slightly increase, and CAGR of 1.4% was applied in the demand forecast of coffee export for the period of 2017 to 2035. The result is shown in Table 7.3.2.

Table 7.3.2 Result of Demand Forecast (Export - Coffee)

Unit: 1,000 ton

2016 (Actual)	2020	2025	2030	2035
271	286	307	329	353

Source: JICA Design Team

(3) Soda Ash

The volume of export of soda ash has been largely fluctuating, and it falls below 300,000 tons per annum since 2015. Tata Chemicals Magadi, the sole company in Kenya producing and exporting soda ash, announced proposal to mothball its plant operations in May 2014 due to high energy costs, however, it has been continuing the operations and produced soda ash of 372,000 tons in 2014-15 and 311,000 tons in 2015-16. As matters stand, increase in soda ash export at Mombasa Port can no longer be expected, and therefore, the average value for the last three years (2014-2016) was applied to the demand for the period of 2017 to 2035. The result is shown in Table 7.3.3.

Table 7.3.3 Result of Demand Forecast (Export – Soda Ash)

Unit: 1,000 ton

2016 (Actual)	2020	2025	2030	2035
269	276	276	276	276

Source: JICA Design Team

Table 7.3.4 Commodity-wise Cargo Volume handled at Mombasa Port

Exports (in 1,000 tons)

Type	Commodities	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
General Cargo	Tea	362	370	376	406	405	402	464	421	371	468	433	450	541	554	528	548
	Soda Ash	106	141	148	185	217	200	309	549	121	391	444	372	423	336	223	269
	Coffee	220	221	188	180	170	195	235	272	234	199	230	210	264	256	262	271
	Others	351	365	398	471	544	572	568	702	717	719	868	840	840	851	820	963
	Sub-total	**1,039**	**1,097**	**1,110**	**1,242**	**1,336**	**1,369**	**1,576**	**1,944**	**1,443**	**1,777**	**1,975**	**1,872**	**2,068**	**1,997**	**1,833**	**2,051**
Dry Bulk	Titanium	0	0	0	0	0	0	0	0	0	0	0	0	0	363	544	589
	Others	226	464	380	382	285	314	205	200	62	70	122	106	65	59	34	17
	Sub-total	**226**	**464**	**380**	**382**	**285**	**314**	**205**	**200**	**62**	**70**	**122**	**106**	**65**	**422**	**578**	**606**
Liquid Bulk	Liquid Bulk	253	208	265	246	174	132	167	190	167	95	158	160	100	45	40	51
	Sub-total	**253**	**208**	**265**	**246**	**174**	**132**	**167**	**190**	**167**	**95**	**158**	**160**	**100**	**45**	**40**	**51**
Total		**1,518**	**1,769**	**1,755**	**1,870**	**1,795**	**1,815**	**1,948**	**2,334**	**1,672**	**1,942**	**2,255**	**2,138**	**2,233**	**2,464**	**2,451**	**2,708**

Imports (in 1,000 tons)

Type	Commodities	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
General Cargo	Iron & Steel	285	360	219	515	435	493	621	595	780	826	833	854	1,192	1,367	1,773	1,594
	Plastic	133	126	183	218	199	266	308	313	402	454	265	218	398	662	798	683
	Rice	164	191	296	297	311	311	328	275	387	285	298	340	465	651	610	572
	Paper & Paper Products	58	97	118	168	143	209	244	208	296	336	265	196	300	503	509	451
	Chemicals & Insecticides	170	145	173	169	199	267	299	237	218	244	213	200	254	390	429	366
	Sugar	258	143	237	207	246	289	372	320	281	279	140	102	207	231	316	356
	M/Vehicle & Lorries	81	101	74	86	164	202	287	334	296	283	293	332	366	463	465	313
	Others	2,111	1,893	1,946	2,131	2,100	2,226	2,615	3,143	3,512	3,806	5,015	5,815	5,464	4,846	5,375	5,277
	Sub-total	**3,260**	**3,056**	**3,246**	**3,791**	**3,797**	**4,263**	**5,074**	**5,425**	**6,172**	**6,513**	**7,322**	**8,057**	**8,646**	**9,113**	**10,275**	**9,612**
Dry Bulk	Clinker	35	103	139	164	430	520	1,080	1,013	1,135	1,428	1,368	2,268	2,228	2,065	2,920	3,084
	Wheat in Bulk	673	519	585	543	911	948	858	737	1,074	1,287	1,443	1,559	1,401	1,908	1,838	1,896
	Fertilizer in Bulk	132	181	343	363	385	337	280	236	388	366	380	336	603	360	529	560
	Coal	161	183	82	177	137	167	176	174	162	236	346	291	296	436	509	455
	Other Dry Bulk	167	149	255	341	264	372	328	732	1882	510	270	357	385	462	554	452
	Sub-total	**1,168**	**1,135**	**1,404**	**1,588**	**2,127**	**2,344**	**2,722**	**2,892**	**4,641**	**3,827**	**3,807**	**4,811**	**4,913**	**5,231**	**6,350**	**6,447**
Liquid	P.O.L.	3,826	3,486	3,957	4,045	4,320	4,734	4,798	4,889	5,671	5,553	5,783	5,898	5,637	6,286	6,473	7,636
	Others	466	440	534	551	598	669	676	552	760	833	824	767	900	906	759	41
	Sub-total	**4,292**	**3,926**	**4,491**	**4,596**	**4,918**	**5,403**	**5,474**	**5,441**	**6,431**	**6,386**	**6,607**	**6,665**	**6,537**	**7,192**	**7,232**	**7,677**
Total		**8,720**	**8,117**	**9,141**	**9,975**	**10,842**	**12,010**	**13,270**	**13,758**	**17,244**	**16,726**	**17,736**	**19,533**	**20,096**	**21,536**	**23,857**	**23,736**

Source: JICA Design Team based on KPA Annual Review and Bulletin of Statistics

(4) Other General Cargo

Other general cargoes, including 'tinned fruits, vegetables and juices', 'beans, peas, pulses', 'hides and skins', 'clothes', 'oil seeds', and 'tobacco and cigarettes', have been increasing with certain fluctuations at CAGR of 7.0% during the period of 2001 to 2016. The volume of "other general cargo" during 2017 to 2035 was estimated based on the correlation between the cargo volume and the gross domestic product (GDP) of the major export trading partners of Mombasa Port (the top ten countries, excluding Pakistan, Egypt, and South Sudan, which are short of GDP data). The GDP of the export trading partners is assumed as shown in Table 7.3.5 based on the projections in the "World Economic Outlook Database, October 2016" by the International Monetary Fund (IMF). The result of demand forecast is shown in Table 7.3.6.

Table 7.3.5 GDP Growth Rates of Major Export Partners Used in the Demand Forecast

2016	2017	2018～2021	2022～2025	2026～2030	2031～2035
2.0%	5.4%	6.2-6.5%	6.0%	5.0%	4.0%

Note: The GDP for the period of 2016 to 2021 is based on the "World Economic Outlook Database, October 2016" by IMF, whereas the GDP for 2022 onwards was set by the JICA Design Team.
Source: JICA Design Team

Table 7.3.6 Result of Demand Forecast (Export - Other General Cargo)

Unit: 1,000 ton

2016 (Actual)	2020	2025	2030	2035
963	1,072	1,266	1,426	1,555

Source: JICA Design Team

(5) Titanium

A firm called Base Titanium Limit commenced the mining of ilmenite, rutile and zircon in Kwale County in 2013, and these cargoes appear in KPA statistics since 2014. Base Titanium Limit exports a part of rutile and all zircon as container cargo and the remaining part of rutile and all ilmenite as dry bulk through Mombasa Port. It is said that the annual production is reaching the limits, and the capacity is unlikely to be augmented. Therefore, the actual export volume in 2016 was applied to the demand for the period of 2017 to 2035. The result is shown in Table 7.3.7.

Table 7.3.7 Result of Demand Forecast (Export - Titanium)

Unit: 1,000 ton

2016 (Actual)	2020	2025	2030	2035
589	589	589	589	589

Source: JICA Design Team

(6) Iron Ore

Sanghani Group started the mining of iron ore in Wundanyi, Taita Taveta County in 2008, and exported iron ore to China and India through Mombasa Port. The amount used to reach 15,000 to 20,000 tons a month as container cargo. The company once stopped the operation in 2013, but it intends to resume the mining and export of iron ore through Mombasa Port in 2017. The export volume is expected to be 30,000 tons a month in bulk. Therefore, the demand for the period of 2017 to 2035 is estimated to maintain 360,000 tons (30,000 tons/month x 12 months) from 2018. The result is shown in Table 7.3.8.

Table 7.3.8 Result of Demand Forecast (Export - Iron Ore)

Unit: 1,000 ton

2016 (Actual)	2020	2025	2030	2035
0	360	360	360	360

Source: JICA Design Team

(7) Other Dry Bulk

Since 2012, "Other Dry Bulk" is composed of solely 'fluorspar' which is mined by Kenya Fluorspar Company Ltd in Elgeyo-Marakwet County. It suspended the operations for a few times since 2012, due to poor demand and fall in price, and the export volume is therefore decreasing year by year. Since the future prospects for the fluorspar export remain unclear, the average value for the last five years (2012-2016) was applied to the demand for the period of 2017 to 2035. The result is shown in Table 7.3.9.

Table 7.3.9 Result of Demand Forecast (Export - Other Dry Bulk)

Unit: 1,000 ton

2016 (Actual)	2020	2025	2030	2035
17	56	56	56	56

Source: JICA Design Team

(8) Liquid Bulk

The export of liquid bulk at Mombasa Port is composed of 1) re-export of oil to islands such as Zanzibar in Tanzania as well as to Somalia where ordinary oil tankers were unable to directly call due to the security situation; and 2) bunker oil for vessels calling at Mombasa Port. The re-export of oil is decreasing, since oil tankers resumed to directly call at Somalia with the improved security situation. The bunker oil is also showing a continued decline. Since increase in export of liquid bulk cannot be expected under these circumstances, the actual export volume in 2016 is applied to the demand for the period of 2017 to 2035. The result is shown in Table 7.3.10.

Mombasa Port is expected to start the exportation of crude oil from Turkana fields in June 2017. However, it is not reflected in the demand forecast of export of liquid bulk, because the said crude oil (or oil) is supposed to be exported through Lamu Port, once the port becomes operational connected with Turkana fields by oil pipelines.

Table 7.3.10 Result of Demand Forecast (Export - Liquid Bulk)

Unit: 1,000 ton

2016 (Actual)	2020	2025	2030	2035
51	51	51	51	51

Source: JICA Design Team

7.3.2 Demand Forecast of Import Cargo

The evolution of commodity-wise volume of import cargo at Mombasa Port is shown in Table 7.3.4. The future demand of each commodity was estimated through the following process:

(1) Iron and Steel

Import of iron and steel has been increasing year by year at CAGR of 12.2% during the period of 2001 to 2016. The volume of iron and steel import during 2017 to 2035 was estimated based on the correlation between the cargo volume and the GDP of Kenya. The GDP of Kenya is assumed as shown in Table 7.3.11 based on the projections in the "World Economic Outlook Database, October 2016" by IMF. The result is shown in Table 7.3.11.

Table 7.3.11 GDP Growth Rates of Kenya used in the Demand Forecast

2016	2017	2018～2021	2022～2025	2026～2030	2031～2035
6.0%	6.1%	6.5%	6.0%	5.0%	4.0%

Note: The GDP for the period of 2016 to 2021 is based on the "World Economic Outlook Database, October 2016" by IMF, whereas the GDP for 2022 onward was set by the JICA Design Team.

Table 7.3.12 Result of Demand Forecast (Import - Iron and Steel)

Unit: 1,000 ton

2016 (Actual)	2020	2025	2030	2035
1,594	2,404	3,618	4,928	6,238

Source: JICA Design Team

(2) Plastic

Import of plastic at Mombasa Port had been steadily increasing since 2001, but it has been fluctuating after then. The decline in the plastic imports in 2011 and 2012 can be attributed to the outlawing of manufacture and import of plastic bags issued in January 2011. After then, the import volume went up, but the Government of Kenya issued once again the ban on production, use and import of plastic bags for commercial and household packaging in February 2017, which has come into effect in September 2017. Thus, the import of plastic at Mombasa Port is likely to decrease in 2017. In this demand forecast, the average value for the last five years (2012-2016) is applied to the demand for the period of 2017 to 2035. The result is shown in Table 7.3.13.

Table 7.3.13 Result of Demand Forecast (Import – Plastic)

Unit: 1,000 ton

2016 (Actual)	2020	2025	2030	2035
683	552	552	552	552

Source: JICA Design Team

(3) Rice

The volume of imported rice at Mombasa Port used to be around 300,000 tons per annum until 2011, but it drastically increased after then, and reached 651,000 tons in 2014. According to the Economic Review of Agriculture 2015 (Ministry of Agriculture, Livestock and Fisheries), the rice consumption in Kenya was increasing in the period of 2010 to 2014, while the production in the same period was fluctuating (see Table 7.3.14). The rice consumption per capita in Kenya is estimated to be 12.57 kg, by dividing the consumption volume in 2014 by the population in Kenya in 2014, namely 44,864 thousand people, quoted from the World Population Prospects (the 2015 Revision). Then, the rice consumption in Kenya in each year of the period of 2017 to 2035 was calculated, by multiplying the rice consumption per capita by the population in Kenya, assuming that the rice consumption per capita would increase at a CAGR of 0.70%, referring to the growth rate of rice consumption per capita of Sub-Sahara Africa according to OECD-FAO Agricultural Outlook

2016-2025. On the other hand, the rice production in Kenya in each year of the period of 2017 to 2035 was estimated, based on the average for the 5 years (from 2010 to 2014), that is 119,489 tons, applying CAGR of 3.26% which is the growth rate of rice production of Sub-Sahara Africa according to OECD-FAO Agricultural Outlook. Finally, the rice export from Mombasa Port was estimated, by calculating the difference between the rice production and consumption in each year. The result is shown in Table 7.3.15.

Table 7.3.14 Evolution of Consumption and Production of Rice in Kenya

	2010	2011	2012	2013	2014
Consumption (tons)	410,000	520,000	540,000	509,000	564,000
Production (tons)	110,494	111,229	138,204	125,256	112,263
Deficit (tons)	299,506	408,771	401,796	383,744	451,737
Import through Mombasa Port ('000 tons)	285	298	340	465	651

Source: Consumption and production are quoted from the Economic Review of Agriculture 2015, Ministry of Agriculture, Livestock and Fisheries; Import is from KPA Annual Review and Bulletin of Statistics

Table 7.3.15 Result of Demand Forecast (Import – Rice)

Unit: 1,000 ton

2016	2020	2025	2030	2035
572	539	626	720	822

Source: JICA Design Team

(4) Paper and Paper Products

Import of paper and paper products at Mombasa Port had been increasing until 2010, but it decreased in 2011 and 2012. It went up after then, but it is reaching a peak after 2014. In this demand forecast, the average value for the last five years (2012-2016) was applied to the demand for the period of 2017 to 2035. The result is shown in Table 7.3.16.

Table 7.3.16 Result of Demand Forecast (Import - Paper and Paper Products)

Unit: 1,000 ton

2016 (Actual)	2020	2025	2030	2035
451	392	392	392	392

Source: JICA Design Team

(5) Chemicals and Insecticides

Import of chemicals and insecticides at Mombasa Port had been increasing until 2007, but it declined after then. It went up again during the period of 2013 to 2015. In this demand forecast, the average value for the last five years (2012-2016) was applied to the demand for the period of 2017 to 2035. The result is shown in Table 7.3.17.

Table 7.3.17 Result of Demand Forecast (Import – Chemicals and Insecticides)

Unit: 1,000 ton

2016 (Actual)	2020	2025	2030	2035
366	328	328	328	328

Source: JICA Design Team

(6) Sugar

The volume of imported sugar at Mombasa Port during the period of 2001 to 2016 has been fluctuating within the range of 100,000 tons and 400,000 tons. According to the Economic Review of Agriculture 2015 (Ministry

of Agriculture, Livestock and Fisheries), the sugar consumption in Kenya was increasing in the period of 2010 to 2014, while the production in the same period was fluctuating (see Table 7.3.18). The sugar consumption per capita in Kenya is estimated to be 18.28 kg, by dividing the consumption volume in 2014 by the population in Kenya in 2014, namely 44,864 thousand people, quoted from the World Population Prospects (the 2015 Revision). Then, the sugar consumption in Kenya in each year of the period of 2017 to 2035 was calculated, by multiplying the sugar consumption per capita by the population in Kenya, assuming that the sugar consumption per capita would increase at a CAGR of 1.27%, referring to the growth rate of sugar consumption per capita of Sub-Sahara Africa according to OECD-FAO Agricultural Outlook 2016-2025. On the other hand, the sugar production in Kenya in each year of the period of 2017 to 2035 was estimated, based on the production volume in 2014, that is 592,668 tons, applying CAGR of 4.14% which is the growth rate of sugar production of Sub-Sahara Africa according to OECD-FAO Agricultural Outlook. Finally, the sugar export from Mombasa Port was estimated, by calculating the difference between the sugar production and consumption in each year. The result is shown in Table 7.3.19.

Table 7.3.18 Evolution of Consumption and Production of Sugar in Kenya

	2010	2011	2012	2013	2014
Consumption (tons)	772,731	783,700	794,844	800,000	820,000
Production (tons)	523,652	487,022	493,937	600,179	592,668
Deficit (tons)	249,079	296,678	300,907	199,821	227,332
Import through Mombasa Port ('000 tons)	279	140	102	207	231

Source: Consumption and production are quoted from the Economic Review of Agriculture 2015, Ministry of Agriculture, Livestock and Fisheries; Import is from KPA Annual Review and Bulletin of Statistics

Table 7.3.19 Result of Demand Forecast (Import – Sugar)

Unit: 1,000 ton

2016	2020	2025	2030	2035
356	273	305	329	340

Source: JICA Design Team

(7) Motor Vehicles and Lorries

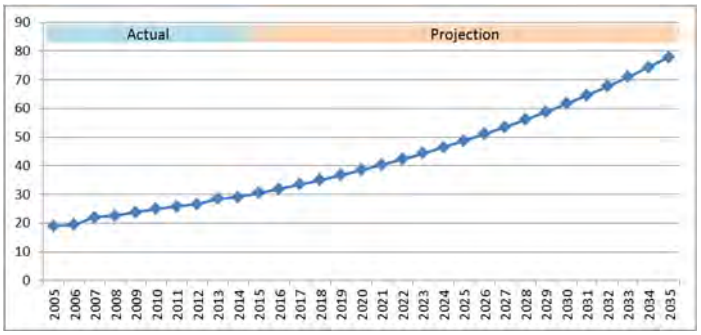
With the motorization in Kenya, more and more vehicles have been imported through Mombasa Port. The number of imported vehicles has been increasing during the period of 2001 to 2015 with certain fluctuations at CAGR of 13.3%. The majority of the imported vehicles are secondhand. In 2016, the number of imported vehicles was 313,000 units, declined at 32.7% from 465,000 units in the previous year, because the people seemed to hold back from purchasing vehicles owing to the tax increase and the economic slowdown. However, the decline may be only temporary, taking account of the strong desire to buy vehicles in Kenya, and it is expected to increase in 2017.

According to the KPA's data for the year 2013, 62.7% of the vehicles imported through Mombasa Port were to Kenya, while 29.0% were to Uganda, and the remaining 8.4% were to the other countries.

The number of imported vehicles at Mombasa Port is estimated through the following process.

1) The motorization rate in Kenya has been increasing at CAGR of 4.8% during the peiod of 2005-2014, and it is estimated to have reached 29.1 units/1,000 habitants (2014), by dividing the number of 'vehicles in use' according to the International Organization of Motor Vehicle Manufacturers (OICA) by the population of Kenya indicated in the UN World Population Prospects (the 2015

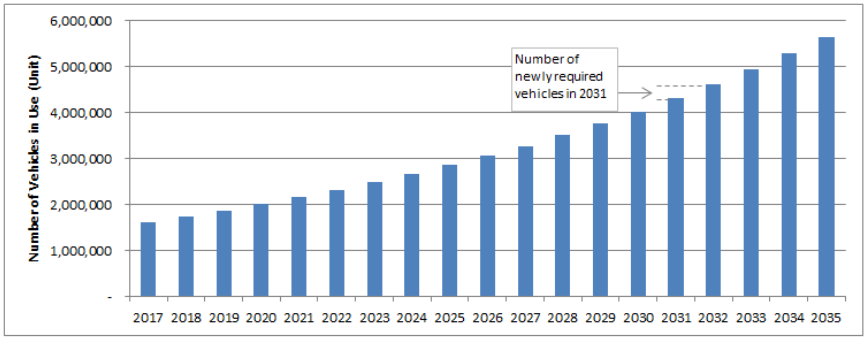
Revision). Assuming that the motorization rates in Kenya will continuously increase at CAGR of 4.8%, as the same as the period of 2005 to 2014 (see Figure 7.3.1), the number of 'vehicles in use' in Kenya in the future was estimated, by multiplying the motorization rates by the projected population according to the UN World Population Prospects.



Source: Estimations by the JICA Design Team

Figure 7.3.1 Projection of the Motorization Rates (units/1,000 habitants)

2) The number of newly required vehicles a year which comprised the number of vehicles to be manufactured in Kenya and to be imported from abroad (new and secondhand) in the concerned year is calculated by quoting the increment in the number of 'vehicles in use' in every year (see Figure 7.3.2).



Source: JICA Design Team

Figure 7.3.2 Projection of the Number of Vehicles in Use

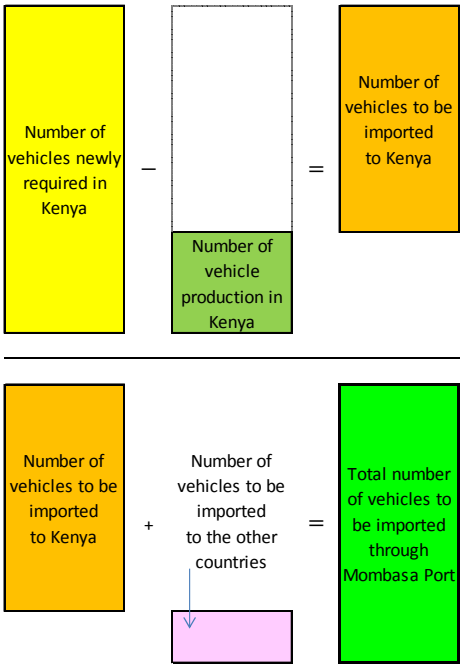
3) The number of vehicles assembled in Kenya has been increasing during the period of 2011 to 2015 at CAGR of 14.1% and it reached 10,181 units (provisional) in 2015, according to the Statistical Abstract 2016 by the Kenya National Bureau of Statistics. Therefore, the number of vehicle production in Kenya is assumed to keep growing in 2016 onward at the same CAGR of 14.1%.

4) The number of vehicles to be imported from abroad to Kenya in a year is calculated by subtracting the number of vehicle production in Kenya from the number of newly required vehicles in the concerned year.

5) Mombasa Port handles vehicles imported to other countries like Uganda, and the number remains at almost the same level, namely, around 50,000 units per annum, according to the KPA's data for the period of 2011 to 2013. Thus, assuming that the number of vehicles to be imported to the other countries through Mombasa Port will remain at 50,000 units per annum, the total number of vehicles

to be imported through Mombasa Port is estimated, by adding the number of vehicles to be imported to the other countries (50,000 units) to the number of vehicles to be imported to Kenya.

The foregoing process is shown in Figure 7.3.3 and Table 7.3.20, and the projection of the number of imported vehicles in units is shown in Table 7.3.21.



Source: JICA Design Team

Figure 7.3.3 Process of Demand Forecast (Import - Motor Vehicles and Lorries)

Table 7.3.20 Process of Demand Forecast (Import - Motor Vehicles and Lorries)

		2014	2020	2025	2030	2035
Motorization rate	Unit/1,000 habitants	29.1	38.5	48.7	61.5	77.8
Population in Kenya	1,000 people	44,864	52,187	58,610	65,412	72,600
Number of vehicles in use in Kenya	Unit		2,010,876	2,853,571	4,026,047	5,648,883
Number of vehicles to be newly required in Kenya	Unit		147,376	204,763	284,081	392,003
Number of vehicle production in Kenya	Unit	9,514	19,689	38,076	73,633	142,398
Number of vehicles to be imported through Mombasa Port (to Kenya)	Unit		127,687	166,688	210,448	249,605
Number of vehicles to be imported through Mombasa Port (to other countries)	Unit		50,000	50,000	50,000	50,000
Number of vehicles to be imported through Mombasa Port (Total)	Unit		177,687	216,688	260,448	299,605

Source: JICA Design Team

Table 7.3.21 Result of Demand Forecast (Import - Motor Vehicles and Lorries)

Unit: number of vehicles

2016 (Actual) 2015 (Actual)	2020	2025	2030	2035
97,746 143,833	177,687	216,688	260,448	299,605

Source: JICA Design Team

The volume of vehicles (in tons) to be imported through Mombasa Port is calculated by multiplying the total number of imported vehicles by the average weight of a vehicle in 2016 which is 3.2 ton/unit according to the "KPA Annual Review and Bulletin of Statistics". The result is shown in Table 7.3.22.

Table 7.3.22 Result of Demand Forecast (Import - Motor Vehicles and Lorries)

Unit: 1,000 ton

2016 (Actual) 2015 (Actual)	2020	2025	2030	2035
313 465	569	693	833	959

Source: JICA Design Team

(8) Other General Cargo

The volume of 'other general cargo' including fertilizer and cereals has been increasing with certain fluctuations during the period of 2001 to 2016 at CAGR of 6.3%. The volume of import of 'other general cargo' during 2017 to 2035 was estimated based on the correlation between the cargo volume and the GDP of Kenya. The result is shown in Table 7.3.23.

Table 7.3.23 Result of Demand Forecast (Import - Other General Cargo)

Unit: 1,000 ton

2016 (Actual)	2020	2025	2030	2035
5,277	8,530	12,269	16,302	20,338

Source: JICA Design Team

(9) Clinker

The imported clinker has been rapidly increasing since 2001, especially during the period of 2006 to 2016 at CAGR of 19.5%, to make up for the deficiency, despite the domestic clinker production by some major cement firms in Kenya. The volume of import of clinker during 2017 to 2035 was estimated based on the correlation between the cargo volume and the GDP of Kenya. The result is shown in Table 7.3.24.

Table 7.3.24 Result of Demand Forecast (Import - Clinker)

Unit: 1,000 ton

2016 (Actual)	2020	2025	2030	2035
3,084	4,821	7,518	10,428	13,340

Source: JICA Design Team

(10) Wheat

The volume of imported wheat has been increasing during the period of 2001 to 2016 at CAGR of 7.1%, to make up for the shortfalls caused by the rapidly increasing wheat consumption which can be

attributed to the changing food preference with the rise in the standard of living in Kenya. According to Wheat Atlas, the wheat consumption in Kenya was increasing in the period of 2006 to 2015, while the production in the same period was fluctuating (the trend from 2010 onward is shown in Table 7.3.25). The wheat consumption per capita in Kenya is estimated to be 42.56 kg, by dividing the consumption volume in 2015 by the population in Kenya in 2015, namely 46,050 thousand people, quoted from the World Population Prospects (the 2015 Revision). The growth of wheat consumption per capita is at CAGR of around 1% in the last 3 years, namely 2013-2015. Then, the wheat consumption in Kenya in each year of the period of 2017 to 2035 was calculated, by multiplying the wheat consumption per capita by the population in Kenya, assuming that the wheat consumption per capita would increase at a CAGR of 1%, the same growth rate as the actual, whereas the growth rate of wheat consumption per capita of Sub-Sahara Africa according to OECD-FAO Agricultural Outlook 2016-2025 is of 0.48%. On the other hand, the wheat production in Kenya in each year of the period of 2017 to 2035 was estimated, based on the average for the 5 years (from 2011 to 2015), that is 413.2 thousand tons, applying CAGR of 3.2% which is the growth rate of wheat production of Sub-Sahara Africa according to OECD-FAO Agricultural Outlook. As shown in Table 7.3.25, the wheat import at Mombasa Port substantially exceeded the deficit (the gap between the consumption and production in Kenya); the ratio of the former to the latter is 1.17 on average for the period 2006 to 2015, which implies that Mombasa Port handles imported wheat bound for other countries as well. Therefore, the wheat export from Mombasa Port during 2017 to 2035 was estimated, by calculating the difference between the wheat production and consumption in each year, and subsequently multiplying it by 1.17. The result is shown in Table 7.3.26.

Table 7.3.25 Evolution of Consumption and Production of Wheat in Kenya

	2010	2011	2012	2013	2014	2015
Consumption (tons)	1,458	1,590	1,760	1,814	1,885	1,960
Production (tons)	256	268	442	486	450	420
Deficit (tons)	1,202	1,322	1,318	1,328	1,435	1,540
Import through Mombasa Port ('000 tons)	1,287	1,443	1,559	1,401	1,908	1,838

Source: Consumption and production are quoted from Wheat Atlas; Import is from KPA Annual Review and Bulletin of Statistics

Table 7.3.26 Result of Demand Forecast (Import - Wheat)

Unit: 1,000 ton

2016	2020	2025	2030	2035
1,896	2,165	2,562	3,006	3,504

Source: JICA Design Team

(11) Fertilizer

The demand for fertilizer in Kenya is entirely filled by importation because of absence of domestic fertilizer manufacturers. The volume of imported fertilizer through Mombasa Port has been increasing with certain fluctuations during the period of 2001 to 2016 at CAGR of 10.1%. According to the "Kenya Fertilizer Assessment" published by the International Fertilizer Development Center (IFDC) in June 2012, the fertilizer consumption should be augmented from 500,000 tons to 900,000 tons per annum in order to achieve the growth target for the agriculture in Kenya. Therefore, the volume of imported fertilizer during

2017 to 2035 was estimated, on the assumption that it will increase at CAGR of 10% until it reaches 900,000 tons per annum, leaving unchanged after then. The result is shown in Table 7.3.27.

Table 7.3.27 Result of Demand Forecast (Import - Fertilizer)

Unit: 1,000 ton

2016 (Actual)	2020	2025	2030	2035
560	820	902	902	902

Source: JICA Design Team

(12) Coal

The demand for coal in Kenya is entirely filled by importation because of absence of domestic coal production. The volume of imported coal through Mombasa Port has been increasing with certain fluctuations during the period of 2001 to 2016 at CAGR of 7.2%. The volume of import of coal during 2017 to 2035 was estimated based on the correlation between the cargo volume and the GDP of Kenya. The result is shown in Table 7.3.28.

Table 7.3.28 Result of Demand Forecast (Import - Coal)

Unit: 1,000 ton

2016 (Actual)	2020	2025	2030	2035
455	669	985	1,327	1,669

Source: JICA Design Team

(13) Other Dry Bulk

The volume of import of 'other dry bulk' at Mombasa Port has been at the same level, except the sudden rise in 2008 and 2009. In this demand forecast, the average value for the last five years (2012-2016) was applied to the demand for the period of 2017 to 2035. The result is shown in Table 7.3.29.

Table 7.3.29 Result of Demand Forecast (Import - Other Dry Bulk)

Unit: 1,000 ton

2016 (Actual)	2020	2025	2030	2035
452	442	442	442	442

Source: JICA Design Team

(14) Petroleum, Oil and Lubricants (POL)

The volume of POL imported through Mombasa Port has been steadily increasing during the period of 2001 to 2016 at CAGR of 4.7%. It is assumed that approximately 20% of the imported POL is bound for Uganda. However, it is likely that the said portion will disappear from 2021 because the planned oil refinery in Uganda is expected to be operational from 2020 and Uganda will no longer count on the oil imported through Mombasa Port after then. Therefore, the volume of import of POL during 2017 to 2035 was estimated based on the correlation between the GDP of Kenya and the volume of POL bound for Kenya, which is assumed to be equivalent to 80% of the imported POL at Mombasa Port. Having said that the volume of POL bound for Uganda, which is assumed to be equivalent to one fourth of the POL bound for Kenya, was added to the POL import until 2020, since Uganda will still count on the POL imported through Mombasa Port until 2020. The result is shown in Table 7.3.30.

Table 7.3.30 Result of Demand Forecast (Import - POL)

Unit: 1,000 ton

2016 (Actual)	2020	2025	2030	2035
7,636	8,173	7,654	8,574	9,313

Source: JICA Design Team

(15) Other Liquid Bulk

The volume of 'other liquid bulk' at Mombasa Port had been rising with certain fluctuations until 2013. After that it was reaching a peak, then drastically went down in 2016, from 759,000 tons in the previous year to only 41,000 tons. In this demand forecast, the average value for the five years (2011-2015) prior to the sharp decrease in 2016 is applied to the demand for the period of 2017 to 2035. The result is shown in Table 7.3.31.

Table 7.3.31 Result of Demand Forecast (Import - Other Liquid Bulk)

Unit: 1,000 ton

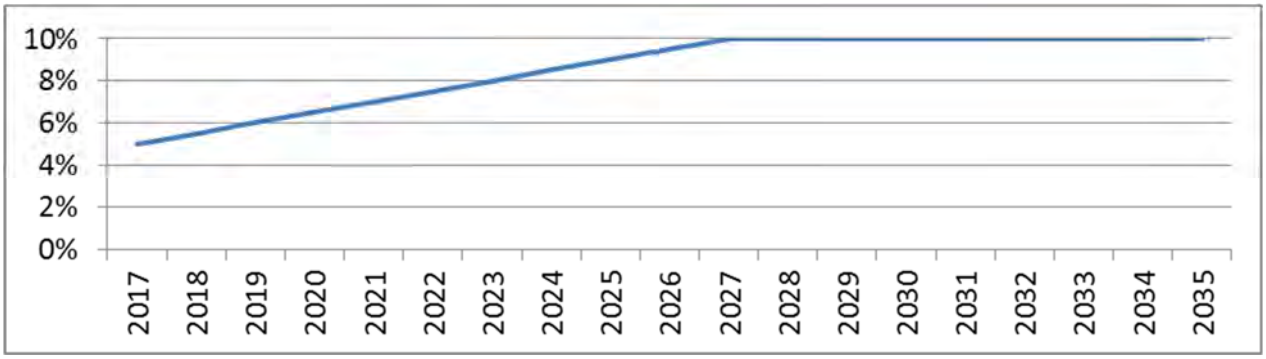
2016 (Actual)	2020	2025	2030	2035
41	831	831	831	831

Source: JICA Design Team

7.3.3 Demand Forecast of Container Cargo

Container cargo volume (in TEUs) in the future was calculated based on the projection of general cargo volume (in tons) shown in Clause 7.3.1 and 7.3.2, through the following process:

1) The container cargo volume (in tons) was estimated by multiplying the general cargo volume (in tons) by containerization ratio (95% for exports, 70% for imports, based on the analysis of current cargo data of Mombasa Port).
2) The container volume (in tons) was converted into the number of laden containers (in TEUs) by dividing the container volume (in tons) by the unit weight of laden container. The unit weight of laden container in these calculations is 15 tons/TEU for export containers, based on the analysis of data on loaded containers, and 13.5 tons/TEU for import containers, which has been used by KPA in the statistics of Mombasa Port.
3) Since the number of import containers exceeds the number of export containers, the number of empty containers (import) was calculated first, by using the empty container ratio of 1.5% quoted from the actual empty container ratio (import) in 2016. Subsequently, the number of empty containers (export) was estimated in such a way that the number of export containers (laden + empty) will be equal to the number of import containers (laden + empty).
4) The number of transshipment containers was calculated on the assumption that it would steadily increase with the capacity augmentation and improving efficiency of Mombasa Port as well as the active promotion of transshipment services. In this demand forecast, the transshipment ratio (the proportion of transshipment containers in the total containers) in 2017 was set at 5%, referring to the actual transshipment ratio of 4.4% in 2016, and it was assumed to increase every year by 0.5% for 10 years until it reaches 10% in 2027 (see Figure 7.3.4).



Source: JICA Design Team

Figure 7.3.4 Transshipment Ratio for Demand Forecast

The foregoing process is shown in Table 7.3.32 and 33, whereas the container volume projection in TEUs is in Table 7.3.34.

Table 7.3.32 Process of Demand Forecast (Export containers)

Item	Unit	2020	2025	2030	2035
General Cargo	1,000 ton	2,233	2,515	2,775	3,013
Containerization Ratio		95%	95%	95%	95%
Container Volume	1,000 ton	2,121	2,389	2,636	2,862
Container Unit Weight	ton/TEU	15.0	15.0	15.0	15.0
Laden Container Volume	TEU	141,404	159,299	175,725	190,815
Empty Container Ratio		80.2%	83.9%	86.3%	87.9%
Empty Container Volume	TEU	573,786	829,429	1,107,819	1,386,776
Container Volume (Laden + Empty)	TEU	715,190	988,728	1,283,544	1,577,590

Source: JICA Design Team

Table 7.3.33 Process of Demand Forecast (Import containers)

Item	Unit	2020	2025	2030	2035
General Cargo	1,000 ton	13,586	18,782	24,383	29,969
Containerization Ratio		70%	70%	70%	70%
Container Volume	1,000 ton	9,510	13,148	17,068	20,978
Container Unit Weight	ton/TEU	13.5	13.5	13.5	13.5
Laden Container Volume	TEU	704,462	973,897	1,264,291	1,553,927
Empty Container Ratio		1.5%	1.5%	1.5%	1.5%
Empty Container Volume	TEU	10,728	14,831	19,253	23,664
Container Volume (Laden + Empty)	TEU	715,190	988,728	1,283,544	1,577,590

Source: JICA Design Team

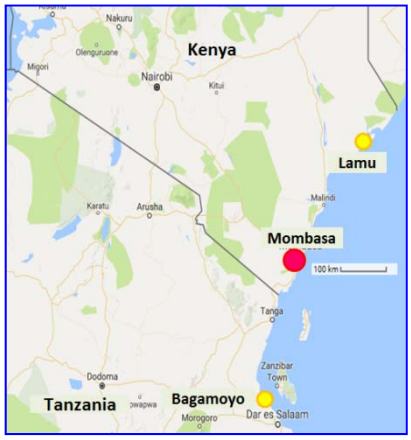
Table 7.3.34 Result of Demand Forecast (Container)

	Unit	2016	2020	2025	2030	2035
Export	1,000 TEU	507	715	989	1,284	1,578
[laden]		129	141	159	176	191
[empty]		379	574	829	1,108	1,387
Import	1,000 TEU	536	715	989	1,284	1,578
[laden]		528	704	974	1,264	1,554
[empty]		8	11	15	19	24
Transshipment	1,000 TEU	48	99	196	285	351
Total	1,000 TEU	1,091	1,530	2,173	2,852	3,506

Source: JICA Design Team

7.3.4 Influence of Potential Competing Ports

Lamu Port in the northern part of Kenya and Bagamoyo Port in Tanzania, which are both green field ports, can be regarded as potential competing ports for Mombasa Port (see Figure 7.3.5). The former is being constructed, whereas the project is yet to be initiated for the latter.



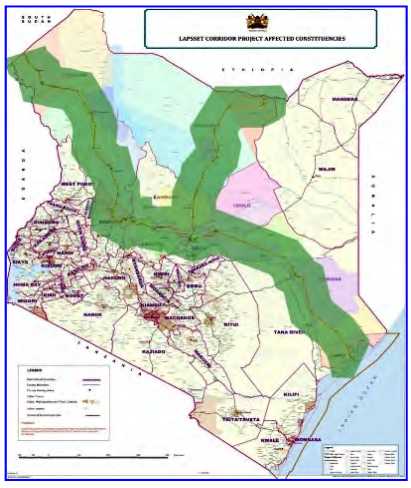
Source: Google Map

Figure 7.3.5 Location of Lamu Port and Bagamoyo Port

(1) Lamu Port

Development of Lamu Port is part of the Lamu Port-South Sudan-Ethiopia- Transport (LAPSSET) Corridor Project which is to provide transport and logistics infrastructure aimed at creating seamless connectivity between the Eastern African countries of Kenya, Ethiopia, and South Sudan (see Figure 7.3.6). The LAPSSET Corridor Project is composed of, in addition to Lamu Port, inter-regional standard gauge railways, inter-regional highways, crude and product oil pipelines, international airports, resort cities, merchant oil refinery, high grand falls multipurpose dam, and fiber optic cables and communication systems.

Lamu Port is planned to have 32 berths, and construction of the first three berths (length: 1,200 in total, depth: 18 m) will be completed by the end of 2019. Out of the three berths, one is to handle coal to be used at Amu Thermal Power Plant while the remaining two are the multi-purpose berths. The Government of Kenya plans to concession the three berths to the private sector for operation. The timing of development of the remaining 29 berths will depend on the demand and it will be concessioned to the private sector for both construction and operation.



Source: LAPSSET Corridor Development Authority

Figure 7.3.6 LAPSSET Corridor

The foregoing demand forecast is on the assumption that the development of Lamu Port will not affect the demand of Mombasa Port up to 2035 for the following reasons:

1) The majority of cargo handled at Mombasa Port is from/to Kenya (85.5% for exports, 68.8% for imports), and these are mainly generated and consumed in the southern part of Kenya, e.g., Nairobi and Mombasa. These cargoes are likely to be handled at Mombasa Port, even after Lamu Port becomes operational, because of shorter distance and lead time, as well as more frequent maritime shipping services.

Source: Northern Corridor Transit and Transport Co-ordination Authority (NCTTCA)

Figure 7.3.7 Northern Corridor

2) Approximately 80% of the transit cargo handled at Mombasa Port is from/to Uganda, and the remaining is bound for South Sudan, Democratic Republic of the Congo (DRC), and other countries, as described in Section 7.2 (5). Mombasa Port is connected with Uganda, South Sudan, DRC, Rwanda, and Burundi through the Northern Corridor (see Figure 7.3.7) and the transit cargo bound for these counties which are currently handled at Mombasa Port is likely to remain, because of shorter distance and lead time, as well as more frequent maritime shipping services.

3) Lamu Port, being a deep sea port with 18 m depth, will be more advantageous than Mombasa Port in terms of ability to receive larger vessels. However, it will be a long future when Lamu Port would serve as a major port, as it requires construction of a number of berths (in addition to the first three berths) and development of the hinterland connections such as highways and railways, which seems to take longer time.

(2) Bagamoyo Port

With respect to Bagamoyo Port, a USD 11 billion project to develop a green field port with a capacity of 20 million TEU per annum has been planned, but it was allegedly suspended by the Government of Tanzania in 2016. Therefore, potential influence of development of Bagamoyo Port is not reflected in this demand forecast.

7.3.5 Summary of Demand Forecast

The summary of the demand forecast is shown from Table 7.3.35 to Table 7.3.37, while a detailed table is in the appendix 6. In addition, the evolution of the actual demand during the period of 2001 to 2016 together with the demand projection up to 2035 is shown in Figure 7.3.8 for export cargo (tons), Figure 7.3.9 for import cargo (tons), and Figure 7.3.10 for container cargo (TEUs).

Exports show a slight increase at CAGR of 2.2% from 2,708,000 tons in 2016 to 4,069,000 tons in 2035. In addition to the resumption of export of iron ore, the two major export commodities, namely; tea and coffee are expected to moderately increase, and soda ash and titanium-related minerals will remain at the

same level. On the other hand, imports show substantial increase at CAGR of 5.0% from 23,736,000 tons in 2016 to 59,970,000 tons in 2035, as it is expected that the volume of iron and steel, motor-vehicles, clinker and coal will rapidly increase with the economic growth of Kenya. The gap between the imports and exports will widen, because of the higher growth of imports compared with the exports.

With respect to container cargo, it is expected to increase from 1,091,371 TEUs in 2016 to 3,505,756 TEUs in 2035 at CAGR of 6.3%, since the number of laden import containers is assumed to grow at a rapid pace. The number of transshipment containers is estimated to rise from 48,031 TEUs in 2016 to 350,756 TEUs in 2035.

Table 7.3.35 Summary of Demand Forecast – Export Cargo (ton)

(1,000 ton)

	2016	2020	2025	2030	2035	CAGR (2016-2035)
General Cargo	2,051	2,233	2,515	2,775	3,013	2.0%
Dry Bulk	606	1,005	1,005	1,005	1,005	2.7%
Liquid Bulk	51	51	51	51	51	0.0%
Total	**2,708**	**3,289**	**3,571**	**3,831**	**4,069**	**2.2%**

Source: JICA Design Team

Table 7.3.36 Summary of Demand Forecast – Import Cargo (ton)

(1,000 ton)

	2016	2020	2025	2030	2035	CAGR (2016-2035)
General Cargo	9,612	13,586	18,782	24,383	29,969	6.2%
Dry Bulk	6,447	8,916	12,409	16,105	19,857	6.1%
Liquid Bulk	7,677	9,004	8,485	9,405	10,144	1.5%
Total	**23,736**	**31,507**	**39,677**	**49,893**	**59,970**	**5.0%**

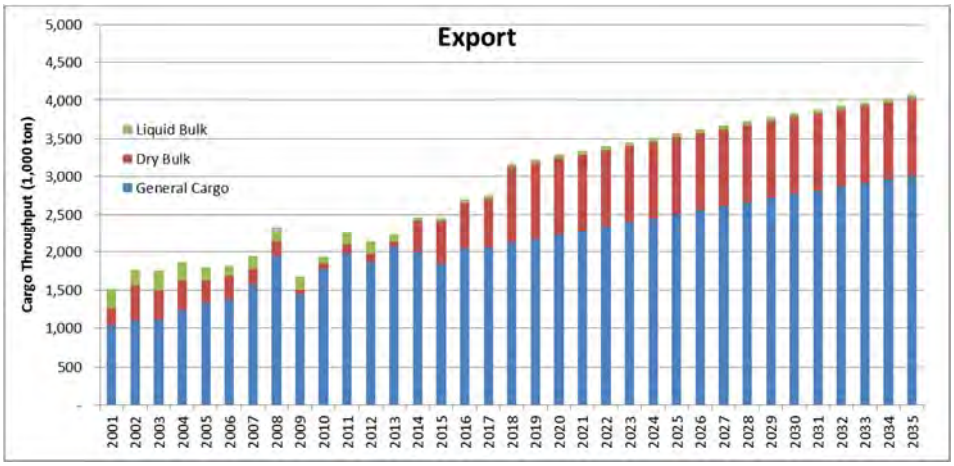
Source: JICA Design Team

Table 7.3.37 Summary of Demand Forecast – Container Cargo (TEU)

(TEU)

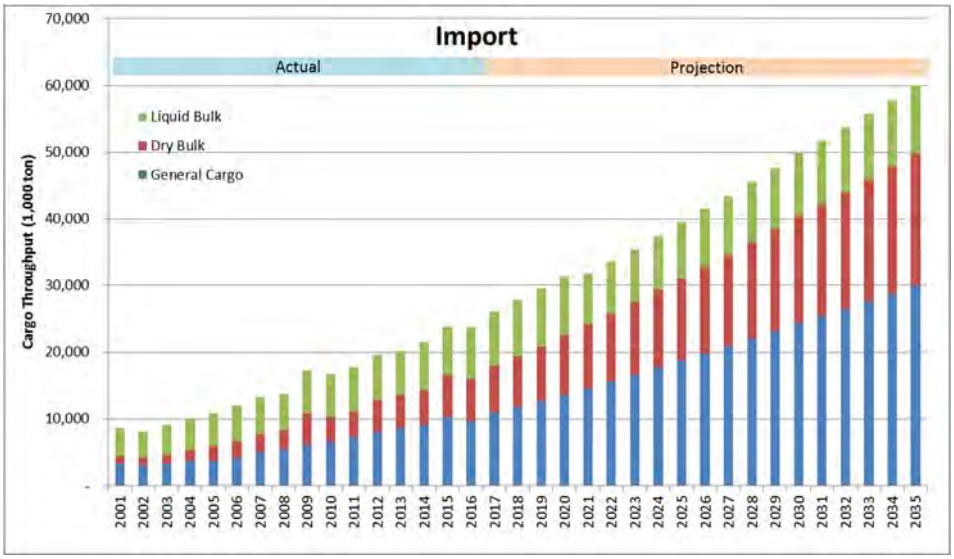
	2016	2020	2025	2030	2035	CAGR (2016-2035)
Export	507,357	715,190	988,728	1,283,544	1,577,590	6.2%
Import	535,983	715,190	988,728	1,283,544	1,577,590	5.8%
Transshipment	48,031	99,438	195,573	285,232	350,576	11.0%
Total	**1,091,371**	**1,529,818**	**2,173,029**	**2,852,321**	**3,505,756**	**6.3%**

Source: JICA Design Team



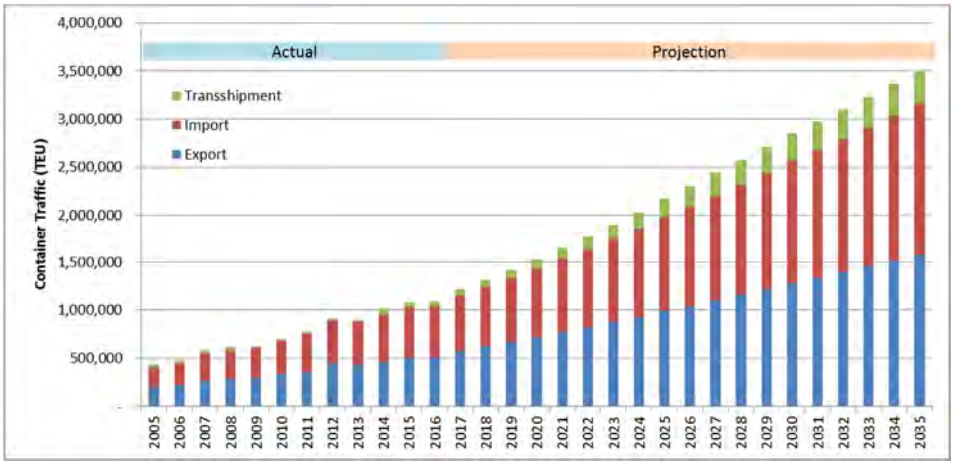
Source: JICA Design Team

Figure 7.3.8 Actual and Estimated Demands – Export Cargo (ton)



Source: JICA Design Team

Figure 7.3.9 Actual and Estimated Demands – Import Cargo (ton)



Source: JICA Design Team

Figure 7.3.10 Actual and Estimated Demands – Container Cargo (TEU)

7.4 Comparison with the Demand Forecast in Mombasa Port Master Plan

A comparison of this demand forecast for the year 2035 with that of the "Mombasa Port Master Plan including Dongo Kundu" completed in October 2015 (hereinafter "the Port M/P") is shown in Table 7.4.1.

(1) Export Cargo

The volume of export cargo in 2035 is estimated to be 4,069,000 tons in this demand forecast, whereas the Port M/P indicated 5,312,000 tons, which largely exceeds this forecast at about 30%. This is partly attributed to the difference in the amount of soda ash as well as 'other general cargo'. Regarding soda ash, this demand forecast applied the average value for the last three years (2014-2016) because the current situation of the soda ash business implies that an increase in soda ash export at Mombasa Port can no longer be expected. On the other hand, the Port M/P predicts that the soda ash export will increase with the GDP growth of export trading partners. In terms of the projection of 'other general cargo', this demand forecast and the Port M/P both used the regression analysis with the GDP of export trading partners, but this demand forecast applied the "log approximation" whereas the Port M/P adopted the "linear approximation" which has led to the larger amount. The "log approximation" was applied because 1) the correlation coefficient of log approximation was slightly higher than that of liner approximation based on the data for the period of 2001 to 2016, and 2) it is said that cargo growth will slow down with the economic growth, and the log approximation represents such a tendency. The export of iron ore formerly mentioned in this demand forecast is not captured in the demand forecast in the Mombasa Port M/P.

(2) Import Cargo

In case of import cargo, it is estimated to be 59,970,000 tons in 2035 in this demand forecast, while the Port M/P's projection is 67,577,000 tons which is larger at 13%. The estimated volume of total general cargo in this demand forecast is close to that of the Port M/P, although substantial gaps can be observed commodity-wise, due to different methodologies applied. Wheat is the commodity within the dry bulk, which shows the largest gap. In this demand forecast, wheat consumption per capita in Kenya is estimated to increase at CAGR of 1% referring to the latest growth rate in Kenya, whereas the Port M/P calculated the wheat consumption per capita by using a regression analysis with GDP in Kenya and it lead to the projection larger than this demand forecast. In terms of liquid bulk, the commodity of the largest gap is POL; this demand forecast and the Port M/P both used the regression analysis with the GDP of Kenya, but this demand forecast applied the "log approximation" whereas the Port M/P adopted the "linear approximation" which has led to the larger amount. The assumed GDP growth rates for the demand forecast are shown in Figure 8.4.1; the assumption of this demand forecast is larger than that of the Port M/P.

(3) Container Cargo

The projections of container cargo volume in 2035 in this demand forecast and the Port M/P are 3,506,000 TEUs and 3,789,000 TEUs, respectively, showing a slight difference (the latter is 8% larger than the former), in spite of the differences in containerization ratio, container unit weight, empty container ratio, and transshipment ratio.

Table 7.4.1 Comparison with the Demand Forecast in Mombasa Port Master Plan (Base Case)

Export (1,000 ton)

Type	Commodities	Design Mission for Mombasa Special Economic Zone Development Project		Mombasa Port Master Plan including Dongo Kundu (Base Case)	
		Demand in 2035	Methodology	Demand in 2035	Methodology
General Cargo	Tea	829	CAGR2.2% based on FAO report	912	Regression analysis with GDP of export partners
	Coffee	353	Using the recent CAGR 1.4%	493	Using an elastic value "export volume - GDP of export partners"
	Soda Ash	276	Average volume in the last 3 years	870	Using an elastic value "export volume - GDP of export partners"
	Others	1,555	Regression analysis with GDP of export partners (log approximation)	2,392	Regression analysis with GDP of GDP of export partners (linear approximation)
	Sub-total	**3,013**		**4,666**	
Dry Bulk	Titanium	589	Same as the volume in 2016	450	Average volume in the last 5 years
	Iron ore	360			
	Others	56	Average volume in the last 5 years	84	Average volume in the last 5 years
	Sub-total	**1,005**		**534**	
Liquid Bulk	Liquid Bulk	51	Same as the volume in 2016	112	Average volume in the last 5 years
	Sub-total	**51**		**112**	
Total		**4,069**		**5,312**	

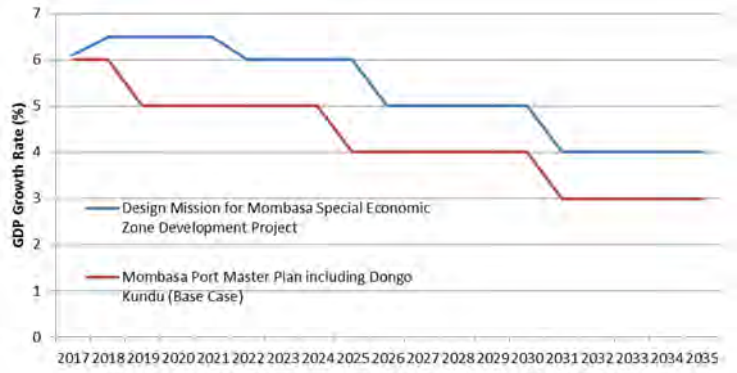
Import (1,000 ton)

Type	Commodities	Design Mission for Mombasa Special Economic Zone Development Project		Mombasa Port Master Plan including Dongo Kundu (Base Case)	
		Demand in 2035	Methodology	Demand in 2035	Methodology
General Cargo	Iron&steel	6,238	Regression analysis with GDP of Kenya	4,397	Regression analysis with GDP of Kenya
	Plastic	552	Average volume in the last 5 years	399	Average volume in the last 5 years
	Rice	822	Gap between the expected production and consumption	-	Gap between the expected production and consumption
	Paper & Paper Products	392	Average volume in the last 5 years	1,346	Regression analysis with GDP of Kenya
	Chemicals & Insecticides	328	Average volume in the last 5 years	260	Average volume in the last 5 years
	Sugar	340	Average volume in the last 10 years	973	Gap between the expected production and consumption
	M/Vehicle & Lorries	959	Gap between the required number of vehicles and the expected vehicle production in Kenya	1,580	Regression analysis with GDP of Kenya
	Others	20,338	Regression analysis with GDP of Kenya	19,452	Regression analysis with GDP of Kenya
	Sub-total	**29,968**		**28,407**	
Dry Bulk	Clinker	13,340	Regression analysis with GDP of Kenya	10,169	Regression analysis with GDP of Kenya
	Wheat in Bulk	3,504	Gap between the expected production and consumption	8,063	Gap between the expected production and consumption
	Fertilizer in Bulk	902	CAGR 10% until it reaches 900,000 ton	829	Import = consumption volume quoted from "Kenya Fertilizer Assessment by IFDC 2012"
	Coal	1,669	Regression analysis with GDP of Kenya	1,192	Regression analysis with GDP of Kenya
	Other Dry Bulk	442	Average volume in the last 5 years	1,632	Using an elastic value "import volume - GDP of Kenya"
	Sub-total	**19,857**		**21,885**	
Liquid	P.O.L	9,313	Regression analysis with GDP of Kenya (log approximation)	14,882	Regression analysis with GDP of Kenya (linear approximation)
	Others	831	Average volume in the last 5 years	2,403	Regression analysis with GDP of Kenya
	Sub-total	**10,144**		**17,285**	
Total		**59,970**		**67,577**	
Grand Total		**64,039**		**72,889**	

Container (1,000 TEU)

Type	Item	Design Mission for Mombasa Special Economic Zone Development Project		Mombasa Port Master Plan including Dongo Kundu (Base Case)	
		Demand in 2035	Remarks	Demand in 2035	Remarks
Export	Laden (1,000 TEU)	191	containerization ratio:95%, container unit weight:15 ton/TEU	326	containerization ratio:95%, container unit weight:20 ton/TEU
	Empty (1,000 TEU)	1,387	Empty ratio:88%	1,517	Empty ratio:82%
	Total (1,000 TEU)	1,578		1,842	
Import	Laden (1,000 TEU)	1,554	containerization ratio:70%, container unit weight:13.5 ton/TEU	1,780	containerization ratio:91%, container unit weight:13.5 ton/TEU
	Empty (1,000 TEU)	24	Empty ratio:1.5%	62	Empty ratio:3.4%
	Total (1,000 TEU)	1,578		1,842	
Transshipment	Total (1,000 TEU)	351	Transshipment ratio 10%	105	Transshipment ratio 2.8%
Total		3,506		3,789	

Source: JICA Design Team



Source: JICA Design Team

Figure 7.4.1 Assumed GDP Growth Rates for the Demand Forecast