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運輸インフラ省  
ケニア港湾公社

ケニア国  
モンバサ・ドンゴクンドゥ港  
開発計画策定支援プロジェクト

業務完了報告書

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基盤
JR
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略語表

略語	意味
C/P	Counterpart
CD	基準面(Chart Datum)
CFS	Container Freight Station
DWT	載貨重量トン数(Dead Weight Tonnage)
E/N	交換公文(Exchange of Notes)
GOJ	日本国政府(Government of Japan)
GOK	ケニア国政府(Government of Kenya)
JCC	合同調整委員会(Joint Coordination Committee)
JICA	国際協力機構(Japan International Cooperation Agency)
KPA	ケニア港湾公社(Kenya Port Authority)
M/P	マスタープラン(Master Plan)
MIED	産業化・企業開発省(Ministry of Industrialization and Enterprise Development)
MOTI	運輸・インフラ省(Ministry of Transport and Infrastructure)
MPDP	モンバサ港開発プロジェクト(Mombasa Port Development Project)
NK	日本工営(Nippon Koei Co., Ltd.)
OC	オリエンタルコンサルタンツ グローバル(Oriental Consultants Global Co., Ltd.)
OCDI	国際臨海開発研究センター(Overseas Coastal Area Development Institute of Japan)
PDM	Project Design Matrix
PPP	Public Private Partnership
R/D	Record of Discussion
RMG	Rail Mounted Gantry Crane
RTG	Rubber Tired Gantry Crane
Ro/Ro	Roll on/ Roll off
SAPROF	Special Assistance for Project Formation
SEZ	経済特区(Special Economic Zone)
SSG	Ship to Shore Gantry Crane
TEU	Twenty-Foot Equivalent Unit
TMEA	Trademark East Africa
TWG	Technical Working Group
UN	国際連合(United Nations)
WBS	Work Breakdown Structure

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## 1. プロジェクトの概要

### 1.1 プロジェクトの背景

モンバサ市に位置するモンバサ港は、東アフリカ地域最大の港である。モンバサ港はケニアだけでなく、ウガンダ、ルワンダ等の内陸国にも利用されている。東アフリカ地域の急速な経済発展と、コンテナ取扱量の増大に際し、国際協力機構（JICA）は、ケニア港湾公社（Kenya Port Authority, KPA）に対し、港の北側にコンテナターミナルを増設する「モンバサ港開発事業（MPDP：2007年11月に267億円で借款契約調印）」にてサポートを行ってきた。さらにJICAは、ケニア政府の要請により、ケニアと東アフリカ地域の経済発展の加速に寄与すべく「ドンゴクンドゥ地区経済特別区（SEZ）マスタープラン」を開始した。

近年、モンバサ港の貨物取扱量は予想を遥かに超えて伸びている。この状況を考慮すると、前述の円借款プロジェクトのあとの、モンバサ港開発の今後の展望と構想を示した、モンバサ港開発マスタープランというものが必要となってくる。詳細計画調査団が2013年11月にケニアに派遣され、ケニア政府機関とのプロジェクト策定のための一連の協議がなされた。これらの協議を経て、本件プロジェクトの目的と手法が合意に至ったものである。

### 1.2 プロジェクトの目的

プロジェクトの目的は以下の通り。

#### (1) 上位目標

策定したモンバサ港の開発計画に基づいて事業が実施される。

#### (2) プロジェクト目標

KPAの港湾開発計画策定に係る能力が向上する。

#### (3) 期待される成果

- 1) KPAが2009年に作成したモンバサ港開発計画がレビューされる。
- 2) KPAの戦略的計画策定及び運営体制が整備される。
- 3) KPAにおける将来需要及び取扱能力予測に係る手法が確立される。
- 4) モンバサ港の開発に係る整備計画及び投資計画が立案される。

### 1.3 対象地域

ケニア国モンバサ郡モンバサ港

## 1.4 モンバサ港の現状と課題

### 1.4.1 現状

#### (1) 港湾管理者

ケニア国の港湾セクターは運輸インフラ省（MOTI）の所管であり、その下部組織として KPA があある。ケニア国においてはモンバサ港が実質的に唯一の国際港であるので、KPA の機能はほぼモンバサ港の港湾管理者としての職能に特化されている。KPA の組織は次の通りである。

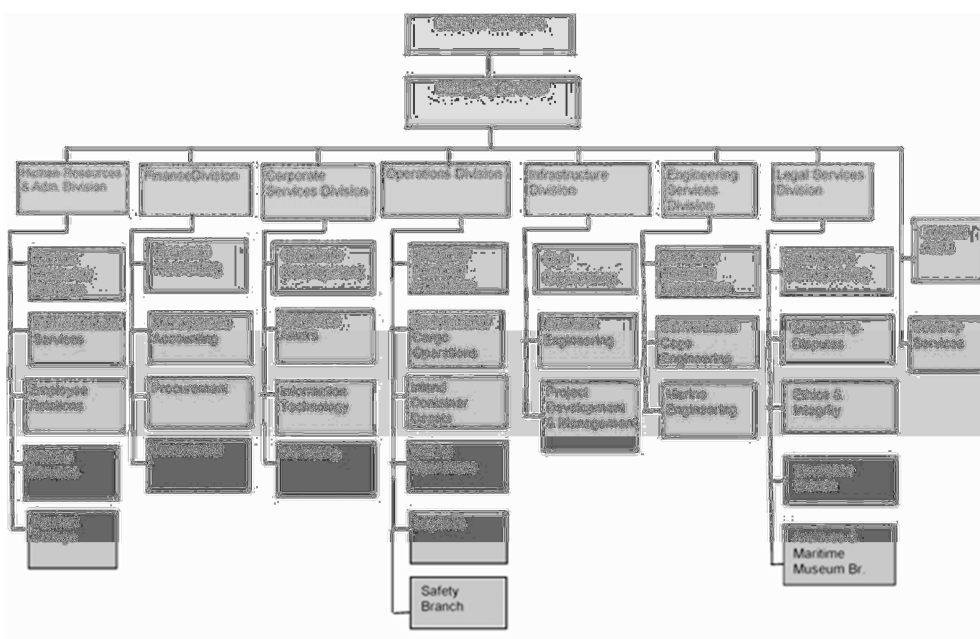


図 1.1 KPA 組織図

出典：KPA

港の形態としては、途上国に多く見られる Public Service Port タイプの港であり、港湾施設のみならず港湾労働者から港湾関連サービス業務まで全て KPA が直接運営する形態となっている。KPA は過去より幾度も Landlord Port タイプへの転換を試みてきたが、港湾労働者からの反対等により、現在に至るも形態の転換は達成されていない。

#### (2) 港湾貨物

モンバサ港は、年間 22 百万トン(2013年)の貨物を取扱っており、輸出入の割合では輸入貨物が 85% を占めている。コンテナ貨物と非コンテナ貨物の割合では、コンテナ貨物が 894 千 TEU (2013 年) で、全体の約 40%を占めている。非コンテナ貨物では、原油・石油製品類、クリンカー及び小麦が太宗貨物である。又、港を持たない内陸諸国を抱える東アフリカ経済圏のゲートウェイ港としての性格を反映して、これら内陸国向けの通過貨物 (transit cargo)が多いのも特徴である。

モンバサ港での取扱貨物の明細は次の通りである。

表 1.1 モンバサ港取扱貨物明細推移

	2010	2011	2012	2013	2014
<b>IMPORTS ('000' DWT)</b>					
Containerized Cargo	4,591	5,226	5,954	5,974	6,524
Conventional Cargo	1,397	1,298	1,302	1,726	1,830
Dry Bulk	3,827	3,807	4,811	4,913	5,231
Liquid Bulk	6,386	6,607	6,665	6,537	7,192
<b>TOTAL</b>	<b>16,201</b>	<b>16,938</b>	<b>18,732</b>	<b>19,150</b>	<b>20,777</b>
of which Transit In	5,004	5,166	6,201	6,196	6,691
<b>EXPORTS ('000' DWT)</b>					
Containerized Cargo	2,218	2,337	2,626	2,690	2,791
Conventional Cargo	192	171	153	128	108
Dry Bulk	70	122	106	65	422
Liquid Bulk	95	158	160	100	45
<b>TOTAL</b>	<b>2,575</b>	<b>2,788</b>	<b>3,045</b>	<b>2,983</b>	<b>3,366</b>
of which Transit Out	377	430	425	513	508
<b>TOTAL IMPORTS &amp; EXPORTS</b>	<b>18,776</b>	<b>19,726</b>	<b>21,777</b>	<b>22,133</b>	<b>24,143</b>
Transshipment ('000' DWT)	158	227	143	174	732
<b>TOTAL THROUGHPUT ('000' DWT)</b>	<b>18,934</b>	<b>19,953</b>	<b>21,920</b>	<b>22,307</b>	<b>24,875</b>
<b>Container Traffic (TEU)</b>	<b>695,600</b>	<b>770,804</b>	<b>903,463</b>	<b>894,000</b>	<b>1,012,002</b>
<b>Total Vessel Calls (No.)</b>	<b>1,579</b>	<b>1,684</b>	<b>1,763</b>	<b>1,768</b>	<b>1,832</b>

Source: KPA Annual Review and Bulletin of Statistics 2014

### (3) 港湾施設

#### a) 岸壁

モンバサ港には No.1 berth から No.19 berth まで 17 の岸壁があり、港内のモンバサ島側に位置する No.1 から No.10 までの岸壁は主として一般貨物船（含む自動車専用船、RoRo 船）の使用に供され、本土側に位置する No.11 から No.19 までの岸壁はコンテナ専用岸壁として使用されている。No.19 の先にタンカーバースを挟んで、現在新たなコンテナターミナル(Mombasa Port Development Project, MPDP) が建設中である。

モンバサ港の岸壁の明細は次の通りである。

表 1.2 モンバサ港岸壁明細

Berth	Usage	Cargo Handling Equipment	Length (m)	Design depth - m below CD	Built in
Mbaraki Wharf	Bulk import of coal, clinker, gypsum, iron ore, bauxite, cement Edible oils & molasses Export of bagged cement & fluorspar	Traveling dry bulk loader  Pneumatic unloader Pipework	306.3	10.5	1970
Berth 1	Cruise liners, passengers, RoRo		173.1	10.5	1921-1929

Berth	Usage	Cargo Handling Equipment	Length (m)	Design depth - m below CD	Built in
Berth 2	Cruise liners, passengers, RoRo		166.4	10.5	1921-1929
Berth 3	Bulk grain	2 x300 tons/hr unloaders plus conveyor system	166.4	10.5	1921-1929
Berth 4	General cargo, containers		190.2	10.5	1921-1929
Berth 5	General cargo, RoRo, steel, containers		178.6	10.5	1921-1929
Berth 7	General cargo, bulk		208.2	10.0	1943-1944
Berth 8	General cargo, bulk		197.5	11.5	1943-1944
Berth 9	General cargo, bulk, steel	Overhead conveyors for soda ash	179.8	11.5	1957-1958
Berth 10	General cargo, bulk		204.2	10.0	1957-1958
Berth 11	General cargo, bulk, RoRo, containers		184.4	10.0	1957-1959
Berth 12	General cargo, containers		182.9	10.0	1957-1959
Berth 13	Containers, general		174.0	10.5	1957-1959
Berth 14	Containers, general	3 RTGs on Berths 14	181.4	10.0	1957-1959
Berth 16	Containers	7 SSG, 19 RTGs & 2 RMGs (rail terminal) on Berths 16-19	177.7	12.5	1975
Berth 17	Containers		182.3	12.5	1975
Berth 18	Containers		239.0	12.5	1977
Berth 19	Containers		240.0	13.5	2013
Kipevu Oil Terminal	Crude oil, oil products		Dolphin berth – max length approx 260 m	13.41	1963
Shimanzi Oil Terminal	Oil products, LPG		Dolphin berth – max length approx 150 m	9.76	1931
Northern Lighter Quay	Not used		Approx. 170 m	2.86	1908-1910
Southern Lighter Quay	Not used		30 m	2.40	1952-1954

Source: Summarized by JICA Team from KPA's records

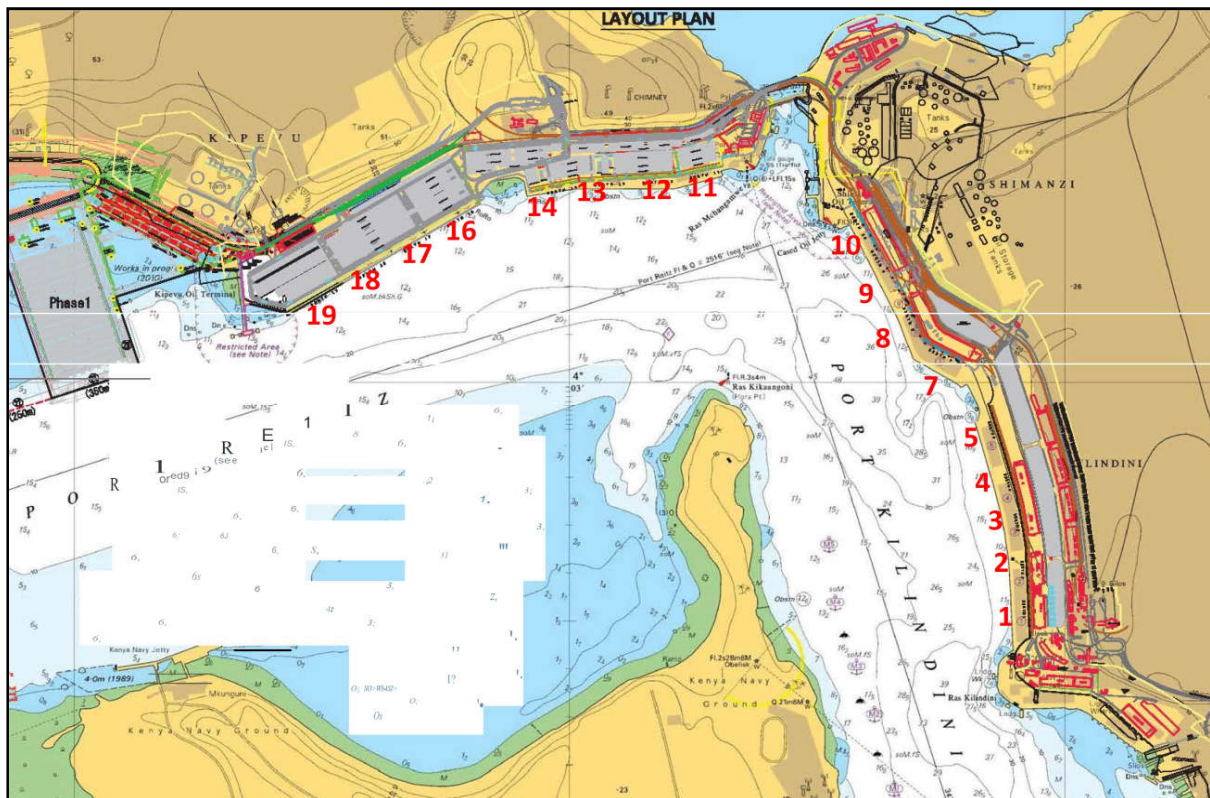


図 1.2 モンバサ港バース配置図

## b) 航路

Likoni Ferry が横断する港の入口から、Port Reitz と称される最奥部まで約 10Km の航路は 15m の水深を維持している。航路では比較的潮流が速いため、タグボートのアシストが義務付けられている。

## c) ターミナル面積

現在コンテナ貨物専用のターミナルとして使用されているのは、岸壁 No.11~No.19 の背後のエリアであり、面積は 290,828m<sup>2</sup> である。この内、岸壁 No. 11/12 はコンテナ船と在来船の併用となっているため、背後エリアは Project Cargo 等に使用される場合もある。岸壁 No.19 の背後エリアはコンテナ混雑解消のため 2013 年に延長増築されたものである。

## d) アクセス手段

モンバサ港へのアクセスは道路と鉄道であるが、鉄道システムの劣化と恒常的保守不備により鉄道の利用は限定的であり、大半の貨物はトラックによる道路輸送である。しかしながらモンバサ港を取り巻く道路網は不備であり、重量交通のために設計された道路ではない。全体的な道路容量の不足により、モンバサ港地域から市街地を抜けてナイロビ等内陸地をつなぐ幹線道路は常に混雑している。



## e) 荷役

陸上ガントリークレーンでの本船荷役が可能なのは岸壁 No.16～19 のコンテナターミナルのみである。岸壁 No.11～14 でのコンテナ荷役は本船クレーンを使用しての荷役となる。現在 KPA のコンテナターミナルには、7 基のガントリークレーンと RTG 22 台、RMG (レール式) 2 台、リーチスタッカー 19 台が配置されている。

### 1.4.2 課題

モンバサ港は、増加する貨物量に港湾施設の拡張が追い付かず、恒常的な混雑に悩まされている。さらに、港湾施設の狭小性に、KPA 直僱の港湾労働者による荷役作業の能率の悪さが拍車をかける結果となっている。

モンバサ港は、背後に高さ 20～50m の丘が控えており、その丘の上には発電所、オイルタンク、住民居住地等の施設が密集している。従って内陸方向への拡張の可能性は無い。

KPA はこの対応策として、港域外の民間 CFS に到着コンテナを強制的に搬出し、そこでコンテナの引き渡しを行うシステムを導入している。モンバサ港を取り巻く周辺地域では、道路システムが整備されておらず、旧来の道路を地域交通と共有して使用しており、港に搬出入されるコンテナ等の貨物の輸送に大きな障害となっている。

これらモンバサ港地域でのボトルネック現象は、ケニア国内荷主層のみならず、モンバサ港を利用せざるを得ない周辺内陸国からも厳しい糾弾を受けており、ケニア政府にとってもモンバサ港の効率改善は喫緊の課題となっている。

## 1.5 関係機関

ケニア側の関連機関は以下の通りである。

- 運輸・インフラ省 (MOTI)
- 産業化・企業開発省 (MIED)
- 財務省
- Vision 2030 マネージメント
- ケニア海事局
- ケニア港湾公社 (KPA)

## 2. 基本的取組方針

### 2.1 技術面での方針

#### (1) 最適な専門家の配置

各専門家の専門性、保有技術力等について吟味し、求められる技術移転項目に係る高度な技術力を有する専門家を配置した。同時に、本件プロジェクトを円滑に実施するためには、モンバサ港周辺で行われている多様なプロジェクトに係る情報が不可欠であり、それらのプロジェクトに直接、間接に関わり、多くの情報及び関連人脈を保有している専門家を可能な限り配置した。

#### (2) 多様な課題が盛り込まれ、分り易く、将来的な見直しが行い易いマスタープラン

マスタープランの構成、内容については、KPA との協議を重ね以下のようにした。

- 1) 目標年次： 2035年（マスタープラン策定後20年）
- 2) 段階計画： 2015 - 2020（緊急計画）  
2021 - 2025（中期計画）  
2026 - 2030, 2031 - 2035（長期計画）

緊急計画においては、現在整備中の新コンテナターミナル整備（第1、第2フェーズ）の着実な推進、Lighter Berth の改修、その他の既存ターミナルの改修、拡張等が含まれる。中期計画では、更なる新コンテナターミナルの整備（第3フェーズ）、ドンゴクンドゥ地区 SEZ M/P に対応した多目的ターミナル 2 バース（D1,D2）が含まれる。長期計画では、更なる新コンテナターミナルの整備（第4、第5フェーズ）が主な整備目標となる。

代案では、クリンカー・石炭などのバルクをドンゴクンドゥ地区に移した場合の整備目標を示した。こちらの案ではドンゴクンドゥ地区にあと 2 バース（D3,D4）、合計 4 バース建設する。

中・長期計画については、KPA において継続的な見直しを実施し、新たな情勢に対応した計画とする必要がある。そのため、構築した需要予測、施設容量予測モデルの KPA に対する技術移転を通して、見直しし易いマスタープランとした。

#### (3) 盛り込むべき課題、方針

上述した施設整備だけでなく、①民営化、PPP 等民間の資金、活力、ノウハウの活用、②荷役の直営体制の是非に係る課題及び③港湾手続きの IT 化等港湾の管理運営全般にわたる課題を盛り込んだ。

#### (4) 経済、財務分析のレベル

マスタープラン段階での、経済分析と簡易な財務分析を行った。実施した経済分析・財務分析は KPA に対する技術移転を通して、KPA 自身で見直しできるものとした。

## (5) 絞り込んだ技術課題に対する技術移転の実施

本件プロジェクトは、「開発調査」的な性格が強いことから、需要予測、施設容量予測モデルの構築などの港湾計画に関わるものを中心とした技術移転を、現地でのワークショップ、セミナーにて実施し、KPA 職員の能力開発を図った。

## (6) 現在実施されている各種プロジェクトとの整合性の確保

上記(1)で述べた通り、多数のプロジェクトが同時進行中であり、これらのプロジェクトとの整合性を十分に確保した。SEZ M/P プロジェクトについては、当該プロジェクトで検討される SEZ の産業配置により、将来的な貨物の種類、量及び港湾施設の配置、規模等が大きく異なって来ることから、その整合性に特段に配慮した。

## (7) 技術移転における KPA の意向及び C/P 技術力の把握

上記(2)で述べた通り、本件プロジェクトは、技術協力プロジェクト中に「開発調査」的性格が混在しており、両者のバランスを確保しつつ業務を遂行する必要がある。このため、技術移転項目に係る KPA の意向を初期段階で確認し、同時に、配置される CP の技術力を確認の上、技術移転計画を策定・実施した。

## (8) KPA との共同作業による技術移転の質の向上及び KPA における持続性の確保

技術移転に際しては、技術移転項目に係るデータの収集、整理、解析及びモデル化等を C/P と共同で行うことにより、質の高い技術移転を図った。特に、需要予測モデル、容量予測モデルについては、本件プロジェクト終了後においても KPA による持続的な運用、必要に応じた改良が不可欠であることから、持続性の確保が可能な分かり易いモデル化を行った。

## (9) 対象者に相応しい本邦研修の実施

TWG (Technical Working Group)メンバーに対して、「KPA の戦略的計画策定及び運営体制の確立」をテーマに4名2週間、また、需要予測モデル等具体的な技術移転項目に配置される KPA 職員に対して、「海運及び貨物の将来需要予測などに必要な能力開発」をテーマに4名4週間、それぞれ本邦研修を実施した。

## (10) 適切なプロジェクトのモニタリング及び評価

PDM に基づいて WBS 及び PO を作成し、プロジェクトの進行を管理した。管理はモニタリング評価シートを用いて行った。

## (11) ローカルコンサルタントの活用

本件プロジェクトの実施には、深淺測量、地形測量、地質調査、環境社会配慮等の分野でローカルコンサルタントを活用した。また、業務全般を通して多様な現地情報、データを迅速に得る必要があることから、現地事情に精通（広範な人的ネットワークを保持）していると共に、得るべき情報、データの取捨選択を自律的に行えることのできる有能なローカルコンサルタントを活用した。

## (12) ジェンダーへの配慮

港湾開発計画の検討に際しては、女性や子供等社会的弱者に対する配慮を行った。

## 2.2 業務運営面での方針

### (1) PDM、WBS によるプロジェクト管理及びプロジェクトの柔軟性の確保

本件プロジェクトは、KPA と JICA との間で 2014 年 5 月 29 日に締結された R/D の Annex 1、2 に各々示されている PDM と PO に基づく。その PDM と PO 必要な修正を加え、それに基づいた WBS を含むワークプランは 2014 年 8 月 26 日に実施した JCC で了承された。

確定した PDM 等に基づきプロジェクト管理を行うが、プロジェクトの進捗、成果発現状況、外部環境の変化等に伴いプロジェクトの方向性を修正する場合も想定されるため、モニタリング作業を通じて状況把握を行い、柔軟なプロジェクト実施が確保できる様、JICA への早期相談を行った。

### (2) 入手情報、報告書等の厳重、適切な管理

本件プロジェクトの実施過程において得られる情報、データ、レポート等は、KPA 或いは関係民間企業にとって極秘扱いである場合も想定されることから、厳重、適切に管理した。本件プロジェクトの専門家が作成する資料、分析結果、報告書も同様の扱いとした。

### (3) 他ドナーとの連携の確保

他ドナーからの情報収集及び連携を図る意味から、TMEA 等他ドナーを往訪する等意見・情報交換を積極的に実施した。

### (4) JICA ケニア事務所への適切な報告、連絡、相談の実施

ワークプラン、事業進捗報告書等に関する JCC、TWG との協議に関し、日程、協議内容等に関する事前相談、協議結果の速やかな報告を行った。また、プロジェクトの進捗状況及び専門家の安全等に係る事項についても、JICA ケニア事務所に速やかに報告、協議した。

### (5) プロジェクト実施時の安全確保

JV 各社は、他案件でモンバサにおける業務を実施中であり、業務途中でケニア国内でのテロ事案、モンバサ、ナイロビにおける騒乱や強盗等犯罪事案に係る多数の情報を入手しており、安全確保の重要性を痛感している。このため、本件プロジェクト実施に当たっては、別途作成した安全管理体制に基づき行動すると共に安全な宿泊施設、移動手段を使用した。また、外出時には、治安機関オフィス、喧騒な場所やデモ現場を避ける等安全確保に努めた。さらに、大使館、JICA 事務所、C/P、マスコミ、インターネットからの情報収集に努め、状況の把握を行うと共に専門家の安全確保に最大限配慮した。

## 3. 活動

### 3.1 活動内容

本プロジェクトの活動内容は下表に示すとおりである。活動 6 の能力開発(CD)の対象となる活動は活動 3 及び活動 5 となる。

表 3.1 活動内容

活動 1 :	既存の港湾計画及び関連情報のレビュー
活動 2 :	モンバサ地域の開発や活動に係る関連情報の収集及び分析
活動 3 :	海運及び貨物に係る将来需要予測
活動 4 :	ドンゴクンドゥ地区の港湾施設とモンバサ港開発ビジョン・コンセプトの検討
活動 5 :	港湾開発の整備計画及び投資計画の立案
活動 6 :	関連する能力開発 (CD) の実施

### 3.2 プロジェクトフロー

プロジェクトは、概ね 11 ページの業務フローチャート (図 3.1) に沿って実施された。

### 3.3 業務スケジュール

プロジェクトは、概ね 12 ページの業務スケジュール (図 3.2) に基づいて実施された。

### 3.4 プロジェクト管理

KPA 職員の能力開発は、3.1 活動内容で述べた通り、活動 3 及び活動 5 に関連したものである。それらの成果 3 及び成果 5 に対応した WBS を 13 ページ図 3.3 のように作成した。プロジェクトの進捗はこの WBS にもとづきモニターした。

WBS 中、レベル 1 は PDM に規定された期待される効果、レベル 2 は活動の成果の概要、レベル 3 はプロジェクト管理単位、レベル 4 は活動のグループ、レベル 5 は個々の活動となる。

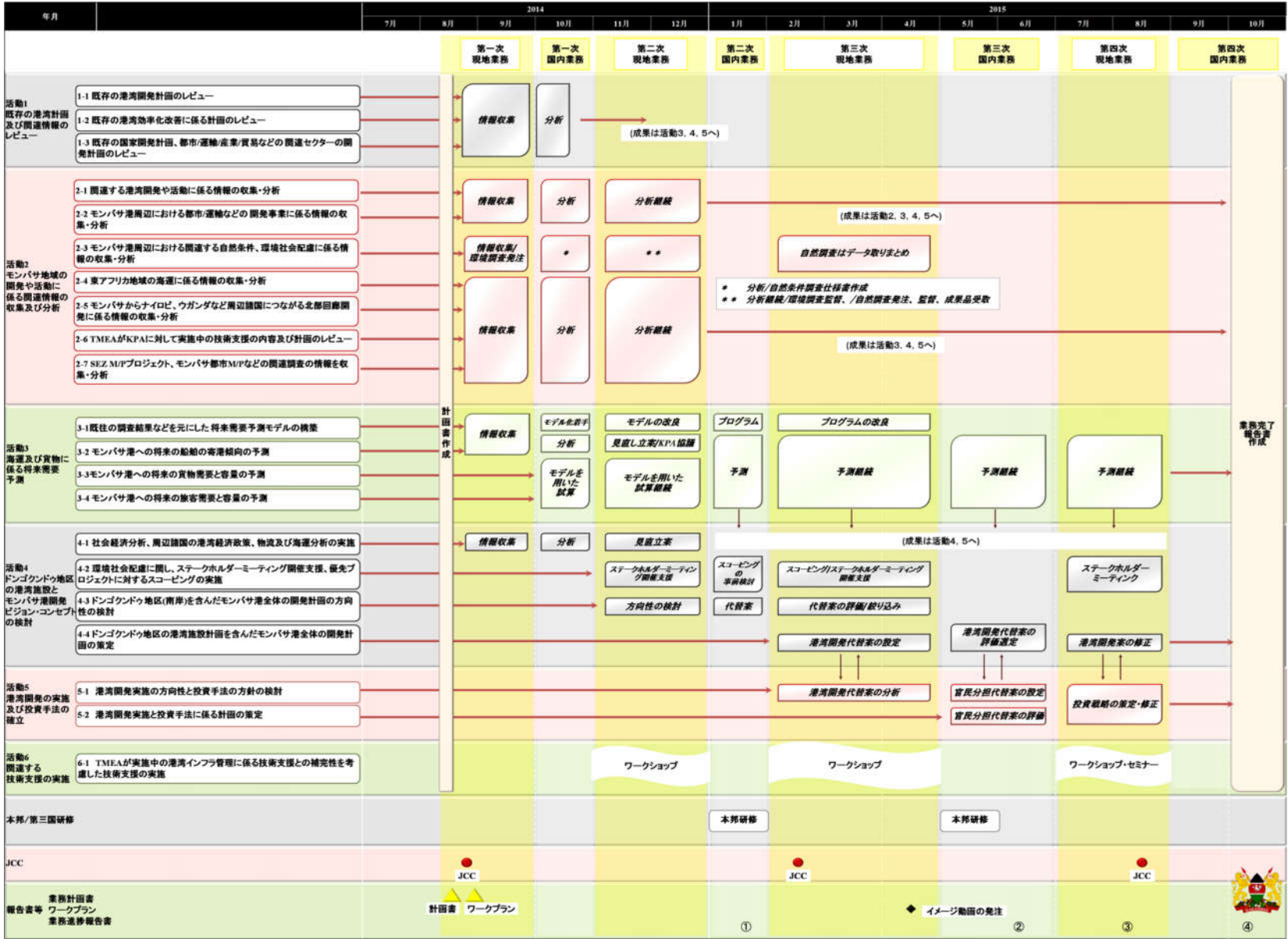
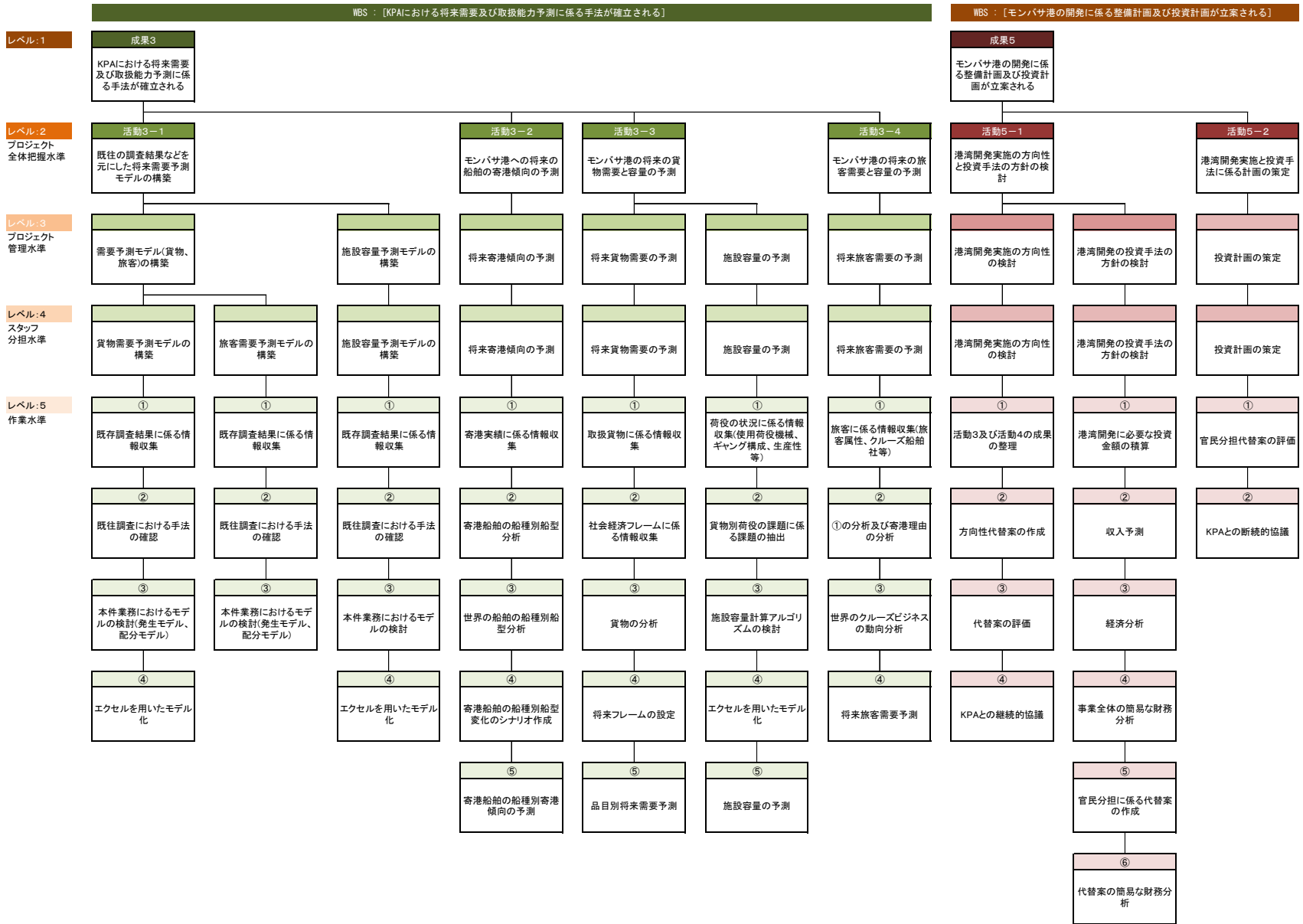


図 3.1 プロジェクトフロー

	2014						2015									
	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10
1-1 既存の港湾開発計画のレビュー		■	■	■												
1-2 既存の港湾効率化改善に係る計画のレビュー		■	■	■												
1-3 既存の国家開発計画、関連セクターの開発計画のレビュー		■	■	■												
2-1 関連する港湾開発や活動に係る情報の収集・分析		■	■	■	■	■										
2-2 モンバサ港周辺における開発事業に係る情報の収集・分析		■	■	■	■	■										
2-3 モンバサ港周辺における関連する自然条件、環境社会配慮に係る情報の収集・分析		■	■	■	■	■	■	■	■	■						
2-4 東アフリカ地域の海運に係る情報の収集・分析		■	■	■	■	■										
2-5 モンバサからナイロビ、さらにはウガンダなど周辺諸国につながる北部回廊開発に係る情報の収集・分析		■	■	■	■	■										
2-6 TMEAがKPAに対して実施中の技術支援の内容及び計画のレビュー		■	■	■	■	■										
2-7 SEZ M/Pプロジェクト、モンバサ都市M/Pなどの関連調査の情報を収集・分析		■	■	■	■	■										
3-1 既往の調査結果などを元にした将来需要予測モデルの構築		■	■	■	■	■	■	■	■	■						
3-2 モンバサ港への将来の船舶の寄港傾向の予測		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
3-3 モンバサ港への将来の貨物需要と容量の予測			■	■	■	■	■	■	■	■	■	■	■	■	■	■
3-4 モンバサ港への将来の旅客需要と容量の予測			■	■	■	■	■	■	■	■	■	■	■	■	■	■
4-1 社会経済分析、周辺諸国の港湾経済政策、物流及び海運分析の実施		■	■	■	■	■										
4-2 環境社会配慮に関し、ステークホルダーミーティング開催支援、優先プロジェクトに対するスコーピングの実施								■	■	■			■	■	■	
4-3 ドンゴクンドゥ地区(南岸)を含んだモンバサ港全体の開発計画の方向性の検討					■	■	■	■	■	■						
4-4 ドンゴクンドゥ地区の港湾施設計画をふくんだモンバサ港全体の開発計画の策定								■	■	■	■	■	■	■	■	■
5-1 港湾開発実施の方向性と投資手法の方針検討								■	■	■	■	■	■	■	■	■
5-2 港湾開発実施と投資手法に係る計画策定											■	■	■	■	■	■
6-1 TMEAが実施中の港湾インフラ管理に係る技術支援との補完性を考慮した技術支援の実施		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

図 3.2 業務スケジュール

3.3 WBS





### 3.5 専門家の配置

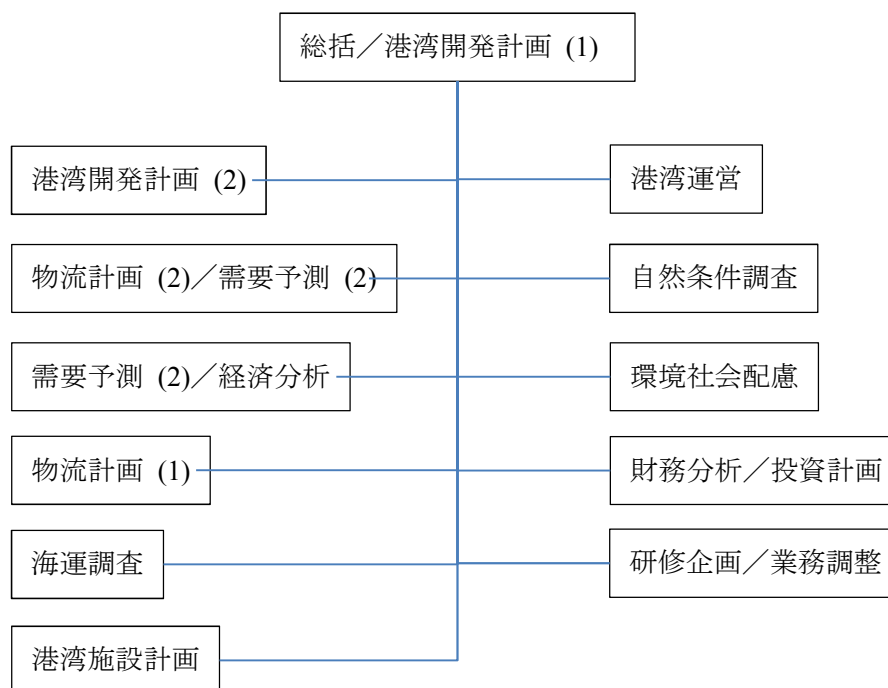


図 3.4 専門家の構成

2014年8月から2015年8月にかけて計4回の専門家派遣を行った。

表 3.2 専門家派遣実績

分野	氏名	派遣回数	期間
総括／港湾開発計画 (1)	東 俊夫	第1回	2014年8月22日～9月6日
		第2回	2014年12月2日～12月13日
		第3回	2015年3月21日～4月4日
		第4回	2015年7月18日～8月17日
港湾開発計画 (2)	鈴木 雅人	第2回	2014年11月30日～12月14日
		第3回	2015年3月21日～4月4日
		第4回	2015年7月4日～8月17日
物流計画 (2)／需要予測 (1)	横本 秀樹	第1回	2014年8月22日～9月20日
		第2回	2014年11月16日～12月14日
		第3回	2015年3月21日～4月5日
需要予測 (2)／経済分析	白取 進吾	第3回	2015年3月7日～4月11日
		第4回	2015年7月10日～8月17日
物流計画 (1)	能勢 道治	第1回	2014年9月7日～9月25日
		第2回	2014年11月29日～12月14日
		第3回	2015年2月26日～3月22日
海運調査	西田 晴重	第1回	2014年8月30日～9月20日
		第3回	2015年3月15日～4月3日

分野	氏名	派遣回数	期間
港湾施設計画	高風 博行	第1回	2014年8月25日～9月19日
		第2回	2014年12月1日～12月13日
		第3回	2015年3月5日～4月4日
		第4回	2015年6月18日～7月12日 2015年7月26日～8月16日
港湾運営	島田 敬	第1回	2014年8月23日～9月12日
		第2回	2014年11月21日～12月14日
		第4回	2015年7月11日～8月17日
自然条件調査	安藤 智史	第1回	2014年8月23日～9月26日
		第2回	2014年10月20日～12月17日
環境社会配慮	武田 智恵	第1回	2014年9月10日～9月29日
		第2回	2014年12月1日～12月4日
		第3回	2015年3月14日～4月11日
		第4回	2015年7月23日～8月13日
財務分析／投資計画	堀川 洋	第3回	2015年3月21日～4月4日
		第4回	2015年7月19日～8月17日
研修計画／業務調整	甲元 正臣	第1回	2014年8月22日～8月29日 2014年9月20日～9月26日
		第2回	2014年11月30日～12月14日
		第4回	2015年7月12日～8月17日

### 3.6 カウンターパートの配置

カウンターパートは、TWGメンバーと統計業務、計画業務の担当者を中心に構成し、ワークショップでの座学を中心に活動した。また、その中から8名が本邦研修に参加した。

### 3.7 合同調整委員会(JCC)

合同調整委員会（JCC）は、プロジェクトの進行に合わせ、関係機関との調整を実施するために構成した。構成員は以下の機関よりの代表者である。

[日本側]

- JICA 専門家
- JICA ケニア事務所
- 日本大使館（オブザーバー）

[ケニア側]

- 運輸インフラ省(MOTI)
- 産業化・企業開発省(MIED)
- 財務省(National Treasury)
- Vision 2030 Management
- ケニア海事局(KMA)
- ケニア港湾公社(KPA)

### 3.8 テクニカルワーキンググループ(TWG)

テクニカルワーキンググループ(TWG)はプロジェクトの日々の活動の実施と協議のために構成した。構成員は以下の通りである。

[日本側]

- JICA 専門家
- JICA ケニア事務所

[ケニア側]

- KPA 最高経営責任者
- KPA 人事・総務部長
- KPA 財務部長
- KPA 法人向けサービス部長
- KPA 施設開発部長
- KPA 施設部長
- KPA エンジニアリングサービス部長
- KPA 法務部長
- KPA 調達部長
- KPA 事務局（法人部）

### 3.9 ワークショップ

モンバサでの技術移転は、各派遣時にワークショップを開催し、対象となる技術移転項目について講義を実施した。

表 3.3 ワークショップ開催状況

No.	Workshop 回数	セッション 番号	タイトル	開催日
1	第1回	1	Updated Demand Forecast – Demand Forecast Model	2014-12-04
2		2	Natural Conditions Survey	
3		3	Strategic Port Management in the World	
4	第2回	1	Operation Procedure - Demand Forecast Model	2015-03-26
5		2	Port Capacity Model	
6	第3回	1	Capacity Evaluation	2015-08-13
7		2	Sorting port data	

### 3.10 本邦研修

プロジェクト期間中に2回の本邦研修を実施した。1回目はKPA幹部クラス4名2週間、2回目はKPA実務者クラス4名4週間で実施した。

## (1) 第1回本邦研修

KPA 幹部クラスを対象とした第1回本邦研修は2015年1月に実施した。表 3.4 にその参加者のリストを、表 3.5 にその研修日程を示す。

表 3.4 参加者

No.	Name	Organization/Department	Title
1	Martin John MUTUKU	Kenya Port Authority Corporate Development	Head of Corporate Development
2	Peter Manyonge MASINDE	Kenya Port Authority Container Terminal Operations	Principal Operations Officer
3	Captain Abdulaziz Ahmed MZEE	Kenya Port Authority Marine Operations	Senior Marine Pilot
4	David Thomas ARIKA	Kenya Port Authority Infrastructure Development	Senior Permanent Way Officer

表 3.5 研修日程

日付	時刻	形態	研修内容	講師又は 見学先担当者等	研修場所
1-18 (日)			来日		
1-19 (月)	10:00 ~ 11:30		規定ブリーフィング		TIC
	13:30 ~ 14:30		プログラム・オリエンテーション	甲元正臣 OCIDI 主任研究員	TIC
	16:30 ~ 17:00	表敬	表敬訪問：OCIDI		OCIDI
	18:00 ~ 20:00		歓迎会		
1-20 (火)	10:00 ~ 10:30	表敬	表敬訪問：MLIT	小嶋俊博 港湾局 産業港湾課 国際企画室 国際企画係長	MLIT
	14:00 ~ 15:30	講義	臨海部開発と港湾計画	小山 彰 OCIDI 首席研究員	
1-21 (水)	10:00 ~ 11:30	講義	港湾と地域開発	池田龍彦 横浜国大 名誉教授	半蔵門
	13:30 ~ 15:00	講義	世界の港湾の課題と取組	成瀬 進 IAPH 事務総長	
	16:00 ~ 16:30	表敬	表敬訪問(日本船主協会)	中村憲吾 日本船主協会 企画部 課長	永田町
1-22 (木)	10:00 ~ 12:00	講義	大井ふ頭講義及び見学(宇徳)	小川宏 (株)宇徳 取締役	大井
	14:00 ~ 16:00	講義	NACCS	吉岡奈津美 NACCS ソリューション事業推進部 ソリューションサービス第1課	川崎
1-23 (金)	10:00 ~ 12:00	見学	鹿島港見学	永野恵子 関東地方整備局 鹿島港湾・空港整備事務所 総務課長	鹿島港湾・空港整備事務所
	14:00 ~ 16:00	見学	新日鉄住金鹿島製鉄所見学	本間久遠 新日鉄住金(株) 鹿島製鉄所 人事総務室	新日鉄住金鹿島製鉄所
1-24 (土)					
1-25 (日)					
1-26 (月)			移動(羽田→大分)		
	14:30 ~ 16:30	見学	三井造船大分工場見学	有元誠 三井造船(株)機械・システム事業本部 運搬機システム営業部 輸出グループ 課長補佐	大分
1-27 (火)			移動(大分→伊丹)		
	14:00 ~ 16:30	見学	神戸港見学(PC18 概要説明、施設見学)	二神係長 近畿地方整備局 港湾計画課 企画調整係長	神戸港湾事務所

日付	時刻	形態	研修内容	講師又は 見学先担当者等	研修場所
				中罵室長 上組 海外事業本部 室長	コンテナター ミナル PC-18
1-28 (水)	13:30 ~ 15:30	見学	移動 (新神戸→名古屋) 名古屋港湾事務所 (港内視察) 鍋田埠頭コンテナターミナル (概要説明、ターミナル視察)	外山補佐 中部地方整備局 名古屋港 湾事務所	名古屋
1-29 (木)			移動 (名古屋→東京) (発表会準備)		
1-30 (金)	10:00 ~ 11:00	発表	(発表会)	甲元正臣 OCDI 主任研究員	JICA 本部
	11:00 ~ 12:00		(評価会)	小柳桂泉 JICA 社会基盤・平和構築 部 運輸交通・情報通信 G	
1-31 (土)			成田離日		

TIC JICA Tokyo International Center  
 MLIT Ministry of Land, Infrastructure, Transport and Turism  
 OCDI Overseas Coastal Area Development Institute of Japan  
 IAPH International Association of Ports and Harbors  
 NACCS Nippon Automated Cargo and Port Consolidated System, Inc.

## (2) 第2回本邦研修

KPA の計画、統計、運営などに携わる実務者クラスを対象とした第2回本邦研修は2015年5月から6月にかけて実施した。表 3.6 にその参加者のリストを、表 3.7 にその研修日程を示す。

表 3.6 参加者

No.	Name	Department / Organization	Title
1	Kavate Geoffrey Kilonzo	Finance Department, Kenya Ports Authority	Senior Accountant (Asset Management)
2	Mwandawiro Benjamin Mwavuda	Container Terminal Operations Department, Kenya Ports Authority	Export Documentation Officer
3	Kahindi Amani Alphonse	Corporate Development Department, Kenya Ports Authority	Statistician (Traffic)
4	Abbas Rukia Mohamed (Rukia Alawi Husni)	Corporate Development/Corporate Services Department, Kenya Ports Authority	Assistant Statistician (Traffic)

表 3.7 研修日程

日付	時刻	形態	研修内容	講師又は見学先担当者等	研修場所
5-24 (日)			成田来日		
5-25 (月)	9:30 ~ 12:00		規定ブリーフィング		TIC
	14:00 ~ 14:30		オリエンテーション	甲元正臣 OCDI 主任研究員	TIC
	15:30 ~ 16:00	表敬	表敬訪問：MLIT	小嶋俊博 港湾局 産業港湾課 国際企 画室 国際企画係長	MLIT
	17:00 ~ 17:30	表敬	表敬訪問：OCDI	東俊夫 OCDI 業務執行理事	OCDI
	18:00 ~ 20:00		歓迎会		OCDI
5-26 (火)	10:00 ~ 11:30	講義	港湾と地域開発	池田龍彦 横浜国大 名誉教授	OCDI
	13:30 ~ 15:00	講義	競争力ある港湾開発の考え方～ 一般的な考え方と横浜港の事例	金子彰 東洋大学 客員研究員	OCDI
	15:30 ~ 17:00	講義	世界の港湾の課題と取組	成瀬進 IAPH 事務総長	OCDI
5-27	10:00 ~ 11:30	講義	港湾と背後圏輸送	菅原淳子 東京工業大学大学院	OCDI

日付	時刻	形態	研修内容	講師又は見学先担当者等	研修場所	
(水)	14:00 ~ 16:00	講義	コンテナターミナルの世界的潮流(1)	舘野美久 海事コンサルタント	OCDI	
	16:00 ~ 17:30	講義	コンテナターミナルの世界的潮流(2)		OCDI	
5-28 (木)	10:00 ~ 11:00	講義	港湾計画(1)	角野隆 沿岸技術研究センター 研究主幹	OCDI	
	11:00 ~ 12:00	講義	モンバサ港マスタープラン	東俊夫 OCDI 業務執行理事	OCDI	
	13:30 ~ 15:30	講義	港湾計画(2)	角野隆 沿岸技術研究センター 研究主幹	OCDI	
5-29 (金)	10:00 ~ 12:00	講義	国土計画	島田敬 OCDI 首席研究員	TIC	
	13:00 ~ 15:30	講義	総合交通計画		TIC	
5-30 (土)						
5-31 (日)						
6-1 (月)	10:00 ~ 12:00	講義	需要予測(1)	白取進吾 オリエンタルコンサルタンツ 次長	OCDI	
	14:00 ~ 16:00	講義	需要予測(2)		OCDI	
6-2 (火)	11:00 ~ 12:00	講義	需要予測特論(1)	柴崎隆一 国土技術政策総合研究所	OCDI	
	13:30 ~ 16:30	講義	需要予測特論(2)		OCDI	
6-3 (水)	10:00 ~ 12:00	講義	経済分析	白取進吾 オリエンタルコンサルタンツ 次長	OCDI	
	14:00 ~ 16:00	講義	財務分析		堀川洋 三井造船鉄構エンジニアリング 技師長	OCDI
6-4 (木)	10:00 ~ 12:00	講義	港湾施設の建設	有田恵次 港湾空港総合技術センター 国際技術支援戦略室 上席研究員	OCDI	
	14:00 ~ 16:00	講義	日本の港湾維持管理		兵頭武志 港湾空港総合技術センター 建設マネジメント研究所 上席研究員	OCDI
6-5 (金)	10:00 ~ 12:00	講義	コンテナターミナルの運営・管理	森元秀樹 株式会社宇徳 東京ターミナル部プランニングチームリーダー	東京港	
	13:00 ~ 16:00	見学	大井埠頭3・4号コンテナターミナル視察			
6-6 (土)						
6-7 (日)						
6-8 (月)	10:30 ~ 12:00	講義	シルテーション	中川康之 港湾空港技術研究所 沿岸土砂管理研究チームリーダー	PARI	
	13:30 ~ 15:00	講義	津波について			富田孝史 港湾空港技術研究所 海洋情報・津波研究領域長
	15:00 ~ 16:00	見学	施設見学			吉田行秀 港湾空港技術研究所 企画管理部 企画課 課長補佐
6-9 (火)	10:30 ~ 12:00	講義	我が国の国際協力	中嶋 義全 MLIT 港湾局 産業港湾課 国際企画室	OCDI	
	13:00 ~ 14:30	講義	日本の港湾制度について		青山 佳樹 MLIT 港湾局 総務課	OCDI
	14:45 ~ 16:15	講義	日本の情報化施策		東 翔太 MLIT 港湾局 港湾経済課	OCDI
6-10 (水)	10:30 ~ 12:00	講義	我が国の港湾保安対策	吉川 友也 MLIT 港湾局 危機管理室	OCDI	
	13:00 ~ 14:30	講義	港湾と地域開発		寺園 正彦 MLIT 港湾局 産業港湾課	OCDI
	14:45 ~ 16:15	講義	港湾行政における海洋・環境政策の取組		太田 康貴 MLIT 港湾局 海洋・環境課	OCDI
6-11 (木)	10:00 ~ 12:00	見学	横浜港視察	丸山晶子 横浜市港湾局 賑わい振興課 担当係長	横浜港	
	14:00 ~ 16:00	講義	日本の包括的物流プラットフォームについて	吉岡奈津美 NACCS ソリューション事業推進部 ソリューションサービス第1課	川崎	
6-12 (金)	10:00 ~ 12:00	見学	鹿島港視察	本多正治 関東地方整備局 鹿島港湾・空港整備事務所 副所長	鹿島	

日付	時刻	形態	研修内容	講師又は見学先担当者等	研修場所
	14:00 ~ 16:00	見学	新日鉄住金鹿島製鉄所視察	中島彰一 新日鉄住金 鹿島製鉄所 総務部 人事総務室 主幹	鹿島
6-13 (土)					
6-14 (日)					
6-15 (月)			移動(東京→大分)		
	14:30 ~ 16:30	見学	三井造船大分工場視察	金丸俊一 三井造船大分工場 管理部 管理グループ 課長補佐	大分
6-16 (火)			移動(大分→伊丹)		
	10:05 ~ 11:00				
	13:30 ~ 16:00	見学	神戸港視察	松本桂 近畿地方整備局 港湾空港部 港湾計画課 企画調整係長	神戸港
6-17 (水)			移動(新神戸→名古屋)		
	13:30 ~ 14:20	見学	名古屋港内見学		
	14:30 ~ 15:30	見学	NUCT 視察	澤田隆志 中部地方整備局 港湾空港部 港湾物流企画室 国際物流係長	名古屋港
	16:10 ~ 17:00	見学	名古屋海洋博物館		
6-18 (木)			移動(名古屋→東京)		
		実習	発表会準備		TIC
6-19 (金)	10:00 ~ 11:00	発表	(発表会)	甲元正臣 OCIDI 主任研究員	JICA 本部
	11:00 ~ 11:30		(評価会)	小柳桂泉 JICA 社会基盤・平和構築部	
6-20 (土)			成田離日		

TIC JICA Tokyo International Center  
 MLIT Ministry of Land, Infrastructure, Transport and Tourism  
 OCIDI Overseas Coastal Area Development Institute of Japan  
 IAPH International Association of Ports and Harbors  
 PARI Port and Airport Research Institute  
 NACCS Nippon Automated Cargo and Port Consolidated System, Inc.

### 3.11 セミナー

マスタープランの内容の解説及び技術移転の集大成として、2015年8月14日、KPA関係者を対象にセミナーを実施した。セミナーにおいてはJICA専門家の発表のほか、本邦研修に参加したKPA職員による、本邦研修についての発表があり、日本での研修に参加できなかった職員にも研修の内容を広く周知し、今後の業務改善、モチベーションの維持に務めることができた。

表 3.8 セミナー・プログラム

Time	Program	Presenter
09:00 ~ 09:10	Opening Remarks	Mr. Azuma, Team Leader, JICA Project Team
09:10 ~ 09:40	Some Remarks on Mombasa Port M/P including Dongo Kundu	Mr. Azuma, Team Leader, JICA Project Team
09:45 ~ 10:15	Demand Forecast	Mr. Shiratori, JICA Project Team
10:20 ~ 10:50	Port Planning and Management	Ms. Rukia Alawi Husni, Assistant Statistician (Traffic), Corporate Development/Corporate Services, KPA
10:50 ~ 11:05	Tea/Coffee Break	
11:05 ~ 11:35	Port and Railway	Mr. Shimada, JICA Project Team
11:40 ~ 12:10	Important lessons learnt in Japan and their application on Mombasa Port	Kavate Geoffrey Kilonzo, Senior Accountant (Asset Management), Finance, KPA
12:15 ~ 12:25	Closing Remarks	KPA
12:30 ~	Lunch Buffet	

### 3.12 ステークホルダーミーティング開催支援

プロジェクト期間中、関係者の意見を聴取するため、合計3回のステークホルダーミーティングを開催した(表 3.9 参照)。

表 3.9 ステークホルダーミーティング開催状況

No	Date	Place	Objective	Participants
1	4th December 2014	Bandari College, Mombasa	<ul style="list-style-type: none"> <li>- To share the information on current situation of port activity including the Phase 1 container project and future vision</li> <li>- To explain the outline of the Project</li> <li>- To get feedback from the stakeholders</li> </ul>	Total 60 participants including representatives from Mombasa County Government, relevant authorities and private companies of port users
2	1st April 2015	Bliss Hotel, Mombasa	<ul style="list-style-type: none"> <li>- To explain the outline of the Project including the preliminary port development plan</li> <li>- To get an opinion on the potentially environmental and social concerns from the stakeholders</li> </ul>	Total 28 participants including representatives from the authorities especially related to environmental safeguard
3	AM, 29th July 2015	Bliss Hotel, Mombasa	<ul style="list-style-type: none"> <li>- To explain the outputs of port development master plan</li> <li>- To explain the findings of environmental and social considerations study</li> <li>- To get an opinion on the proposed master plan and project-related concerns from the stakeholders</li> </ul>	Total 42 participants including representatives from Mombasa County Government, NGOs and other governmental organizations
	PM, 29th July 2015	Bliss Hotel, Mombasa	<ul style="list-style-type: none"> <li>- To explain the outputs of port development master plan</li> <li>- To get an opinion on the proposed master plan and project-related concerns from the stakeholders</li> </ul>	Total 39 participants including representatives from the private companies of port users

Source: JICA Team



## 4. プロジェクトの成果

本プロジェクトのPDMに基づく評価は表 4.1 のとおりである。

表 4.1 PDMに基づく評価

Description in the PDM		Achievements	
Narrative Summary	Objectively Verifiable Indicators	Outputs up to September 2015	Evaluation of the progress as of September 2015
<b>Overall Goal</b> Projects which aim at Mombasa Port development are implemented in accordance to the Mombasa Port Master Plan.	At least one project is implemented among the several number of components which are listed in Dongo Kundu Port, Mombasa Master Plan	Mombasa Port Master Plan including Dongo Kundu (Draft Final) was prepared and is under review by KPA. Some of the relevant projects such as highway, railway and MPDP Phase 2 projects are underway or under preparation	Implementation of the project components need to be monitored after completion of the project
<b>Project Purpose</b> Capacity of KPA staff on port development is enhanced.	1. Dongo Kundu Port, Mombasa development plan is established and shared by KPA and MTI. 2. All necessary documents including port development policy are prepared.	1. Mombasa Port Master Plan including Dongo Kundu (Draft Final) was prepared and shared by KPA and MTI 2. All necessary documents including port development policy were prepared in the Master Plan	Targets will be accomplished upon submission of the final report
<b>Output</b> 1 Mombasa Port Master Plan (revised in 2009 by KPA) is reviewed and revised. 2 Strategic planning and management system in KPA is improved. 3 Future demand and capacity forecast method in KPA is improved. 4 Comprehensive Mombasa Port development implementation/ investment plan is prepared.	1-1 Future demand forecast is established. 1-2 KPA's strategy for port development is compiled. 1-3 Dongo Kundu Port, Mombasa master plan is drafted. 2-1 Human resource capacity of strategic planning and management of KPA is developed. 2-2 Analysis and recommendations are made for solutions against issues such as port development plan, port management, concession contract, etc., by joint work between KPA staff and JICA experts. 3-1 Future demand forecast model is developed. 3-2 Future capacity forecast method is developed. 4-1 Port development implementation plan is prepared. 4-2 Port development investment plan is prepared.	1-1 Future demand forecast in SAPROF review 2013 was reviewed and updated based on the current situation 1-2 Strategic Plan 2013-2017 by KPA was reviewed 1-3 Draft Final report of Mombasa Port Master Plan including Dongo Kundu was prepared in Aug 2015 2-1 Capacity development programs were implemented 2-2 Issues were studied and the solution were presented to and discussed with KPA staff in the workshops and seminar 3-1 Future demand forecast model was developed 3-2 Future capacity forecast method was developed 4-1 Port development implementation plan was prepared 4-2 Port development investment plan was prepared	Targets accomplished

本プロジェクトは、技術移転とマスタープラン策定が一体となったプロジェクトであったが、どちらかと言うとマスタープラン策定に軸足を置き、それに関連した計画関連の実務に関して、マスタープラン策定にあわせてワークショップなどで技術移転を行っていくという過程を辿った。また、本邦研修では、計画関連の実務に加え、港湾の運営管理に関連した講義・見学や、産業誘致と関連した港湾開発の講義・見学なども取り入れた。主に港湾の開発と運営管理に焦点を当てながらも、それに役立つ幅広い知見を得られるよう取り計らった。

### (1) 上位目標

”Mombasa Port Master Plan including Dongo Kundu”のドラフトファイナルレポートを2015年8月に提出し、TWG、JCC、ステークホルダーミーティングおよびセミナーにおいてその内容の周知が図られた。しかし、まだ計画の実施段階までは到達していない。

### (2) プロジェクト目標

2015年8月に提出した”Mombasa Port Master Plan including Dongo Kundu”のドラフトファイナルレポートには開発計画はもちろんのこと、開発方針他、モンバサ港に開発に関わる様々な情報が含まれている。その内容はTWG、JCC、ステークホルダーミーティングおよびセミナーにおいて関係者に周知した。

### (3) 期待される成果

1) KPA が2009年に作成したモンバサ港開発計画がレビューされる。

Strategic Plan 2013-2030 by KPA をはじめ、各種関連計画のレビューを行い、需要予測については新たに需要予測モデルを立ち上げ、SAPROF Review 2013 のアップデートを行った。最終的に、この需要予測結果に基づき、モンバサ港の開発計画を策定した。

2) KPA の戦略的計画策定及び運営体制が整備される。

KPA 職員の戦略的計画策定については、主に現地でのワークショップ及び日本での研修において講義を実施し、能力向上を図った。港湾管理に関しては、本邦研修での講義及びその実際の見学を行い、同じくその能力向上を図った。また、これらを通じ、KPA の管理運営体制の問題点を自覚させるとともに、主要な問題点については、その解決策を”Mombasa Port Master Plan including Dongo Kundu”に示した。

3) KPA における将来需要及び取扱能力予測に係る手法が確立される。

将来需要予測手法及び取扱能力予測手法については、2) の KPA 職員の戦略的計画策定能力向上プログラムの一部として、主に現地でのワークショップ及び日本での研修において講義を実施した。その中では演習も実施し、今後の需要の伸びに合わせて予測の修正に対応し、必要に応じて開発計画の修正も可能なように計らった。

4) モンバサ港の開発に係る整備計画及び投資計画が立案される。

モンバサ港の開発計画は、”Mombasa Port Master Plan including Dongo Kundu” に示したほか、JCC、

TWG、セミナーなどで解説し、KPA にその開発の趣旨を周知した。また、投資計画については、幾つかの設定条件のもとに、その有効性を検証し、“Mombasa Port Master Plan including Dongo Kundu” に示した。ただし、マスタープランレベルの概略検証なので、実施においては更に詳細な検討が必要である。

## 5. 結論と提言

### 5.1 結論

貨物・船舶・荷役などの統計データは KPA の担当者によりよくまとめられており、戦略的計画策定において、需要予測を実施するにあたり、非常に有用であった。また、需要の予測、経済分析・財務分析などの分析手法についてもある程度の理解が有り、今回の技術移転により習得した手法を活用して、今後の需要の伸びなどに合わせて、KPA 自身で計画を修正していくことも十分可能である。

反面、実際の港湾運営面では問題が山積みであり、提示した開発計画の実現と合わせて運営面の改善と港湾周辺のインフラ整備が緊急の課題である。これらの改善・整備が実施されないと、開発計画の効果を十分発揮できない。

### 5.2 提言

マスタープランでは、実際の港湾運営面の改善を中心として、以下の提案をしている。

- PPP スキーム及びコンセッションによる効率的な港湾運営
- 電子化によるゲートシステムの改善
- 道路輸送に重きを置いた輸送インフラの整備
- 環境への配慮
- 5年毎の開発計画の見直し
- 運輸省による関連プロジェクトの交通整理
- 運輸省港湾部門の設置と、港湾法の立案・施行
- モンバサ港、ラム港に加えてもう一つの国際港湾の開発の検討

一部は、その実施に向けて動き出しているものもあるが、いまだ、十分な成果を上げることができていないのが現状である。また、KPA はこれらの問題をほぼ認識していると思われるものの、諸般の事情により、その実現は大きなハードルとなっている。

これらをタイムリーに実現させるためには、今後継続的な技術支援及び技術移転、更には、新港に加えて、道路・鉄道などの輸送インフラも含めた包括的なマスタープランの策定が必要である。

## 6. 付属資料

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## Appendix 1 Project team

JICA expert team consists of twelve (12) members whose names and responsibilities are shown below.

Responsibility	Name
1. Team Leader/ Port Development Planning (1)	Mr. Toshio AZUMA (OCDI)
2. Port Development Planning (2)	Mr. Masato SUZUKI (OC)
3. Demand Forecast (1)/ Logistics (2)	Mr. Hideki YOKOMOTO (OC)
4. Demand Forecast (2)/ Economic Analysis	Mr. Shingo SHIRATORI (OC)
5. Logistics (1)	Mr. Michiharu NOSE (OCDI)
6. Shipping Investigation	Mr. Harushige NISHIDA (OC)
7. Port Facility Planning	Mr. Hiroyuki TAKAKAZE (NK)
8. Port Management	Mr. Takashi SHIMADA (OCDI)
9. Natural Conditions Survey	Mr. Satoshi ANDO (NK)
10. Environmental and Social Considerations	Ms. Tomoe TAKEDA (NK)
11. Financial Analysis	Mr. Hiroshi HORIKAWA (OCDI)
12. Training Planning/Operational Coordination	Mr. Masaomi KOMOTO (OCDI)

## Appendix 2 Record of Discussions

### (1) Record of Discussions

**RECORD OF DISCUSSIONS**

**ON**

**THE PROJECT FOR TECHNICAL ASSISTANCE  
TO KENYA PORTS AUTHORITY  
ON DONGO KUNDU PORT, MOMBASA MASTER PLAN**

**IN**

**REPUBLIC OF KENYA**

**AGREED UPON BETWEEN**

**MINISTRY OF TRANSPORT AND INFRASTRUCTURE,  
KENYA PORTS AUTHORITY**

**AND**

**JAPAN INTERNATIONAL COOPERATION AGENCY**

Nairobi, 29<sup>th</sup> May, 2014

 _____ Mr. Hideo Eguchi Chief Representative Kenya Office Japan International Cooperation Agency	 _____ Mr. Nduva Muli, EBS Principal Secretary Ministry of Transport and Infrastructure Republic of Kenya
	 _____ Mr. Gichiri Ndua, MBS Managing Director Kenya Ports Authority Republic of Kenya

Based on the Minutes of Meetings on the Detailed Planning Survey on the Project for Technical Assistance to Kenya Ports Authority on Port and Cargo Handling (hereinafter referred to as "the Project") signed on March 11<sup>st</sup>, 2014 among Ministry of Transport and Infrastructure (hereinafter referred to as "MOTI") , Kenya Ports Authority (hereinafter referred to as "KPA") and the Japan International Cooperation Agency (hereinafter referred to as "JICA"), JICA held a series of discussions with MOTI, KPA and relevant organizations to develop a detailed plan of the Project.

All parties agreed the details of the Project and the main points discussed as described in the Attachment 1 and 2 respectively.

All parties also agreed that MOTI, the counterpart to JICA, will be responsible for the implementation of the Project in cooperation with JICA, coordinate with KPA and other relevant organizations and ensure that the self-reliant operation of the Project is sustained during and after the implementation period in order to contribute toward social and economic development of Republic of Kenya.

The Project will be implemented within the framework of the Agreement on Technical Cooperation signed on April 29, 2004 (hereinafter referred to as "the Agreement") between the Government of Japan (hereinafter referred to as "GOJ") and Republic of Kenya.

Attachment 1: Project Description

Attachment 2: Main Points Discussed



## (2) Project Discription

### Attachment 1

## PROJECT DESCRIPTION

### I. BACKGROUND

The Mombasa Port locates at Mombasa City, the second largest city of Kenya and is the largest port at East African region. Mombasa port is used not only for trade of Kenya, but also for inland countries such as Uganda and Rwanda. Due to the rapid economic development at the region and increase of container handling, JICA is supporting Kenya Ports Authority (KPA) for expansion of container terminal at the northern side of the port through its finance for "Mombasa Port Development Project" of which loan agreement has been signed on November 2007 for the amount of 26.7 billion Japanese Yen. Also, based on the request from GOK, JICA has commenced "The Project on Master Plan for Development of Dongo Kundu, Mombasa Special Economic Zone" which is expected to contribute to the acceleration of economic growth in Kenya and East African region.

Recent years, the cargo handling volume in Mombasa Port is increasing drastically exceeding the previous future demand forecast. Taking the current situation into consideration, it is required to formulate the Master Plan for the Development of Mombasa Port which contains the vision and concept of the Mombasa Port development after completion of the above mentioned Yen loan project. In response to the request of GOK, Detailed Planning Survey Team was organized by JICA and visited Kenya in November 2013 to have a series of discussions with Kenyan authorities concerned on formulation of the Project. As results of the Survey, both sides agreed upon the details of the Project.

### II. OUTLINE OF THE PROJECT

Details of the Project are described in the Logical Framework (Project Design Matrix: PDM) (Annex 1) and the tentative Plan of Operation (Annex2).

#### 1. Title of the Project

The Project for Technical Assistance to Kenya Ports Authority on Dongo Kundu Port, Mombasa Master Plan

#### 2. Input

##### (1) Input by JICA

##### (a) Dispatch of Mission

##### [Area of experts]

- Chief Advisor/ Port Development Planning
- Demand Forecast/ Economic Analysis
- Logistic Planning
- Maritime Trade
- Port Facility Planning
- Port Operation
- Natural Condition Survey
- Environmental and Social Considerations

Input other than indicated above will be determined through mutual consultations among JICA, MOTI and KPA during the implementation of the Project, as necessary.

(2) Input by MOTI and KPA

MOTI and KPA will take necessary measures to provide at its own expense:

- (a) Services of MOTI and KPA's counterpart personnel and administrative personnel;
- (b) Suitable office space with necessary equipment;
- (c) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the equipment provided by JICA;
- (d) Information as well as support in obtaining medical service;
- (e) Credentials or identification cards;
- (f) Available data (including maps and photographs) and information related to the Project;
- (g) Running expenses necessary for the implementation of the Project;
- (h) Expenses necessary for transportation within Republic of Kenya of the equipment as well as for the installation, operation and maintenance thereof; and
- (i) Necessary facilities to the JICA experts for the remittance as well as utilization of the funds introduced into Republic of Kenya from Japan in connection with the implementation of the Project

3. Implementation Structure

The Project organization chart is given in the Annex 3. The roles and assignments of relevant organizations are as follows:

(1) Joint Coordinating Committee

Joint Coordinating Committee (hereinafter referred to as "JCC") will be established in order to facilitate inter-organizational coordination. JCC will be held at every six months and whenever deems it necessary. JCC will approve an annual work plan, review overall progress, conduct monitoring and evaluation of the Project, and exchange opinions on major issues that arise during the implementation of the Project. A list of proposed members of JCC is shown in the Annex 4.

(2) Technical Working Group

Technical Working Group (hereinafter referred to as "TWG") will be established in order to implement the day to day activities and consultation for the Project. A list of proposed members of TWG is shown in the Annex 5.

(3) JICA Experts

The JICA experts will give necessary technical guidance, advice and recommendations to MOTI and KPA on any matters pertaining to the implementation of the Project.

#### 4. Project Site(s) and Beneficiaries

- (1) Project Site: Project activity will be mainly implemented in Mombasa Port.
- (2) Beneficiaries: The Direct beneficiaries are staff of KPA. Effective and efficient development and management of KPA will contribute to stimulate the logistics of entire Kenya and East African Region.

#### 5. Duration

The duration of the project will be one (1) year and three (3) months from the commencement of consultancy agreement. The tentative project schedule is shown in the Annex 2.

#### 6. Reports

MOTI, KPA and JICA experts will jointly prepare the following reports in English.

- (1) Inception Report at the time of commencement of the project
- (2) Interim Report at the time about six (6) months after the commencement of the project
- (3) Draft Final Report at the time about three (3) months before the completion of the project
- (4) Final Report at the time of project completion.

#### 7. Environmental and Social Considerations

MOTI and KPA agreed to abide by 'JICA Guidelines for Environmental and Social Considerations' in order to ensure that appropriate considerations will be made for the environmental and social impacts of the Project.

### **III. UNDERTAKINGS OF MOTI AND KPA**

MOTI and KPA will take necessary measures to:

- (1) ensure that the technologies and knowledge acquired by Republic of Kenya nationals as a result of Japanese technical cooperation contributes to the economic and social development of Republic of Kenya, and that the knowledge and experience acquired by the personnel of Republic of Kenya from technical training as well as the equipment provided by JICA will be utilized effectively in the implementation of the Project; and
- (2) grant privileges, exemptions and benefits to the JICA experts referred to in II-2 (1) above and their families, which are no less favorable than those granted to experts and members of the missions and their families of third countries or international organizations performing similar missions in Republic of Kenya.

Other privileges, exemptions and benefits will be provided in accordance with the Agreement on Technical Cooperation signed on April 29, 2004 between the Government of Japan and GOK.

#### **IV. EVALUATION**

JICA will conduct the following evaluations and surveys to mainly verify sustainability and impact of the Project and draw lessons. MOTI and KPA are required to provide necessary support for them.

1. Ex-post evaluation three (3) years after the project completion, in principle
2. Follow-up surveys on necessity basis

#### **V. PROMOTION OF PUBLIC SUPPORT**

For the purpose of promoting support for the Project, MOTI and KPA will take appropriate measures to make the Project widely known to the people of Republic of Kenya.

#### **VI. MUTUAL CONSULTATION**

JICA, MOTI and KPA will consult each other whenever any major issues arise in the course of Project implementation.

#### **VII. AMENDMENTS**

The record of discussions may be amended by the minutes of meetings among JICA, MOTI and KPA.

The minutes of meetings will be signed by authorized persons of all parties who may be different from the signers of the record of discussions.

- Annex 1 Logical Framework (Project Design Matrix: PDM)
- Annex 2 Tentative Plan of Operation (PO)
- Annex 3 Project Organization Chart
- Annex 4 A List of Proposed Members of Joint Coordinating Committee
- Annex 5 A List of Proposed Members of Technical Working Group

## Project Design Matrix (PDM)

The Project for Technical Assistance to Kenya Ports Authority on Dongo Kundu Port, Mombasa Master Plan

Project Implementation Period: From July 2014 (15 months)

Target Area: Mombasa Port Area

Date Prepared: May , 2014

Target Group: Kenya Ports Authority

Version: 1

## (3) Project Design Matrix (PDM)

Narrative Summary	Objectively Verifiable Indicators	Data Source/ Means of Verification	Important Assumption
<p><b>Overall Goal</b></p> <p>Projects which aim at Mombasa Port development are implemented in accordance to the Mombasa Port Master Plan.</p>	At least one project is implemented among the several number of components which are listed in Dongo Kundu Port, Mombasa Master Plan	<ul style="list-style-type: none"> <li>- KPA annual report/ strategic plan</li> <li>- Interview Survey from KPA</li> <li>- National Transport Integrated Policy</li> <li>- Vision 2030</li> <li>- Kenya Constitution 2020</li> </ul>	
<p><b>Project Purpose</b></p> <p>Capacity of KPA staff on port development is enhanced.</p>	<ol style="list-style-type: none"> <li>1. Dongo Kundu Port, Mombasa development plan is established and shared by KPA and MTI.</li> <li>2. All necessary documents including port development policy are prepared.</li> </ol>	<ol style="list-style-type: none"> <li>1. Approved port development plan (master plan)</li> <li>2. Budget allocation plan, human resource development plan and other necessary documents</li> </ol>	
<p><b>Output</b></p> <ol style="list-style-type: none"> <li>1 Mombasa Port Master Plan (revised in 2009 by KPA) is reviewed and revised.</li> <li>2 Strategic planning and management system in KPA is improved.</li> <li>3 Future demand and capacity forecast method in KPA is improved.</li> <li>4 Comprehensive Mombasa Port development implementation/ investment plan is prepared.</li> </ol>	<ol style="list-style-type: none"> <li>1-1 Future demand forecast is established.</li> <li>1-2 KPA's strategy for port development is compiled.</li> <li>1-3 Dongo Kundu Port, Mombasa master plan is drafted.</li> <li>2-1 Human resource capacity of strategic planning and management of KPA is developed.</li> <li>2-2 Analysis and recommendations are made for solutions against issues such as port development plan, port management, concession contract, etc., by joint work between KPA staff and JICA experts.</li> <li>3-1 Future demand forecast model is developed.</li> <li>3-2 Future capacity forecast method is developed.</li> <li>4-1 Port development implementation plan is prepared.</li> <li>4-2 Port development investment plan is prepared.</li> </ol>	<ol style="list-style-type: none"> <li>1-1 KPA annual report/ strategic plan</li> <li>1-2 KPA strategic plan</li> <li>1-3 Port master plan (draft) National Transport Integrated Policy Vision 2030 Kenya Constitution 2020</li> <li>2-1 Human resource development plan in KPA</li> <li>2-2 Analysis and recommendation report on current issues in KPA</li> <li>3-1 Future demand forecast model in KPA</li> <li>3-2 Future capacity forecast method in KPA</li> <li>4-1 Port development implementation plan in KPA</li> <li>4-2 Port development investment plan in KPA</li> </ol>	<ul style="list-style-type: none"> <li>- KPA secures budget and necessary number of personnels required for establishment of the port development plan.</li> </ul>

Activities	Inputs (Japanese side)	Inputs (Kenyan side)	Preconditions
<b>1 Review of the existing port development plan and related information</b> 1-1 To review the existing port development plan 1-2 To review the existing port efficiency improvement plan 1-3 To review the existing national development plan, plans for the sectors such as urban, transportation, infrastructure, industry, trade plans and others concerned	<b>1. Dispatch of Japanese Experts</b> Area of Expertise - Chief Adviser/ Port Development Planning - Demand Forecast/ Economic Analysis - Logistic Planning - Maritime Trade - Port Facility Planning - Port Operation - Natural Condition Survey - Environmental and Social Considerations	<b>1. Services of KPA's counterpart personnel and administrative personnel</b> <b>2. Suitable office space with necessary equipment</b> <b>3. Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the equipment provided by JICA</b> <b>4. Information as well as support in obtaining medical service</b> <b>5. Credentials or identification cards</b> <b>6. Available data (including maps and photographs) and information related to the Project</b> <b>7. Running expenses necessary for the implementation of the Project</b> <b>8. Expenses necessary for transportation within Kenya of the equipment as well as for the installation, operation and maintenance</b> <b>9. Necessary facilities to the JICA experts for the remittance as well as utilization of the funds introduced into Kenya from Japan in connection with the implementation of the Project</b>	Security situation in Mombasa Port area will not get drastically worse.  Yen Loan Project (Container Terminal Phase 1) and SEZ M/P will be implemented as scheduled.  KPA staff being in charge of establishment of port development plan will not be lost.
<b>2 Information collection and analysis, which is related to Mombasa Area Development</b> 2-1 To collect and analyze the related port activities 2-2 To collect and analyze the related national, urban, transportation, infrastructure, industry, trade information around the port 2-3 To collect and analyze the related natural condition, environmental and social considerations around the port 2-4 To collect and analyze the related maritime transportation around east Africa region 2-5 To collect and analyze the related Northern Corridor information 2-6 To review the work plan and its contents of technical assistance conducted by Trade Mark East Africa (TMEA) and other organizations to KPA To collect the information on relevant study such as Mombasa SEZ Master Plan, Mombasa Urban Development Master Plan, Northern Corridor Logistic Mater Plan, etc.	<b>2. Counterpart training in Japan</b> Trainings required for the Project  <b>3. Natural Conditions Survey</b> Natural conditions survey (i.e. soil investigation, bathymetric survey, Environment and Social Considerations) required for the Project  <b>4. Equipment</b> Items required for the Project		
<b>3 Future Demand Forecast</b> 3-1 To develop the future demand forecast model 3-2 To forecast the ship call trend 3-3 To forecast future cargo traffic demand and capacity 3-4 To forecast future passenger demand and capacity			
<b>4 Set-up of vision and concept for Dongo Kundu Port Facility and Mombasa Port Master Plan</b> 4-1 To conduct the study on social and economic analysis, port economic policy of neighboring countries, logistics and maritime analysis, natural conditions survey, and environmental and social considerations analysis 4-2 To examine the direction of development policy of Dongo Kundu port facility and Mombasa Port 4-3 To develop Dongo Kundu Port Facility and Mombasa Port Master Plan			
<b>5 Port development implementation/ investment program</b> 5-1 To examine the direction of port development implementation and investment policy. 5-2 To develop the port development implementation/ investment plan			
<b>6 Provision of necessary technical assistance</b> 6-1 To examine and implement the technical assistance taking into consideration the compatibility with TMEA's technical assistance 6-2 To conduct the training program in Japan and/or third countries 6-3 To hold the workshop/seminar in Kenya			

## (4) Plan of Operation

Tentative Plan of Operation (PO)

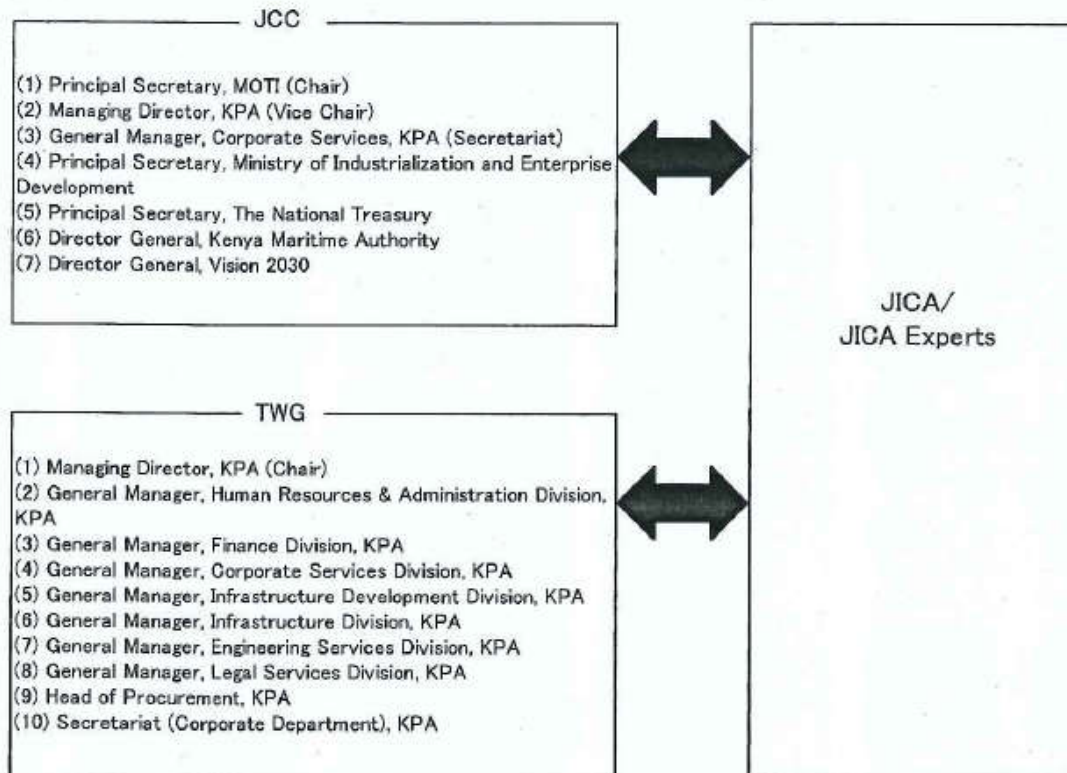
Annex 2

The Project for Technical Assistance to Kenya Ports Authority on Dongo Kundu Port, Mombasa Master Plan

Year	2014						2015									
Month	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	
Total Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
<b>1. Review of the existing port development plan and related information</b>																
1-1	←→		←→													
1-2	←→		←→													
1-3	←→		←→													
<b>2. Information collection and analysis, which is related to Mombasa Area Development</b>																
2-1	←→		←→													
2-2	←→		←→													
2-3	←→		←→													
2-4	←→		←→													
2-5	←→		←→													
2-6	←→		←→													
2-7	←→		←→													
<b>3. Forecast demand forecast</b>																
3-1	←→		←→													
3-2	←→		←→													
3-3	←→		←→													
3-4	←→		←→													
<b>4. Set-up of vision and concept for Dongo Kundu Port Facility and Mombasa Port Master Plan</b>																
4-1							←→									
4-2							←→									
4-3							←→									
<b>5. Port development implementation/ investment program</b>																
5-1							←→									
5-2							←→									
<b>6. Provision of necessary technical assistance</b>																
6-1	←→		←→		←→		←→		←→		←→		←→		←→	
6-2																
6-3	←→		←→		←→		←→		←→		←→		←→		←→	
<b>Experts</b>																
Chief Adviser/ Port Development Planning	←→		←→		←→		←→		←→		←→		←→		←→	
Demand Forecast/ Economic Analysis	←→		←→		←→		←→		←→		←→		←→		←→	
Logistic Planning	←→		←→		←→		←→		←→		←→		←→		←→	
Maritime Trade	←→		←→		←→		←→		←→		←→		←→		←→	
Port Facility Planning	←→		←→		←→		←→		←→		←→		←→		←→	
Port Operation	←→		←→		←→		←→		←→		←→		←→		←→	
Natural Condition Survey	←→		←→		←→		←→		←→		←→		←→		←→	
Environmental and Social Considerations	←→		←→		←→		←→		←→		←→		←→		←→	
<b>Joint Coordinating Committee (JCC)</b>																
Holding of JCC																
<b>Stakeholder Meeting</b>																
Holding of Stakeholder Meeting																
<b>Reports</b>																
Submission of the Reports																
	IC/R						IT/R					DF/R			F/R	

## (5) Project Organization Chart

### Annex 3 Project Organization Chart





## (6) List of Proposed Members of Joint Coordination Committee

### Annex 4 A List of Proposed Members of Joint Coordinating Committee

Joint Coordinating Committee (hereinafter referred to as “JCC”) will be established in order to facilitate inter-organizational coordination. JCC will be held whenever deems it necessary. The proposed members of JCC are as follows, and additional members are allowed as deemed necessary;

#### Kenyan Side

- (1) Principal Secretary, MOTI (Chair)
- (2) Managing Director, KPA (Vice Chair)
- (3) General Manager, Corporate Services, KPA (Secretariat)
- (4) Principal Secretary, Ministry of Industrialization and Enterprise Development
- (5) Principal Secretary, The National Treasury
- (6) Director General, Kenya Maritime Authority
- (7) Director General, Vision 2030

#### Japanese Side

- (1) JICA Experts
- (2) JICA Kenya Office
- (3) Embassy of Japan (Observer)

## (7) List of Proposed Members of Technical Working Group

### Annex 5 A List of Proposed Members of Technical Working Group

Technical Working Group (hereinafter referred to as "TWG") will be established in order to implement the day to day activities and consultation for the Project. A list of proposed members of TWG are as follows, and additional members are allowed as deemed necessary;

#### Kenyan Side

- (1) Managing Director, KPA (Chair)
- (2) General Manager, Human Resources & Administration Division, KPA
- (3) General Manager, Finance Division, KPA
- (4) General Manager, Corporate Services Division, KPA
- (5) General Manager, Infrastructure Development Division, KPA
- (6) General Manager, Infrastructure Division, KPA
- (7) General Manager, Engineering Services Division, KPA
- (8) General Manager, Legal Services Division, KPA
- (9) Head of Procurement, KPA
- (10) Secretariat (Corporate Department), KPA

#### Japanese Side

- (1) JICA Experts
- (2) JICA Kenya Office

## (8) Main Points Discussed

### Attachment 2

#### MAIN POINTS DISCUSSED

1. Title of the Project  
The both sides confirmed that the title of the Project will be "The Project for Technical Assistance to Kenya Ports Authority on Dongo Kundu Port, Mombasa Master Plan". Both sides confirmed to undertake necessary actions to formalize the title of the Project with relevant government authorities.
2. Relevant data/information  
Both sides agreed that preparation of the Dongo Kundu Port, Mombasa Master Plan will take into consideration other developments in the Port including Mombasa Port Master Plan (2004, revised in 2009), SAPROF Review Report (2013), Integrated National Transport Policy (2009) and the proposed 50 Year National Transport Master Plan (ongoing).
3. Coordination with Master Plan for Dongo Kundu  
The both sides recognized the importance of harmonization between the Mombasa Port Master Plan and Special Economic Zone (SEZ) Master Plan in Dongo Kundu Area ("The Project on Master Plan for Development of Dongo Kundu, Mombasa Special Economic Zone" conducted by JICA), and agreed to take necessary actions for the required coordination of the said two Master Plan studies.
4. Target area of the Project  
Both sides agreed that the target area of the project is whole Mombasa Port comprised of north side (Kipevu area) and south side (Dongo Kundu Area), and comprehensive Mombasa Port Master Plan is reviewed and revised.
5. Timing of commencement of the Project  
Both sides agreed that the Project will be commenced after the submission of the grand design of SEZ in Dongo Kundu Area by SEZ Master Plan study to the Kenyan side around June, 2014.
6. Stakeholder Meeting  
The both sides agreed to hold the Stakeholder Meeting aiming at the dissemination of the contents of the Master Plan study to any stakeholder during its implementation in accordance with the Kenyan practice.

## Appendix 3 Revised Project Design Matrix (PDM) and Plan of Operation (PO)

### (1) Project Design Matrix (PDM)

**Project Design Matrix (PDM)**

The Project for Technical Assistance to Kenya Ports Authority on Dongo Kundu Port, Mombasa Master Plan

Target Area: Mombasa Port Area

Target Group: Kenya Ports Authority

Project Implementation Period: From August 2014 (15 months)

Date Prepared: August 26, 2014

Version: 2

Narrative Summary	Objectively Verifiable Indicators	Data Source/ Means of Verification	Important Assumption
<p><b>Overall Goal</b> Projects which aim at Mombasa Port development are implemented in accordance to the Mombasa Port Master Plan.</p>	<p>At least one project is implemented among the several number of components which are listed in Dongo Kundu Port, Mombasa Master Plan</p>	<ul style="list-style-type: none"> <li>- KPA annual report/ strategic plan</li> <li>- Interview Survey from KPA</li> <li>- National Transport Integrated Policy</li> <li>- Kenya Vision 2030</li> </ul>	<ul style="list-style-type: none"> <li>- Mombasa Port development policy and its importance of the Government of Kenya will not be changed.</li> </ul>
<p><b>Project Purpose</b> Capacity of KPA staff on port development is enhanced.</p>	<ol style="list-style-type: none"> <li>1. Dongo Kundu Port, Mombasa development plan is established and shared by KPA and MTI.</li> <li>2. All necessary documents including port development policy are prepared.</li> </ol>	<ol style="list-style-type: none"> <li>1. Approved port development plan (master plan)</li> <li>2. Budget allocation plan, human resource development plan and other necessary documents</li> </ol>	<ul style="list-style-type: none"> <li>- The Kenyan economy will grow steadily.</li> </ul>
<p><b>Output</b></p> <ol style="list-style-type: none"> <li>1 Mombasa Port Master Plan (revised in 2009 by KPA) is reviewed and revised.</li> <li>2 Strategic planning and management system in KPA is improved.</li> <li>3 Future demand and capacity forecast method in KPA is improved.</li> <li>4 Comprehensive Mombasa Port development implementation/ investment plan is prepared.</li> </ol>	<ol style="list-style-type: none"> <li>1-1 Future demand forecast is established.</li> <li>1-2 KPA's strategy for port development is compiled.</li> <li>1-3 Dongo Kundu Port, Mombasa master plan is drafted.</li> <li>2-1 Human resource capacity of strategic planning and management of KPA is developed.</li> <li>2-2 Analysis and recommendations are made for solutions against issues such as port development plan, port management, concession contract, etc., by joint work between KPA staff and JICA experts.</li> <li>3-1 Future demand forecast model is developed.</li> <li>3-2 Future capacity forecast method is developed.</li> <li>4-1 Port development implementation plan is prepared.</li> <li>4-2 Port development investment plan is prepared.</li> </ol>	<ol style="list-style-type: none"> <li>1-1 KPA annual report/ strategic plan</li> <li>1-2 KPA strategic plan</li> <li>1-3 Port master plan (draft) National Transport Integrated Policy Kenya Vision 2030</li> <li>2-1 Human resource development plan in KPA</li> <li>2-2 Analysis and recommendation report on current issues in KPA</li> <li>3-1 Future demand forecast model in KPA</li> <li>3-2 Future capacity forecast method in KPA</li> <li>4-1 Port development implementation plan in KPA</li> <li>4-2 Port development investment plan in KPA</li> </ol>	<ul style="list-style-type: none"> <li>- KPA secures budget and necessary number of personnels required for establishment of the port development plan.</li> </ul>

Activities	Inputs (Japanese side)	Inputs (Kenyan side)	Preconditions
<p><b>1 Review of Existing Port Development Plan and related Information</b></p> <p>1-1 To review existing port development plan            1-2 To review existing port efficiency improvement plan            1-3 To review existing national development plan, plans for urban, transportation, industry, trade and other relevant sectors</p>	<p><b>1. Dispatch of Japanese Experts</b>            Area of Expertise            - Chief Adviser/            Port Development Planning            - Demand Forecast/            Economic Analysis            - Logistic Planning            - Maritime Trade            - Port Facility Planning            - Port Operation            - Natural Condition Survey            - Environmental and Social Considerations            - Financial Analysis/ Investment Plan            - Training Program</p>	<p>1. Services of KPA's counterpart personnel and administrative personnel            Suitable office space with necessary equipment            2. Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the equipment provided by JICA            3. Information as well as support in obtaining medical service            4. Credentials or identification cards            5. Available data (including maps and photographs) and information related to the Project            6. Running expenses necessary for the implementation of the Project            7. Expenses necessary for transportation within Kenya of the equipment as well as for the installation, operation and maintenance            8. Necessary facilities to the JICA experts for the remittance as well as utilization of the funds introduced into Kenya from Japan in connection with the implementation of the Project            9.</p>	<p>- Security situation in Mombasa Port area will not get drastically worse.            - Yen Loan Project (Container Terminal Phase 1) and SEZ MP will be implemented as scheduled.            - KPA staff being in charge of establishment of port development plan will not be lost.</p>
<p><b>2 Information Collection and Analysis, which is related to Mombasa Area Development</b></p> <p>2-1 To collect and analyze data and information related to port activities            2-2 To collect and analyze data and information related to transportation, infrastructure, industry and trade around the port            2-3 To collect and analyze data and information related to the natural conditions and environmental and social considerations in the vicinity of the port            2-4 To collect and analyze data and information related to the maritime transportation in the East Africa region            2-5 To collect and analyze data and information related to the Northern Corridor            2-6 To review the work plan and its contents of technical assistance conducted by the Trade Mark East Africa (hereinafter referred to as "TMEA")            2-7 To collect data and information of relevant studies including the Mombasa SEZ Master Plan, Mombasa Urban Development Master plan, Northern Corridor Logistic Master Plan and etc</p>	<p><b>2. Counterpart training in Japan</b>            Trainings required for the Project</p> <p><b>3. Natural Conditions Survey</b>            Natural conditions survey (i.e. soil investigation, bathymetric survey, Environment and Social Considerations) required for the Project</p>		
<p><b>3 Future Demand Forecast</b></p> <p>3-1 To develop future demand forecast model            3-2 To forecast the trend of ship calls            3-3 To forecast future cargo traffic demand and capacity            3-4 To forecast future passenger demand forecast</p>	<p><b>4. Equipment</b>            Items required for the Project</p>		
<p><b>4 Set-up of Vision and Concept for Dongo Kundu Port Facility and Mombasa Port Master Plan</b></p> <p>4-1 To conduct the study on social and economic analysis, port economic policy of neighboring countries, logistics and maritime analysis, natural conditions survey, and environmental and social considerations analysis            4-2 To examine the direction of development policy of Dongo Kundu port facility and Mombasa Port            To develop Dongo Kundu Port Facility and Mombasa Port Master Plan in consistency with            4-3 Dongo Kundu SEZ M/P</p>			
<p><b>5 Port Development Implementation/ Investment Program</b></p> <p>5-1 To examine the direction of port development implementation and investment policy.            5-2 To develop the port development implementation/ investment plan</p>			
<p><b>6 Provision of Necessary Technical Assistance</b></p> <p>6-1 To examine and implement the technical assistance taking into consideration the compatibility with TMEA's technical assistance</p>			

## (2) Plan of Operation (PO)

Tentative Plan of Operation (PO)

Version 2

The Project for Technical Assistance to Kenya Ports Authority on Dongo Kundu Port, Mombasa Master Plan

Year	2014					2015										
	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	
Month																
Total Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
<b>1. Review of Existing Port Development Plan and related Information</b>																
1-1	To review existing port development plan															
1-2	To review existing port efficiency improvement plan															
1-3	To review existing national development plan, plans for urban, transportation, industry, trade and other relevant sectors															
<b>2. Information Collection and Analysis, which is related to Mombasa Area Development</b>																
2-1	To collect and analyze data and information related to port activities															
2-2	To collect and analyze data and information related to transportation, infrastructure, industry and trade around the port															
2-3	To collect and analyze data and information related to the natural conditions and environmental and social considerations in the vicinity of the port															
2-4	To collect and analyze data and information related to the maritime transportation in the East Africa region															
2-5	To collect and analyze data and information related to the Northern Corridor															
2-6	To review the work plan and its contents of technical assistance conducted by the Trade Mark East Africa (hereinafter referred to as "TMEA")															
2-7	To collect data and information of relevant studies including the Mombasa SEZ Master Plan, Mombasa Urban Development Master plan, Northern Corridor Logistic Master Plan and etc.															
<b>3. Forecast Demand Forecast</b>																
3-1	To develop the future demand forecast model															
3-2	To forecast the trend of ship calls															
3-3	To forecast future cargo traffic demand and capacity															
3-4	To forecast future passenger demand forecast															
<b>4. Set-up of Vision and Concept for Dongo Kundu Port Facility and Mombasa Port Master Plan</b>																
4-1	To conduct the study on social and economic analysis, port economic policy of neighboring countries, logistics and maritime analysis, natural conditions survey, and environmental and social considerations analysis.															
4-2	To examine the direction of development policy of Dongo Kundu port facility and Mombasa Port															
4-3	To develop Dongo Kundu Port Facility and Mombasa Port Master Plan in consistency with Dongo Kundu SEZ M/P															
<b>5. Port Development Implementation/ Investment Program</b>																
5-1	To examine the direction of port development implementation and investment policy.															
5-2	To develop the port development implementation/ investment plan															
<b>6. Provision of Necessary Technical Assistance</b>																
6-1	To examine and implement the technical assistance taking into consideration the compatibility with TMEA's technical assistance															
<b>Experts</b>																
Chief Adviser/ Port Development Planning (1)																
Port Development Planning (2)																
Logistic Planning (2) / Demand Forecast (1)																
Demand Forecast (2) / Economic Analysis																
Logistic Planning (1)																
Maritime Trade																
Port Facility Planning																
Port Operation																
Natural Condition Survey																
Environmental and Social Considerations																
Financial Analysis / Investment Plan																
Training Program																
<b>Joint Coordinating Committee (JCC)</b>																
Holding of JCC																
<b>Stakeholder Meeting</b>																
Holding of Stakeholder Meeting																
<b>Training Program</b>																
Implementation of Training Program in Japan																
<b>Reports</b>																
Submission of the Reports																
	W/P					PG/R1					PG/R2	PG/R3			PC/R	

W/P: Work Plan, PG/R: Progress Report, PC/R: Project Completion Report

## Appendix 4 Joint Coordination Committee

The project team of JICA (hereinafter referred as “the Team”) will have a series of meetings with the Joint Coordinating Committee (hereinafter referred to as “JCC”) and Technical Working Group (hereinafter referred to as “TWG”) to confirm and identify the detailed scope of the project in the first stage and to confirm the progress of the study at each stage of the project.

### (1) The 1<sup>st</sup> JCC

The 1<sup>st</sup> JCC was held on 26 Aug 2014 at Ministry of Transport and Infrastructure, Nairobi.

Date & Time	26 <sup>th</sup> August 2014 15:15 – 16:30	
Venue	Ministry of Transport and Infrastructure, Nairobi	
	Attendees	Title, Organization
	<b>Kenyan Side</b>	
	Mr. Nduva Muli, EBS	Principal Secretary, Ministry of Transport & Infrastructure
	Mr. D. G. Hunda	Senior Economist, Ministry of Transport & Infrastructure
	Mr. Paul Kingori	Senior Economist, Ministry of Transport & Infrastructure
	Mr. Charles W. Mahinda	Ag. Director, Medium & Large Industries, Ministry of Industrialization & Enterprise Development
	Mr. George Makateto	AOI, Ministry of Industrialization & Enterprise Development
	Mr. J. O. Nyalandi	G. M. Corporate Service, KPA
	Mr. Denis Lewa Muganga	Principal Economist (Corporate Development & Planning), KPA
	Mr. Eric Misoka	Marine Officer, Kenya Maritime Authority Kingori
	<b>Japanese Side</b>	
	Mr. Masahiro Yoshimi	Executive Technical Advisor to the Director General, Infrastructure and Peace Building Department, JICA
	Mr. Yoshimoto Koyanagi	Team 1, Transportation and ICT Group, Infrastructure and Peacebuilding Department, JICA
	Mr. Koji Jitsukawa	Deputy Head of Mission, JICA Kenya Office
	Dr. Steve N. Mogere	Infrastructure and Evaluation Advisor, JICA Kenya Office
	Mr. Toshio Azuma	Team Leader, JICA Project Team
	Mr. Hideki Yokomoto Mr. Hiroyuki Takakaze Mr. Takashi Shimada Mr. Satoshi Ando Mr. Masaomi Komoto	JICA Project Team
	Minutes	
	Detailed plan of the project was explained by the JICA Project Team based on the Work Plan prepared by the team. A questions and answers session in which various opinion was exchanged followed. It was agreed to discuss details of the project during the Kick-off meeting in Mombasa. The following comments were made by the Kenyan side;	
	<ul style="list-style-type: none"> <li>● The project title should be corrected to “Mombasa Port including Dongo Kundu” from the current “Dongo Kundu, Mombasa Port”.</li> <li>● Short-term development plan from 2015 to 2020 and a midterm plan until 2035 as well as investment planning should be included in the study.</li> <li>● Close coordination with SEZ M/P is crucial and it must be included in the Work Plan.</li> <li>● Stakeholder meetings shall be held targeting shipping companies and logistics companies excluding fishery organization.</li> <li>● Governor of Mombasa state shall be included in the member of JCC.</li> <li>● Kick-off meeting in Mombasa will be held on 29<sup>th</sup> August 2014.</li> </ul>	

## (2) The 2<sup>nd</sup> JCC

The 2<sup>nd</sup> JCC was held on 31 Mar 2015 at Ministry of Transport and Infrastructure, Nairobi.

Date & Time	31 <sup>st</sup> March 2015, 10:00 – 12:00	
Venue	Ministry of Transport and Infrastructure, Nairobi	
	Attendees	Title, Organization
<b>Kenyan Side</b>		
	Mr. George Ngegwa	Ministry of Transport & Infrastructure
	Mr. Robert Gatonga	National Treasury
	Mr. John Omingo	Kenya Maritime Authority
	Mr. George Makateto	AOI, Ministry of Industrialization & Enterprise Development
	Mr. Lewell Njehia	Ministry of Industrialization & Enterprise Development
	Mr. John Kariuki	VDS
	Mr. Martin Mutuku	Head of Corporate Development, Kenya Ports Authority
<b>Japanese Side</b>		
	Mr. Kenji Yokota	JICA Kenya Office
	Mr. Kiyonori Matsushima	JICA Kenya Office
	Dr. Steve N. Mogere	Infrastructure and Evaluation Advisor, JICA Kenya Office
	Mr. Toshio Azuma	Team Leader, JICA Project Team
	Mr. Masato Suzuki Mr. Hideki Yokomoto Mr. Hiroyuki Takakaze Mr. Shingo Shiratori Mr. Hiroshi Horikawa	JICA Project Team
Minutes		
<p>1. Introduction</p> <p>2. Progress Report on Master Plan</p> <p>The 1<sup>st</sup> Progress Report was explained by the JICA Project Team Leader providing an overview of the progress made so far. The progress presented includes results of natural condition survey, future development of Mombasa Port and outstanding issues to complete the Master Plan.</p> <p>3. Q&amp;A</p> <p>The Dongo Kundu SEZ and the Mombasa Master plan need to complement each other. It was also agreed that the two JST teams on SEZ and Master plan to work closely together especially on the issue of RAP for Dongo Kundu to avoid duplications. It was agreed that RAP needs to be fast-tracked it is important to work very closely with the County Government of Mombasa.</p> <p>The proposal to have two berths at Dongo Kundu dedicated for wheat and motor vehicles need to be revisited. This is because the Dongo Kundu Free port is meant to server the Special Economic zones that the products expected from the industrial zones etc.</p> <p>The implication of the Second Container Terminal should be analyzed and also the issue of Mombasa Port being a landlord port should also be addressed in the Master plan</p> <p>The Master Plan should also cover the in more detail the future of Lamu port- the management and type of cargo to be handled.</p> <p>The Final Master Plan document should have a clear implementation plan.</p> <p>Agreed that KPA should share with the JST the detailed comments done on 1st Progress Report so that they can be addressed and included in the 2nd Progress Report.</p>		



It was agreed that going forward, progress reports and other documents should be shared in good time so that the counterparts can provide comments for improvement. JST and counterpart team should also work very closely together.

#### 4. Way Forward

Agreed that KPA should share with the JST the detailed comments done on 1st Progress Report so that they can be addressed and included in the 2nd Progress Report.

It was agreed that going forward, progress reports and other documents should be shared in good time so that the counterparts can provide comments for improvement. JST and counterpart team should also work very closely together.

### **(3) The 3<sup>rd</sup> JCC**

#### **MINUTES OF THE THIRD JOINT COORDINATION COMMITTEE (JCC) MEETING HELD ON 11<sup>TH</sup> AUGUST 2015 AT THE MINISTRY OF TRANSPORT & INFRASTRUCTURE HEADQUARTERS, PUBLIC WORKS BOARDROOM, NAIROBI**

##### **ATTENDANCE**

###### **A. PUBLIC AGENCIES**

- |                    |  |
|--------------------|--|
| 1) George Ndegwa   | - Chief Economist, Ministry of Transport<br>- Chairing                     |
| 2) Cosmas Cherop   | - Ag. Director General, Kenya Maritime Authority                           |
| 3) Martin Mutuku   | - Head of Corporate Development, Kenya Ports Authority                     |
| 4) John Omingo     | - Head of Commercial Shipping, Kenya Maritime Authority                    |
| 5) Charles Mahinda | - Ag. Director Ministry of Industrialisation and<br>Enterprise Development |
| 6) Denis Muganga   | - Principal Economist, Kenya Ports Authority<br>- Taking Notes             |

###### **B. JICA KENYA OFFICE**

- |                         |   |
|-------------------------|---|
| 7) Koji Noda            | - Senior Representative/Deputy Mission Leader |
| 8) Kenji Yokota         | - Representative                              |
| 9) Dr. Steve Mogere     | - Advisor, Infrastructure                     |
| 10) Kiyonori Matsushima | - Representative                              |

###### **C. JICA STUDY TEAM (JST)**

- |                       |   |
|-----------------------|---|
| 11) Toshio Azuma      | - Team Leader                             |
| 12) Masato Suzuki     | - Port Development and Planning           |
| 13) Hiroyuki Takakaze | - Port Facility Planning                  |
| 14) Takashi Shimada   | - Port Management                         |
| 15) Tomoe Takaeda     | - Environmental and Social Considerations |

##### **MINUTE 1/11/8/2015: INTRODUCTION**

The Chair called the meeting to order and opened with a word of prayer. He then informed members that the Ministry recognised this project as a very important project for the Republic of Kenya that required maximum support. The Ministry was therefore keen on moving this project forward.

The meeting was also informed that the Principal Secretary, Ministry of Transport, would have liked to chair the meeting but was handling other equally important matters.

The Chair indicated that the main purpose of the meeting was to receive the third Progress Report of the Mombasa Port Master Plan Review and provide comments and guidance on the way forward.

The JST was then invited to take the meeting through the presentation.

##### **MINUTE 2/11/8/2015: 3<sup>RD</sup> PROGRESS REPORT - PRESENTATION**

The Team Leader Mr. Azuma, expressed his gratitude for the convening of the JCC and for all officers who were able to make time to attend the meeting. He then updated the meeting on the schedule of

activities for the JST, as follows:

- a. The JCC meeting would receive a presentation of the Progress Report 3 in this meeting;
- b. The JST will then polish the Report by the next day, 12<sup>th</sup> August 2015;
- c. By Friday 14<sup>th</sup> August, JST will submit a revised Report 3 to KPA and the JCC;
- d. JST will then travel to Japan over the weekend; and
- e. KPA will be expected to compile comments and submit to JST in Tokyo, based on which the JST will finalise and submit a Final Report.

### **Presentation of the Report**

The presentation provided an overview, scope and background of the project. It then highlighted the main goal of the Master Plan and strategies.

The main topics covered included the following:

**1.0 Demand Forecast** - important to note is that most cargo components will triple between 2014 and 2035.

**2.0 Facility Planning** - it was indicated that high occupancy ratios and long waiting time at berths (50% of vessels will be affected by long waiting time) are currently experienced at the Port of Mombasa. Further;

- A mixture of various commodities are handled at one berth, followed by low cargo handling productivity;
- Inadequate berth length for calling vessels (60% of calling vessels were longer than berth length);
- Low productivity rampant; and
- Capacity saturation with cargo demand – total of 17 berths currently at Port of Mombasa. These will not cope with increasing demand in the near future.

**3.0 Development Scenarios** - two scenarios were considered in this Master Plan Review;

- a. Base scenario – requires minimal investments but maximises utilisation of existing facilities; and
- b. Alternative scenario – proposes utilising Dongo Kundu area for coal and clinker cargoes.

**4.0 Phased Development Plan** – different aspects of the Master Plan will be undertaken at different stages. The main difference between scenario 1 and 2 is that clinker and coal will be shifted to Dongo Kundu area in scenario 2.

The Lighter area will also be developed for general cargo.

**5.0 Urgent, Mid Term and Long Term Plans** – specific proposals are made in the Master Plan for projects to be undertaken in response to the needs and growing demand. These cover both new developments and improvements to existing structures/facilities.

- a. **New facilities**, including Phases 2 to 5 of the Mombasa Port Development Plan (MPDP); Multipurpose berths at Dongo Kundu; development of Lighter Area; new Passenger Terminal; and a new Kipevu Oil Terminal (KOT).
- b. **Improvement works** on existing facilities.

**6.0 Cargo Handling Capacities** – capacity is projected to be 72.9million tons for scenario 2; and 69.8million tons for the base case. The excess cargoes are likely to be handled at a new international port, Lamu or other commercial ports that will be developed by KPA.

**7.0 Economic and Financial Analysis** – the Plan presents the costs for each scenario and also the costs for rehabilitation of facilities. Further analysis is as presented below:

**a. Economic Viabilities**

- Overflowing cargo will go to Bagamoyo Port in Tanzania if no new developments occur
- Economic Internal Rate of Return (EIRR) for scenario 1 is estimated at 18.5%
- Economic Internal Rate of Return (EIRR) for scenario 2 is estimated at 17.3%

**b. Financial Viabilities**

- Costs for comprehensive development of the Plan were analysed and estimated as below:
  - o Scenario 1, New Facilities – \$1,323million over the planning period;
  - o Scenario 2, New Facilities - \$1,645million over the planning period.
  - o Other improvement works for both scenarios - \$696million.
- Revenues, based on current Tariff will be collected from; port dues, stevedoring, shore-handling, wharfage and concession fees.
- Weighted average cost of capital, comprising of Soft loan; GoK funding and Domestic Market financing will be considered.
- Weighted average cost of capital was estimated at 5.1%

**c. Financial Internal Rate of Return (FIRR)**

- 9.7% for the Scenario 1; and
- 8.9% for Scenario 2.

**8.0 PPP Consideration** – two main proposals are made, presented in two cases;

- Case A and B
- FIRR for case A – public sector 11.6% and private party 7.0%
- FIRR for case B – public sector 6.9% and private party 12.6%

Various combinations will be considered and conclusions made based on each specific project.

**9.0 Environment and Social Considerations**

**Major concerns noted were as follows:**

- channel dredging and reclamation
- clearance of mangroves (36 areas affected)
- reforestation required
- increased pollution
- resettlement and compensation

**Suggestions for future studies**

- Full Environmental and Social Impact Assessment (ESIA)
- Mangrove study
- Resettlement Action Plan (RAP)

## **10.0 Administrative Issues**

1. Coordination – KPA; KRC and KENHA are carrying out projects that are inter-related and aimed at one goal. These should be harmonised and coordinated in order to ensure smooth implementation;
2. SGR alignment and access road intersecting thus will cause interruptions. This should be resolved;
3. Proposed to have a new Port Act separate from the current KPA Act. This will provide clarity and guide operations of the ports and terminals;
4. Transformation to a Land Lord Port – need for clear structures, including the management of concessions;
5. Introduction of an adequate PPP Scheme;
6. Introduction of a Community Based System; and
7. Upgrade Gate System and Introduce Container Booking System.

### **MINUTE 3/11/8/2015: COMMENTS FROM THE FLOOR**

#### **1. Kenya Ports Authority (KPA)**

KPA indicated that the progress made so far is commendable and a lot of improvement has been seen from the First Draft Report. The following issues however, still need to be considered:

- a. It is important to use the latest data for 2014 in all the analysis done;
- b. Comments received from stakeholders' meetings held in Mombasa should be incorporated in the report. These were mainly on the issues below;
  - Port operators - how do they fit in the Master Plan?
  - Operations outside the port – what happens when goods leave the port? Need to align Port Master Plan with County/City Planning (for roads, by-pass, rail, etc.)
  - CFSs not fully tackled in the Master Plan. How are they likely to be impacted by the SGR?
- c. Implications of Lamu port, ICDs and Small Ports will be very useful in the Master Plan Review;
- d. On-going studies supported by Trade Mark East Africa (TMEA) (studies from Inros Lackner) should also be considered in the current analysis.

### **JST Response**

- a) The Team indicated that the base data used was 2014 for demand forecast. 2013 data was used for capacity analysis only. The new data provided by KPA recently will also be considered in final report as much as possible. Currently, sorting and filtering of 2014 data is on-going.
- b) Harmonisation of Port Master Plan and County Urban Development Plan will be considered.
- c) Traffic congestion outside the Port arises from various reasons, such as container handling through the city area. These issues will be eased when Dongo Kundu or new container terminal is fully developed because CFS's function is inside the terminal. The SGR will also ease traffic congestion if container transportation is shifted to railway, but transportation of containers by railway is not much.
- d) Lamu Port, ICDs and Small Ports are recognised as important, the Team is conducting Mombasa Port master plan including Dongo Kundu area, but the scope does not cover a comprehensive KPA strategy. The JST will only provide more descriptions in the next report and a brief analysis of their impact on the Port Master Plan.

- e) JST also confirms the need for berths 11 to 13 to be rehabilitated urgently and used for general cargo. The number of general cargo berths will have a shortage. Therefore, berths 11 to 13 are not required to transform from general cargo to containers. Container terminal capacity will increase rapidly by berths 21 and 22.

## **2. Kenya Maritime Authority (KMA)**

- a) KMA appreciated the comprehensive report. They however expressed the need to embark on completion and implementation so as to ease the current situation in Mombasa and the Northern Corridor. The timelines for addressing emergencies of the current scenario should be highlighted and adhered to.
- b) The Container Freight Stations (CFSs) scenario needs to be addressed. Possibilities should include considering consolidating them for Export Activities. Consolidation of trade volumes for small exporters who may not be able to fill up containers could be done at such stations, among other activities.
- c) We have a lot of capacities in ICDs which are under-utilised. Consider direct cargo transfers by rail from Mombasa to Nairobi, Eldoret and Kisumu. These proposals should come clear in the Master Plan.

## **3. Ministry of Industrialisation and Enterprise Development (MOIED)**

- a) Clarification was sought on the Port Master Plan title. This should already include everything, without having to mention Dongo Kundu.
- b) MOIED is more focused on Dongo Kundu, however, timelines indicated start from 2022, for development of the first berth at Dongo Kundu Free Port. This implies that the SEZ will not be supported by a port facility when ready, which is expected to be before 2022.
- c) The southern by-pass is also expected by 2018, but not well covered in the Master Plan. Even if ready, without the Free Port, nothing much will happen in Dongo Kundu.
- d) There is therefore need to harmonise the timelines.

## **JST Response**

- a) Current situation of ICDs explained in terms of capacities. All are currently under 20% utilization. Despite being more costly than rail, cargo owners seem to prefer road transport – just in time, door to door delivery for their cargo. Secondary handling involved when railway is used poses an additional cost and possible delays, thus as the railway is less considered, highways should also be considered for expansion so as to increase traffic flow and speed up evacuation.
- b) The JST has discussed with Dongo Kundu SEZ Study Team which indicated that the first terminal at the Free Port should be available by 2022. The southern by-pass is also being considered for Phases 2 and 3 of second Container Terminal (CT2), whose timing is around 2019.
- c) The highway therefore remains most important for the SEZ.

## **4. JICA Kenya Office**

- 1) The representatives indicated that the role of JCC is to make certain decisions and clarify some of the issues that need clear direction.
- 2) JICA organised a Mission at KPA last month to look at Dongo Kundu Free Port which is required for the SEZ. It however learnt that KPA priorities are different currently, with more focus on CT2 Phase 2 and 3.
- 3) Ministries represented in the JCC should therefore present their positions and preferences for the JCC to direct on the way forward.
- 4) Financing for Dongo Kundu should then be embarked on as soon as possible. JICA is ready to cater for this and will be open for discussions at the appropriate time.
- 5) On the southern by-pass, funding issues have been addressed but a few challenges still need to be cleared before finalisation. There is need for more coordination for implementation to happen smoothly.
- 6) It should also be noted that the railway is targeting completion by June 3<sup>rd</sup> 2017.
- 7) This Master Plan process therefore presents a reform agenda for KPA so as to enable it respond to issues.
- 8) JICA proposes the setting up of a Ports Department in the Ministry, which would be important in providing guidance on key issues, including the development of a Port Policy, which needs to be addressed urgently.
- 9) Issues on political economy should also be considered. The World Bank study for instance, presents good findings on the same.
- 10) Key issues also need to be noted for tackling such as labour issues. These would however require clear guidance from KPA management and the Ministry.
- 11) The Master Plan comes out very strongly on the infrastructure side, but how will KPA address the implementation and fast tracking of these issues, especially those which are reform in nature, such as the Ports Regulator, among others.
- 12) Competition between Dongo Kundu and new terminal should also be addressed. What policy will guide this? Government thinking and direction is therefore required.
- 13) A candid discussion on these issues is urgently required for us to move forward.

## **5. Other Issues**

- a) The SEZ Master Plan was finalised but does not seem to have been fully considered in the Port Master Plan. A question was therefore raised as to who carries the day? Prioritisation of issues and harmony between the two Master Plans is necessary.
- b) It should be noted that the Free Port was to support the SEZ. The road was to be ready by 2018. The MOIED would therefore have to try to reconcile itself to these timelines, however, if priorities of KPA are different from those of MOIED then there will be need for further discussions. This needs to be taken up at policy level because the SEZ needs facilitation by 2019, at the very latest. The by-pass alignment challenges should also be ironed out in good time.
- c) Poverty and unemployment are critical needs of the flagship projects of Vision 2030. These needs must be responded to. All projects should therefore be aligned appropriately. The Master Plan which

has still not been finalised should therefore be harmonised to help achieve the greater goals of the country.

- d) Issues of Port Policy also need to be taken up urgently. This will create harmony and coordination in the sector.
- e) Issues of coordination of Concessions could also be tackled along this process.
- f) Reference was made to a meeting held in March 2015 between the Government of Kenya and Government of Japan, when His Excellency the President went to Japan. The two governments agreed on Mombasa Port Development Cooperation, including development of Phase 2 and 3 of the new Terminal and Dongo Kundu area. Considering the costs of the Master Plan development, JICA may not manage to finance all these projects, so GoK will have to consider PPPs, but JICA is ready to discuss most of these financing requirements. It is therefore important to ensure a clear way forward is achieved.

**MINUTE 4/11/8/2015: Chair's Remarks and Way Forward**

- 1) The Chair indicated that as we progress to finalization, issues coming out must be mentioned and indications provided for addressing them, including alternative options.
- 2) The Ministry will therefore coordinate a meeting soon to have the Principal Secretaries for all institutions represented on the JCC to deliberate on the key issues raised and agree on the best way forward.
- 3) KMA, the Maritime Regulator, was also tasked to initiate discussions on the Port Policy. They will however be supported by the Ministry. Considering that TMEA had indicated readiness to fund a National Port Policy if requested by the Government, this will be considered for follow up.

**MINUTE 5/11/8/2015: A.O.B**

There being no other business the meeting ended at 12 noon.



## Appendix 5 Technical Working Group

### (1) The 1<sup>st</sup> TWG

The 1<sup>st</sup> TWG was held on 29<sup>th</sup> August 2014 at KPA Mombasa.

Date & Time	29 <sup>th</sup> August 2014	
Venue	KPA Mombasa	
Attendees	Title, Organization	
<b>Kenyan Side</b>		
Mr. J.O. Nyarandi	General Manager, Corporate Services, KPA	
Mr. Mohamad Yuraf Faruk	Principal Statistician, KPA	
Ms. Rukia Alawi	Assistant Statistician, KPA	
Mr. Denis Lewa Muganga	Principal Economist, KPA	
Mr. William K. Tenay	Senior Projects Engineer (Civil), KPA	
Mr. Peter Masinde	Principal Operational Officer, KPA	
Mr. Mohamed Mwazuzu	Senior Operational Officer, KPA	
<b>JICA Team</b>		
Mr. Toshio Azuma	Team Leader	
Mr. Hideki Yokomoto	Demand Forecast / Logistics	
Mr. Hiroyuki Takakaze	Port Facility Planning	
Mr. Takashi Shimada	Port Management	
Mr. Satoshi Ando	Natural Conditions Survey	
Ms. Tomoe Takeda	Environmental and Social Considerations	
Mr. Masaomi Komoto	Training Planning / Operational Coordination	
Mr. Koji Yamada	Team Leader, SEZ M/P Project (Observer)	
<b>Supporting Consultant</b>		
Mr. Ngure Mwaniki	Economist, MA Consultant Group	
Mr. Aziz Ramzan	Port Operations Expert, MA Consulting Group	
Mr. Antony Muriithi	Port Planning Expert, MA Consulting Group	
Minutes		
<p>1. Opening by Mr. Nyalandi</p> <p>1) He apologized for the delay due to the President's visit to Mombasa Port. Counterparts of Kenyan side were introduced; the Captain and person in charge of finance were absent.</p> <p>2) As highlighted in the JCC, the title of this project must be “Master Plan Study of the Mombasa Port including Dongo Kundu Free Port”. This project is aimed to update “Port Master Plan Study of the Port of Mombasa including Development of Free Trade Zone” in 2009 and to enhance the capability of KPA staff. For the former matter, plan and schedule of port facilities expansion, schedule and scale of Dongo Kundu SEZ development, investment timing and financial source for dirty cargo terminal such as oil product, clinker, coal etc. shall be studied. For the latter one, KPA itself intend to study financial model including economic and financial analysis. Since demand forecast analysis was carried out in Dongo Kundu SEZ M/P, both JICA teams must cooperate with each other to share their findings.</p> <p>2. Explanation of the Work Plan by Mr. Azuma</p> <p>The Work Plan has been explained and the proposal was accepted in the JCC held on 26<sup>th</sup> August at MOTI. There are 2 major objectives in this project. The first one is to update the port development plan including Dongo Kundu area targeting year 2035. The second one is to enhance the capability of KPA staff by transferring technologies during the project.</p> <p>3. Questions and Answers</p> <p>1) Q: What does the “Monitoring and Evaluation” stated in 3-10 of the Work Plan entail? (Mr. Denis</p>		

Muganga)

A: Enhancement of capability on demand forecasting and plan formulating is one of the important targets in this project. It is a standard practice to evaluate such result of technical transfer by both JICA team and the counterpart.

- 2) Q: Please show us the guideline and format for the data collection stated in the activities. Please logically explain us the conditions of the calculation since demand forecast and financial model must be reviewed periodically. (Mr. Mohamad Yuraf Faruk)

A: We will seek your input as we carry out this activity. The forecast model will be formulated to be flexible so that demand can be revised depending on changes in economic situations in 2~3 year intervals.

- 3) Mr. Antony Muriithi requested KPA to provide TMEA's technical assistance program so that it does not overlap with JICA's.

4. Closing by Mr. Nyalandi

The organizer of this meeting was Mr. Denis Muganga.

## (2) The 2<sup>nd</sup> TWG

The 2<sup>nd</sup> TWG was held on 24<sup>th</sup> March 2015 at KPA Mombasa.

Date & Time	24 <sup>th</sup> March 2015	
Venue	KPA Headquarters Mombasa	
	Attendees	Title, Organization
<b>KPA</b>		
	Mr. Gichiri Ndua	Managing Director
	Mr. Justus O. Nyarandi	General Manager, Corporate Services
	Ms. Muthoni Gatere	General Manager, Board and Legal Services
	Ms. Catherine Wairi	General Manager, Finance
	Mr. Salim Chingabwi	General Manager, Human Resources and Development
	Eng. Atong	General Manager, Engineering
	Capt. Twalib Hamisi	General Manager, Operations
	Mr. Joseph Birir	Head of Port Electrical Engineering
	Eng. D. O. Amadi	Head of Project Development & Management
	Mr. Martin Mutuku	Head of Corporate Development
	Mr. Denis Lewa Muganga	Principal Economist
	Mr. Mohamed I. Golicha	Senior Economist Planning
<b>JICA Kenya Office</b>		
	Mr. Koji Noda	Deputy Chief Representative
	Dr. Steve N. Mogere	Infrastructure and Evaluation Advisor
<b>JICA Team</b>		
	Mr. Toshio Azuma	Team Leader / Port Development Planning (1)
	Mr. Masato Suzuki	Port Development Planning (2)
	Mr. Hideki Yokomoto	Demand Forecast (1) / Logistics
	Mr. Shingo Shiratori	Demand Forecast (2) / Economic Analysis
	Mr. Harushige Nishida	Shipping Investigation
	Mr. Hiroyuki Takakaze	Port Facility Planning
	Ms. Tomoe Takeda	Environmental and Social Considerations
	Mr. Hiroshi Horikawa	Financial Analysis
<b>Supporting Staff</b>		
	Mr. Aziz Ramzan	Port Operations Expert, MA Consulting Group
	Mr. Antony Muriithi	Port Planning Expert, MA Consulting Group
Minutes		
<p>1. Opening by General Manager Corporate Services Mr. Nyalandi (KPA) He made an opening remark at the beginning of the TWG meeting.</p> <p>2. Explanation of the First Progress Report and issues by JICA Team (JT) The First Progress Report and issues were explained by JICA Team Leader Mr. Azuma to the participants with handouts (attached), while the part of the natural conditions survey results was presented by Mr. Suzuki.</p> <p>3. Questions and Answers Session Prior to the questions and answer session, Head of Corporate Development Mr. Mutuku (KPA) briefed the comments on the First Progress Report, which were raised in the meeting on 23<sup>rd</sup> March 2015 between the KPA counterparts and JICA Team.</p> <p>1) Q: Dar es Salaam Port has an expansion of the existing container berths and a new port Bagamoyo will also be developed. How will such port development in Tanzania affect the situation of Mombasa Port. More analysis will be needed. (KPA) A: JICA Team will analyze more about the impact. (JT)</p>		

- 2) Q: Clinker should be handled at the Dongo Kundu area. (KPA)  
A: Clinker is categorized dirty cargo. Therefore, it is not appropriate to handle such dirty cargo next to the vehicle berth at Dongo Kundu. (JT)
- 3) Q: Any possibility to berth cruise ships at Dongo Kundu (KPA)  
A: It is important cruise ships use a berth in the vicinity of Mombasa city. So, existing Berth No.1 should be used in the future for cruise ships. (JT)
- 4) Q: Which side the existing north side or the Dongo Kundu side to be developed first? (KPA)  
A: Container berths should be combined in one place. The By-Pass road to Dongo Kundu will be open in the future. (JT)
- 5) Q: Existing KOT will be relocated in the future. Therefore, the surrounding area of KOT can be used for new berths. (KPA)  
A: Even KOT is relocated, the surrounding area behind KOT is narrow and very limited and sufficient area cannot be secured for yards. (JT)
- 6) Q: The future container terminal has straight line berths, requiring much reclamation. Is it possible to consider another type of berth structure in order to minimize the reclamation area. (KPA)  
A: The container terminal requires enough container stacking yards. Increase of berthing capacity should be followed by adequate container stacking yard to ensure the increase of container handling capacity. (JT)
- 7) Q: According to the previous dredging records, hard rock was found in the shallow depths at nearby area where dredging was carried out. The contractor mobilized a trailer suction hopper dredger at first, but they changed to a cutter suction dredger in this regard. (KPA)  
A: JT will reconfirm the investigation results. (JT)

#### 4. Closing Remarks

Mr. Nyarandi made closing remarks and asked the KPA counterparts and JICA Team to have more discussions and meeting during the JT's stay in Mombasa.

Mr. Nyarandi asked Kenyan members of TWG to submit written materials to him if they have any additional comments and questions.

### (3) The 3<sup>rd</sup> TWG

Date & Time	23 <sup>rd</sup> July 2015
Venue	KPA Mombasa
<b>Attendees</b>	
<b>KPA</b>	
Mr. Gichiri Ndua	Managing Director
Mr. J.O Nyarandi	General Manager, Corporate Services
Mr. Salim Chingabwi	General Manager, Human Resources & Development
Capt. T. Khamis	General Manager, Operations
Ms. Catherine Wairi	General Manager, Finance
Eng. Joseph Atonga	General Manager, Engineering Services
Ms. Maliam Khamis	EXCOM Secretary
Mr. Joseph Birir	Head of Port Electrical Engineering
Mr. M. Y. Faruk	Principal Statistician
Mr. Denis Muganaga	Principal Economist
<b>Advisor</b>	
Mr. Paul Kent	Infrastructure Planning and Economics, Nathan Associates Inc.
<b>JICA Team</b>	
Mr. Toshio Azuma	Team Leader / Port Development Planning (1)
Mr. Masato Suzuki	Port Development Planning (2)
Mr. Shingo Shiratori	Demand Forecast (2) / Economic Analysis
Mr. Takashi Shimada	Port Management
Mr. Hiroshi Horikawa	Financial Analysis
Mr. Masaomi Komoto	Training Planning / Operational Coordination
<b>Supporting Staff</b>	
Mr. Azis Ramzan	Port Operations Expert, MA Consulting Group
<b>Minutes</b>	
<p>1. Opening Remarks by Mr. Nyarandi</p> <p>2. Explanation of the Second Progress Report and Issues by Mr. Azuma</p> <p>3. Questions and Answers Session</p> <p>Prior to the Q&amp;A session, Mr. Ndua expressed a series of remarks before excusing for his duty.</p> <ul style="list-style-type: none"> <li>● KPA and JICA Team shall communicate and consent each other on the development plan presented by JICA Team before the stake holder meeting.</li> <li>● There is no analysis done for bulk oil in the report.</li> <li>● The direction to go ahead the berth 23 to 24 or Dongo Kundu must be clarified taking the reform of berth 11 to 14 into consideration.</li> <li>● How the lighter wharf is renovated?</li> <li>● How the Lamu Port development is taken into account in the report?</li> <li>● The SGR marshalling yard may have great advantages for berth 23 to 24.</li> <li>● No type or kind of the cargo to be handled in Dongo Kundu is specified in the report.</li> </ul> <p>The followings are the discussions made during the session;</p> <p>Mr. Atonga: Coal at berth 11 is not suitable. Handled in Dongo Kundu is not studied? Cargoes handled in Mbaraki to be transported through Mombasa city. It's better to handle such cargoes at the end of the wharfs.</p> <p>Mr. Azuma: Allocation of cargoes in the berth layout can be switched based on KPA's needs.</p> <p>Mr. Nyarandi: (1) Zoning of the port is required to understand the concept of the development. (2) Condition of berth 11 to 14 is very bad. It will be rehabilitated and transformed to container terminals. This transformation may have impacts to the development of berth</p>	

22 to 25 and Dongo Kundu. Direction of the development must be clarified prior to the SHM.

Capt. Khamis: Cargo handling productivity must be per berth length rather than per berth analyzed in the report since larger ships occupy 2 berths exceeding the length of a berth. Depth shall also be taken into account for defining such productivity.

Mr. Atonga: Such situation of occupying 2 berths is stated in page 5-25 of the report.

Mr. Nyarandi: Kenya's economic plan must be explained to JICA Team.

Capt. Khamis: Export cargos must be taken into account for analyzing future cargo volume which will balance with import cargoes.

Mr. Kent: (1) PPP needs better idea to facilitate. (2) Are the projections of 2025, 2030 and 2030 proper interval or duration? (3) Berth length is 200m or 300m? and 1 berth per operator? (4) Capability of the access to the port is the problem. Private investors will not come if the situation is not improved. (5) What is the maximum vessel size allowed to enter the port area?

Mr. Shimada: LOA 300m is the maximum.

Capt. Khamis: LOA 330~340m vessel may become possible after trained by TMEA.

#### (4) The 4<sup>th</sup> TWG

Date & Time	5 August 2015, 10:45 -13-30	
Venue	KPA Mombasa IT Block Meeting Room	
Attendees	Title / Organization	
KPA		
Mr. Martin Mutuku	Head of Corporate Development Division	
Mr. Denis Muganga	Principal Economist	
Mr. Weldon Korir	Senior Economist (P)	
Mr. Mohamed Mwazuzu	Senior Operations Officer (P)	
Mr. Geoffrey Kavate	Senior Accountant, Financial/Accounting	
Mr. Isaac O. Omoke	Statistics Officer (MI), Corporate Development Division	
Ms. Joyce Lenga	Statistics Officer, MCC	
Ms. Rukia Alawi Husuni	Assistant Statistician (Traffic), Corporate Development Division	
Ms. Faiza Mohamed	Assistant Statistic Officer, Container Operations	
JICA Team		
Mr. Toshio Azuma	Team Leader / Port Development Planning (1)	
Mr. Masato Suzuki	Port Development Planning (2)	
Mr. Shingo Shiratori	Demand Forecast (2) / Economic Analysis	
Mr. Hiroyuki Takakaze	Port Facility Planning	
Mr. Takashi Shimada	Port Management	
Ms. Tomoe Takeda	Environment and Social Considerations	
Mr. Hiroshi Horikawa	Financial Analysis	
Mr. Masaomi Komoto	Training Planning / Operational Coordination	
Supporting Consultant		
Mr. Aziz Ramzan	Port Operations Expert, MA Consulting Group	
Mr. Antony Muriithi	Port Planning Expert, MA Consulting Group	
Minutes		
<ol style="list-style-type: none"> <li>1. Opening Remarks by Mr. Mutuku</li> <li>2. Explanation of PR3 by Mr. Suzuki</li> <li>3. Q &amp; A Session                     <ul style="list-style-type: none"> <li>● Data used in the report to be updated. For example, 2013 data is used in slide #9. (Mutuku)</li> <li>● What is the difference between Scenario 1 and 2? (Mutuku)                             <ul style="list-style-type: none"> <li>→Bulk(Clinker/Coal) is handled in existing berths in Scenario 1 but it is handled in Dongo Kundu in Scenario2. (Azuma)</li> </ul> </li> <li>● Why is coal still handled at berth #11? (Mutuku)                             <ul style="list-style-type: none"> <li>→It must be a mistake. Coal should be handled at another berth. (Azuma)</li> </ul> </li> <li>● What is the LOA of 200,000DWT tanker in slide #35? (Mutuku)                             <ul style="list-style-type: none"> <li>→Maximum LOA in Mombasa Port is 300m. (Azuma)</li> <li>→100,000~120,000DWT tanker has a LOA of approx. 300m. Because KPA's proposal shows 200,000DWT, dredging to -18m is required for 200,000DWT class tankers to approach. (Shimada)</li> </ul> </li> <li>● Kenya is supposed to export oil by 2020. Is it taken into account? (Mutuku)                             <ul style="list-style-type: none"> <li>→A part of the planned oil berth could be used for the export. Offshore single buoy berth may be suitable for larger size tankers. (Aziz)</li> </ul> </li> <li>● Cargo demand and berth capacity in slide #36 are not consistent. (Mutuku)                             <ul style="list-style-type: none"> <li>→Slide 36 is based on Scenario 1. It is consistent under Scenario 2. Berth capacity is larger than cargo demand in 2026/2027, but cargo demand will become dominant in 2030 and therefore a new terminal will be required. (Azuma)</li> </ul> </li> <li>● SGR shown in slide 55 will come up to berth #11 and handle 30% of the total cargo volume. (Mutuku)                             <ul style="list-style-type: none"> <li>→The marshalling yard in the current plan is separating the road and berths and is not appropriate for smooth cargo handling. SGR can only handle 16~32% of the total cargo volume according to</li> </ul> </li> </ul> </li> </ol>		

my calculation. (Shimada)

→Eng. Tonga is in charge of this issue. More detailed discussion can be made with him. (Mutuku)

→Is it a good idea to transport clinker by SGR? (Mutuku)

- Slide #7: Import volume growth of sugar seems less and why does the import volume of rice becomes 0 in 2035? (Isaac)

→Both results are forecasted by regression analysis. Volume of rice is based on consumption volume and production volume by the Ministry of Agriculture. (Azuma)

→Rice is not only consumed in Kenya but in other neighboring countries. (Isaac)

- Slide 7: Why are there no individual forecast volumes of Soda/Cement/Fluorspar in dry bulk? And oil as well. (Isaac)

→Past data is insufficient for an accurate analysis. (Azuma)

→Oil and bunkers must have certain figures. (Isaac)

→Analysis is not done for each item but is done for the total. (Azuma)

→Demand in other neighboring countries such as Uganda should also exist. (Mutuku)

- Berth #14 is planned as a container berth and berth #16 is located apart. Does connecting berth #14 and #16 have any advantage? (Denis)

→It was understood that berth #15 could not be used for a certain reason, the same as berth #6. (Azuma)

→According to Capt. Aziz, those 2 berths are curved, soil condition is poor and siltation likely occurs at a dead end of the curved berth line. (Shimada)

- Mbaraki wharf still handles dry bulk even though dry bulk at the existing berths have been moved to Dongo Kundo in slide #21. It still does not resolve the issue as trucks carrying the dry bulk from Mbaraki still need to go through the city. (Mwazuzu)

→Another berth is required to move Mbaraki cargo to Dongo Kundo. In this plan, Mbaraki handles other bulk. (Azuma)

→Is it possible to transport Mbaraki cargo by rail? (Mwazuzu)

→It is not included in the study. (Azuma)

→Railway company usually does not prefer bulk cargo due to its cheap fee. (Shimada)

→Malfunction of the rail system is causing road congestion and cargo stagnation. Hope if the rail system could work efficiently. (Mutuku)

- Handling of titanium started in 2014 and the volume has been increasing constantly. Why does the volume reach a ceiling in 2015? (Isaac)

→Demand of titanium is limited by the capacity of the factory. (Shiratori)

- TMEA has conducted Mombasa Port Detail Study. In the report, rehabilitation of berth #11-#14 was proposed and accepted by KPA management. This should be incorporated in this report. (Mutuku)

→Rehabilitation works are included in Other Improvement Works in the report (Azuma)

- Slide #36: 130% increase in productivity is set in KPA Strategic Plan. How is this plan incorporated into the Master Plan (Denis)

→Additional equipment and facilities are required to raise the productivity up to 130%. It is costly and there is no space to build such additional facilities. (Azuma)

- Master Plan and plan of County Government should be integrated. (Isaac)

→Land transportation was not studied in the Master Plan. (Azuma)

→Such study is underway by another JICA Study Team. (Suzuki)

→Existing CFSs are causing road congestion. The new container terminal does not require CFS and the new bypass road project may mitigate the congestion in the city as well. In addition, existing gate system must be improved at the same time. (Shimada)

- A.1 of the KPA's comments on PR2 is beyond the scope of our study. (Azuma)

→It may be possible to include when and how many cargoes must be handled at Lamu Port



instead of doing a detailed study and analysis. (Mutuku)

## Appendix 6 Stakeholder Meeting

To secure the stakeholders involvement in planning, several stakeholder consultations have been held in the course of the Project. The stakeholder engagement has been also implemented by the group focus meeting with fisheries and separate meetings with the key leading agencies.

### (1) The 1<sup>st</sup> stakeholder meeting

The first stakeholder meeting was held on 4 December 2014. It focused the information sharing and explanation of background and outline of the Master Plan as presented in the table below.

Item	Findings
Date and Time	9:00 – 12:00, 4 December 2014
Place	Bandari College, Mombasa
Participants	Total 60 participants including representatives from Mombasa County, KenHA, KMA, Bollore Logistics, Kipevu ICD(Inland Container Depot LTD), National Oil Corporation of Kenya, Trade Mark East Africa etc.
Objective	<ul style="list-style-type: none"> <li>- To share the information on current situation of port activity including the Phase 1 container project and future vision</li> <li>- To explain the outline of the Project</li> <li>- To get feedback from the stakeholders</li> </ul>
Program	<ol style="list-style-type: none"> <li>1) Opening Remarks</li> <li>2) First Presentation by KPA: Background of the Project</li> <li>3) Coffee Break</li> <li>4) Second Presentation by JICA Team: JICA Port Master Plan Project</li> <li>5) Question and Answers /Discussions</li> <li>6) Closing Remarks</li> </ol>
Key comments	<ul style="list-style-type: none"> <li>- Comments on the linkage between Mombasa Port Master Plan and the other plans/projects such as SEZ Master Plan, Southern bypass road project, port strategic plan of port</li> <li>- Request of needs of sharing of project's output</li> <li>- Questions about the planned schedule for the following stakeholder meeting etc.</li> </ul>

## (2) The 2<sup>nd</sup> stakeholder meeting

The second stakeholder meeting was held on 1 April 2015 as detailed in the table below.

Item	Findings
Date and Time	9:00 – 12:00, 1 April 2015
Place	Bliss Hotel, Mombasa
Participants	Total 28 participants including representatives from NEMA, Kenya Maritime Authority, Kenya Forest Service, Kenya Wildlife Service, Kenya Coast Development, National Museum of Kenya, NGOs etc.
Objective	<ul style="list-style-type: none"> <li>- To explain the outline of the Project including the preliminary port development plan</li> <li>- To get an opinion on the potentially environmental and social concerns from the stakeholders</li> </ul>
Program	<ol style="list-style-type: none"> <li>1) Opening Remarks</li> <li>2) First Presentation by JICA Team: Mombasa Port Development Plan</li> <li>3) Second Presentation by KPA: KPA's Activities for Sound Environmental and Social Management</li> <li>4) Coffee Break</li> <li>5) Third Presentation by JICA Team: Study on Environmental and Social Consideration for Mombasa Port Development Plan</li> <li>6) Question and Answers /Discussions</li> <li>7) Closing Remarks</li> </ol>
Key comments	<ul style="list-style-type: none"> <li>- Confirmation of scope of the project</li> <li>- There is a need for a comprehensive archeological analysis of the project site before any work commences</li> <li>- Regarding the Kayas located in the project site, both the village and Kaya elders properly consulted.</li> <li>- Request of information sharing and consultation with all stakeholders including the engagement of County Government and BMUs.</li> <li>- Question of the concrete mitigation measures against the possible adverse impact rrv.</li> </ul>
Conclusion	<ul style="list-style-type: none"> <li>- There is need to seek consultation with officials of the County Government of Mombasa and have their input before conclusion of the study</li> <li>- There is need to create clarity between the SEZ project and the Master Plan. It is apparent that part of the area of the Master Plan falls within the SEZ and causes considerable confusion to stakeholders.</li> <li>- Another environmental stakeholders meeting would be called to present the findings of the environmental and social considerations survey and also make clear issues which are still uncertain so that stakeholders can give their input from a more informed position.</li> </ul>

### (3) The 3<sup>rd</sup> stakeholder meeting

The third stakeholder meeting was held before the finalization of the output of Project as shown in the table below.

Item	Findings
Date and Time	Morning session: 9:00 – 12:00, 29 July 2015 Afternoon session: 14:30-16:30, 29 July 2015
Place	Bliss Hotel, Mombasa
Participants	Morning session: Total 44 participants including representatives from Mombasa County Government, KenHA, KMA, NOCK etc.  Afternoon session: Total 39 participants including representatives from Trade Mark East Africa, KIFWA, CFS, logistics, and other private port users etc.
Objective	- To explain the outputs of port development master plan - To explain the findings of environmental and social considerations study - To get an opinion on the proposed master plan and project-related concerns from the stakeholders
Program	Morning session: 1) First Presentation by JICA Project Team: Mombasa Port Development Plan 2) Second Presentation by JICA Project Team: Study on Environmental and Social Consideration for Mombasa Port Development Plan 3) Question and Answers /Discussions Afternoon session: 1) First Presentation by JICA Project Team: Mombasa Port Development Plan 2) Second Presentation by KPA: KPA's Activities 3) Question and Answers /Discussions
Key comments	Morning session: - Suggestions of significance of mangrove forest and the associated resources - Concerns on accessibility of fishing vessels which will use the fishing jetty to be developed in the western part of shore - Comments on the necessity to decongest the traffic jam outside of port in the city - Concerns on the adverse impact on the marine environment and fishing resource by the disposal of dredged materials - Comments on the necessity of the reduction of waste generated from port operations - Questions about the coordination among some on-going development projects (SGR, Southern Bypass Road, Mombasa SEZ etc.) Afternoon session: - Question about the possibility of relocation of the existing port facilities - Question about how to decongest the traffic jam outside of port - Pros and cons of moving the dirty cargo to Dongo Kundu side (e.g., it is acceptable from the viewpoint of mitigation measures against dust impact to the Mombasa city area)

## Appendix 7 Workshop

### (1) The 1<sup>st</sup> workshop

Date & Time	4 <sup>th</sup> December 2014
Venue	KPA Meeting Room
Attendees	KPA (11)
	Denis Muganga, M. Pariara, Rukia Alawi Husuni, Peter Masinde, Mohamed I Golicha, Weldor Morin, Capt. Abdulaziz Mzee, Mohamed Ali Mwazyzy, Benjamin Mwandawiro, M. Y. Faruk, Martin Mutuku
	JICA Team (9)
	Toshio Azuma, Masato Suzuki, Hideki Yokomoto, Michiharu Nose, Hiroyuki Takakaze, Takashi Shimada, Satoshi Ando, Tomoe Takeda, Masaomi Komoto
	Supporting Consultant (2)
	Ngure Mwaniki, Antony Muriithi
<b>Programs</b>	
1. Opening Remarks by Mr. Azuma	
2. Updated Demand Forecast – Demand Forecast Model by Mr. Yokomoto The followings were explained	
<ul style="list-style-type: none"> <li>● Outline of demand forecast analysis</li> <li>● Demand forecast for major commodities updated from SAPROF Review 2013</li> <li>● Demand forecast method</li> </ul>	
3. Natural Condition Survey by Mr. Ando Results of natural condition surveys up to date including topographic survey, bathymetric survey and geotechnical investigation were explained.	
4. Strategic Port Management in the World by Mr. Shimada Overview of several major ports in the world were introduced along with their practice on strategic port management depending on their circumstances.	
5. Closing Remarks by Mr. Azuma	

## (2) The 2<sup>nd</sup> workshop

Date & Time	26 <sup>th</sup> March 2015
Venue	KPA Headquarters Mombasa
Attendees	Title, Organization
<b>KPA</b>	
Mr. Martin Mutuku	Head of Corporate Development
Mr. Denis Lewa Muganga	Principal Economist
Mr. Mohamed I. Golicha	Senior Economist Planning
Capt. Abdulaziz A. Mzee	Senior Marine Pilot
Mr. Benjamin M. Mwandawiro	Officer Export Documentation Container Terminal
Mr. David Arika	Senior Permanent-way Officer
Mr. Joyce N. Lenga	
<b>JICA Team</b>	
Mr. Toshio Azuma	Team Leader / Port Development Planning (1)
Mr. Masato Suzuki	Port Development Planning (2)
Mr. Hideki Yokomoto	Demand Forecast (1) / Logistics
Mr. Shingo Shiratori	Demand Forecast (2) / Economic Analysis
Mr. Harushige Nishida	Shipping Investigation
Mr. Hiroyuki Takakaze	Port Facility Planning
Ms. Tomoe Takeda	Environmental and Social Considerations
Mr. Hiroshi Horikawa	Financial Analysis
<b>Supporting Staff</b>	
Mr. Aziz Ramzan	Port Operations Expert, MA Consulting Group
Mr. Antony Muriithi	Port Planning Expert, MA Consulting Group
Minutes	
<p><b>1. Opening by Team Leader Mr. Azuma (JT)</b> Mr. Azuma made opening remarks and introduced two JICA Team members who gave presentation in the 2<sup>nd</sup> Workshop.</p> <p><b>2. Presentation by Mr. Yokomoto Demand Forecast (1) / Logistics, JICA Team</b> Mr. Yokomoto made a presentation about Demand Forecast Model to the KPA participants followed by the questions and answer session. The questions raised are listed below. Q1. Is the number of transit countries limited to 10? A1. Yes, at the moment, but we can change the system to increase if we receive a request from KPA. Q2. Is this demand forecast model only for Mombasa Port? For example, is it possible to consider the Lam Port development? A2. It is possible but necessary data should be input manually. Q3. Is it possible to integrate with KPA's statistic system? A3. You had better discuss with KPA system engineers because I'm not familiar to the matter. Q4. As raised also in the TWG meeting, Base Year is set at 2013. Can everybody use the program? A4. At least knowledge about demand forecast is necessary. But if you have knowledge, it is not difficult. Q5. Is it possible to point out important matters on operation of the programme? A5. The JICA Team will prepare a manual later on. Q6. Is it possible to reflect political situations in the programme? A6. Political situations in the country can be reflected by the country's GDP.</p> <p><b>3. Presentation by Mr. Shiratori Demand Forecast (2) / Economic Analysis, JICA Team</b> Mr. Shiratori made a presentation about Port Capacity Model to the KPA participants followed by the questions and answer session. The questions raised are listed below. Q1. How about the capacity model for conventional cargo? A1. The model for the conventional cargo is still under consideration therefore, we will conduct the presentation of the conventional cargo model in the 3<sup>rd</sup> Workshop. Q2. This container capacity modeling can be applied to the container cargo volume in 2035? A2. Yes, the required number of container berths is five (5) with 58% BOR (berth occupancy ratio) or six (6) berths with 73% BOR. Five (5) berths are recommend considering the suitable BOR in the New Container Terminal. Q3. How about the container cargo productivity in the New Container Terminal? A3. Productivity of 22 boxes/hour/crane on average in the case of the container handling operation with four</p>	

(4) gantry cranes.

Q4. This model can be arranged not only the gantry crane's productivity, but also container trailer's productivity?

A4. This model only considered based on the gantry crane's productivity because of the core cargo handling equipment.

**4. Closing Remarks by Mr. Suzuki**

Mr. Suzuki made closing remarks and expressed a gratitude to the KPA participants.

### (3) The 3<sup>rd</sup> workshop

Date & Time	13 August 2015, 14:30 -16:00	
Venue	KPA Mombasa 3th Floor Meeting Room	
	Attendees	Title / Organization
KPA		
	Mr. Martin Mutuku	Head of Corporate Development
	Mr. Denis Muganga	Principal Economist
	Mr. Stephen Mwaruta	Senior Research Officer
	Mr. Dalmas Ogwang	Research Officer, Corporate Development
	Ms. Joyce Lenga	Statistics Officer
	Mr. Isaac O. Omoke	Statistics Officer (MI)
	Mr. Makuu A. Salim	Statistician
	Ms. Rukia Alawi	Assistant Statistician
	Ms. Faiza Mohamed	Assistant Statistician
JICA Team		
	Mr. Toshio Azuma	Team Leader / Port Development Planning (1)
	Mr. Masato Suzuki	Port Development Planning (2)
	Mr. Shingo Shiratori	Demand Forecast (2) / Economic Analysis
	Mr. Hiroyuki Takakaze	Port Facility Planning
Supporting Consultant		
	Mr. Aziz Ramzan	Port Operations Expert, MA Consulting Group
	Mr. Antony Muriithi	Port Planning Expert, MA Consulting Group
Minutes		
<p><b>4. Opening Remarks by Mr. Mutuku</b></p> <p><b>5. Capacity Evaluation by Mr. Azuma</b></p> <p>How the capacity of the berths is evaluated is explained by Mr. Azuma using power point slides and results of the future cargo demand forecast.</p> <p><b><u>Q &amp; A Session</u></b></p> <p>Q: Scenario 1 and 2 of the port development plans are presented based on results of the future cargo demand forecast. How about the high case, medium case and low case of the demand forecast? High case and low case studies are included in the previous master plan review.</p> <p>A: This time, the berth capacities are calculated with increased cargo handling productivity, 10% up and 20% up after 2030. High case and low case could be studied by KPA modifying our base study.</p> <p>Q: Development of Dongo Kundu has no progress in these 20 years. How this port master plan including Dongo Kundu development took this real situation into account?</p> <p>A: There is no concern on the Dongo Kundu development now while Mombasa SEZ Master Plan and Mombasa Gate City Comprehensive Development Master Plan are underway simultaneously as well as Dongo Kundo Bypass Road which is about to start its construction works.</p> <p>Q: How cargo volume is converted to container volume?</p> <p>A: Please refer to the relevant excel spreadsheet which contains the calculation formula. Containerization factor is increasing every year. Maximum of 95% is assumed in the calculation.</p> <p><b>6. Sorting port data by Mr. Suzuki</b></p> <p>Statistical analysis on each berth is demonstrated using Excel spreadsheet.</p> <p><b><u>Q &amp; A Session</u></b></p> <p>Q: How the summary sheet was produced from the statistics.</p> <p>A: Figures in the summary sheet are derived from figures in other relevant sheet.</p>		



## Appendix 8 Seminar

### Seminar on Mombasa Port Master Plan including Dongo Kundu

Date: 14 August 2015  
Venue: Travelers Beach Hotel  
Time: 9:00~12:30

#### Program

09:00 ~ 09:10	Opening Remarks	Mr. Azuma, Team Leader, JICA Project Team
09:10 ~ 09:40	Some Remarks on Mombasa Port M/P including Dongo Kundu	Mr. Azuma, Team Leader, JICA Project Team
09:45 ~ 10:15	Demand Forecast	Mr. Shiratori, JICA Project Team
10:20 ~ 10:50	Port Planning and Management	Ms. Rukia Alawi Husni, Assistant Statistician (Traffic), Corporate Development/Corporate Services, KPA
10:50 ~ 11:05	Tea/Coffee Break	
11:05 ~ 11:35	Port and Railway	Mr. Shimada, JICA Project Team
11:40 ~ 12:10	Important lessons learnt in Japan and their application on Mombasa Port	Kavate Geoffrey Kilonzo, Senior Accountant (Asset Management), Finance, KPA
12:15 ~ 12:25	Closing Remarks	KPA
12:30 ~	Lunch Buffet	

#### Participants:

JICA Project Team (7) + Supporting Consultant (2)  
KPA: Expected around 20 people.

Date & Time	14 <sup>th</sup> August 2015, 09:00 -12:10
Venue	Travellers Beach Hotel Meeting Room
Attendees	Title / Organization
KPA	
Mr. Martin Mutuku	Head of Corporate Development
Mr. Denis Muganga	Principal Economist
Mr. M. Y. Faruk	Principal Statistician
Mr. Peter Masinde	Principal Operational Officer
Capt. Abdulaziz A. Mzee	Senior Marine Pilot
Mr. Mohamed I. Golicha	Senior Economist Planning
Mr. Geoffrey Kavate	Senior Accountant, Financial/Accounting
Mr. Benjamin M. Mwandawiro	Officer Export Documentation Container Terminal
Mr. David Arika	Senior Permanent-way Officer
Mr. Mohamed Mwazuzu	Senior Operations Officer (P)
Mr. Sipei Jim	Research Officer
Ms. Joyce Lenga	Statistics Officer
Mr. Isaac O. Omoke	Statistics Officer (MI)
Mr. Makuu A. Salim	Statistician
Ms. Rukia Alawi	Assistant Statistician (Traffic)
Ms. Faiza Mohamed	Assistant Statistician
Mr. Martin M. Tureno	Assistant Statistician
Mr. Kheri Hussein	CA (DL)
JICA Team	
Mr. Toshio Azuma	Team Leader / Port Development Planning (1)
Mr. Masato Suzuki	Port Development Planning (2)
Mr. Shingo Shiratori	Demand Forecast (2) / Economic Analysis
Mr. Hiroyuki Takakaze	Port Facility Planning
Mr. Takashi Shimada	Port Management
Mr. Hiroshi Horikawa	Financial Analysis
Mr. Masaomi Komoto	Training Planning / Operational Coordination
Supporting Consultant	
Mr. Aziz Ramzan	Port Operations Expert, MA Consulting Group
Mr. Antony Muriithi	Port Planning Expert, MA Consulting Group
Minutes	
<b>7. Opening Remarks by Mr. Azuma</b>	
<b>8. Some Remarks on Mombasa Port M/P including Dongo Kundu by Mr. Azuma</b>	
Briefs of Mombasa Port Master Plan including Dongo Kundu were explained to KPA staff.	
<b>Q &amp; A Session</b>	
Q: Is only 1 berth enough for the new oil terminal?	
A: The new oil terminal located inside the bay consists of 4 berths having berthing capacity of maximum 200,000DWT tanker for each has enough capacity.	
Q: Is the oil terminal nearby KPA H/Q taken into account?	
A: The detail is not clear since it does not belong to KPA.	
Q: Why only berth #14 is assigned for container cargo out of berth #11 to #14 in the future plan?	
A: Berths #11 to #13 are assigned for general cargoes. Berth #14 is assigned only for container cargoes as well as its berth capacity calculation.	
<b>9. Demand Forecast by Mr. Shiratori</b>	
Demand forecast method is demonstrated using excel program and spreadsheet.	
<b>10. Port Planning and Management by Ms. Rukia Alawi Husni (KPA)</b>	
The result of the training in Japan in May ~ June is reported.	
<b>11. Port and Railway by Mr. Shimada</b>	

Port and rail transportation is explained citing various examples.

**12. Important Lessons learned in Japan and their Application on Mombasa Port by Mr. Kavate Geoffrey Kilonzo (KPA)**

The result of the training in Japan in May ~ June is reported.

**13. Closing Remarks by Mr. Mutuku (KPA)**

END