República de Moçambique
Ministério dos Transportes e Comunicações

Projeto para a Melhoria do Porto de Nacala na República de Moçambique

Relatório de Conclusão do Projeto

Março de 2015

Agência de Cooperação Internacional do Japão (JICA)

Instituto Ultramarino de Desenvolvimento de Áreas Costeiras do Japão

EI
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Abreviaturas

Abreviatura	Descrição
ADMAR	Administração Marítima
ASEAN	Associação de Nações do Sudeste Asiático
BOR	Taxa de Ocupação dos Berços
CDN	Corredor de Desenvolvimento do Norte
CEO	Diretor Executivo
CFM	Portos e Caminhos de Ferro de Moçambique
CFO	Diretor Financeiro
CHE	Equipamento de Movimentação de Contêineres
CP	Contraparte
CT	Terminal de Contêineres
CTMS	Sistema de Gerenciamento do Terminal de Contêineres
CY	Pátio de Contêineres
D/D	Projeto Detalhado
EMS	Sistema de Gestão Ambiental
FS	Estudo de Viabilidade
GAZEDA	Gabinete das Zonas Econômicas de Desenvolvimento Acelerado
GDP	Produto Interno Bruto (PIB)
INATTER	Instituto Nacional de Transportes Terrestres
IT	Tecnologia da Informação (TI)
JCC	Comitê de Coordenação Conjunta
JICA	Agência de Cooperação Internacional do Japão
ME, MOE	Ministério da Energia
MLIT	Ministério da Terra, Infraestrutura, Transportes e Turismo
MOFA	Ministério de Negócios Estrangeiros
MPD	Ministério da Planificação e Desenvolvimento
MTC	Ministério dos Transportes e Comunicações
OCDI	Instituto Ultramarino de Desenvolvimento de Áreas Costeiras do Japão
ODA	Assistência Oficial para o Desenvolvimento
OJT	Treinamento no local de trabalho
PDCA	Planejar – Fazer – Verificar – Agir
PDM	Matriz Lógica do Projeto
PETROMOC	Petróleos de Moçambique, S.A.
PN	Portos do Norte, S.A.
QC	Guindaste de Cais
R/D	Registro de Discussões
RTG	Guindaste de Pórtico Montado sobre Pneus
SG	Equipamento de Bordo

Abreviatura	Descrição
TA	Assistência Técnica
TEEN	Terminal Especial de Exportações de Nacala
TF	Força-Tarefa (FT)
TIC	Centro Internacional de Tóquio da JICA
TN	Terminais do Norte S.A.
TOR	Termo de Referência
TOS	Sistema de Operação de Terminal
WBS	Estrutura Analítica de Processos (EAP)
WSR	Razão Tempo de Espera / Tempo de Serviço

Conteúdos

1. Linhas Gerais do Projeto

1.1 Introdução

Em resposta à solicitação do Governo da República de Moçambique, o Governo do Japão resolveu implementar o "Projeto para a Melhoria do Porto de Nacala na República de Moçambique" (doravante referido como "o Projeto") com base nos entendimentos mútuos descritos no Registro de Discussões subsequente assinado em 22 de dezembro de 2011 entre os lados moçambicano e japonês.

A Agência de Cooperação Internacional do Japão (JICA), agência oficial responsável pela implementação de programas de cooperação técnica do Governo do Japão, iniciou o Projeto em 2012 em colaboração estreita com as autoridades pertinentes do Governo da República de Moçambique. Uma equipe de peritos do Instituto Ultramarino de Desenvolvimento de Áreas Costeiras do Japão (OCDI) (doravante referida como "a Equipe do Projeto") efetuou transferência de tecnologia para o lado moçambicano com base em um contrato celebrado com a JICA.

1.2 Pano de Fundo do Projeto

O Porto de Nacala (doravante referido como "o Porto") é um porto que serve de porta de entrada na área do Corredor de Nacala. A área do Corredor de Nacala inclui não somente as províncias setentrionais de Moçambique, mas também países encravados, como a República do Malaui e a República da Zâmbia. O desenvolvimento dessa área é uma das principais prioridades da nação a fim de concretizar plenamente seu potencial industrial. O rápido desenvolvimento da área vem gerando um aumento no tráfego de cargas. Visando responder ao crescimento do volume de cargas, a eficiência do Porto precisa ser melhorada.

1.3 Objetivo do Projeto

O objetivo do Projeto é descrito abaixo:

(1) Objetivo Superior

A área do Corredor de Nacala é desenvolvida através do fortalecimento de atividades comerciais e econômicas.

(2) Objetivo do Projeto

O Porto de Nacala é operado eficientemente.

(3) Resultados do Projeto

1) É desenvolvida a estratégia de desenvolvimento do Porto
2) É revisada e estabelecida a estrutura de implementação de desenvolvimento de curto prazo

3) É desenvolvida a capacidade de administração e gestão portuária
4) É aprimorada a habilidade de movimentação de carga
5) É desenvolvida a habilidade de manutenção das instalações e equipamentos do porto

1.4 Local do Projeto

O local do projeto é o Porto de Nacala e áreas adjacentes na Província de Nampula, da República de Moçambique.

1.5 Agências Envolvidas do Lado Moçambicano

As seguintes agências moçambicanas estão envolvidas com o Projeto.

- MTC (Ministério dos Transportes e Comunicações)
- CFM (Portos e Caminhos de Ferro de Moçambique)
- CDN (Corredor de Desenvolvimento do Norte)
- PN (Portos do Norte, SA)

No curso do Projeto, a PN foi estabelecida em março de 2013 como subcontratada do CDN. A maior parte dos empregados da PN foi transferida da antiga Divisão de Portos do CDN daquela época.

A relação contratual e os vínculos de capital dessas agências estão indicados na figura abaixo.

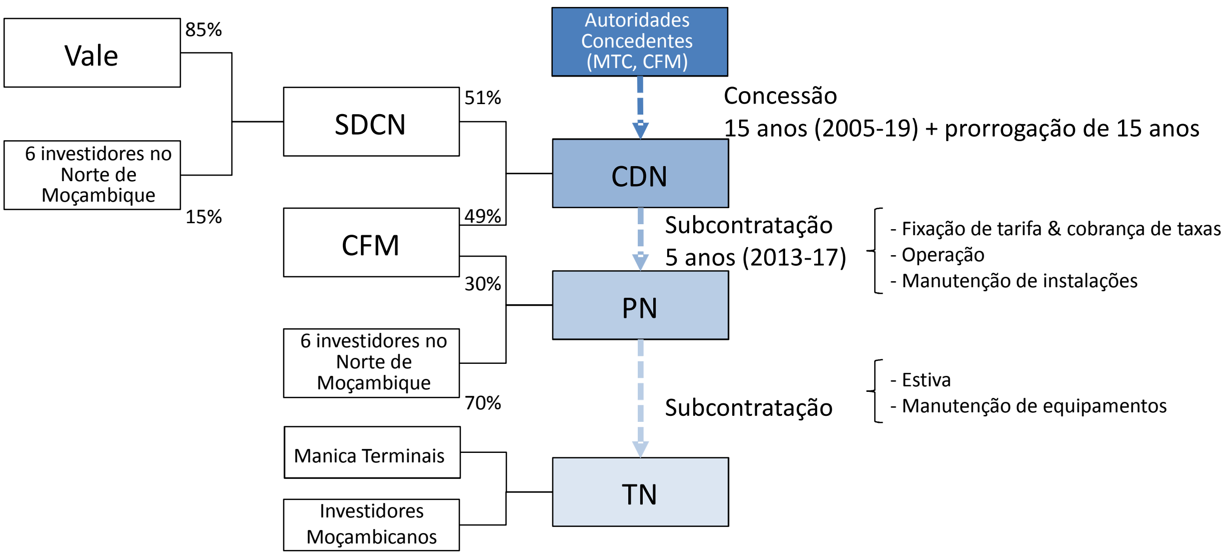


Figura 1.5-1 Agências Moçambicanas Envolvidas

Vale: Empresa multinacional brasileira de mineração e metais diversificados e também a maior produtora de minério de ferro e pelotas, detendo 35% de participação de mercado no mundo. A Vale também produz níquel (segunda maior produção), manganês, ouro, cobre, bauxita, potássio, etc. A Vale opera ferrovia, transporte marítimo, bem como negócios de geração de energia.

2. Abordagens básicas para a implementação do Projeto

O Projeto foi implementado com base nas seguintes abordagens:

2.1 Aspectos técnicos

(1) Devida consideração aos últimos desdobramentos no Porto

Foram levados em devida conta os últimos desdobramentos no e ao redor do Porto, incluindo os seguintes fatores:

1) Mudança na composição do capital do CDN
2) Rápido aumento da carga conteinerizada excedendo o volume estimado no "Estudo Preparatório sobre o Projeto de Desenvolvimento do Porto de Nacala na República de Moçambique, junho de 2011"
3) Subconcessão das operações portuárias do CDN para a PN em 2013
4) Progresso dos projetos de ODA (do inglês *Official Development Assistance*, ou Assistência Oficial ao Desenvolvimento) do Japão

(2) Pleno uso da experiência do Instituto Ultramarino de Desenvolvimento de Áreas Costeiras do Japão (OCDI)

Os peritos da JICA para o Projeto foram disponibilizados pelo OCDI. O OCDI utilizou plenamente a experiência adquirida através dos seguintes projetos nos quais desempenhou papéis de liderança:

1) Estudo Preparatório sobre o Projeto de Desenvolvimento do Porto de Nacala na República de Moçambique, junho de 2011
2) Levantamento para Coleta de Dados sobre o Projeto para a Melhoria do Porto de Nacala, novembro de 2011
3) Estudo sobre a Melhoria dos Fluxos de Cargas Portuárias nos Principais Corredores na República de Moçambique, 2009

(3) Designação dos peritos mais apropriados

Os membros da Equipe do Projeto foram designados levando-se em conta a *expertise* necessária para a sua conclusão bem sucedida. As áreas de expertise são: planejamento de desenvolvimento portuário, administração e gestão portuária, movimentação de carga portuária, e manutenção de instalações e equipamentos.

(4) Devida consideração às condições atuais do Porto e contrapartes

Com vistas a maximizar os efeitos da transferência tecnológica, foram levadas em devida conta as condições atuais de aspectos tangíveis e não tangíveis do Porto, bem como a experiência e competência das contrapartes.

(5) Estreita coordenação com projetos de cooperação relacionados

O Projeto foi conduzido mantendo-se estreita coordenação com projetos de cooperação relacionados, incluindo a assistência gratuita concedida para a reabilitação urgente do Cais Norte e os empréstimos da JICA considerados para o aumento da capacidade do Porto.

(6) Estreita coordenação entre os peritos

Com vistas a assegurar a boa operação do Projeto, os peritos da JICA estabeleceram estreita coordenação entre suas atividades.

(7) Devida consideração à sustentabilidade dos resultados do Projeto

Foi levada em devida conta a sustentabilidade dos resultados do Projeto de modo que o lado moçambicano pudesse manter a eficiência das operações portuárias após a conclusão do Projeto.

2.2 Aspectos operacionais

(1) Gerenciamento do Projeto baseado no Plano de Trabalho

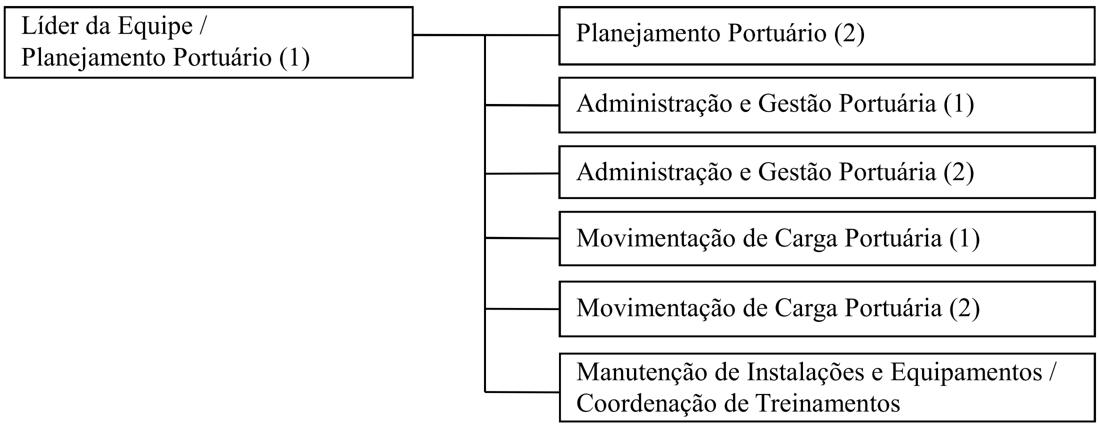
A Equipe do Projeto e as agências contrapartes moçambicanas concordaram quanto ao Plano de Trabalho em abril de 2012 e conduziram o Projeto de acordo com ele.

(2) Desenvolvimento de capacidades por meio de oficinas, seminários, OJT e treinamento

Com vistas a alcançar transferência tecnológica efetiva, o Projeto empregou vários métodos, como oficinas, seminários, OJT (treinamento no local do trabalho) e treinamentos no exterior.

3. Atividades

3.1 Envio de peritos



A JICA enviou equipes de peritos por dez vezes a Moçambique entre abril de 2012 e fevereiro de 2015.

Tabela 3.1-1 Designação de Peritos

Área de *Expertise*	Nome	Duração
Líder da Equipe / Planejamento Portuário (1)	Sr. Mitsuhiko Okada	1º envio: 07 ABR – 27 ABR 2012 2º envio: 01 JUN – 16 JUN 2012 3º envio: 04 SET – 24 SET 2012 5º envio: 06 ABR – 20 ABR 2013 7º envio: 07 DEZ – 21 DEZ 2013 8º envio: 15 ABR – 04 MAI 2014 9º envio: 30 AGO – 20 SET 2014 10º envio: 25 JAN – 14 FEV 2015
Planejamento Portuário (2)	Sr. Yutaka Miyaji	4º envio: 03 DEZ – 23 DEZ 2012
	Dr. Osamu Kunita	6º envio: 10 JUN – 30 JUN 2013
Administração e Gestão Portuária (1)	Sr. Kiyoshi Nakashima	1º envio: 07 ABR – 05 MAI 2012 4º envio: 03 DEZ – 23 DEZ 2012 5º envio: 06 ABR – 28 ABR 2013 6º envio: 10 JUN – 30 JUN 2013 8º envio: 15 ABR – 04 MAI 2014 10º envio: 25 JAN – 14 FEV 2015
Administração e Gestão Portuária (2)	Cap. Teruki Eto	2º envio: 01 JUN – 16 JUN 2012 3º envio: 04 SET – 24 SET 2012 4º envio: 03 DEZ – 23 DEZ 2012 6º envio: 11 JUN – 30 JUN 2013 7º envio: 07 DEZ – 21 DEZ 2013 9º envio: 30 AGO – 20 SET 2014 10º envio: 25 JAN – 14 FEV 2015
Movimentação de Carga Portuária (1)	Sr. Masao Ichinose	1º envio: 7 ABR – 5 MAI 2012
Movimentação de Carga Portuária (2)	Sr. Susumu Kimura	3º envio: 04 SET – 27 SET 2012 4º envio: 03 DEZ – 23 DEZ 2012 5º envio: 06 ABR – 28 ABR 2013 7º envio: 07 DEZ – 21 DEZ 2013 8º envio: 15 ABR – 04 MAI 2014 9º envio: 30 AGO – 20 SET 2014 10º envio: 25 JAN – 14 FEV 2015

Área de *Expertise*	Nome	Duração
Manutenção de Instalações e Equipamentos / Coordenação de Treinamentos	Sr. Tatsuo Kawabata	1º envio: 07 ABR – 27 ABR 2012 2º envio: 01 JUN – 16 JUN 2012 3º envio: 04 SET – 27 SET 2012 5º envio: 06 ABR – 20 ABR 2013
	Sr. Masaomi Komoto	6º envio: 10 JUN – 30 JUN 2013 7º envio: 07 DEZ – 21 DEZ 2013 8º envio: 15 ABR – 04 MAI 2014 9º envio: 30 AGO – 19 SET 2014

3.2 Designação de contrapartes

O coordenador do Projeto do MTC indicou contrapartes para o Projeto de agências pertinentes, incluindo o MTC, a CFM, o CDN e a PN. As contrapartes foram nomeadas para cada área de transferência tecnológica: planejamento portuário, administração portuária, movimentação de carga e manutenção. As contrapartes uniram forças com a equipe da JICA para alcançar os resultados do Projeto e atuaram como pontos focais da transferência tecnológica no Projeto. Durante a implementação do Projeto, mais de 30 contrapartes foram convidadas para o Japão e participaram de programas de treinamento de contrapartes.

3.3 Forças-Tarefa

A fim de conduzir eficazmente a transferência tecnológica em Moçambique, a Equipe do Projeto e as contrapartes moçambicanas criaram grupos de força-tarefa para cada área de tecnologia. Ambos os lados designaram participantes para as reuniões de força-tarefa de acordo com sua *expertise* (Vide Apêndice-2 Registro das Reuniões de Força-Tarefa).

Tabela 3.3-1 Grupos de Força-Tarefa

FT Nº	Grupo de Força-Tarefa	Número de reuniões de FT realizadas	Número de contrapartes que participaram
Geral	Geral	10	125
FT-1	Planejamento Portuário	8	120
FT-2	Administração e Gestão Portuária	13	170
FT-3	Movimentação de Carga	16	190
FT-4	Manutenção de Equipamentos de Movimentação de Carga	10	94
FT-5	Manutenção de Infraestrutura	15	110
	Total	72	809

Reuniões de força-tarefa foram realizadas 72 vezes no total por meio de envios de peritos feitos 10 vezes durante 3 anos (エラー！ 参照元が見つかりません。).

Tabela 3.3-2 Lista de Reuniões de Força-Tarefa

Nº	Envio de Peritos	Nº da Sessão	Nº da FT	Título	Data
1	4º	1	FT-4	Reunião para Manutenção de Equipamentos de Movimentação de Carga (CHE)	11-12-2012
2	4º	2	FT-3	Movimentação de Carga: Tecnologia de TI no Terminal de Contêineres (CT) e sua Necessidade	11-12-2012

Nº	Envio de Peritos	Nº da Sessão	Nº da FT	Título	Data
3	4º	3	FT-1	Reunião para Planejamento Portuário e Reunião para Administração e Gestão Portuária	12-12-2012
4	4º	4	FT-1	Reunião para Planejamento Portuário (Tendências Mundiais de Transporte Marítimo)	13-12-2012
5	4º	5	FT-1	Reunião para Planejamento Portuário	14-12-2012
6	4º	6	FT-4	Reunião para Manutenção de Equipamentos de Movimentação de Carga	17-12-2012
7	4º	7	FT-3	Movimentação de Carga: Métodos de Manuseio de Dados de Transporte Marítimo	17-12-2012
8	4º	8	FT-2	Reunião para Administração e Gestão Portuária (Sistema de EDI (do inglês *Electronic Data Interchange*, ou Intercâmbio Eletrônico de Dados) dos Portos do Japão)	17-12-2012
9	4º	9	FT-2	Reunião para Gerenciamento de Processos Administração e Gestão Portuária (Gerenc. de Projeto)	18-12-2012
10	5º	1	FT-3	Reunião para Movimentação de Carga: Sistema de TI para Operações do Terminal de Contêineres (CT)	12-4-2013
11	5º	2	FT-5	Reunião de Manutenção de Instalações Portuárias: Manutenção Preventiva / Gerenciamento de Manutenção	12-4-2013
12	5º	3	FT-1	Reunião para Planejamento Portuário	12-4-2013
13	5º	4	FT-2	Reunião para Administração & Gestão Portuária (Leis e Regulamentos)	12-4-2013
14	5º	5	FT-4	Reunião para Manutenção de Equipamentos de Movimentação de Carga: Plano de Ação sobre a Melhoria dos Equipamentos de Movimentação	12-4-2013
15	5º	6	FT-1	Reunião para Planejamento Portuário	13-4-2013
16	5º	7	FT-5	Reunião para Manutenção de Instalações Portuárias: Manutenção Preventiva / Gerenciamento de Manutenção	13-4-2013
17	5º	8	FT-1	Reunião para Planejamento Portuário	15-4-2013
18	5º	9	FT-2	Reunião para Administração e Gestão Portuárias (Privatização do CT)	15-4-2013
19	5º	10	FT-4	Sessão de treinamento de Manutenção de Equipamentos de Movimentação de Carga: Lista de Peças de Reposição para Peças Substituídas Periodicamente e Peças de Emergência	15-4-2013
20	6º	3	FT-3	Reunião para Movimentação de Carga	18-6-2013
21	6º	4	FT-5	Reunião para Manutenção de Instalações Portuárias	18-6-2013
22	6º	5	FT-1	Reunião para Planejamento Portuário	18-6-2013
23	6º	6	FT-2	Reunião para Administração & Gestão Portuária	19-6-2013
24	6º	7	FT-1	Reunião para Planejamento Portuário	19-6-2013
25	6º	8	FT-5	Reunião para Manutenção de Instalações Portuárias	20-6-2013
26	6º	9	FT-3	Reunião para Movimentação de Carga	20-6-2013
27	6º	10	FT-2	Reunião para Administração & Gestão Portuária	20-6-2013
28	6º	11	FT-3	Reunião para Movimentação de Carga	21-6-2013
29	6º	12	FT-2	Reunião para Administração & Gestão Portuária	21-6-2013
30	6º	13	FT-5	Reunião para Manutenção de Instalações Portuárias	24-6-2013
31	7º	1	Geral	Discussão sobre o plano de Assistência Técnica do 7º envio de peritos e indicadores de monitoramento	11-12-2013
32	7º	2	FT-5	Discussão sobre o plano de manutenção de infraestruturas (com base no resultado do estudo feito pela Geoibéricos)	11-12-2013
33	7º	3	FT-3	Discussão sobre a revisão do sistema Phaeros (plano de melhoria pelos engenheiros da Phaeros)	12-12-2013
34	7º	4	FT-5	Levantamento das infraestruturas com as contrapartes moçambicanas	12-12-2013
35	7º	5	FT-2	Discussão sobre o regulamento de segurança e o regulamento de operações portuárias (com base nos comentários da Equipe de Assistência Técnica da JICA)	13-12-2013

Nº	Envio de Peritos	Nº da Sessão	Nº da FT	Título	Data
36	7º	6	FT-3	Estudo do 2º Porto de Nacala (Porto Seco)	16-12-2013
37	7º	7	FT-5	Discussão sobre o resultado do monitoramento da infraestrutura realizado pelas contrapartes moçambicanas	16-12-2013
38	7º	8	FT-4	Discussão sobre manutenção de equipamentos	16-12-2013
39	7º	9	Geral	Reunião de encerramento	16-12-2013
40	7º	10	FT-3	Discussão sobre produtividade das operações de movimentação de contêineres, incluindo questões do porto seco (sessão extra 1)	17-12-2013
41	7º	11	FT-5	Monitoramento das infraestruturas (sessão extra 2)	18-12-2013
42	8º	1	Geral	Discussão sobre o plano de Assistência Técnica do 8º envio de peritos	21-4-2014
43	8º	2	FT-5	Discussão sobre o plano de manutenção de infraestruturas	21-4-2014
44	8º	3	FT-5	Monitoramento conjunto *in loco* da infraestrutura	22-4-2014
45	8º	4	FT-5	Discussão sobre contramedidas do Cais Sul	22-4-2014
46	8º	5	FT-4	Monitoramento conjunto in loco dos equipamentos	23-4-2014
47	8º	6	FT-4	Discussão sobre Manutenção de Equipamentos	23-4-2014
48	8º	7	FT-3	Discussão sobre o progresso das melhorias do sistema Phaeros	24-4-2014
49	8º	8	FT-3	Discussão sobre melhoria do porto seco e aquisição de *spreaders* com *flippers*	24-4-2014
50	8º	9	FT-2	Seminário para o regulamento de segurança do Porto de Nacala	25-4-2014
51	8º	10	FT-2	Palestras sobre "5S" e Gestão Ambiental	25-4-2014
52	8º	11	Geral	Reunião de Encerramento: Medidas a serem tomadas até o 9º envio de peritos (setembro de 2014) e Progresso do Projeto com base na PDM (do inglês *Project Design Matrix*, ou Matriz Lógica do Projeto)	28-4-2014
53	9º	1	Geral	Discussão sobre o plano de Assistência Técnica do 9º envio de peritos	4-9-2014
54	9º	2	Geral	Discussões sobre os progressos desde abril	4-9-2014
55	9º	3	Geral	Revisão das estatísticas da PN	5-9-2014
56	9º	4	FT-3	Visita ao terminal seco e ao terminal TEEN	5-9-2014
57	9º	5	FT-5	Manutenção de infraestrutura (1): Monitoramento da Infraestrutura & Fundamentos de Levantamento do Nível	9-9-2014
58	9º	6	FT-5	Manutenção de infraestrutura (2): Inspeção Conjunta	9-9-2014
59	9º	7	FT-4	Manutenção de equipamentos (1)	10-9-2014
60	9º	8-1	FT-5	Manutenção de infraestrutura (3): Treinamento de Campo sobre Levantamento do Nível	10-9-2014
61	9º	8-2	FT-4	Manutenção de equipamentos (2)	10-9-2014
62	9º	9	FT-3	Status de melhoria do sistema Phaeros	11-9-2014
63	9º	10	FT-2	Treinamento sobre "5S": Orientação	11-9-2014
64	9º	11	FT-2	Treinamento sobre "5S": Treinamento de Campo (1)	12-9-2014
65	9º	12	FT-2	Treinamento sobre "5S": Treinamento de Campo (2)	12-9-2014
66	9º	13	Geral	Reunião de encerramento	15-9-2014
67	10º	1	Geral	Apresentação do Relatório de Conclusão	30-1-2015
68	10º	2	FT-4/FT-5	Monitoramento *in loco* da infraestrutura e equipamentos	30-1-2015
69	10º	3	FT-3	Monitoramento *in loco* do terminal seco	2-2-2015
70	10º	4	FT-3	Discussões sobre compilação de dados	2-2-2015
71	10º	5	FT-3	Contramedidas para ventos altos no pátio de contêineres	4-2-2015
72	10º	6	Geral	Reunião de encerramento	6-2-2015

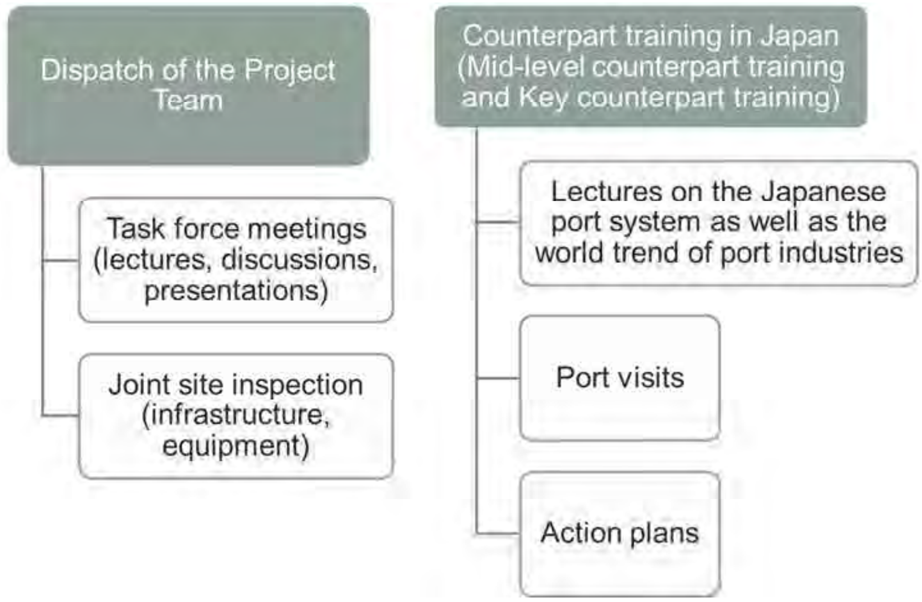


Figura 3.3-1 Metodologia de transferência tecnológica

3.4 Treinamento de contrapartes no Japão

Durante o curso do Projeto, a Equipe do Projeto realizou quatro programas de treinamento de contrapartes no Japão. Desses quatro programas, um foi adaptado para contrapartes-chave e os outros três foram preparados para contrapartes de nível intermediário.

Tabela 3.4-1 Participantes dos programas de treinamento de contrapartes no Japão

Organization	Key counterparts	Mid-level counterparts	Total
MTC/ME	1	3	4
CFM	2	12	14
CDN		6	6
PN	1	8	9
TN		2	2
Total	4	31	35

(1) Primeiro treinamento de contrapartes no Japão (20 Ago 2012 – 31 Ago 2012)

Lista de Participantes

Nº	Nome Completo	Organização	Profissão	Observações
1	Maria Fernanda de Carvalho	MTC	Contadora	
2	Critiano Oliveira	CFM	Engenheiro Civil	
3	Braulio Franco Catutula	CFM	Técnico de Suportes Informáticos	
4	Nauaia Omar Mahonca	CFM	Conferente "A"	
5	Nilsa da Gloria Luis	CFM	Técnica de Contabilidade "C"	
6	Alfredo Rafael Sigola	CFM	Engenheiro Civil	
7	Lucas Jose Cipriano	CDN	Gerente de Operações Portuárias	
8	Bonifacio Alvaro Muassabao	CDN	Gerente de Carga Geral	
9	Eusebio Ananias Ramos Logizela	CDN	Supervisor do Sistema de Movimentação de Contêineres	
10	Danilo Abdula Laisse	ME	Superintendente do Terminal da PETROMOC no Porto de Nacala	

Programa do Treinamento

Data		Horário	Programa	Conferencista	Local
20-Ago	Seg	9:00-11:30	Instruções da JICA	JICA,OCDI	Yokohama
		11:30-12:30	Orientação da JICA	JICA, OCDI	Yokohama
		13:30-15:00	Deslocamento (Yokohama → Tóquio)	JICA, OCDI	-
		15:00-15:30	Visita de cortesia à JICA	JICA	Tóquio
		16:00-16:30	Visita de cortesia ao MLIT	MLIT	Tóquio
		17:00-17:30	Visita de cortesia ao OCDI	OCDI	Tóquio
		17:30-19:30	Deslocamento (Tóquio →Yokohama)	JICA, OCDI	-
21-Ago	Ter	9:00-10:00	Deslocamento (Yokohama → Tóquio)	JICA	—
		10:00-11:30	Palestra: Portos do Japão e desenvolvimento econômico	OCDI (Okada)	OCDI
		13:00-14:30	Palestra: Movimentação de Carga Portuária e Operações do Porto de Nacala	OCDI (Eto)	OCDI
		15:00-16:30	Palestra: Manutenção de Equipamentos de Movimentação de Carga	OCDI (Kimura)	OCDI
		17:00-19:00	Festa de Boas Vindas em Tóquio (17:00-19:00)	JICA, OCDI	Akasaka
		20:00-21:30	Deslocamento (Tokyo →Yokohama)	JICA, OCDI	—
22-Ago	Qua	10:00-11:30	Palestra: Manutenção de Infraestrutura	OCDI (Kawabata)	YIC
		13:30-16:30	Estudo de Campo: Manutenção de Infraestrutura Portuária	OCDI (Kawabata)	Porto de Yokohama
		16:30-18:00	Deslocamento (para Yokohama)	JICA, OCDI	-
23-Ago	Qui	9:00-10:00	Visita de cortesia ao escritório de administração portuária de Yokohama	Autoridade Portuária, JICA, OCDI	Porto de Yokohama
		10:00-12:00	Estudo: Papéis do administrador portuário do Porto de Yokohama	Autoridade Portuária, JICA, OCDI	Porto de Yokohama
		13:30-17:00	Estudo de Campo: Terminal de Contêineres de Daikoku	Autoridade Portuária, JICA, OCDI	Porto de Yokohama
24-Ago	Sex	10:10-11:20	Estudo de Campo: Porto de Yokohama (Observação por um barco)	Autoridade Portuária, JICA, OCDI	Porto de Yokohama
		10:40-12:00	Estudo de Campo: Terminal de passageiros do Porto de Yokohama	Autoridade Portuária, JICA, OCDI	Porto de Yokohama
		13:30-16:00	Estudo: Manutenção da Infraestrutura do Porto de Tóquio (incluindo Estudo de Campo no Terminal de Contêineres de Honmoku)	Autoridade Portuária, JICA, OCDI	Porto de Yokohama
25-Ago	Sáb	Dia inteiro	Preparação de Relatório / Elaboração da minuta do Plano de Ação / Preparação do Questionário	—	Sala de Informática no YIC
26-Ago	Dom	Dia inteiro	Preparação de Relatório / Elaboração da minuta do Plano de Ação / Preparação do Questionário	—	Sala de Informática no YIC
27-Ago	Seg	Dia inteiro	Deslocamento (Yokohama →Haneda →Oita)	JICA, OCDI	-
28-Ago	Ter	9:00-10:00	Estudo: Linhas Gerais de um Fabricante de Equipamentos: MES (Mitsui Engineering & Shipbuilding)	MES, JICA, OCDI	MES Oita
		10:15-12:00	Estudo de Campo: Fábrica da MES para Equipamentos de Operações Portuárias	MES, JICA, OCDI	MES Oita
		13:30-16:00	Palestra e Estudo de Campo: Manutenção de Equipamentos de Operações Portuárias	MES, JICA, OCDI	MES Oita
29-Ago	Qua	Dia inteiro	Deslocamento (Oita →Haneda →Yokohama)	JICA, OCDI	-
30-Ago	Qui	9:00-10:30	Relatório: Preparação do Relatório Final e Plano de Ação	OCDI	YIC
		10:30-11:30	Discussão: Desafios do Porto de Nacala	OCDI	YIC
		11:30-12:30	Discussão: Contramedidas para resolver os desafios do Porto de Nacala	OCDI	YIC
		14:00-16:30	Discussão: Plano de Ação para o Desenvolvimento do Porto de Nacala	OCDI	YIC
		16:30-18:00	Relatório: Preparação do Relatório Final e Plano de Ação	OCDI	YIC

31-Ago	Sex	10:00-12:00	Deslocamento (Yokohama →Tóquio)	–	JICA Tóquio
		13:00-15:00	APRESENTAÇÃO: Preparação do Relatório Final e Plano de Ação	JICA e OCDI	JICA Tóquio
		16:00-16:00	Discussões de avaliação e cerimônia de encerramento	JICA e OCDI	JICA Tóquio
		16:00-17:30	Deslocamento (Tóquio →Yokohama)	–	JICA Tóquio

(2) Segundo treinamento de contrapartes no Japão (02 Set 2013 – 13 Set 2013)

Lista de participantes

Nº	Nome Completo	País	Organização	Departamento	Posição
1	Sra. SIMTE Lineza Amarpope	Moçambique	Portos do Norte('07)	Operações Portuárias	Conferencista
2	Sr. QUINANE Atumane	Moçambique	Portos do Norte('13)	Operações Portuárias	Coordenador de Operações Portuárias
3	Sr. MADEIRA Cremildo Rafael Da Silva	Moçambique	Portos do Norte('08)	Meio Ambiente, Saúde e Segurança	Coordenador
4	Sr. JUNIOR Afonso Vasco Da Cunha	Moçambique	Portos do Norte('13)	Divisão de Manutenção	Chefe da Divisão de Manutenção
5	Sr. INDUNA Neimo Da Esperanca Albert	Moçambique	Portes do Norte('13)	Operações Portuárias	Gerente do Pátio de Contêineres
6	Sra. MATSINHA Anabela Emilia	Moçambique	Portos e Caminhos de Ferro de Moçambique ('08)	Diretoria Executiva – CFM Sul	Engenharia Civil e Transportes
7	Sr. BAINHA Arceliu Lopes	Moçambique	Portos e Caminhos de Ferro de Moçambi-que, CFM Sul ('07)	Diretoria Executiva	Engenheiro Civil
8	Sr. MAFUCA Alfredo Artur	Moçambique	Portos e Caminhos de Ferro de Moçambi-que, CFM Norte('08)	Terminal de Granel Líquido do Porto de Nacala	Gerente
9	Sra. BENE Filomena Jose	Moçambique	CFM CENTRO('13)	Manutenção de Infraestrutura Portuária	Chefe de Departamento
10	Sr. BINZE Cesar Tomocene	Moçambique	CFM CENTRO('10)	Manutenção de Infraestrutura Portuária	Engenheiro Civil

Programa do Treinamento

Data		Horário	Programa	Conferencista	Local
2-Set	Seg	9:00-12:00	Instruções da JICA sobre a estadia no Japão	JICA	TIC
		13:30-14:30	Orientação sobre o Programa	JICA, OCDI	TIC
		14:30-15:30	Deslocamento (TIC → MLIT)	JICA, OCDI	-
		15:30-16:00	Visita de cortesia ao MLIT	MLIT	MLIT
		16:00-16:30	Deslocamento (MLIT → OCDI)	JICA, OCDI	-
		16:30-17:00	Visita de cortesia ao OCDI	OCDI	OCDI
		17:30-19:30	Deslocamento (OCDI → TIC)	JICA, OCDI	-
3-Set	Ter	9:00-10:00	Deslocamento (TIC → OCDI)	JICA	-
		10:00-11:30	Palestra: Portos japoneses e desenvolvimento econômico	OCDI (Okada)	OCDI
		13:00-14:30	Palestra: Considerações gerais sobre movimentação de carga, Operações no Porto de Nacala	OCDI (Eto)	OCDI
		15:00-16:30	Palestra: Manutenção de equipamentos de movimentação de carga	OCDI (Kimura)	OCDI
		17:00-19:00	Festa de Boas Vindas em Kojimachi, Tóquio (17:00-19:00)	JICA, OCDI	Tóquio
		19:00-20:00	Deslocamento (Local da festa → TIC)	JICA, OCDI	-
4-Set	Qua	9:00-10:00	Palestra: Manutenção de infraestrutura portuária	OCDI (Komoto)	TIC
		10:00-11:00	Segurança durante Obras de Construção	TOA (Tomita)	TIC
		11:30-13:30	Almoço, Deslocamento (TIC → Toa Yokohama → Porto de Yokohama, Minami Hommoku)	JICA, OCDI	-
		13:30-16:30	Estudo de campo: Manutenção de infraestrutura portuária (Porto de Yokohama)	TOA (Mikutsu)	Yokohama
		16:30-18:00	Deslocamento (Yokohama → TIC)	JICA, OCDI	-
5-Set	Qui	9:00-14:00	Deslocamento (TIC → Estação de Tóquio → Sendai)	JICA, OCDI	-
		14:00-15:30	Palestra: Reconstrução de portos na região de Tohoku após o desastre de terremoto	MLIT (Tohoku)	Sendai
		15:30-17:00	Estudo de campo: Cidade de Sendai	JICA, OCDI	Sendai
6-Set	Sex	9:30-10:00	Deslocamento (Hotel → Porto de Sendai)	JICA, OCDI	-
		10:00-10:50	Estudo de campo: Porto de Sendai (Terminal de Contêineres de Takasago)	MLIT (Tohoku)	Sendai
		11:00-12:00	Estudo de campo: Porto de Sendai (Refinaria de Óleo JX)		Sendai
		12:00-17:00	Almoço – estudo de campo: Cidade de Ishinomaki – Estação de Sendai		Ishinomaki
		17:26-20:00	Deslocamento (Estação de Sendai → Estação de Tóquio → TIC)	JICA, OCDI	-
7-Set	Sáb	Dia inteiro	Preparação de relatório / plano de ação / questionário	-	TIC
8-Set	Dom	Dia inteiro	Preparação de Relatório / Elaboração da Minuta do Plano de Ação / Preparação do Questionário	-	TIC
9-Set	Seg	Dia inteiro	Deslocamento (TIC → Haneda → Oita → Beppu)	JICA, OCDI	-
10-Set	Ter	8:20-9:00	Deslocamento (Beppu → MES Oita)	JICA, OCDI	-
		9:00-10:00	Palestra: Visão geral da Mitsui Engineering & Shipbuilding (MES), fabricante de equipamentos de operação portuária	MES	MES
		10:15-12:00	Estudo de campo: Fábrica da MES Oita		
		13:30-16:30	Palestra e estudo de campo: Manutenção de equipamentos de estiva		
11-Set	Qua	Dia inteiro	Deslocamento (Oita → Haneda → TIC)	JICA, OCDI	-

12-Set	Qui	9:00-10:30	Discussão: Desafios do Porto de Nacala	OCDI	TIC
		10:30-12:00	Discussão: Contramedidas para resolver os desafios do Porto de Nacala		
		13:00-15:00	Discussão: Plano de ação para o desenvolvimento do Porto de Nacala		
		15:00-17:00	Preparação do relatório final e do plano de ação		
13-Set	Sex	10:00-11:00	Apresentação: relatório final e plano de ação	JICA e OCDI	TIC

(3) Terceiro treinamento de contrapartes no Japão (28 Jul 2014 – 08 Ago 2014)

Lista de Participantes

Nº	Nome Completo	Posição, Departamento, Organização	Observações
1	Sr. ADUDOSSOMADO Zacarias Andarusse	Técnico de segurança, Serviços Marítimos, Corredor de Desenvolvimento do Norte S.A. (2013)	
2	Sr. CANDIDO Antonio Frederico	Gerente-Adjunto de operações portuárias, Serviços Portuários / Marítimos, Corredor de Desenvolvimento do Norte S.A. (2014)	
3	Sr. MUSSA Ibraimo Nazimo	Analista de operações portuárias, Serviços Marítimos, Corredor de Desenvolvimento do Norte S.A. (2013)	
4	Sra. RIBEIRO Loni Jacqueline	Gerente Comercial, Divisão comercial, Portos do Norte (2013)	
5	Sr. DIOGO Luis Alvito	Gerente de equipamentos, Divisão de manutenção, Portos do Norte, S.A. (2014)	
6	Sr. FAQUIHE Abudo Sele	Gerente Engenheiro Civil, Unidade de Gestão de Projetos, Portos do Norte, S.A. (2014)	
7	Sr. SALOMAO Helvio Jesus Correia	Gerente de Operações, Operações portuárias, Terminais do Norte S.A. (2010)	
8	Sr. LANGA Jaime Pedro	Operações, Operações portuárias, Terminais do Norte S.A. (2013)	
9	Sr. JORGE Edgar Frederico	Supervisor Chefe, Divisão de Engenharia, Portos e Caminhos de Ferro de Moçambique (2014)	
10	Sr. NGOCA Tomas Fortunato	Estagiário em mecânica locomotiva, Departamento de equipamentos motores, Caminhos de Ferro de Moçambique (2013)	
11	Sr. LANGA Samuel Joao	Advogado, Logística (Leis), Instituto Nacional de Transportes Terrestres (2007)	

Programa do Treinamento

Data		Horário	Conteúdo		Conferencista / Atendente	Local
28-Jul	Seg	9:30-12:00	Orientação	Instruções da JICA sobre a estadia no Japão	JICA	TIC
		13:30-14:00	Orientação	Orientação sobre o Programa	Komoto (OCDI)	
		14:00-15:00		TIC → Kasumigaseki		
		15:00-15:30	Visita de Cortesia	Visita de cortesia ao MLIT	Sr. Nakazaki (MLIT)	MLIT
		15:30-17:00		Kasumigaseki → Hanzomon		
		17:00-17:30	Visita de Cortesia	Visita de cortesia ao OCDI	OCDI	OCDI
		17:30-19:00		Festa de Boas Vindas no OCDI	Komoto (OCDI)	
29-Jul	Ter	10:00-11:30	Palestra	Estratégia de Desenvolvimento Industrial de Moçambique	Nakashima (OCDI)	OCDI
		13:00-14:30	Palestra	Operações de movimentação de carga no Porto de Nacala	Cap. Eto (OCDI)	
		15:00-16:30	Palestra	Manutenção de infraestrutura portuária	Prof. Iwanami (TIT)	
30-Jul	Qua	10:00-12:00	Estudo de Campo	Canteiro de Obras do Terminal de Contêineres de Minami-Honmoku	Sr. Mikutsu (TOA)	Yokohama
		12:00-14:00		Minami-Honmoku → Kurihama		
		14:00-16:30	Palestra & Estudo de Campo	Medidas contra deterioração em estruturas portuárias	Sr. Yamaji (PARI)	PARI
31-Jul	Qui	10:00-11:30	Palestra	Apresentação geral para Guindastes de Movimentação de Contêineres	Sr. Ichimura (MES)	OCDI
		13:00-14:30	Palestra	Segurança durante as obras	Sr. Tomita (TOA)	
		15:00-16:30	Palestra	Controle ambiental durante as obras		
1-Ago	Sex	10:00-12:00	Palestra	História e operações atuais do Porto de Yokohama	POY / YPC	Porto de Yokohama
		13:30-14:30	Estudo de Campo	Porto de Yokohama de barco		
		14:30-16:00	Estudo de Campo	Terminal de Contêineres de Daikoku		
2-Ago	Sáb					
3-Ago	Dom					
4-Ago	Seg			TIC → Haneda → Oita → Beppu		
5-Ago	Ter	9:00-10:00	Palestra	Visão geral da Mitsui Engineering & Shipbuilding (MES), fabricante de equipamentos de operação portuária	MES Oita	MES Oita
		10:15-12:00	Estudo de Campo	Passeio guiado pela fábrica da MES Oita		
		13:10-16:30	Palestra	Manutenção de equipamentos de movimentação de carga		
6-Ago	Qua	10:00-12:00	Estudo de Campo	Passeio guiado pela Refinaria JX Oita	JX Oita	JX Oita
				Oita → Haneda → TIC		
7-Ago	Qui	10:00-11:30	Discussão	Desafios do Porto de Nacala	Komoto (OCDI)	TIC
		13:00-14:30	Discussão	Contramedidas para resolver os desafios do Porto de Nacala		
		15:00-16:30	Discussão	Plano de ação para o desenvolvimento do Porto de Nacala		
8-Ago	Sex	10:00-11:00	Apresentação	Relatório final e do plano de ação	JICA e OCDI	TIC
		11:00-12:00	Encerramento	Discussões de avaliação e encerramento		

(4) Treinamento de contrapartes-chave no Japão (08 Jul 2013 – 19 Jul 2013)

Lista de participantes

Nº	Nome Completo	Organização	Posição
1	Dra. Ana Dimande	Ministério dos Transportes e Comunicações	Gerente do Projeto, Unidade de Reabilitação Portuária
2	Paulo Jafar Tarmamade	Portos e Caminhos de Ferro de Moçambique	Assessor e Líder da Equipe da CFM, Conselho Administrativo, Porto de Nacala
3	Jeremias Fernando Numes do Rego	Portos e Caminhos de Ferro de Moçambique	Gerente do Terminal, Porto da Beira, Píer de Óleo, Cais #12
4	Agostinho F. Langa Jr.	Portos do Norte S.A.	Diretor de Operações (COO), Porto de Nacala

Programa de Treinamento

Data		Horário	Conteúdo	Conferencista / Atendente	Local
8-Jul	Seg	9:00-11:30	Instruções da JICA Tóquio	JICA	TIC
		11:30-12:00	Orientação pelo OCDI	OCDI	TIC
		12:00-14:30	Almoço (TIC) e deslocamento (TIC → Kojimachi)		-
		14:30-15:00	Visita de cortesia ao Escritório-Sede da JICA	JICA	Tóquio
		15:30-16:00	Visita de cortesia ao Ministério de Negócios Estrangeiros	MOFA	Tóquio
		16:30-17:00	Visita de cortesia ao MLIT	MLIT	Tóquio
		17:30-18:00	Visita de cortesia ao OCDI	OCDI	Tóquio
		18:30-20:00	Festa de Boas Vindas	JICA, MLIT, MOFA, OCDI	Tóquio
9-Jul	Ter	10:00-11:30	Palestra: Desenvolvimento portuário e regional	Professor Ikeda	OCDI
		13:00-14:30	Palestra: Situações atualizadas e desenvolvimento futuro de portos de todo o mundo	IAPH	OCDI
		14:30~15:30	Deslocamento (Kojimachi → Terminal de Ooi)		
		15:30-17:00	Palestra: Operações portuárias e indústria de transportes do Japão	Utoku Corporation	Porto de Tóquio (Terminal de Ooi)
10-Jul	Qua	10:00-10:15	Visita de cortesia ao escritório de administração portuária de Yokohama	OCDI (Komoto)	Porto de Yokohama
		10:15-11:00	Estudo: Papéis do administrador portuário e História do desenvolvimento do Porto de Yokohama	Autoridade portuária, JICA, OCDI	Porto de Yokohama
		11:15-12:00	Estudo: Papéis das companhias de operação portuária e manutenção de equipamentos de movimentação de carga e infraestrutura	Yokohama Port Corporation	Porto de Yokohama
		13:30-14:30	Estudo de Campo: Passeio guiado pelo Porto de Yokohama	Autoridade portuária, JICA, OCDI	Porto de Yokohama
		14:30-16:00	Estudo de Campo: Terminal de Contêineres de Honmoku	Yokohama Port Corporation	Porto de Yokohama
11-Jul	Qui	9:00-9:30	Visita de cortesia à Embaixada de Moçambique	Embaixada de Moçambique	Tokyo
		9:30-10:00	Deslocamento (Tamachi → Kojimachi)		
		10:00-11:30	Palestra: Negócios da indústria de transporte marítimo mundial	OCDI (Nakashima)	OCDI
		13:00-14:30	Discussão: Compreensão do *status quo* do Porto de Nacala	OCDI	OCDI
		15:00-16:30	Discussão: Desenvolvimento do Porto de Nacala num futuro próximo	OCDI	OCDI

Data		Horário	Conteúdo	Conferencista / Atendente	Local
12-Jul	Sex	10:00-12:00	Estudo de Campo: Centro de Pesquisa & Desenvolvimento - TOA Corporation	TOA Corporation	TOA
		12:00-14:00	Almoço e deslocamento (Tsurumi → Honmoku)		
		14:00-16:00	Estudo de Campo: Desenvolvimento do maior e mais profundo terminal de contêineres do Japão	TOA Corporation	Porto de Yokohama (Honmoku)
13-Jul	Sáb	Dia inteiro	Preparação de Apresentação / Plano de Ação / Resposta ao Questionário	-	Sala de informática no TIC
14-Jul	Dom	Dia inteiro	Preparação de Apresentação / Plano de Ação / Resposta ao Questionário	-	Sala de informática no TIC
15-Jul	Seg	Dia inteiro	Preparação de Apresentação / Plano de Ação / Resposta ao Questionário	-	Sala de informática no TIC
16-Jul	Ter	10:00-12:00	Palestra: Operação de transporte marítimo regular para a África	MOL	MOL
		13:30-16:00	Palestra: Fabricação e manutenção de equipamentos de movimentação de carga (QC+RTG)	MES	MES
17-Jul	Qua	10:00-11:00	Palestra: EDI de Portos	MLIT ou OCDI	OCDI
		11:00-12:00	Palestra: Operação de segurança durante o período de reabilitação do porto	TOA Corporation	OCDI
		15:00-15:20	APRESENTAÇÃO: Projeto de Desenvolvimento do Porto de Nacala	MTC (Dra. Ana Dimande)	Kasumi-gaseki
		15:20-15:40	APRESENTAÇÃO: Operações ferroviárias e portuárias pela CFM em Moçambique	CFM (Paulo Jafar Tarmamade)	Kasumi-gaseki
		15:40-16:00	APRESENTAÇÃO: Operações e Serviços no Porto da Beira	CFM (Sr. Jeremias Fernando Numes do Rego)	Kasumi-gaseki
		16:00-16:20	APRESENTAÇÃO: Operações e Serviços da PN no Porto de Nacala	PN (Sr. Langa)	Kasumi-gaseki
		16:30-17:00	Perguntas e respostas com o setor privado japonês		Kasumi-gaseki
		17:30-18:30	Troca de cumprimentos com o setor privado japonês		Kasumi-gaseki
18-Jul	Qui	10:30-11:30	Discussão: (Desenvolvimento do Porto de Nacala no Futuro)	OCDI	Sala de informática no TIC
		11:30-12:00	Entrega: Questionários preenchidos	OCDI	Sala de informática no TIC
		13:00-13:30	Discussão sobre Projeto de Assistência Gratuita	JICA, Ecoh	Sala de informática no TIC
		13:30-16:30	Relatório: Preparação do Relatório Final e Plano de Ação	OCDI	Sala de informática no TIC
19-Jul	Sex	10:00-11:00	APRESENTAÇÃO: Relatório Final e Preparação do Plano de Ação	JICA e OCDI	JICA HQ
		11:00-12:00	Discussões de avaliação e cerimônia de encerramento	JICA e OCDI	JICA HQ

3.5 Relatórios de progresso

As atividades e o progresso do Projeto estão descritos abaixo, por meio das linhas gerais dos consecutivos relatórios de progresso.

(1) Relatório de Progresso 1 (Setembro de 2012)

Este Relatório resumiu o progresso do Projeto de abril a agosto de 2012 e foi apresentado no terceiro envio de peritos (setembro de 2012). Durante esse período a JICA enviou a Equipe do Projeto duas vezes a Moçambique, em abril e junho. Este relatório definiu o curso da assistência técnica com base nas necessidades do Porto de Nacala, identificadas por meio de dois envios de peritos. A Equipe do Projeto estabeleceu indicadores destinados a monitorar a eficiência do Porto. Também preparou programas de treinamento para as contrapartes moçambicanas tanto em Moçambique como no Japão.

A Equipe do Projeto analisou mudanças no ambiente econômico ao redor do Porto de Nacala desde a conclusão do “Estudo Preparatório sobre o Projeto de Desenvolvimento do Porto de Nacala na República de Moçambique” (doravante referido como “o Estudo de Viabilidade”). Preparou uma estratégia de desenvolvimento portuário baseada nos conceitos propostos no Estudo de Viabilidade, mas com algumas modificações. A Equipe do Projeto agrupou os componentes do projeto (infraestrutura e equipamentos) em três pacotes de investimento levando em consideração a prioridade, a coerência com o plano geral e a conformidade com os esquemas de financiamento (Tabela 3.5-1

Conceitos básicos dos pacotes de investimento

Novo Esquema de Financiamento		Pacote Principal	Efeitos	Comentários	Custo (US$)
Conceito	Assistência Gratuita	Instalação de protetores de borracha no cais norte Pavimentação da praça de manobra (*apron*) no cais norte Pavimentação do pátio no lado da terra do cais norte 2 conjuntos de empilhadeiras *reach stacker* 2 conjuntos de guindastes de pórtico montados sobre pneus (RTG) Equipamento de combate a incêndio Braço de carregamento	Aumentar a eficiência da capacidade de movimentação de contêineres (aumento de 60%) Responsivo à demanda em torno do ano de 2015	Os pacotes listados são necessários com urgência.	36.097.000
	Empréstimo 1	Via de acesso de desvio Construção de portão Alargamento da pista de entrada Dragagem (V=80.000m3) (*)	Aumentar a eficiência da movimentação de carga aliviando os congestionamentos do porto Acelerar o processo de dragagem do solo, preparando a área para a disposição do solo Responsivo à demanda em torno do ano de 2018	Serão introduzidas técnicas de proteção ambiental de alto padrão pelos experientes consultores e	89.159.120

		Pavimentação do pátio no lado da terra do cais norte 3 conjuntos de guindastes de pórtico montados sobre pneus (RTG) Terminal ferroviário de contêineres		empreiteiros japoneses.	
	Empréstimo 2	Reconstrução do cais (-14m) 2 conjuntos de guindastes de pórtico de cais (**) Dragagem (V=115.000m3) 3 conjuntos de guindastes de pórtico montados sobre pneus (RTG) Pavimentação do pátio de contêineres (lado da terra) Sistema de gerenciamento do terminal de contêineres incluindo sistema de gerenciamento do pátio Outros	Renovação para operação do terminal de contêineres de águas profundas de alta capacidade por guindastes de pórtico de cais Responsivo à demanda em torno do ano de 2020	Serão introduzidas técnicas de proteção ambiental de alto padrão pelos experientes consultores e empreiteiros japoneses.	194.350.154

As estimativas de custo são baseadas nos dados do Estudo Preparatório e, portanto, precisam ser revistas.

Nota: (*) Será dragada a área exceto a adjacente ao novo Cais.

(**) A eletricidade para o Guindaste de Pórtico de Cais será providenciada pelo lado moçambicano.

, Figura 3.5-1 e Figura 3.5-2).

Tabela 3.5-1 Conceitos básicos dos pacotes de investimento

Novo Esquema de Financiamento		Pacote Principal	Efeitos	Comentários	Custo (US$)
Conceito	Assistência Gratuita	Instalação de protetores de borracha no cais norte Pavimentação da praça de manobra (*apron*) no cais norte Pavimentação do pátio no lado da terra do cais norte 2 conjuntos de empilhadeiras *reach stacker* 2 conjuntos de guindastes de pórtico montados sobre pneus (RTG) Equipamento de combate a incêndio Braço de carregamento	Aumentar a eficiência da capacidade de movimentação de contêineres (aumento de 60%) Responsivo à demanda em torno do ano de 2015	Os pacotes listados são necessários com urgência.	36.097.000
	Empréstimo 1	Via de acesso de desvio Construção de portão Alargamento da pista de entrada Dragagem (V=80.000m3) (*) Pavimentação do pátio no lado da terra do cais norte 3 conjuntos de guindastes de pórtico montados sobre pneus (RTG) Terminal ferroviário de contêineres	Aumentar a eficiência da movimentação de carga aliviando os congestionamentos do porto Acelerar o processo de dragagem do solo, preparando a área para a disposição do solo Responsivo à demanda em torno do ano de 2018	Serão introduzidas técnicas de proteção ambiental de alto padrão pelos experientes consultores e empreiteiros japoneses.	89.159.120
	Empréstimo 2	Reconstrução do cais (-14m) 2 conjuntos de guindastes de pórtico de cais (**) Dragagem (V=115.000m3) 3 conjuntos de guindastes de pórtico montados sobre pneus (RTG) Pavimentação do pátio de contêineres (lado da terra) Sistema de gerenciamento do terminal de contêineres incluindo sistema de gerenciamento do pátio Outros	Renovação para operação do terminal de contêineres de águas profundas de alta capacidade por guindastes de pórtico de cais Responsivo à demanda em torno do ano de 2020	Serão introduzidas técnicas de proteção ambiental de alto padrão pelos experientes consultores e empreiteiros japoneses.	194.350.154

As estimativas de custo são baseadas nos dados do Estudo Preparatório e, portanto, precisam ser revistas.

Nota: (*) Será dragada a área exceto a adjacente ao novo Cais.
(**) A eletricidade para o Guindaste de Pórtico de Cais será providenciada pelo lado moçambicano.

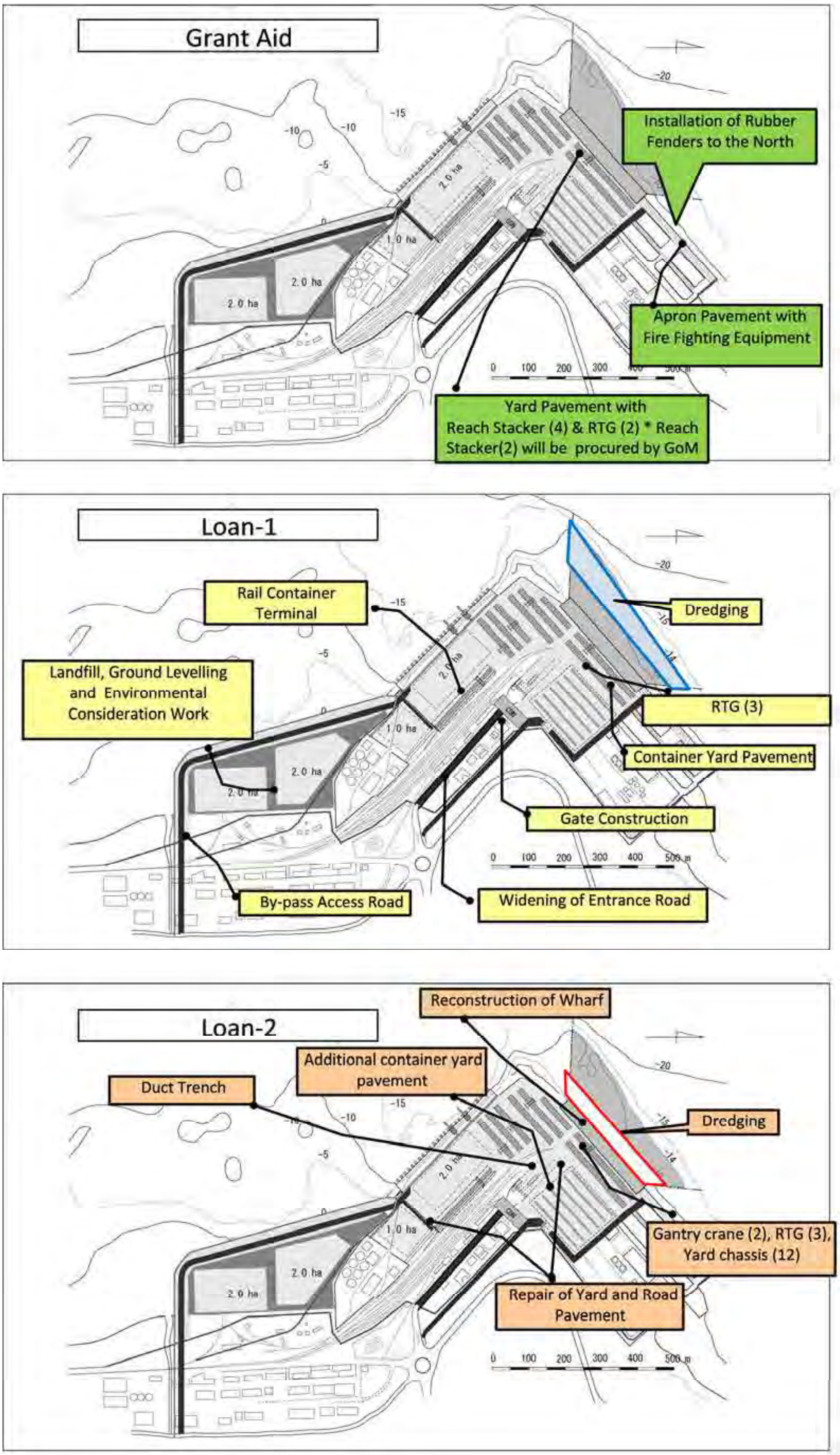


Figura 3.5-1 Desenvolvimento faseado do porto

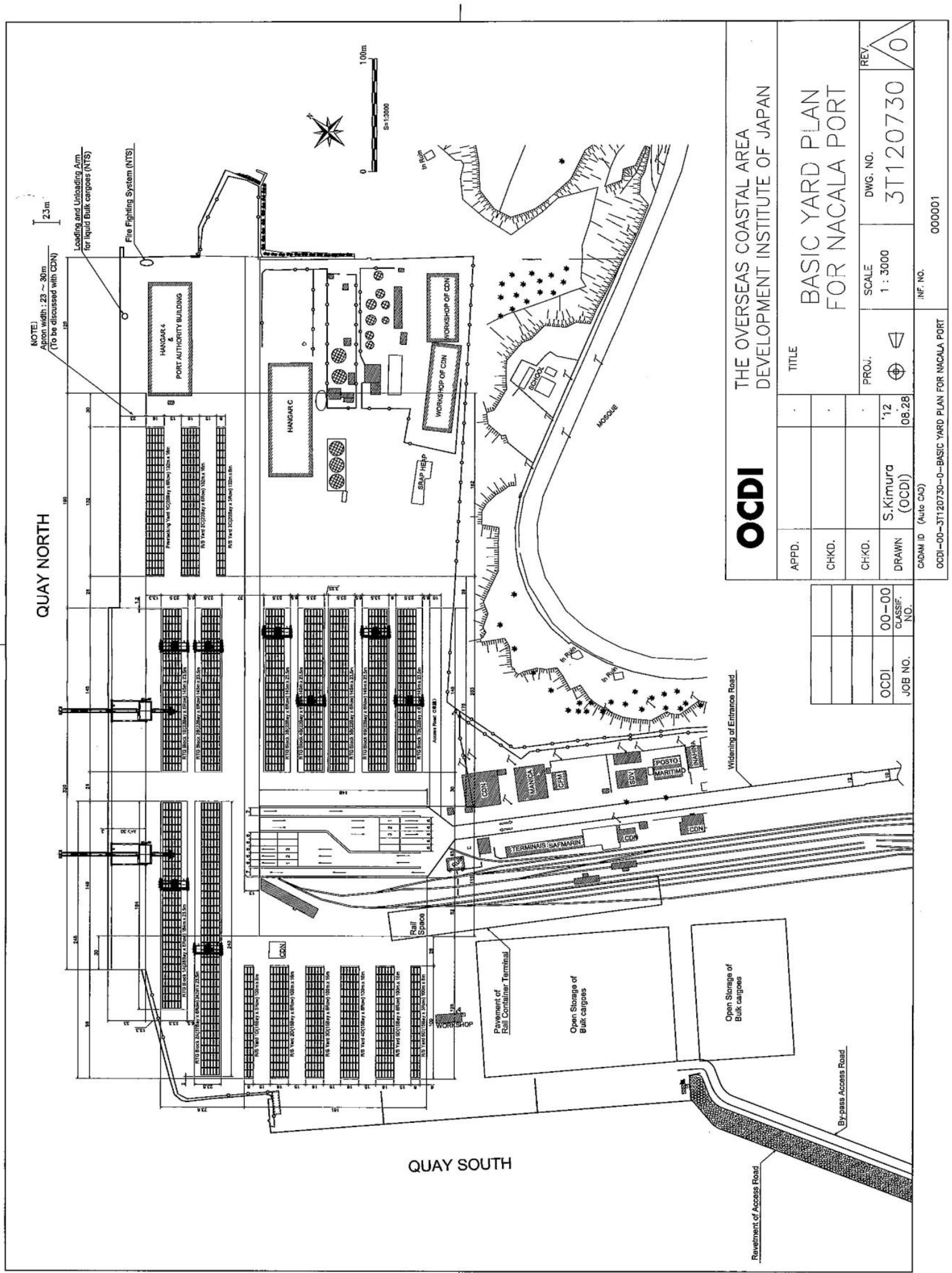


Figura 3.5-2 Plano básico do pátio

(2) Relatório de Progresso 2 (Abril de 2013)

Este Relatório resumiu o progresso da transferência tecnológica de outubro de 2012 a março de 2013 e foi apresentado no quinto envio de peritos (abril de 2013). Com base em discussões internas, o lado moçambicano propôs suas necessidades de treinamento em outubro de 2012 (Tabela 3.5-3). A Equipe do Projeto apreciou muito a iniciativa do lado moçambicano e preparou o programa de transferência de tecnologia em conformidade com isso (**Tabela 3.5-2 Programa de transferência tecnológica**

Área	Assunto	2012	2013			2014		2015
		Dez	Abr	Jun	Dez	Abr	Set	Jan
Movimentação de Carga	Equipamentos de Movimentação de Carga	●		●				
	Produtividade da movimentação			●	●	●	●	●
	Sistema de TI para Operação do Terminal de Contêineres	●	●	●	●	●	●	
	Planejamento de Pátio			●	●			●
	Desenvolvimento de Capacidades - Habilidade	●		●				
Manutenção (instalações portuárias, equipamentos de movimentação de carga)	Manutenção Preventiva	●	●	●	●			
	Manuais de Manutenção			●	●	●		
	Gerenciamento da Manutenção	●	●		●	●	●	●
	Inventário de Peças de Reposição	●	●		●	●	●	
	Segurança Portuária			●	●			●
	"5S" [*1]						●	
Planejamento Portuário	Sistema de Planejamento Portuário	●	●					
	Previsão de Demanda		●					
	Planejamento do Terminal de Grãos			●		●		
	Tendências Mundiais de Transporte Marítimo	●						
	Considerações Ambientais	●						
	Segurança durante as Obras de Construção			●				
	Necessidade de Plano Diretor Revisado					●		
	Capacidade de Empilhamento					●		
Administração e Gestão Portuária	Leis e Regulamentos	●	●	●	●	●		
	Facilitação de Procedimentos Portuários	●			●	●	●	●
	Privatização do Terminal de Contêineres		●					
	Promoção do Porto		●					
	Proteção de Instalações Portuárias							
	"5S"					●		
Gerenciamento de Processos	Ciclo PDCA	●						
	Mapeamento de Processos Críticos	●						
	Liderança e Alinhamento	●						

[*1] Sistema japonês de organização do ambiente de trabalho (Senso de Seleção, Senso de Ordenação, Senso de Limpeza, Senso de Padronização e Senso de Autodisciplina).

). A transferência de tecnologia precisa englobar grandes áreas incluindo planejamento, gestão, administração, manutenção e movimentação de cargas.

Tabela 3.5-2 Programa de transferência tecnológica

Área	Assunto	2012	2013			2014		2015
		Dez	Abr	Jun	Dez	Abr	Set	Jan

Movimentação de Carga	Equipamentos de Movimentação de Carga	●		●				
	Produtividade da movimentação			●	●	●	●	●
	Sistema de TI para Operação do Terminal de Contêineres	●	●	●	●	●	●	
	Planejamento de Pátio			●	●			●
	Desenvolvimento de Capacidades - Habilidade	●		●				
Manutenção (instalações portuárias, equipamentos de movimentação de carga)	Manutenção Preventiva	●	●	●	●			
	Manuais de Manutenção			●	●	●		
	Gerenciamento da Manutenção	●	●		●	●	●	●
	Inventário de Peças de Reposição	●	●		●	●	●	
	Segurança Portuária			●	●			●
	"5S" [*1]						●	
Planejamento Portuário	Sistema de Planejamento Portuário	●	●					
	Previsão de Demanda		●					
	Planejamento do Terminal de Grãos			●		●		
	Tendências Mundiais de Transporte Marítimo	●						
	Considerações Ambientais	●						
	Segurança durante as Obras de Construção			●				
	Necessidade de Plano Diretor Revisado					●		
	Capacidade de Empilhamento					●		
Administração e Gestão Portuária	Leis e Regulamentos	●	●	●	●	●		
	Facilitação de Procedimentos Portuários	●			●	●	●	●
	Privatização do Terminal de Contêineres		●					
	Promoção do Porto		●					
	Proteção de Instalações Portuárias							
	"5S"					●		
Gerenciamento de Processos	Ciclo PDCA	●						
	Mapeamento de Processos Críticos	●						
	Liderança e Alinhamento	●						

[*1] Sistema japonês de organização do ambiente de trabalho (Senso de Seleção, Senso de Ordenação, Senso de Limpeza, Senso de Padronização e Senso de Autodisciplina).

Tabela 3.5-3 Necessidades de Treinamento Propostas pelo Lado Moçambicano

► Planos de Manutenção + 06 Steps Plan - Atingir Padrões Internacionais de Nível de Serviço Portuário

TARGETS:	**1. Ships Productivity: Net 10 Lifts / Ship-gear / hour**
	2. CY Turn-Time: 30 minutes from Gate-in to Gate-out

■ Manutenção Equipamentos: Otimização e Melhor Controle do Plano de Manutenção de Equipamentos

Objetivo	Plano de Ação	Prazo	Responsável	Envolvidos	Treinamento	Custo	Melhorias
Melhorar a Produtividade garantindo maior taxa de disponibilidade dos equipamentos do Porto	1. Executar contrato da PASICO - Empresa contratada para realizar manutenção (com fornecimento de peças) de todas as máquinas do Porto e realizar uma passagem de conhecimento para profissionais CDN (3 meses). 2. Definição de Pontos Focais CDN para receber treinamentos específicos de Manutenção. 3. Contratar um outsourcing de 2 ou 3 pessoas capacitadas para realizar e treinar profissionais da CDN em Manutenção - Estimativa de um contrato de 1 ano. Auxiliar na criação de uma área de gestão e controlo de manutenção. 4. Aquisição de peças sobresalentes. Aumento de 10% no orçamento de 2013 para a aquisição de peças. 5. Realizar de Treinamento em áreas especificas de manutenção (Eletrônica, Hidráulica, Mecânica) - Vinculado ao Item 03	1.31/01/13 2. 16/10/12 3. 30/01/13 4. 01/03/13 5. 01/03/13	- Langa - Matos Fernandes	- TBA	- Manutenção (Hidraulica, Eletrô nica e Mecânica) - Gestão da Manutenção (Planos de Execução, Controle de Qualidade)	- TBD	1. Aumento da Taxa de Disponibilidade de Equipamentos 2. Maior absorção de demandas de mercado.

■ Manutenção Infraestrtutura: Otimização / Criação e Melhor Controle do Plano de Manutenção de Infraestruturas

Objetivo	Plano de Ação	Prazo	Responsável	Envolvidos	Treinamento	Custo	Melhorias
Melhorar infraestrutura do Porto garantindo maior segurança e agilidade para a operação.	1. Contratação de Engenheiro Civil responsável pela Elaboração e Implementação do Plano de Manutenção da Infraestrutura. 2. Criar plano de inspeção de insfraestrutura. 3. Alocar Orçamento para manutenção de infraestrutura.	1. 01/06/13 2. 01/08/13 3. 01/03/13	- Langa - Matos Fernandes	N/A	N/A	- TBD	1. Reduzir número de avarias na infraestrutura aumentando sua disponibilidade 2. Reduzir número de acidentes

■ Step 01: Use Attachment With Flippers - Controlling it by Two Ropes

Objetivo	Plano de Ação	Prazo	Responsável	Envolvidos	Treinamento	Custo	Melhorias
Identificar como são realizadas as operações de carga / descarga de navios a fim de otimizar produtividade.	1. Ajustar os Spreaders com os Flippers e Cordas para guia. 2. Realizar treinamento de estivadores para a nova operação.	1. 01/02/13 2. 01/04/13	- Lucas Cipriano	- Terminais do Norte	Necessário para a novo modelo de operação	0	1. Higher Productivity by smooth Ship Gear (SG) Ops 2. Less Damange to containers due to gentle contact of attachment

■ Step 02: Modify the Container Yard (CY) & Re-naming / Striping

Objetivo	Plano de Ação	Prazo	Responsável	Envolvidos	Treinamento	Custo	Melhorias
Organizar o Pátio de Contentores para simplificar a operação e criar mais capacidade.	1. Pintar as Letras e Números do Layout atual	1. 01/04/13	- Lucas Cipriano	N/A	N/A	- US $ 15.000	1. Able to increase in 25% the capacity of CY. 2. Easy management of the CY by allocating the space/blocks by status/kinds of containers. 3. Easy access to the assigned CY by truckers.

■ Step 03: Prepare Enough Numbers of Cargo Handling Equipment (CHE) for Both CY-Gate & Ship Operations

Objetivo	Plano de Ação	Prazo	Responsável	Envolvidos	Treinamento	Custo	Melhorias
Garantir um número mínimo de equipamentos por opera ção para se atingir a eficiência esperada do Porto. - REQUERIMENTOS MINIMOS: Ship Ops: 01 RS/2-SG at Apron (Dis. Only) 01 RS/SG at CY 02 Tractor-Chassis/SG CY - Gate Ops: 01 RS / 10~15 Gate Moves / Hour	0. Porto de Nacala possui o equipamento necessário para a operação no modelo apresentado para 01 Navio. 1. Discutir com o Time da JICA um adiantamento no processo de aquisição dos 02 Reach Stackers previstos no Grant Aid. 2. Não será necessário a aquisição de Tractor-Chassis, pois é possível contratar em mercado local.	1. 20/10/12	- Ana Dimande - Langa	N/A	N/A	N/A	1. Higher productivity due to covering both Ship & CY-Gate Ops by enough CHE. 2. CY Turn time of external customers should become fewer than the present.

■ Step 04: Manage the adress of all the containers existing in the Container Yard

Objetivo	Plano de Ação	Prazo	Responsável	Envolvidos	Treinamento	Custo	Melhorias
Realizar a gestão do "endereço" exacto de todos os contentores existentes no CY todo o tempo. NOTA: considerado o primeiro passo para se tornar um Container Terminal nos padrões internacionaos	1. Mapear todos os fluxos de carga e de modo de transporte (fisicos e administrativos); 2. Processar os anúncios de carga; 3. Registar as entradas (por terra e navio); 4. Programar o parque por tipo de movimento, armador e navio; 5. Localizar os contentores e seus movimentos;	2013/6/30	- Matos Fernandes	PN/ CDN notificando agentes e empresas de transprote	Dar formação aos agentes internos em duas fases 1 - Generalista sobre sistemas (3 dias); 2 - Uso da aplicação (3 dias) 3 - Seminário de sensibilização para agentes externos	20,000 USD para up grade de sistema + custo de formação + 7,500 USD / mês para manter activo o sistema	1. Aumento da eficiência na movimentação e levante de carga uma vez que a mesma se encontra localizada com rigor 2. Redução de erros e eliminação da informalidade na gestão e nos levantes

Com base no programa, a Equipe do Projeto iniciou a transferência tecnológica no quarto envio de peritos em dezembro de 2012. A Equipe do Projeto realizou 9 oficinas em Nacala com a presença, no total, de 133 participantes do MTC, CDN, CFM e PN. Por meio do processo de transferência de tecnologia, a Equipe do Projeto enfatizou a importância da “abordagem participativa”, pela qual as contrapartes participam ativamente das palestras e dão *feedback* do que aprenderam aplicando no planejamento, operação, gestão e avaliação.

No tocante aos trabalhos de movimentação de carga, a Equipe do Projeto propôs seis passos a serem dados no terminal de contêineres do Porto de Nacala para que ele possa alcançar um nível de serviço aceitável internacionalmente (Figura 3.5-4).

Figura 3.5-3 Foco da transferência tecnológica

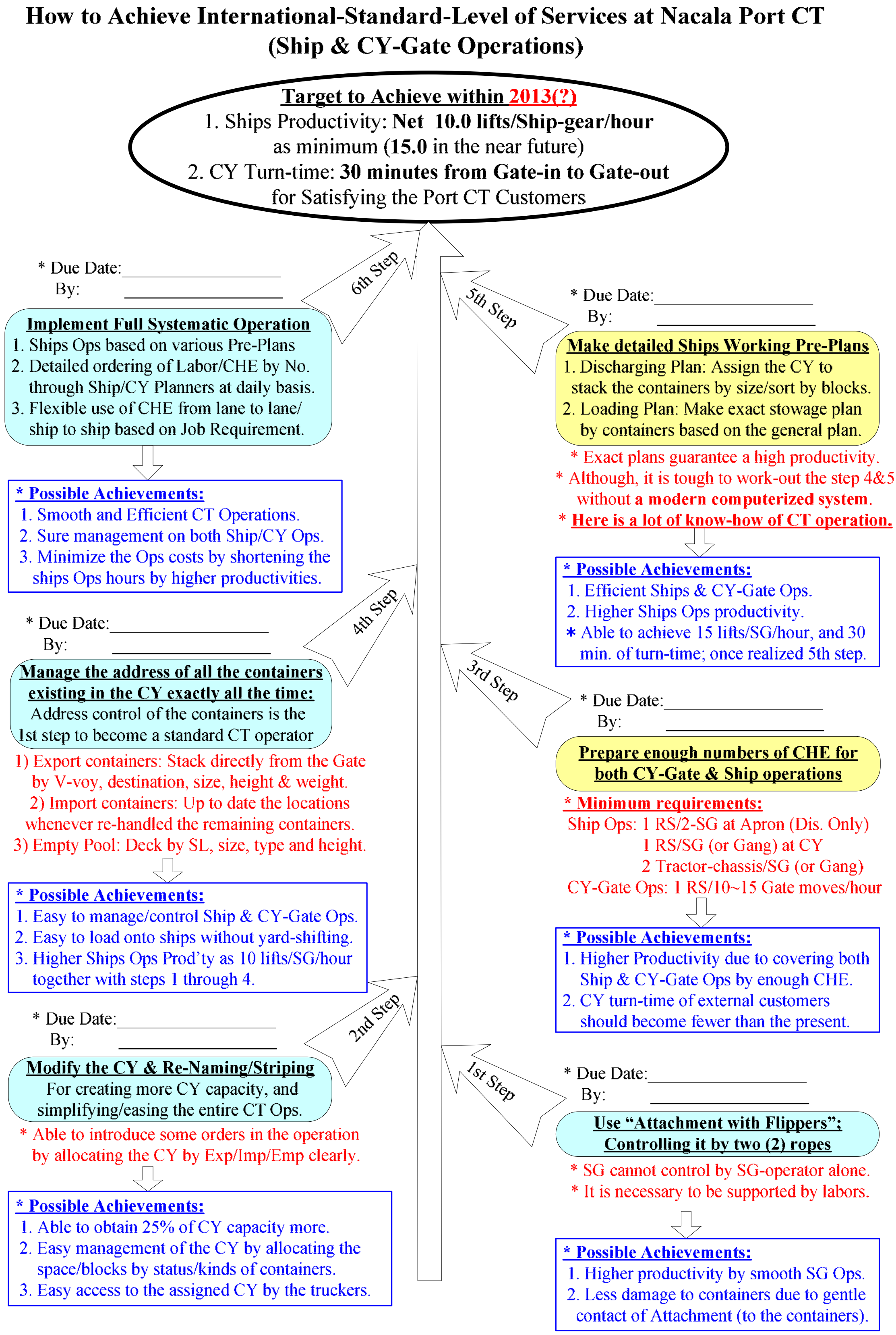


Figura 3.5-4 Abordagem em Seis Passos para um nível de serviço aceitável internacionalmente

(3) Relatório de Progresso 3 (Novembro de 2013)

Este Relatório resumiu o progresso da transferência técnica de abril a outubro de 2013 e foi apresentado no sétimo envio de peritos (dezembro de 2013). Durante esse período a JICA enviou a Equipe do Projeto duas vezes a Moçambique, em abril e junho. A JICA também realizou dois cursos de treinamento de contrapartes: o “Treinamento de Contrapartes-Chave” em julho e o “Treinamento de Contrapartes de Nível Intermediário” em setembro. Durante sua estadia em Moçambique, a Equipe do Projeto deu 24 palestras nas quais participaram 272 contrapartes. A Equipe do Projeto também realizou levantamentos e inspeções *in loco*. Quanto ao treinamento de contrapartes, a Equipe do Projeto conduziu treinamento especial para quatro contrapartes-chave do MTC, CFM e PN, bem como treinamento prático para dez contrapartes de nível intermediário da CFM e PN. Durante o treinamento de contrapartes de nível intermediário, contrapartes moçambicanas e participantes angolanos receberam conjuntamente transferência de tecnologia enquanto compartilhavam as experiências em seus portos.

O progresso da transferência técnica foi resumido conforme segue:

1) Planejamento Portuário

A Equipe do Projeto apresentou ferramentas básicas de planejamento portuário de modo que o lado moçambicano pudesse fazer o planejamento portuário por conta própria no futuro. A primeira ferramenta foi a taxa de ocupação dos berços (BOR, do inglês *Berth Occupancy Ratio*) e a razão tempo de espera / tempo de serviço (WSR, do inglês *Waiting time / Service Time Ratio*). A Equipe do Projeto explicou como calcular e avaliar esses indicadores usando os registros reais de ocupação de berço no Porto de Nacala. O lado moçambicano será capaz de usá-los para avaliar o congestionamento do terminal e encontrar maneiras para melhorar a produtividade. A segunda ferramenta foi o método de previsão macro para projeção de carga. A Equipe do Projeto explicou os fundamentos dos métodos de previsão macro por meio do PIB usando a previsão macro realizada no Estudo de Viabilidade do Porto de Nacala feito pela JICA como exemplo.

A Equipe do Projeto também fez uma apresentação e forneceu materiais que irão ajudar o porto a destinar um espaço apropriado para um terminal de grãos eficiente no futuro em resposta ao Projeto Pro-SAVANA.

2) Administração e gestão portuária

A Equipe do Projeto começou a revisar o rascunho existente do “Regulamento do Porto de Nacala” em abril de 2013. Levando em consideração a importância e a urgência, os regulamentos de segurança (conforme estipulados no Capítulo 7 do rascunho do Regulamento) e as operações portuárias (Capítulo 3 do mesmo) foram priorizados na revisão. Tendo verificado artigo por artigo os pareceres solicitados pelo lado moçambicano, a Equipe do Projeto concluiu que o conteúdo do rascunho existente do Capítulo 3 era quase aceitável, embora algumas disposições adicionais fossem necessárias em consideração à diferença na extensão da responsabilidade da companhia marítima entre cargas convencionais e cargas conteinerizadas e à documentação específica para cargas conteinerizadas.

Um novo rascunho do "Regulamento de Segurança do Porto de Nacala" foi apresentado pelo lado moçambicano. Em resposta, a Equipe do Projeto deu uma palestra sobre "Política de Segurança do Terminal de Contêineres do Porto de Kobe", por considerá-la adequada como um exemplo de regulamentação de segurança a ser introduzida no Porto de Nacala depois que este renascesse como um terminal de contêineres de pleno direito. A Equipe do Projeto também apresentou a importância de tornar conhecidas ao mercado internacional as melhorias na qualidade operacional, os fundamentos da política de fixação de tarifas sob o ponto de vista teórico da "gestão de receitas" e a estratégia de promoção portuária tendo como alvo companhias marítimas e proprietários de carga.

3) Trabalhos de movimentação de carga

A Equipe do Projeto fez uma palestra durante a oficina sobre os fundamentos do sistema de gerenciamento de terminal de contêineres de modo que o lado moçambicano pudesse estabelecer um plano sobre que tipo de sistema de TI deveria ser introduzido no Porto de Nacala para melhorar a eficiência do terminal. Em resposta, a PN explicou seu plano de atualização e ativação do sistema Phaeros, o sistema de operação de terminal (TOS, do inglês *Terminal Operation System*) existente na PN, contratando especialistas da STRING, uma companhia de sistemas de Moçambique.

O volume de movimentação de contêineres do porto tem sido superior a 70.000 TEUs por ano nos últimos anos; consequentemente, é muito difícil gerir e operar o Terminal de Contêineres (CT) sem um TOS eficaz. O Phaeros foi introduzido com sucesso nos portos administrados pela Autoridade Portuária da Tanzânia, como o Dae es Salaam ou o Mtwara; assim, espera-se que o sistema vá funcionar bem para dar suporte às operações da PN no Porto de Nacala.

Entretanto, o Phaeros é somente uma ferramenta; mesmo que o sistema seja bom, a PN precisa treinar adequadamente seus funcionários para que ele seja eficaz. Isso se aplica principalmente ao pessoal designado para as funções de planejamento da operação, como planejadores de pátio e de navio. O trabalho de planejamento é novo para a PN (atualmente a PN elabora alguns planos, mas eles estão no nível elementar) e levará tempo para que os funcionários da PN dominem as tecnologias exigidas e adquiram o conhecimento necessário. Por esse motivo, a Equipe do Projeto recomendou que a PN contratasse do exterior 3 ou 4 profissionais bem experientes (com no mínimo 5 anos de experiência) como planejadores de navio ou de pátio por um ou dois anos, fazendo-os transmitir várias tecnologias e habilidades para as contrapartes moçambicanas por meio de OJT.

4) Manutenção de infraestrutura civil

A Equipe do Projeto deu uma palestra sobre os fundamentos do planejamento de manutenção de modo que o lado moçambicano pudesse estabelecer o plano de inspeção periódica para a infraestrutura do Porto de Nacala. Uma vez que a PN estava planejando contratar externamente a elaboração do plano de manutenção de infraestrutura, a Equipe do Projeto sugeriu que um engenheiro civil da PN fosse envolvido em sua preparação e implementação.

Por meio de inspeção *in loco*, a Equipe do Projeto constatou que a área do pátio de contêineres do Cais Sul, a 30 m atrás da linha do cais, sofreu significativa subsidência em virtude da contínua deterioração do Cais. Assim, a Equipe preparou um documento técnico e sugeriu que deveriam ser evitadas forças e/ou cargas excessivas sobre a estrutura do deque do Cais Sul. A Equipe do Projeto sugeriu que os contêineres cheios colocados no pátio de contêineres logo atrás do deque do cais deveriam ser deslocados para outro lugar a fim de reduzir a carga sobre o pavimento e assim evitar novas subsidências. A Equipe também solicitou inspeções periódicas das estruturas para monitorar novas degradações.

A Equipe do Projeto deu uma palestra sobre a atual integridade estrutural dos Cais Sul e Norte, conceito de manutenção de infraestrutura, conceito de inspeção / monitoramento, bem como método prático de inspeção / monitoramento usando os equipamentos disponíveis. Os instrumentos de medição que a Equipe do Projeto preparou foram entregues à CFM de modo que eles pudessem realizar trabalhos de inspeção / monitoramento por eles próprios.

5) Manutenção de equipamentos

A Equipe do Projeto deu aos funcionários de manutenção listas no formato Excel de peças de reposição para substituição periódica e substituição de emergência. A Equipe do Projeto deu uma palestra aos participantes do Porto de Pemba sobre como consertar a empilhadeira *reach stacker* cuja lança ficou emperrada. A Equipe também sugeriu que o setor de manutenção do Porto de Pemba deveria ter poderes para adquirir peças de reposição sem a aprovação prévia da autoridade superior em Nampula e Maputo, de modo a poder responder às necessidades em tempo hábil.

(4) Relatório de Progresso 4 (Abril de 2014)

Este relatório resumiu o progresso da transferência técnica de dezembro de 2013 a março de 2014 e foi apresentado no oitavo envio de peritos (abril de 2014). Durante esse período a JICA enviou a Equipe do Projeto a Moçambique em dezembro de 2014. No curso de sua estadia em Moçambique, a Equipe do Projeto realizou 11 sessões de trabalho com o lado moçambicano nas quais participaram 80 contrapartes. A Equipe do Projeto e o lado moçambicano também realizaram em conjunto levantamentos e inspeções *in loco*.

O lado japonês e o lado moçambicano confirmaram o progresso estável do Projeto na terceira reunião do Comitê de Coordenação Conjunta (JCC), realizada em 19 de dezembro de 2013 em Maputo. No JCC, ambas as partes concordaram sobre as novas medidas a serem tomadas para atingir as metas do projeto (Tabela 3.5-4 Medidas a serem tomadas para tornar o Porto de Nacala mais eficiente

	Medidas	Cronograma	
		Janeiro	antes de Abril 2014
Lado Moçambicano	◦ Início do monitoramento e manutenção da infraestrutura com base no relatório da Geoibéricos e contratação de um engenheiro civil (PN, CDN, CFM)	✓	
	◦ Exame dos comentários da Equipe da JICA sobre o *upgrade* do Phaeros e início do sistema Phaeros (PN)		✓
	◦ Exame dos comentários da Equipe da JICA sobre as normas de segurança (CDN)	✓	
	◦ Monitoramento da produtividade da movimentação de contêineres com base em 3 indicadores (PN)	✓	

	◦ Determinação do desenho do pavimento do terminal seco (TN, PN)		✓
	◦ Exame das medidas de reabilitação para o Cais Sul indicadas no relatório da Geoibéricos (CDN, CFM)		✓
	◦ Aquisição de *spreaders* com *flippers* (TN)		✓
Equipe da JICA	◦ Exame das medidas de reabilitação para o Cais Sul indicadas no relatório da Geoibéricos	✓	
	◦ Exame do plano de manutenção da infraestrutura proposto no relatório da Geoibéricos	✓	
	◦ Preparação de materiais de palestra sobre "5S"		✓
	◦ Preparação de materiais de palestra sobre gestão ambiental		✓
	◦ Início do processo de aquisição de equipamentos de investigação (preparação de uma lista de equipamentos necessários para o monitoramento quantitativo)		✓

).

Tabela 3.5-4 Medidas a serem tomadas para tornar o Porto de Nacala mais eficiente

	Medidas	Cronograma	
		Janeiro	antes de Abril 2014
Lado Moçambicano	◦ Início do monitoramento e manutenção da infraestrutura com base no relatório da Geoibéricos e contratação de um engenheiro civil (PN, CDN, CFM)	✓	
	◦ Exame dos comentários da Equipe da JICA sobre o *upgrade* do Phaeros e início do sistema Phaeros (PN)		✓
	◦ Exame dos comentários da Equipe da JICA sobre as normas de segurança (CDN)	✓	
	◦ Monitoramento da produtividade da movimentação de contêineres com base em 3 indicadores (PN)	✓	
	◦ Determinação do desenho do pavimento do terminal seco (TN, PN)		✓
	◦ Exame das medidas de reabilitação para o Cais Sul indicadas no relatório da Geoibéricos (CDN, CFM)		✓
	◦ Aquisição de *spreaders* com *flippers* (TN)		✓
Equipe da JICA	◦ Exame das medidas de reabilitação para o Cais Sul indicadas no relatório da Geoibéricos	✓	
	◦ Exame do plano de manutenção da infraestrutura proposto no relatório da Geoibéricos	✓	
	◦ Preparação de materiais de palestra sobre "5S"		✓
	◦ Preparação de materiais de palestra sobre gestão ambiental		✓
	◦ Início do processo de aquisição de equipamentos de investigação (preparação de uma lista de equipamentos necessários para o monitoramento quantitativo)		✓

O progresso da transferência técnica foi resumido como segue:

1) Planejamento portuário

Até setembro de 2012, a Equipe do Projeto focou seus esforços na revisão do plano de desenvolvimento do Porto de Nacala e na formulação de pacotes de projeto adequados para os programas de ODA do Japão. Através da apresentação pela Equipe do Projeto, o lado moçambicano entendeu o raciocínio por trás da preparação dos pacotes de projeto e basicamente concordou com eles. Aquele processo é entendido como sendo parte da transferência tecnológica sobre planejamento portuário. Desde então a implementação do projeto de ODA tornou-se uma questão de negociação de governo para governo. Assim, a Equipe do Projeto redirecionou o foco de sua atenção para a transferência tecnológica de habilidades de planejamento mais gerais. Com vistas a responder à necessidade futura de um terminal de grãos no Porto de Nacala, foram transferidas também habilidades gerais de planejamento sobre terminais de grãos.

Uma vez que o congestionamento do pátio de contêineres existente estava piorando, a Equipe do Projeto visitou o terminal seco durante o sétimo envio de peritos e fez diversas sugestões para tornar esse terminal completamente funcional.

2) Administração e gestão portuária

Desde abril de 2013 a Equipe do Projeto vem trabalhando na revisão do "Regulamento do Porto de Nacala", o qual havia sido rascunhado pelo Diretor do CDN, mas que não foi aprovado pela administração do CDN. Dentre uma variedade de temas contemplados no "Regulamento", foi dada prioridade às questões urgentes; o tema "política de segurança" foi abordado na oficina em abril de 2013 e o tema "operações portuárias", em junho de 2013. Em dezembro de 2013 o CDN apresentou uma minuta revisada das regulamentações de segurança refletindo alguns dos comentários da Equipe do Projeto. Em resposta, a Equipe do Projeto fez sugestões adicionais, tais como a necessidade de regulamentações referentes à movimentação de contêineres / carga geral. Uma vez que as obras de construção da assistência gratuita iriam começar em pouco tempo, o lado moçambicano reconheceu a urgência de concluir as regulamentações de segurança.

No tocante aos regulamentos operacionais, a Equipe do Projeto sugeriu que deveriam ser acrescidas algumas disposições com relação a cargas conteinerizadas, uma vez que os procedimentos para contêineres quanto à documentação e responsabilidade seriam diferentes dos procedimentos para carga geral.

Outra área-chave na qual a Equipe do Projeto tem focado desde abril de 2013 é a função de "marketing" do Porto, uma vez que essa função do CDN e PN não parece estar muito ativa e precisa ser fortalecida. As oficinas para esse tema cobriram os aspectos gerais das atividades de marketing; não só de "promoção do porto", mas também da "qualidade do serviço", "preço", etc., conforme definido pela teoria consolidada dos "4 Ps do Marketing".

3) Trabalhos de movimentação de carga

Em dezembro de 2013 a Equipe do Projeto sugeriu que as seguintes funções fossem instaladas (ou confirmadas) no sistema Phaeros. Essas funções do Phaeros de atribuição automática de localização de pátio deveriam ajudar a PN não somente por reduzir o trabalho dos escriturários no portão do pátio de contêineres e no pátio de contêineres, mas também por eliminar erros na digitação dos endereços dos contêineres no pátio.

- Programa de atribuição automática de localização no pátio de contêineres para exportação quando eles são recebidos no portão do pátio de contêineres
- Programa de atribuição automática de localização no pátio quando estiverem deslocando contêineres no pátio de contêineres

Para operar e administrar o terminal de contêineres mais eficientemente e utilizar integralmente o sistema Phaeros, a PN tem que reorganizar e reforçar algumas funções-chave, tais como equipe de documentação (que maneja dados e informações para/de clientes externos, como linhas marítimas, proprietários de carga, transportadoras e Alfândega), equipe de planejamento e controle das operações do pátio de contêineres (que planeja e controla todos os trabalhos do pátio de contêineres em cooperação com os Planejadores de Navio) e equipe de planejamento e supervisão das operações do navio (que planeja e supervisiona todos os trabalhos dos navios cooperando com os Planejadores do Pátio de Contêineres).

Em dezembro de 2013 a Equipe do Projeto desenvolveu um plano de modificação para o terminal seco do CDN de modo que ele possa movimentar contêineres cheios quando da conclusão da pavimentação e o disponibilizou ao lado moçambicano (Figura 3.5-3). Com a modificação, a capacidade do porto seco passa para 3.640 TEU/vez como capacidade máxima morta (*dead max*) (quase 3 vezes a capacidade atual) e 2.730 TEU como capacidade máxima trabalhável (*workable max*) quando empilhados os contêineres em 4 de altura na média. No novo terminal seco, os blocos de A até F são bons para empilhar contêineres vazios classificados por linhas marítimas, tamanho e altura; então os blocos G a L podem ser usados para contêineres cheios importados classificados pelos números do mesmo B/L ou consignatários.

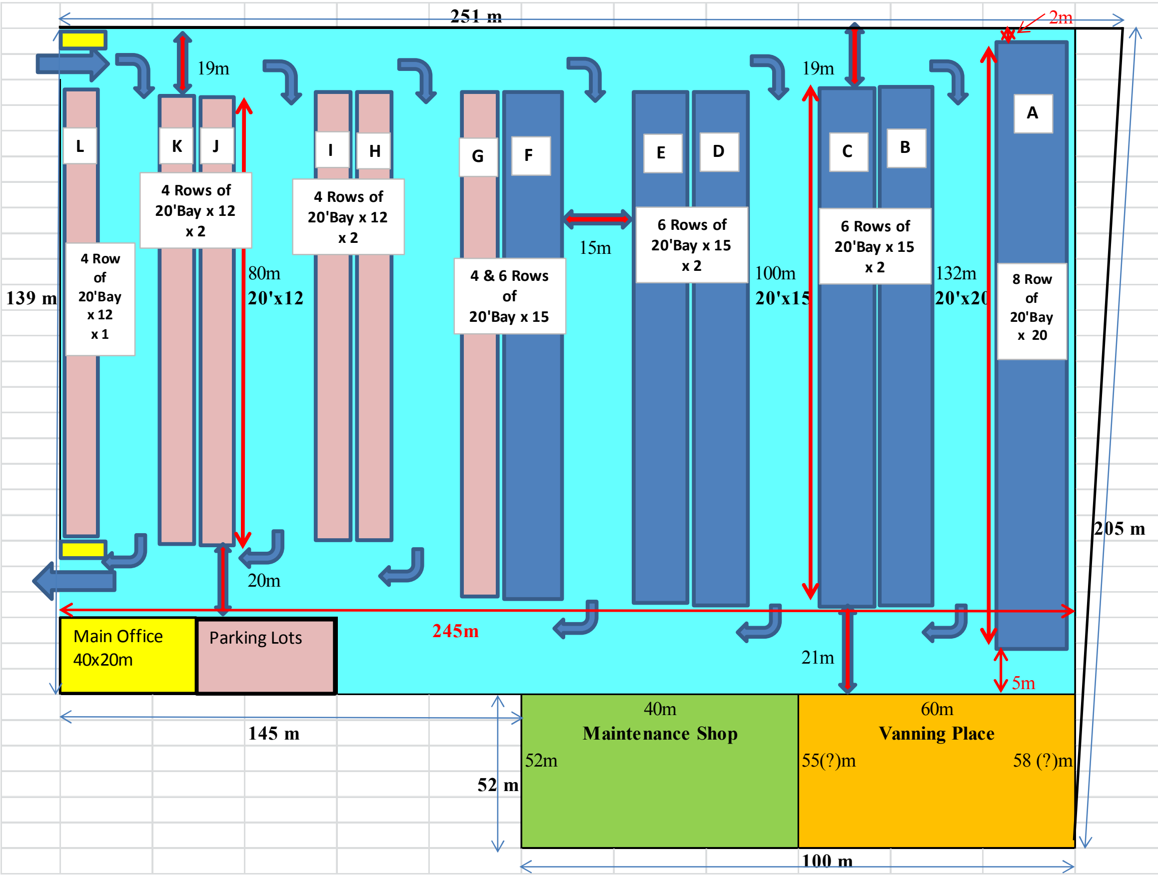


Figura 3.5-3 Plano de Modificação do Porto Seco do CDN

4) Manutenção de infraestrutura civil

Até abril de 2013, o treinamento sobre manutenção da infraestrutura civil era feito apenas através de palestras porque nenhum engenheiro civil havia sido designado para esse fim pelo lado moçambicano. Assim, as palestras eram realizadas em base teórica, explicando como preparar um plano de manutenção da infraestrutura com base no método adotado em portos japoneses.

Em junho de 2013 o órgão contraparte designou como encarregados 3 engenheiros civis da CFM. Foi um bom sinal ver que as contrapartes tinham um interesse genuíno na manutenção da infraestrutura. O programa em junho de 2013 incluiu mais aspectos práticos da manutenção de infraestrutura bem como inspeção conjunta da infraestrutura para permitir que os participantes conhecessem a real situação da infraestrutura por eles próprios.

Desde então o lado moçambicano iniciou ações proativas. Durante o sétimo envio de peritos em dezembro de 2013, o lado moçambicano apresentou diversos documentos incluindo um plano de inspeção e manutenção estrutural (PN) bem como um relatório de inspeções *in loco* no Cais Sul (CFM). Esses avanços indicam que a área de manutenção da infraestrutura está se tornando autossustentável.

5) Manutenção de equipamentos

Até o sexto envio de peritos em junho de 2013, a Equipe do Projeto deu palestras sobre os fundamentos do Sistema de Operação de Terminal (TOS, do inglês *Terminal Operation System*) de modo que as contrapartes pudessem estabelecer planos para introduzir o sistema de TI para melhorar a eficiência do terminal do Porto de Nacala por eles próprios. Durante o sétimo envio de peritos em dezembro de 2013, a Equipe do Projeto fez diversas sugestões para tornar esse sistema completamente funcional.

A Equipe do Projeto tem enfatizado a necessidade de adotar o sistema de “Reserva de Orçamento” para adquirir facilmente peças de reposição e peças de substituição emergencial, e também a necessidade de delegar ao departamento de manutenção a autoridade aquisitiva para reduzir o tempo ocioso dos equipamentos de movimentação de carga. Durante o sétimo envio de peritos, a PN afirmou que eles introduziram o sistema de “Reserva de Orçamento”. A PN reportou que a taxa média de disponibilidade dos equipamentos melhorou significativamente devido a esses procedimentos aprimorados de aquisição.

(5) Relatório de Progresso 5 (Setembro de 2014)

Este relatório resumiu o progresso da transferência técnica de abril de 2014 a agosto de 2014 e foi apresentado no nono envio de peritos (setembro de 2014). Durante esse período a JICA enviou a Equipe do Projeto para Moçambique em abril de 2014. A JICA também realizou um curso de treinamento de contrapartes no Japão de 27 de julho a 9 de agosto, que foi o quarto e último curso de treinamento de contrapartes para o Projeto.

No curso de sua estadia em Moçambique, a Equipe do Projeto realizou 11 sessões de trabalho com o lado moçambicano, nas quais participaram 99 contrapartes. A Equipe do Projeto e o lado moçambicano também realizaram conjuntamente levantamentos e inspeções *in loco*. A Equipe do Projeto avaliou o progresso geral do Projeto com base na PDM acordada no início do Projeto. O lado japonês e o lado moçambicano confirmaram o progresso estável do Projeto durante a sessão de encerramento realizada em 28 de abril de 2014 em Nacala. Na sessão, ambos os lados concordaram sobre novas medidas a serem adotadas para atingir as metas do projeto.

<u>Progressos alcançados até então</u>

Ambos os lados concordaram que os seguintes progressos foram alcançados:

✓ Em planejamento portuário, o Projeto cumpriu a meta resultando no início dos projetos de ODA.

- ✓ Em administração / gestão portuária, foi alcançado progresso significativo resultando na elaboração da minuta dos regulamentos de segurança e operação.
- ✓ Em movimentação de carga, foi alcançado progresso significativo em áreas tais como *upgrades* do Phaeros (sistema de operação de terminal de contêineres), fortalecimento das funções do terminal seco e aquisição de novos *spreaders*.
- ✓ Em manutenção, foi alcançado algum progresso em áreas tais como a designação de engenheiros civis da CFM e PN para manutenção de infraestrutura e redução do tempo ocioso dos equipamentos.

Novas medidas a serem tomadas

Ambos os lados concordaram que as seguintes medidas devem ser tomadas para materializar plenamente o potencial do Porto de Nacala:

- ✓ Em planejamento portuário, um novo plano diretor do porto precisa ser elaborado fora do escopo do Projeto em resposta às necessidades em evolução do porto e sua hinterlândia.
- ✓ Em administração / gestão portuária, os rascunhos dos regulamentos de segurança e operação precisam ser finalizados e implementados o mais rápido possível. A fim de definir claramente a responsabilidade das organizações pertinentes, é preciso finalizar a revisão do acordo de concessão.
- ✓ Em movimentação de carga, o progresso e implementação estável do *upgrade* do sistema Phaeros precisa ser monitorado. Uma vez que o Phaeros não inclui funções de planejamento automático do pátio, planejadores de pátio precisam ser treinados em treinamentos no exterior ou *in situ*, por meio de OJT, por um considerável período de tempo. Também é recomendado o monitoramento da produtividade da movimentação de carga por três indicadores universalmente utilizados (produtividade do berço, produtividade bruta por guindaste e produtividade líquida por guindaste).
- ✓ Em manutenção, deve ser iniciada imediatamente a inspeção / monitoramento periódico da infraestrutura. A Equipe do Projeto fornecerá assistência técnica para essa área por meio de treinamento *in loco* durante o próximo envio de peritos. São necessários novos estudos e decisão da política sobre a reabilitação do Cais Sul levando em consideração as sugestões da Equipe do Projeto. O fornecimento de peças sobressalentes precisa ser acelerado para reduzir ainda mais o tempo ocioso dos equipamentos.

3.6 Comitê de Coordenação Conjunta (JCC)

O Comitê de Coordenação Conjunta (doravante referido como "o JCC") foi estabelecido a fim de facilitar a coordenação interorganizacional. O JCC reuniu-se quatro vezes durante a execução do projeto. O JCC aprovou o plano de trabalho, examinou o progresso geral e monitorou e avaliou o progresso do Projeto.

O JCC é composto dos seguintes membros:

[Lado Japonês]

- ✧ Peritos da JICA
- ✧ Representante(s) do Escritório da JICA em Moçambique
- ✧ Representante(s) da Embaixada do Japão (como observador(es))
- ✧ Outras pessoas acordadas mutuamente

[Lado Moçambicano]

- ✧ Diretor do Projeto, do Ministério dos Transportes e Comunicações (MTC)
- ✧ Diretor Nacional da Portos e Caminhos de Ferro de Moçambique E.P. (CFM)
- ✧ Diretor Nacional do Corredor de Desenvolvimento do Norte (CDN)
- ✧ Outras pessoas acordadas mutuamente

Os principais tópicos do JCC estão resumidos abaixo.

	Data	Principais tópicos
1º JCC	23 de abril de 2012	1) Aprovação do Plano de Trabalho O Plano de Trabalho foi aprovado conforme proposto pela Equipe do Projeto 2) Designação de contrapartes moçambicanas 14 funcionários foram nomeados do MTC, MOE, CFM e CDN 3) Aprovação do plano do pátio de contêineres e do plano de alocação de berços Foram aprovados o plano de desenvolvimento portuário e o plano de alocação de berços até 2018 4) Aprovação do plano para o primeiro treinamento no Japão O plano de treinamento será preparado em resposta às necessidades identificadas pela Equipe do Projeto no primeiro e segundo envios de peritos
2º JCC	20 de setembro de 2012	1) Progresso dos primeiros seis meses Relatórios da Equipe do Projeto sobre planejamento faseado, 10 áreas com necessidade de melhoria e programa de transferência tecnológica foram aprovados

		2) Transferência tecnológica e indicadores de monitoramento Indicadores de monitoramento foram definidos para cada área (planejamento portuário, administração e gestão portuária, movimentação de cargas, manutenção de infraestrutura, manutenção de equipamentos) com base nas condições atuais do Porto de Nacala 3) Discussões sobre o desenvolvimento do Porto de Nacala Mudanças na entidade operadora do Porto de Nacala serão monitoradas de perto
3º JCC	19 de dezembro de 2013	1) Progresso do Projeto Foi confirmado progresso em áreas tais como preparação de um plano de manutenção, inspeção *in loco* da infraestrutura, melhoria na taxa de tempo de operação dos equipamentos e melhoria do sistema de operação do terminal 2) Medidas a serem tomadas para tornar o Porto de Nacala mais eficiente Foram consideradas necessárias novas ações em áreas tais como melhoria da produtividade de movimentação de contêineres, uso efetivo do terminal seco, início das inspeções periódicas da infraestrutura e determinação de medidas de reabilitação para o Cais Sul
4º JCC	10 de fevereiro de 2015	1) Resultados alcançados pelo Projeto Os resultados alcançados pelo Projeto foram confirmados com base na PDM e indicadores de monitoramento atualizados com os últimos dados obtidos em Nacala 2) Necessidades adicionais de assistência técnica Foi acordada a continuidade da assistência técnica japonesa. Ela compreenderá o envio de peritos de curta duração e treinamento no exterior.

3.7 Seminário

A JICA e o MTC co-organizaram um seminário em Nacala para que as agências pertinentes ficassem informadas sobre os resultados alcançados no Projeto e para trocar opiniões sobre as futuras funções do Porto de Nacala. Mais de 40 pessoas de diversas organizações participaram do seminário. O seminário terminou bem sucedido graças à participação ativa dos moçambicanos que fizeram cinco apresentações.

(1) Data e local

5 de fevereiro de 2015 em Nacala

(2) Organizadores

Co-organização pelo MT e JICA

(3) Participantes

- Lado moçambicano: MTC, CFM, CDN, PN, TN, Alfândega, Escritório de Imigração, usuários do porto, etc. (35 participantes registrados)
- Lado japonês: Escritório da JICA em Moçambique, Equipe do Projeto (6 participantes)

(4) Apresentações

- Equipe do Projeto (Mitsuhiko Okada): Assistência Técnica da JICA para o Porto de Nacala – Resultados e Desafios Futuros
- CFM (Sr. Arzilio Josué Mata): Melhorias na infraestrutura e equipamentos
- CDN (Sr. Ibraimo Mussa): Fortalecimento das funções portuárias em Nacala, a porta de entrada do Corredor de Nacala
- PN (Sr. Neimo Induna): Melhorias na operação do terminal
- Usuários do porto (Sr. Hinelder Ferreira (CMA CGM) e Sr. Simon Kanjanga (MSC): Expectativas para o desenvolvimento futuro do Porto de Nacala

3.8 Fluxograma de implementação do Projeto

O Projeto foi conduzido com base no Fluxograma de Trabalho (Figura 3.8-1) com pequenas modificações.

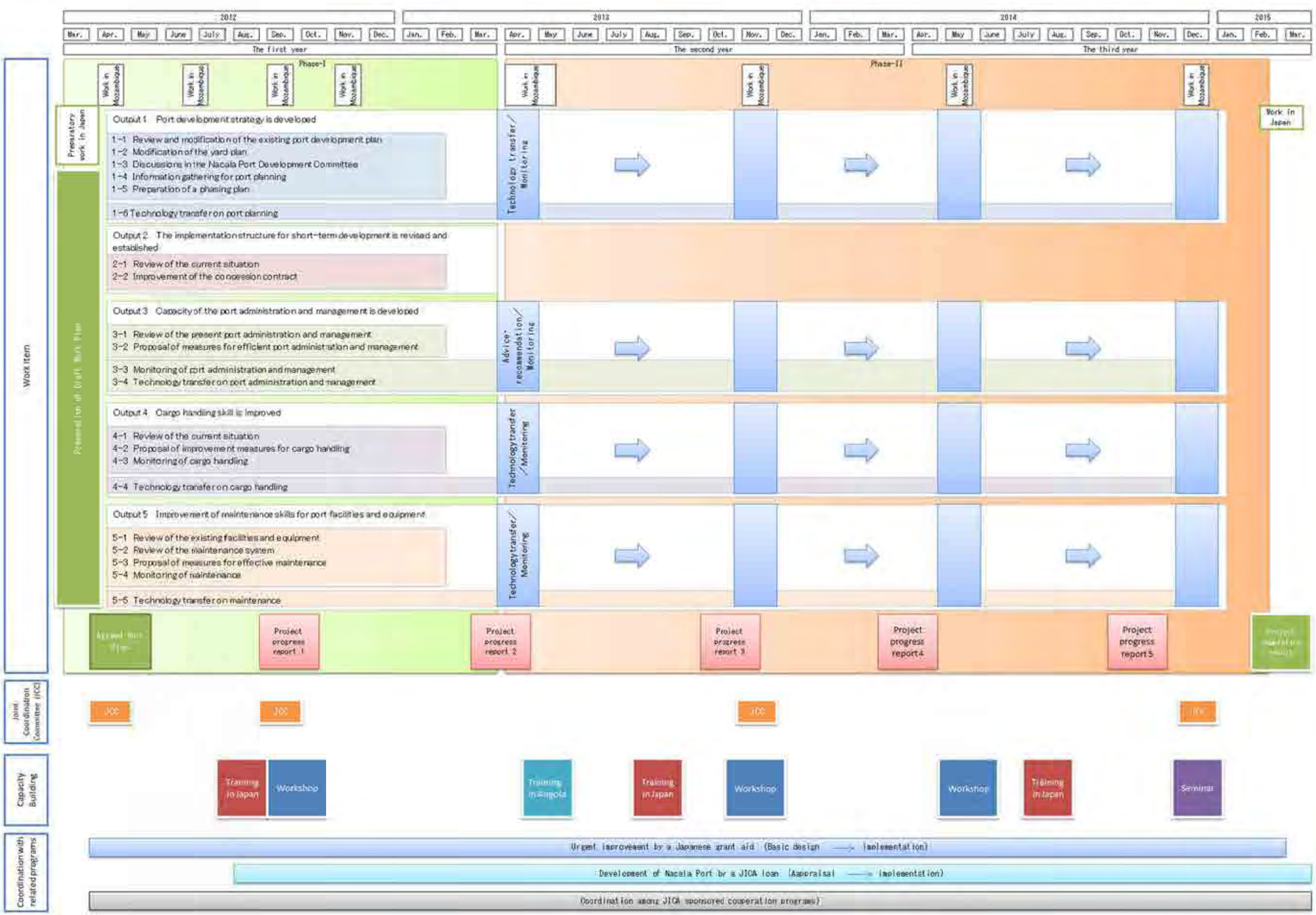


Figura 3.8-1 Fluxograma de Trabalho

3.9 Cronograma de trabalho

O Cronograma de Trabalho é mostrado na Figura 3.9-1.

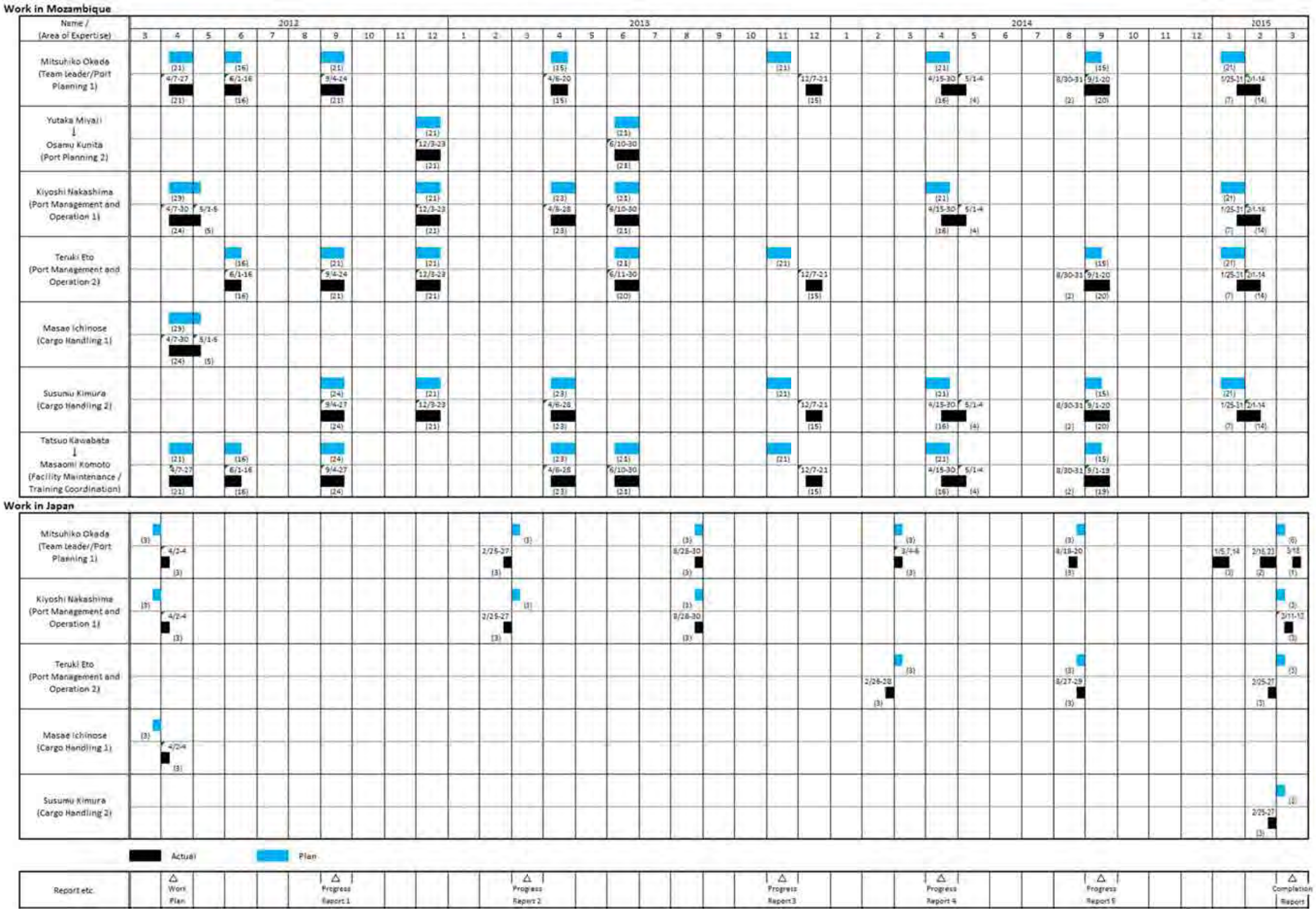


Figura 3.9-1 Cronograma de Trabalho

3.10 Gerenciamento do Projeto

A fim de executar eficientemente o Projeto, os trabalhos foram desdobrados e descritos na WBS (do inglês *Work Breakdown Structure*, ou Estrutura Analítica de Projetos – EAP) (Figura 3.10-1 ~ Figura 3.10-5). O gerenciamento do Projeto foi monitorado com base na WBS. O Nível 1 mostra os resultados da PDM. O Nível 2 mostra o resumo dos resultados alcançados pelos trabalhos. O Nível 3 mostra as categorias de gerenciamento do projeto. O Nível 4 mostra as categorias de pacote de trabalho. O Nível 5 mostra cada atividade.

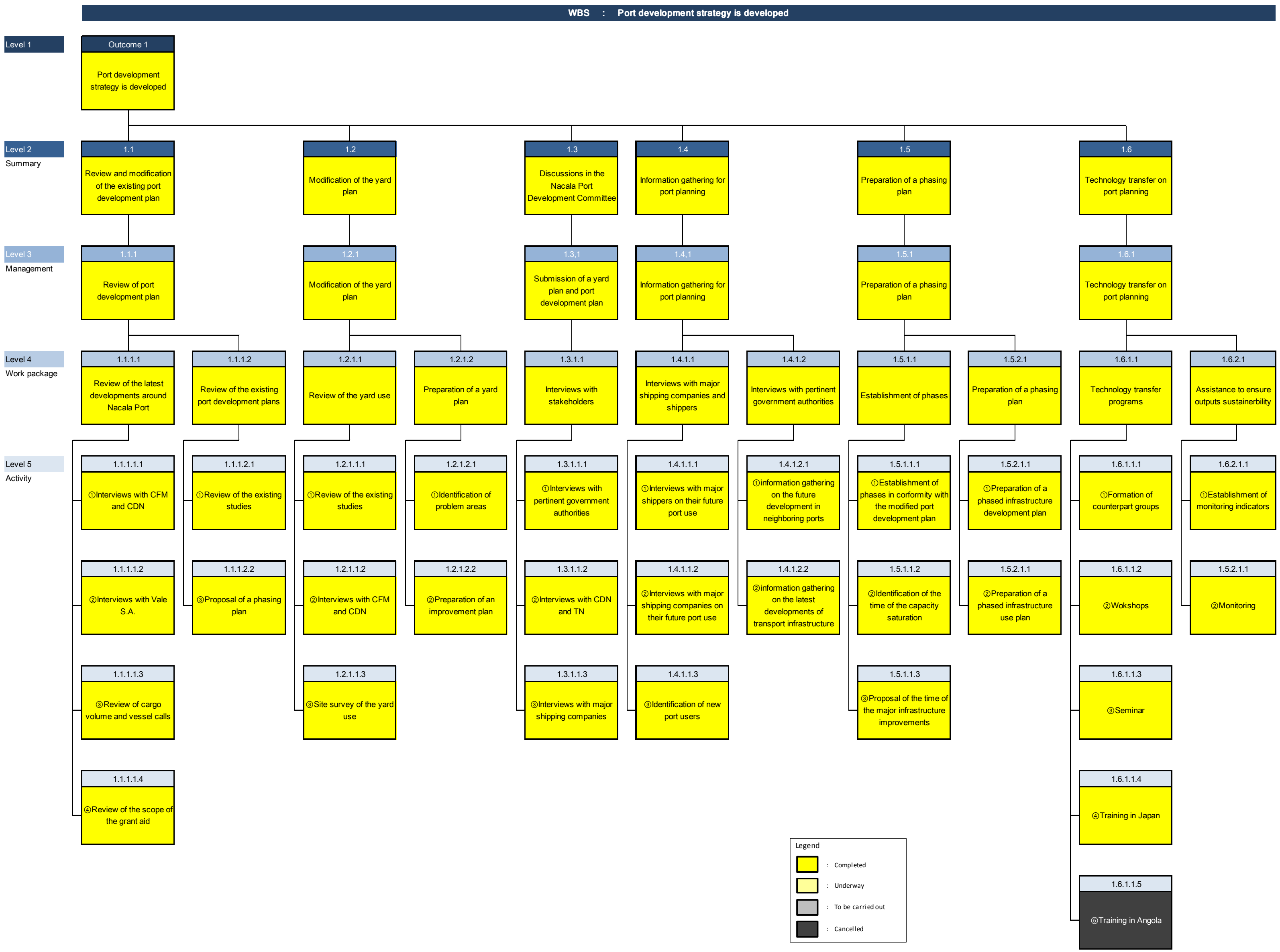


Figura 3.10-1 WBS para Planejamento Portuário

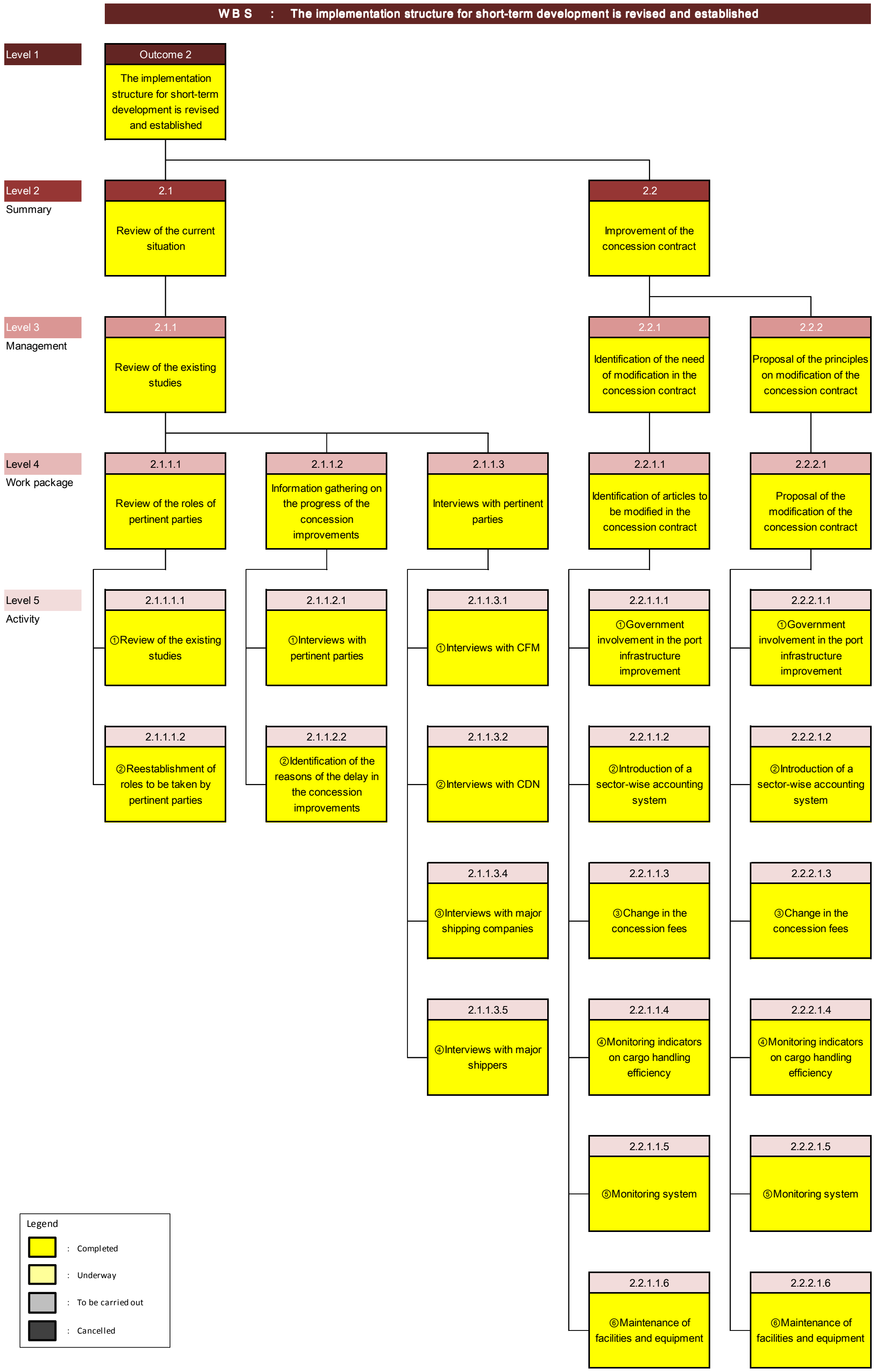


Figura 3.10-2 WBS para Estrutura de Implementação

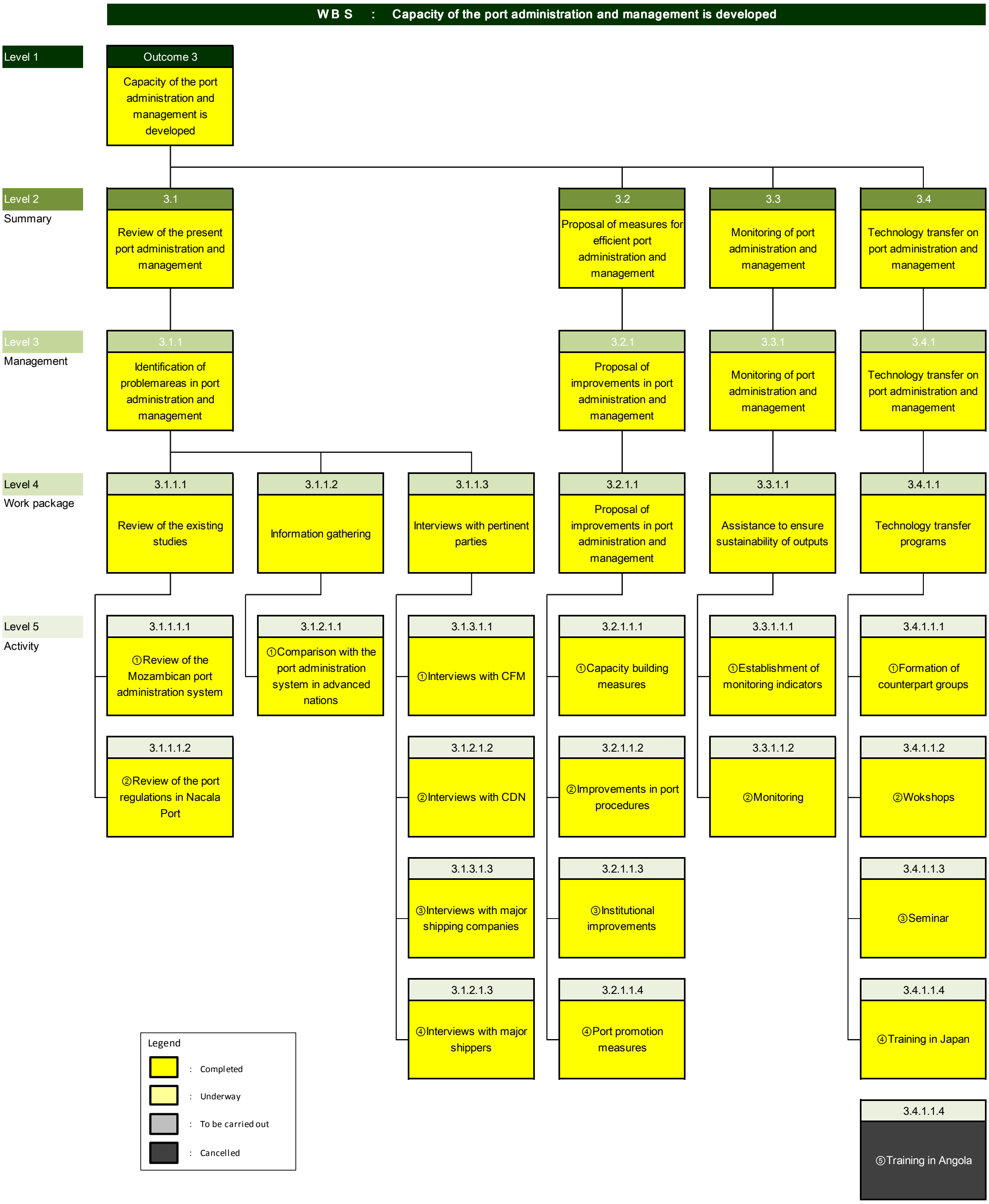


Figura 3.10-3 WBS para Administração e Gestão Portuária

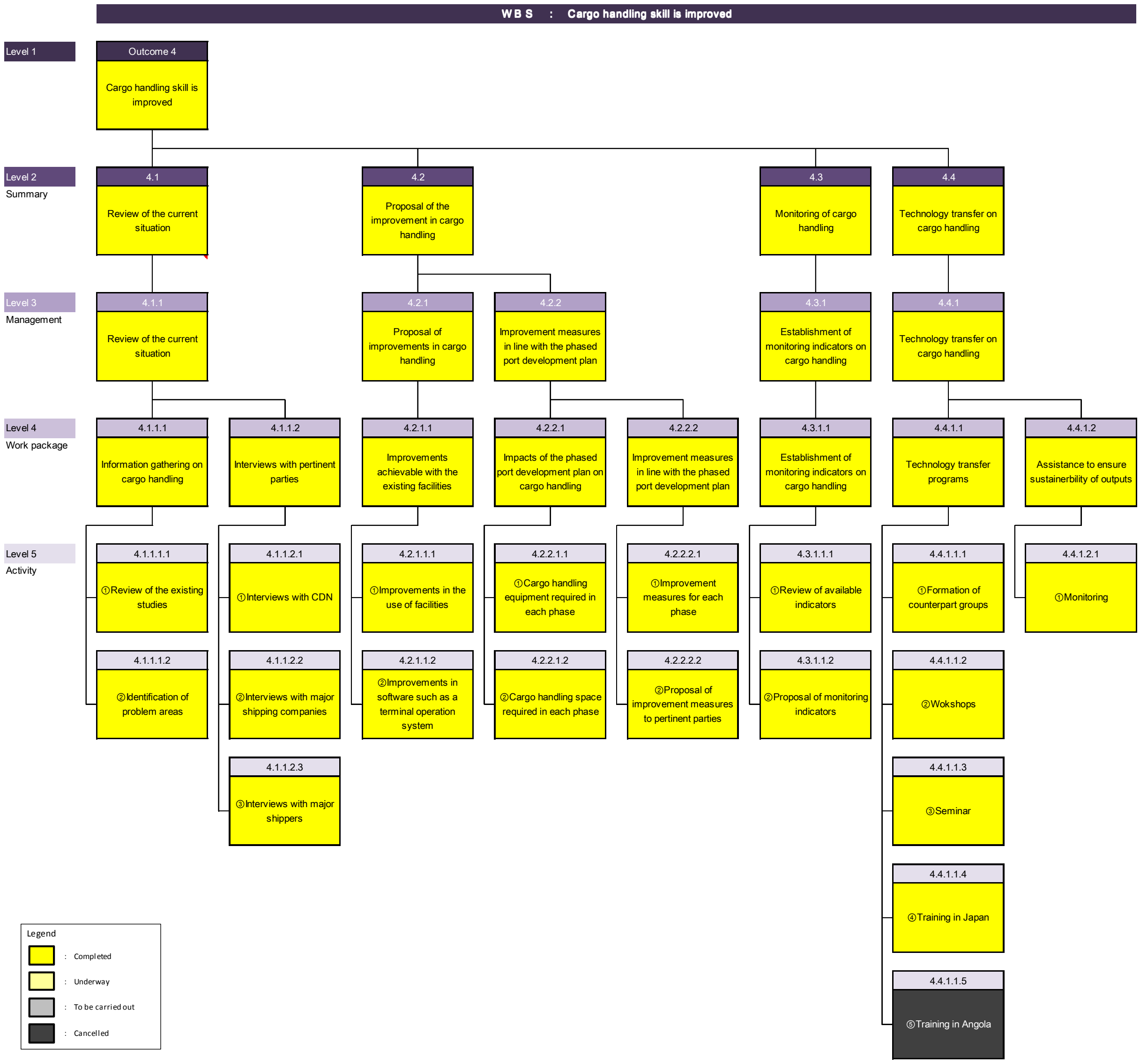


Figura 3.10-4 WBS para Movimentação de Carga

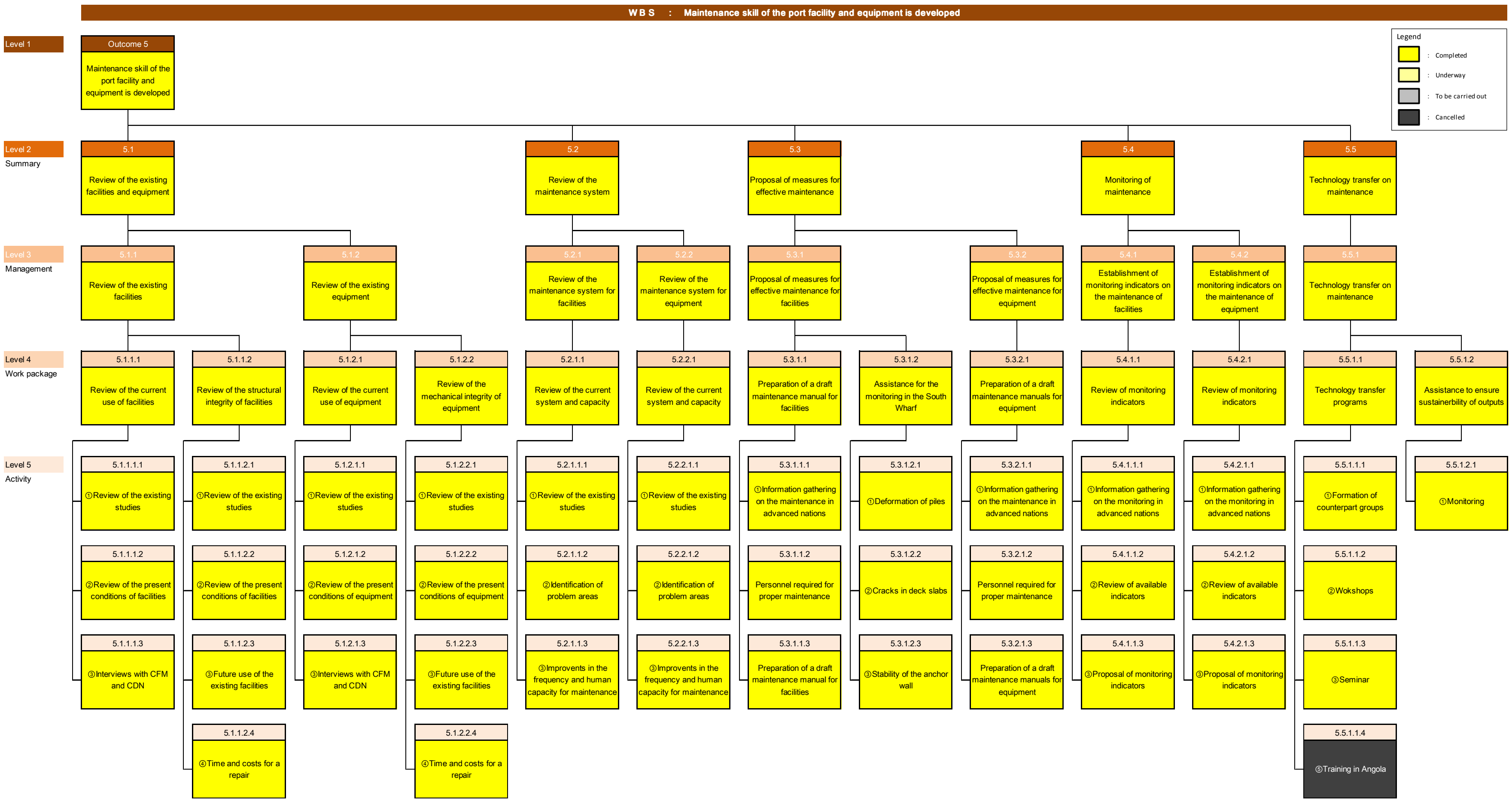


Figura 3.10-5 WBS para Manutenção

4. Resultados Alcançados

4.1 Avaliação baseada na PDM

(1) Avaliação em setembro de 2014

A Equipe do Projeto avaliou o progresso geral do Projeto com base na PDM acordada no início do Projeto (vide Apêndice-1 Matriz Lógica do Projeto (PDM, do inglês *Project Design Matrix*)). Na reunião de encerramento de 18 de setembro de 2014, a Equipe do Projeto e as contrapartes moçambicanas discutiram e concordaram sobre até que ponto o Projeto havia progredido e que medidas adicionais deveriam ser tomadas.

Progresso alcançado

Na reunião de encerramento de 18 de setembro de 2014, ambos os lados concordaram que havia sido alcançado progresso nos seguintes pontos:

- ✓ No que diz respeito ao planejamento portuário, o Projeto cumpriu a meta resultando no início dos projetos de ODA.
- ✓ No que diz respeito à administração e gestão portuária, houve progresso significativo resultando na implementação do regulamento de segurança e na elaboração do rascunho do regulamento de operação.
- ✓ No que diz respeito à movimentação de cargas, houve progresso significativo em áreas tais como melhorias do Phaeros (sistema de operação do terminal de contêineres), fortalecimento das funções do terminal seco e aquisição de novos *spreaders*.
- ✓ No que diz respeito à manutenção, houve progresso significativo em áreas tais como a designação de engenheiros civis da CFM e PN para manutenção da infraestrutura, o início da inspeção / monitoramento periódico da infraestrutura e a redução do tempo de inatividade dos equipamentos.

Medidas adicionais a serem tomadas

Na reunião de encerramento de 18 de setembro de 2014, ambos os lados concordaram que as seguintes medidas precisam ser tomadas para materializar completamente o potencial do Porto de Nacala:

- ✓ No que diz respeito ao planejamento portuário, um plano de uso do solo do Porto de Nacala abrangendo a Baía de Nacala precisa ser elaborado fora do escopo do Projeto em resposta às necessidades em evolução do porto e da hinterlândia. Um novo plano diretor do porto seria uma parte do plano de uso do solo.
- ✓ No que diz respeito à administração e gestão portuária, o regulamento operacional precisa ser finalizado e implementado o mais rápido possível. A fim de definir claramente a responsabilidade dos órgãos pertinentes, é preciso finalizar a revisão do acordo de concessão. Com respeito à segurança, atenção adicional deve ser dada durante os projetos de reabilitação. As lições aprendidas a partir dos acidentes precisam ser circuladas entre todos os empregados.

- ✓ No que diz respeito à movimentação de carga, o progresso estável na melhoria da eficiência precisa ser monitorado. Uma vez que o Phaeros não inclui funções de planejamento automático do pátio, planejadores de pátio precisam ser treinados, seja por meio de treinamento no exterior, seja por meio de OJT, por um considerável período de tempo. Também é recomendável o monitoramento da produtividade da movimentação de contêineres por meio de três indicadores utilizados universalmente (produtividade do berço, produtividade bruta por guindaste e produtividade líquida por guindaste). (No tocante ao Phaeros, a Equipe do Projeto acredita que o lado moçambicano precisará, cedo ou tarde, atualizá-lo ou substituí-lo por um sistema de operação de terminal computadorizado reconhecido internacionalmente. A Equipe do Projeto também gostaria de sugerir que o lado moçambicano nomeasse três ou quatro planejadores de navio e planejadores de pátio (os nomeados devem ser, preferencialmente, pensadores lógicos) e então os treinasse no exterior ou *in situ*, por meio de OJT. No caso de OJT, contratar dois ou três especialistas experientes do exterior por pelo menos seis meses seria uma boa ideia (A Spence Atkin, que trabalha atualmente para a TN, pode ser um bom recurso para fornecer tais especialistas). O treinamento precisa terminar antes que o novo pátio de contêineres no sistema RTG se torne operacional.)
- ✓ No que diz respeito à manutenção, engenheiros civis moçambicanos precisam ser treinados em cursos no exterior e localmente em OJT. O lado moçambicano precisa esclarecer a parte responsável e iniciar a preparação para a manutenção dos equipamentos introduzidos nos projetos de ODA. É preciso decidir a política quanto à reabilitação do Cais Sul levando em consideração as sugestões da Equipe do Projeto.

Medidas tomadas desde setembro de 2014

- ✓ As contrapartes moçambicanas tomaram medidas decisivas para melhorar a administração do Porto de Nacala. Em uma ocasião, o lado moçambicano solicitou uma reunião técnica com a Equipe do Projeto e a JICA para trocar opiniões sobre o uso futuro do Cais Sul. Ambos os lados discutiram esse tema em Tóquio em novembro de 2014 e identificaram pontos a serem esclarecidos. As contrapartes igualmente tomaram a iniciativa de implementar o regulamento de segurança em dezembro de 2014. O CDN minutou esse regulamento seguindo as sugestões da Equipe do Projeto e realizou um seminário para disseminá-lo às partes interessadas em novembro de 2014. Essas ações mostram que o lado moçambicano está gradualmente se tornando autossustentável.

(2) Avaliação em fevereiro de 2015

A PDM foi atualizada durante o 10º envio de peritos. Na reunião de encerramento em 6 de fevereiro de 2015 e na 4ª reunião do JCC realizada subsequentemente em 10 de fevereiro de 2015, o lado japonês e o lado moçambicano avaliaram conjuntamente os resultados do Projeto com base na PDM e concordaram que o Projeto havia atingido suas metas (エラー！参照元が見つかりません。).

Tabela 4.1-1 Avaliação do Projeto com base na PDM

Descrição da PDM		Resultados alcançados e ações adicionais		
Resumo descritivo dos resultados	Indicadores objetivamente verificáveis	Resultados até setembro de 2014	Avaliação do progresso em setembro de 2014	Ações recomendáveis (Itens entre parênteses são fora do escopo do presente projeto de Assistência Técnica)
É desenvolvida a estratégia de desenvolvimento do porto	É elaborado o rascunho da estratégia de desenvolvimento do porto	# O plano revisado de desenvolvimento do porto foi preparado e acordado entre as partes pertinentes (setembro de 2012)	Metas atingidas	# (Plano diretor além do desenvolvimento de curto prazo) # (Plano de reabilitação do Cais Sul)
É revisada e estabelecida a estrutura de implementação de desenvolvimento de curto prazo	É revisado o plano de desenvolvimento de curto prazo	# Teve início o projeto de assistência gratuita (março de 2014) # Teve início o D/D do projeto de empréstimo-1		
É desenvolvida a capacidade de administração e gestão portuária	# É elaborado o rascunho do regulamento sobre administração e gestão portuária # O porto é administrado e gerido de acordo com o regulamento	# Foram elaborados os rascunhos do regulamento operacional e do regulamento de segurança # O regulamento de segurança foi anunciado às partes interessadas em um seminário (abril e novembro de 2014), aprovado pelo conselho do CDN (junho de 2014) e então implementado (dezembro de 2014)	Metas atingidas	O regulamento operacional será finalizado e implementado (meta fixada para maio de 2015)
É aprimorada a habilidade de movimentação e carga	# A capacidade por hora de movimentação de carga aumenta # A taxa de acidentes diminui # O número de seminários / treinamentos e de participantes que são aprovados no exame dos treinamentos aumenta	# A eficiência da movimentação de carga está aumentando gradualmente por meio da introdução do Phaeros e da segregação dos contêineres, o que resultou em uma diminuição no tempo de giro dos veículos # Os acidentes são registrados e medidas preventivas são analisadas # 170 contrapartes participaram em 16 sessões de palestra / discussões sobre movimentação de carga # O Phaeros (Sistema de operação de terminal) está operacional e todos os agentes estão participando do sistema # O nivelamento do terminal seco foi concluído (setembro de 2014), mas chuvas fortes causaram danos, requerendo que o terminal seja pavimentado # Os novos *spreaders* chegaram (setembro de 2014) e estão atualmente em uso	Metas atingidas	# Será instalada transmissão de dados sem fio antes de meados de março # A produtividade da movimentação de contêineres precisa ser monitorada por 3 indicadores universalmente utilizados # Serão contratados 4 planejadores de pátio # As lições aprendidas a partir dos acidentes devem ser circuladas entre todos os empregados

Descrição da PDM		Resultados alcançados e ações adicionais		
É desenvolvida a habilidade de manutenção das instalações e equipamentos do porto	# O número de técnicos de manutenção aumenta # O custo de manutenção das instalações e equipamentos existentes diminui # O número de seminários / treinamentos e de participantes que são aprovados no exame dos treinamentos aumenta	# Três engenheiros civis (dois da CFM e um da PN) foram designados para a manutenção da infraestrutura # As contrapartes receberam treinamento sobre monitoramento da infraestrutura usando equipamentos de investigação (setembro de 2014) # A taxa de inatividade dos equipamentos caiu (de 39 % em 2012 para 21 % em 2014) # Em reuniões operacionais diárias, as condições dos equipamentos são relatadas e compartilhadas entre todas as pessoas envolvidas # 110 contrapartes participaram em 15 sessões de palestra / discussões sobre manutenção de infraestrutura # As contrapartes entenderam as investigações e análises necessárias para determinar as medidas para reabilitar o Cais Sul # Uma delegação moçambicana teve uma reunião técnica sobre o Cais Sul com as contrapartes japonesas no Japão (novembro de 2014) # 94 contrapartes participaram em 10 sessões de palestra / discussões sobre manutenção de equipamentos # O plano de manutenção periódica de equipamentos foi desenvolvido e está sendo implementado	Metas atingidas	# Estudo adicional e decisão da política sobre a reabilitação do Cais Sul considerando as sugestões da Equipe da JICA # Compilação de uma lista de inventário de peças sobressalentes

4.2 Avaliação com base em indicadores de monitoramento

Em setembro de 2012 o Projeto estabeleceu indicadores para monitorar o progresso das melhorias no Porto de Nacala. Na reunião de encerramento em 6 de fevereiro de 2015 e no 4º JCC realizado subsequentemente em 10 de fevereiro de 2015, o lado japonês e o lado moçambicano avaliaram conjuntamente os indicadores de monitoramento e confirmaram que a maioria deles apresentou um progresso significativo por meio da assistência técnica (Tabela 4.2-1).

Tabela 4.2-1 Avaliação do Projeto com base nos indicadores de monitoramento

Tema	Indicadores	Marcos/Metas	Linha de Base	Resultados Alcançados
Planejamento de desenvolvimento portuário	Progresso dos pacotes de investimento	Início da Assistência Gratuita Início do Empréstimo-1 Início do Empréstimo-2	Em abril de 2012 os pacotes de investimento ainda não tinham iniciado.	Iniciado o projeto de assistência gratuita (março de 2014) # Iniciado o D/D do projeto de empréstimo-1 (maio de 2014)
Administração e gestão portuária	Número de participantes em seminários e oficinas	Treinamento no Japão em 2012, 2013 e 2014 Treinamento em Angola em 2013 Treinamento em Nacala e Maputo		Treinamento no Japão em 2012, 2013 e 2014 (No total, 31 contrapartes receberam transferência técnica no Japão) Treinamento de contrapartes-chave em 2013 em substituição ao Treinamento em Angola
Movimentação de carga	1. Produtividade bruta do navio na movimentação de contêineres 2. Produtividade líquida do navio na movimentação de contêineres 3. Produtividade líquida da equipe de trabalhadores portuários na movimentação de contêineres 4. Tempo de permanência dos contêineres	10 contêineres (=13,0 TEUs) /equipamento de navio (SG)/hora como Produtividade Líquida	1. 6,7 contêineres/ hora/navio (2011) 2. 7,6 contêineres/ hora/navio (2011) 3. 5,0 contêineres/ hora/equipe (2011) 4. 8,55 dias para contêineres em trânsito (2012)	1. 8,2 contêineres/hora/ navio (2014) 2. 10,6 contêineres/hora/ navio (estimativa pela Equipe do Projeto, 2014) 3. 6,3 contêineres/hora/ equipe (estimativa pela Equipe do Projeto, 2014) 4. O tempo médio de permanência não foi registrado
Manutenção de instalações	Frequência de ronda na área do porto (inspeção regular)	É iniciada a inspeção regular É alocado orçamento para manutenção.	Não há inspeção regular Não há alocação de orçamento	Iniciada a inspeção da infraestrutura em agosto de 2014 Foram solicitados 15.380.000 MT à administração para o orçamento do ano fiscal de 2015
Manutenção de equipamentos	Taxa do tempo de trabalho dos equipamentos Dotação orçamentária anual para manutenção de instalações	60-70 % Montante suficiente do orçamento	51,77 % (2012) 27.770.000 MT (2011)	79 % (2014) Foram alocados 92.369.000 MT no orçamento do ano fiscal de 2015

5. Necessidades adicionais de assistência técnica

Conforme descrito na seção 4, o Projeto atingiu com sucesso sua meta prevista no início. A fim de que o Porto de Nacala continue acompanhando o ambiente econômico em evolução, contudo, o Porto precisa melhorar ainda mais a sua eficiência. No 4º JCC, a JICA e o lado moçambicano trocaram opiniões sobre o progresso do Projeto e necessidades adicionais de assistência técnica. Ambos os lados concordaram que a JICA responderia às necessidades com o envio de peritos de curta duração e a realização de treinamento de contrapartes no exterior (Tabela 5-1).

Tabela 5-1 Programa de Assistência Técnica da JICA Acordado no 4º JCC

Item	Descrição	Observações
Forma de Assistência Técnica	Envio de peritos japoneses de curta duração e treinamento de contrapartes no exterior	Não na forma de tipo projeto
Área dos Peritos	1) Administração Portuária 2) Operação de Terminal 3) Manutenção de Infraestrutura 4) Manutenção de Equipamentos	O primeiro envio de peritos será por volta de junho de 2015, levando em consideração o tempo necessário para a contratação
Duração	2 Anos (Início a partir de aproximadamente junho de 2015)	
Frequência do Envio	Cerca de 3 semanas a cada vez Cerca de 3 vezes por ano (cerca de 6 vezes em 2 anos no total)	1) O momento de cada envio será decidido em tempo oportuno 2) Seminários e/ou oficinas podem ser realizados conforme a necessidade
Agência Contraparte	1) MTC 2) CFM 3) CDN 4) PN	

6. Conclusões e Recomendações

6.1 Conclusões

Conforme descrito no Capítulo 4, as metas estabelecidas neste Projeto foram alcançadas com êxito. O lado moçambicano solicitou a continuidade da transferência tecnológica do Japão como mencionado no Capítulo 5, o que reflete elevadas expectativas e confiança de Moçambique na assistência técnica japonesa. Esta seção descreve o pano de fundo de como o Projeto chegou tão longe.

(1) Primeira etapa – pacotes de projetos de ODA e estabelecimento de relações de confiança

Este Projeto de três anos compreende dez envios de peritos e pode ser dividido em duas etapas. A primeira etapa corresponde ao período entre abril e setembro de 2012 no qual foram realizados três envios de peritos. A segunda etapa corresponde ao período entre dezembro de 2012 e janeiro de 2015 no qual foram realizados sete envios de peritos. Na primeira etapa, o Projeto focou na preparação dos pacotes de projetos de ODA. A Equipe do Projeto priorizou os componentes do projeto propostos no Estudo de Viabilidade, levando em consideração o esquema da ODA japonesa, as solicitações do lado moçambicano e a sua urgência. A Equipe do Projeto então os reuniu em três pacotes de investimento: assistência gratuita, empréstimo 1 e empréstimo 2. Nesse processo, a Equipe do Projeto e as contrapartes moçambicanas mantiveram estreita comunicação por meio de visitas conjuntas *in loco* (no primeiro envio de peritos) e apresentações sobre os esquemas da ODA japonesa e urgência de cada componente do projeto. O lado moçambicano então passou a entender o raciocínio do pacote de projeto proposto pelo lado japonês e basicamente concordou com a proposta (no terceiro envio de peritos).

A primeira etapa foi importante em três áreas: 1) agilização da implementação dos projetos de ODA com base em pacotes de projeto mutuamente aceitáveis; 2) transferência tecnológica sobre planejamento portuário racional; 3) estabelecimento de relações de confiança por meio de exaustivas discussões entre os dois lados. A terceira área não foi menos importante que as duas primeiras e foi fundamental para a condução eficiente da transferência tecnológica na segunda etapa.

(2) Segunda etapa – condução de transferência tecnológica e desenvolvimento da iniciativa própria

Em setembro de 2012 (terceiro envio de peritos), as contrapartes moçambicanas solicitaram que a partir daquele momento o Projeto passasse a focar na transferência tecnológica e desenvolvimento de capacidades. Em resposta às sugestões da Equipe do Projeto para a melhoria do Porto de Nacala, o lado moçambicano realizou discussões internas e apresentou a discriminação de suas solicitações para transferência tecnológica em dezembro. Foi nessa época que as contrapartes moçambicanas começaram a tomar a iniciativa com relação à transferência tecnológica. O lado moçambicano estava determinado a gerir o Porto de Nacala pelas mãos dos moçambicanos, em contraste com os outros principais portos de Moçambique que são geridos por companhias com investimento estrangeiro. Assim, o lado moçambicano espera que o benefício da transferência tecnológica não será limitado ao

Porto de Nacala, mas que se estenderá aos funcionários estacionados em Nampula e Pemba.

Na segunda etapa, a Equipe do Projeto inicialmente fez apresentações gerais sobre administração portuária (em dezembro de 2012) e então focou seu programa em áreas com necessidade de atenção urgente. A Equipe do Projeto adotou uma abordagem de duas mãos onde apenas uma quantidade limitada de tempo foi alocada para palestras pelos peritos japoneses enquanto o tempo maior foi dedicado a apresentações das contrapartes, discussões e monitoramento conjunto *in loco*. Essa abordagem foi bem sucedida em desenvolver a iniciativa própria entre as contrapartes, como ficou evidenciado pelo forte conteúdo de suas apresentações no seminário realizado em fevereiro de 2015.

Em cada envio, a Equipe do Projeto identificou áreas com necessidade de atenção urgente com base em monitoramentos *in loco* e discussões. Apenas para citar algumas, a Equipe identificou dez pontos no terceiro envio de peritos e sete áreas no sétimo envio. As contrapartes moçambicanas mostraram iniciativa em responder sinceramente a essas sugestões. Eles tomaram diversas medidas proativas como: implementação de regulamentos de segurança, melhorias do sistema de operação de terminal (Phaeros), melhoria do terminal seco, aquisição de *spreaders*, preparação de planos de manutenção para infraestrutura e equipamentos. Essas ações indicam que as contrapartes moçambicanas apreciaram as sugestões da Equipe do Projeto e tomaram as medidas necessárias para assegurar os requisitos orçamentários. A liderança demonstrada pela contraparte-chefe, Dra. Ana Dimande (MTC), foi particularmente digna de nota.

Tabela 6.1-1 Recomendações da Equipe do Projeto e Respostas pelo Lado Moçambicano

Recomendações feitas no terceiro envio de peritos (setembro de 2012)	Respostas pelo lado moçambicano	Recomendações feitas no sétimo envio de peritos (dezembro de 2013)	Respostas pelo lado moçambicano
Estabelecimento de indicadores de monitoramento	Indicadores de monitoramento foram estabelecidos no terceiro envio de peritos		
Fortalecimento das funções de monitoramento do MTC/CFM sobre o desempenho do porto	O envolvimento do MTC e CFM é maior do que antes		
Fortalecimento das funções de marketing do CDN	A PN inaugurou seu website (agosto de 2013). O presidente da PN visitou a sede do CMA CGM. A PN designou um funcionário de marketing para o departamento comercial		
Execução dos regulamentos do Porto de Nacala	O Regulamento Operacional foi minutado e será aplicado em maio de 2015		
Conquista de maior produtividade de contêineres usando acessórios com *flippers* e cordas	Um *spreader* com *flippers* fabricado pelo CDN foi testado, mas causou danos aos contêineres	Aquisição de *spreader* com *flippers*	A TN pediu para uma firma sul-africana fabricar novos *spreaders*. Atualmente eles estão passando por aprimoramentos.
Renomeação e pintura de faixas no pátio de contêineres	O congestionamento do terminal tornou isso impossível	Melhoria e início do sistema Phaeros	Subsequentemente a melhorias provisórias, o Phaeros tornou-se operacional com a participação de todos os agentes marítimos
Adição de empilhadeiras *reach stacker*	Foi confirmada a adição de uma empilhadeira *reach stacker* no quinto envio de peritos		Foram adicionadas duas outras empilhadeiras *reach stacker*
Contratação de engenheiros civis para a manutenção da infraestrutura	A PN empregou um conselheiro português e designou um funcionário da PN para a manutenção da infraestrutura		
Manutenção mensal da infraestrutura	A PN contratou a Geoibéricos, uma empresa de consultoria portuguesa, para elaborar um plano de manutenção periódica	Início do monitoramento da infraestrutura com base no relatório da Geoibéricos e contratação de um engenheiro civil	A CFM e a PN começaram a fazer inspeções *in loco*, mas a frequência ainda é insatisfatória. A CFM e a PN designaram respectivamente dois engenheiros civis e um engenheiro civil
Estabelecimento de um plano de gerenciamento de manutenção para movimentação de carga	Preparado pela PN. A TN empregou engenheiros do Sri Lanka		
		Revisão dos regulamentos de segurança	Subsequentemente a um seminário co-organizado pelo MTC e JICA, os regulamentos de segurança entraram em vigor em dezembro de 2014
		Determinação do projeto de pavimentação do terminal seco	Obras de compactação foram concluídas antes de setembro de 2014. Obras de pavimentação são necessárias para superar os danos causados por fortes chuvas
		Revisão das medidas de reabilitação para o Cais Sul indicadas no relatório da Geoibéricos	Uma delegação moçambicana visitou o Japão em novembro de 2014 e teve discussões técnicas com o lado japonês
		Monitoramento da produtividade de movimentação de contêineres com base em três indicadores	A Equipe do Projeto deu palestras sobre o método para calcular os indicadores

(3) Treinamento no Japão – introdução de tecnologia japonesa e aprofundamento da compreensão das contrapartes sobre o Japão

Durante o Projeto, foram realizados quatro cursos de treinamento no Japão. No total, 35 contrapartes de seis agências visitaram o Japão e aprenderam sobre tecnologia japonesa e sua aplicação em construção de portos e administração portuária, bem como sobre as últimas tendências das indústrias portuária e marítima no mundo. A JICA convidou quatro contrapartes-chave em resposta à solicitação do lado moçambicano. O programa de treinamento das contrapartes-chave incluiu uma sessão de rede onde as contrapartes-chave fizeram apresentações sobre portos e ferrovias moçambicanas a empresários japoneses. Esta ocasião foi considerada significativa para o aprofundamento dos laços econômicos entre os dois países. Todos os participantes ficaram impressionados com o estado da arte da tecnologia do Japão e desenvolveram uma compreensão da cultura japonesa e confiança no Japão.

(4) Expectativas e confiança com relação à transferência tecnológica do Japão

Conforme descrito anteriormente, as contrapartes moçambicanas solicitaram transferência tecnológica contínua do Japão em setembro de 2012 (no terceiro envio de peritos). Eles apreciaram a transferência de tecnologia do Japão que consistiu de programas em resposta às necessidades do Porto de Nacala visando ao desenvolvimento da autossustentabilidade. Como resultado disso, o lado moçambicano solicitou a extensão do Projeto em início de dezembro de 2014 (no sétimo envio de peritos). As relações de confiança desenvolvidas entre os dois lados levaram à visita de uma delegação moçambicana ao Japão em novembro de 2014, quando eles discutiram com consultores japoneses e a JICA sobre a reabilitação do Cais Sul.

(5) Flexibilidade em responder às necessidades do Porto de Nacala

Na etapa inicial, o Projeto focou na criação de pacotes de projetos de ODA, com quase a metade dos recursos do Projeto alocada para essa tarefa. Em junho de 2012 (no segundo envio de peritos), a MTC solicitou transferência de tecnologia em quatro áreas (planejamento portuário, administração portuária, movimentação de carga e manutenção) em cada envio de peritos. A Equipe do Projeto também reconheceu a importância de transferir tecnologia nessas quatro áreas, considerando a capacidade das contrapartes e as condições atuais do Porto de Nacala. Constatou-se depois que a necessidade de transferência de tecnologia sobre movimentação de carga e manutenção, em particular, era maior do que a esperada inicialmente. Considerando essas circunstâncias, a JICA aprovou um aumento nos recursos do Projeto através de modificações contratuais, tornando possível, assim, a transferência tecnológica solicitada.

Tabela 6.2-1 Plano de envio de peritos depois de novembro de 2012 (plano original)

	Ano Fiscal de 2012 (depois de novembro)	Ano Fiscal de 2013	Ano Fiscal de 2014	Total
Planejamento portuário	1	2	2	5
Administração e gestão portuária	1	2	3	6
Movimentação de carga	0	1	1	2
Manutenção	1	0	0	1

Tabela 6.2-2 Plano de envio de peritos depois de novembro de 2012 (plano modificado)

	Ano Fiscal de 2012 (depois de novembro)	Ano Fiscal de 2013	Ano Fiscal de 2014	Total
Planejamento portuário	1	3	3	7
Administração e gestão portuária	1	3	3	7
Movimentação de carga	1	3	3	7
Manutenção	1	3	3	7

(6) Perito da JICA como coordenador do projeto

A JICA colocou o Sr. Nobuaki Kuribayashi em Nacala como coordenador residente do projeto, de setembro de 2012 a fevereiro de 2015. A nomeação do Sr. Kuribayashi, que fala português fluentemente, foi fundamental para o arranjo dos programas de transferência tecnológica. O desenvolvimento da confiança pelo lado moçambicano na assistência técnica japonesa pode ser creditado à presença contínua de um perito da JICA em Nacala.

6.2 Recomendações

(1) Continuidade da assistência técnica japonesa

A Equipe do Projeto conduziu transferência tecnológica adaptada às necessidades encontradas no Porto de Nacala através do envio de peritos (dez vezes) e da execução de programas de treinamento de contrapartes no Japão (quatro vezes). Essa transferência de tecnologia tornou as contrapartes conscientes da importância da eficiência e da manutenção, resultando em ações proativas, tais como a designação de engenheiros civis, a elaboração de regulamentos, a melhoria das instalações e a realização de estudos. O lado moçambicano tem em alto apreço a assistência técnica japonesa que visa à capacitação autossustentada e contínua. Ao mesmo tempo, a entrega dos equipamentos e o desenvolvimento de infraestruturas pela ODA japonesa estão em andamento em Nacala, o que está aumentando as expectativas e a confiança do lado moçambicano com relação à assistência japonesa. É importante continuar a assistência técnica no Porto de Nacala no futuro. Tendo isso em mente, em fevereiro de 2015 ambos os lados concordaram em continuar a assistência técnica japonesa (no décimo envio de peritos). Espera-se que a assistência técnica japonesa tenha como propósito o desenvolvimento contínuo da autossustentabilidade.

Conforme descrito na seção 6.1, a designação de um coordenador residente do projeto foi eficaz para facilitar a condução dos programas de transferência tecnológica. As agências contrapartes moçambicanas em Maputo e Nacala precisam fazer a coordenação do programa se não for designado nenhum coordenador residente na próxima fase de assistência técnica. A Equipe do Projeto gostaria de enfatizar que a indicação de contrapartes de nível intermediário em Maputo é particularmente importante para a administração portuária, pela qual o governo central é responsável.

(2) Rumo ao alcance do objetivo superior

A fim de alcançar o objetivo superior do Projeto ("A área do Corredor de Nacala é desenvolvida através do fortalecimento de atividades comerciais e econômicas"), o Porto de Nacala deve oferecer serviços modernos e eficientes. O desenvolvimento de um campo de gás natural no norte de Moçambique pode dar origem à criação de indústrias química e de gás na vizinhança. Para criar um grande número de empregos e assim espalhar o benefício do desenvolvimento econômico entre as pessoas da região, contudo, é preciso desenvolver indústrias de manufatura capitalizando recursos do interior, tais como carvão e produtos agrícolas. Sobre esse tocante, o Porto de Nacala precisa oferecer serviços eficientes que sejam competitivos com relação a portos vizinhos, tirando plena vantagem da infraestrutura e equipamentos desenvolvidos pela ODA japonesa. O Porto de Nacala vem sofrendo de movimentação de carga ineficiente em virtude da falta de guindastes de pórtico. No entanto, a melhoria do Cais Norte e o desenvolvimento de um terminal de contêineres moderno equipado com guindastes de pórtico e RTGs por meio da ODA japonesa vão mudar completamente a situação. Uma vez que as contrapartes carecem de experiência em operar essas instalações e equipamentos, a assistência técnica japonesa no estágio inicial seria eficaz.

(3) Fortalecimento de agências governamentais relacionadas a portos

Ao longo do Projeto, a falta de monitoramento periódico da infraestrutura no Porto de Nacala permaneceu como questão de preocupação. Isso ocorre porque a complexa relação entre MTC, CFM, CDN e PN não está resolvida com clareza, tornando vaga a distribuição de responsabilidades. Além disso, as funções governamentais para a administração portuária são fracas em virtude da privatização do porto e reestruturação da CFM recomendadas pelo Banco Mundial. As funções administrativas para o setor portuário precisam ser fortalecidas no governo central para evitar um desenvolvimento portuário desordenado e promover um desenvolvimento portuário que contribua para o crescimento da economia moçambicana.

7. Apêndices

Apêndice -1: Matriz Lógica do Projeto (PDM, do inglês Project Design Matrix)
Apêndice -2: Atas de Reuniões
Apêndice -3: Registro das Reuniões de Força-Tarefa
Apêndice -4: Seminário sobre o Porto de Nacala realizado em 05 FEV 2015
Apêndice -5: Tendências Estatísticas de Desempenho Portuário

Apêndice -1: Matriz Lógica do Projeto (PDM, do inglês Project Design Matrix)

ANNEX – I : PDM(Tentative)
Title of the Project:PROJECT FOR IMPROVEMENT OF NACALA PORT
Target Area: Nacala Port Project Period Feb 2012 – Feb 2015(Three years) Date: 19th December, 2011

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal To promote trade and economic activity and to develop the Nacala Corridor area.	GRDP in the Nacala corridor area, traffic volume in the Nacala corridow area (train car)	Statistical data and analysis	
Project Purpose To improve efficiency of the Port	Carloadings amount, Loading time	Statistical data	
Outputs 1. Port development strategy is developed	1-1. Port Development Strategy is drafted	1-1 Exsitence of port development plan	
2. The implementation structure for short-term development is revised and established	2-1. Short-term Development Plan is revised	2-1. Exsitence of implementation structure	
3. The capacity of the port administration and management is developed	3-1. Regulation on port administration and management is drafted 3-2. Port is administered and managed according to the regulation	3-1. Exsitence of the concession contract	
4. Cargo handling skill is improved	4-1. Cargo handling capacity per hour increases	4-1. Statistical data	
	4-2. Accident rate decreases	4-2. Interview survey	
	4-3. Number of seminar/training and participants who pass the training exam increases	4-3. Statistical data	
5. Maintenance skill of the port facility and equipment is developed	5-1. Number of maintanance technician increases	5-1. Interview survey	
	5-2. Maintenance cost for exisiting facility and equipment decreases	5-2. Interview survey	
	5-3. Number of seminar/training and participants who pass the training exam increases	5-3. Statistical data	
Activities	**Input**		
(1-1)To review and modify the existing port plan by stakeholder	**Japanese side**	**Mozambique side**	
(1-2)To modify existing yard plan	1. Experts	(a) Services of MTC' s counterpart personnel and administrative personnel	
(1-3)To submit modified plans to technical committee for Nacala port which has already been established in the Republic of Mozambique	JICA will provide the services of the Japanese experts	(b) Suitable office space with necessary equipment	
(1-4)To collect necessary information for future port development	(a-1) Dispatch of Expert (Long Term Expert)	(c) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the imp ementation of the Project other than the equipment provided by JICA	
(1-5)To formulate practical stage plan taking into consideration of rehabilitation and expansion plans	Coordination, Port Promotion	(d) Necessary information for the suitable furnished accommodation for the JICA experts and their families	
(1-6)To provide technical advice for port development	(a-2) Dispatch of Experts (Short Term Expert)	(e) Information as well as support in obtaining medical service	
(2-1)To review the roles and the responsibilities among MTC, CFM and CDN	Port Development Plan	(f) Credentials or identification cards	
(2-2) To develop instruction for revising the concession contract for smooth implementation of port development project	Port Administration and Menagement	(g) Available data (including maps and photographs) and information related to the Project	
(3-1)To review the present port administration and management	Facility and Equipment Maintenance	(h) Running expenses necessary for the implementation of the Project	
(3-2) To propose efficient port administration and management	Cargo Handling	(i) Expenses necessary for transportation within the Republic of Mozambique of the equipment as well as for the installation, operation and maintenance thereof	
(3-3)To monitor operation and management of administrative organization for administration	(c) Machinery and Equipment	(j) Necessary facilities to the JICA experts for the remittance as well as utilization of the funds introduced into the Republic of Mozambique from Japan in connection with the implementation of the Project	
(3-4)To provide technical advice for port administration and management	Necessary office machinery for office space		
(4-1)To review the situation of cargo handling	2. Counterpart Training in JAPAN and/or the third countries		
(4-2)To propose the improvement plan for cargo handling	Port Development Plan		
(4-3)To develop the indicators for monitoring of cargo handling	Port Administration and Management		
(4-4)To conduct technical transfer for cargo handling	Facility and Equipment Maintenance		
(5-1)To review the situation of the port facilities, cargo handling equipment, and so on	Cargo Handling		
(5-2)To review the maintenance situation of the port facilities, cargo handling equipment and so on.	Other necessary fields		
(5-3)To propose appropriate maintenance of the port facilities, cargo handling equipment and so on			
(5-4) To develop the indicator for monitoring the maintenance of the port facilities and cargo handling equipment			
(5-5)To conduct technical transfer for maintenance			

Apêndice-2: Atas de Reuniões

1. 1º JCC (1º Envio, 2012-04)

Conclusion of The First Joint Coordination Committee for The Project for Improvement of Nacala Port in Republic of Mozambique

With regard to the Annex 1 of the "Record of Discussions on The Project for Improvement of Nacala Port in Republic of Mozambique Agreed upon between The Government of The Republic of Mozambique and Japan International Cooperation Agency" signed on December 22, 2011 (hereinafter referred to as "the R/D), the first meeting of the Joint Coordination Committee (hereinafter referred to as "JCC") for the Project for Improvement of Nacala Port in Republic of Mozambique (hereinafter referred to as "the Project") was held on April 23 following an on-site meeting in Nacala on April 16. The attendance list of the first JCC and the on-site meeting are attached hereinafter.

At the meeting of JCC, the Work Plan of the Project was presented by the JICA expert team for the Project (hereinafter referred to as "the Project Team"). Following the presentation and discussions, JCC approved the Work Plan.

Responding to the request of the Project Team, the Mozambican side assigned the following officials as counterparts:

(Planning/Administration)

Dr. Ana Dimande, Director of Nacala Port Development, MTC

Mr. Anibal Manave, Adviser of the Board, CFM

Mr. Christiano Oliveira, CFM

Mr. Agostinho F. Langa Jr., Executive Director of Port, CDN

(Capacity building)

Mr. Inacio Rodrigues Junior, CFM

(Operation/Cargo handling)

Mr. Danilo Laisse, MOE

Mr. Alfredo Artur Mafuca, CFM

Mr. Lucas Jose Cipriano, Operational Director, CDN

Mr. Freeman Dickie, Chief of Container Terminal, CDN

(Maintenance)

Mr. Orland Manhique, MTC

Mr. Francisco Rogerio Martins, Ship engineer, MTC

Mr. Antonio Frederico Candido, CDN

Mr. Afonso Vasco da Cunha Junior, CDN

(Statistics)

Mr. Ali Abdala, Statistics Staff, CDN

The Mozambican side requested that the training program should be further discussed between the Project Team and Mr. Inacio Rodrigues Junior, CFM. The Project Team responded that it would elaborate on the training program based on the needs of the Mozambican side it finds thorough the first and second visit to Mozambique and include the program in the Progress Report (1) to be presented in September 2012.

Based on discussions held in the on-site meeting on April 16, the Project Team proposed the future development strategy of Nacala Port up to 2018 including a layout plan and berth allocation plan. The Project Team explained that the urgent rehabilitation project would be a part of the future layout plan and act as the first step of the development strategy. The Project Team also stated that the rest of the port development components would need financing sources other than the Japanese grant aid. JCC basically accepted the proposal of the Project Team and requested that the Project Team further elaborate on the development strategy. The Project Team responded that the development strategy with reasoning would be included in the Project Progress Report (1).

JCC concurred on the importance and urgency of the development of Nacala Port. Recognizing the issues identified in R/D and Work Plan as Output 1 to 5, JCC agreed to work on those issues.

Maputo, April 23, 2012

岡田光彦

Mitsuhiko Okada
JICA Team Leader
The Project for Improvement of
Nacala Port in Republic of Mozambique

Dr. Ana Matusse Dimande
Coordinator,
Nacala Port Development Project
Ministry of Transport & Communications

Participants of the 1st Joint Coordination Committee (Maputo, April 23, 2012)

Name	Organization	Position
Dr. Ana Matusse Dimande	MTC	Coordinator
Mr. Anibal Manave	CFM	Adviser of the Board
Mr. Inacio Rodrigues Junior	CFM	
Ms. Marilia ~~Beae~~ Bene	CFM	
Dr. Antonio Luis	MPD	Japan Desk
Ms. Jorgina Manhengane	Ministry of Energy	Advisor, Office of The Minister
Mr. Yuki Aratsu	JICA Headquarters	Deputy Director General, Economic Infrastructure Department
Mr. Yutaka Araki	JICA Headquarters	Economic Infrastructure Department
Mr. Kota Sakaguchi	JICA Headquarters	Assistant Director, Africa Department
Mr. Ryuichi Nasu	JICA Mozambique office	Resident Representative
Mr. Akihiro Miyazaki	JICA Mozambique office	Assistant Chief Representative
Ms. Harumi Maruyama	JICA Mozambique office	Assistant for Project Formation
Mr. Mitsuhiko Okada	JICA Expert	Team Leader / Port Planning (1)
Mr. Masao Ichinose	JICA Expert	Port Cargo Handling (1)
Mr. Kiyoshi Nakashima	JICA Expert	Port Management & Operation
Mr. Tatsuo Kawabata	JICA Expert	Facility & Equipment Maintenance / Training Coordination
Mr. Masafumi Ito	JICA Team (Urgent Rehabilitation)	Chief Consultant / Port Planning
Ms. Sanae Tanabe	JICA Team	Interpreter

Participants of the on-site meeting (Nacala, April 16, 2012)

Name	Organization	Position
Dr. Ana Matusse Dimande	MTC	Coordinator
Ms. Jorgina Manhengane	Ministry of Energy	Advisor, Office of The Minister
Ms. Natálie M.Teodor	Ministry of Energy	
Mr. Miguel Nhaca Gebuza	CFM	Executive Board Director
Mr. Anibal Manave	CFM	Advisor of the Board
Ms. Marilia ~~Beae~~ Bene	CFM	
Mr. Agostinho F. Langa Jr.	CDN	Executive Director of Port
Capt. Antonio F. Cândio	CDN	
Mr. Lucas Jose Cipriano	CDN	Operational Director
Mr. Mitsuhiko Okada	JICA Expert	Team Leader / Port Planning (1)
Mr. Masao Ichinose	JICA Expert	Port Cargo Handling (1)
Mr. Kiyoshi Nakashima	JICA Expert	Port Management & Operation
Mr. Tatsuo Kawabata	JICA Expert	Facility & Equipment Maintenance / Training Coordination
Mr. Masafumi Ito	JICA Team (Urgent Rehabilitation)	Chief Consultant / Port Planning
Mr. Isao Hino	JICA Team	Port Facility Design / Natural Condition Survey
Mr. Kazutoshi Tsuchiya	JICA Team	Cargo Handling Equipment Plan
Mr. Yuhei Yamamoto	JICA Team	Construction Planning / Cost Estimate
Mr. Yuji Hatakeyama	JICA Team	Environmental & Social Consideration
Ms. Sanae Tanabe	JICA Team	Interpreter

2. 2º JCC (3º Envio, 2012-09)

JICA *The Project for Improvement of Nacala Port in Republic of Mozambique*

Conclusion
of
The Second Joint Coordination Committee
for
The Project for Improvement of Nacala Port
in Republic of Mozambique

The second meeting of the Joint Coordination Committee (hereinafter referred to as "JCC") for the Project for Improvement of Nacala Port in Republic of Mozambique (hereinafter referred to as "the Project") was held on September 20 at the MTC office in Maputo. The attendance list of the second JCC is attached (Attachment A).

At the meeting of JCC, the JICA expert team for the Project (hereinafter referred to as "the Project Team") presented the progress of the Project for the first six months highlighting phased planning, areas in need of improvement, and technology transfer programs. The Project Team also presented what were discussed and suggested at the Work Shop held on September 11 at the CDN Nacala office. The meeting record with CDN Nacala is attached (Attachment B).

The Project Team requested that it would be kept informed of the change in the management and operation of Nacala Port so that it could properly respond to the needs of technology transfer on the Mozambican side.

JCC appreciated the progress of the Project and concurred on the importance and urgency of further technology transfer aimed to the improvement of Nacala Port. Toward this goal, the Project Team and the Mozambican side will jointly monitor the improvement of Nacala Port based on the monitoring indicators attached in Attachment B. The next visit of the Project Team is expected from December 4 to 22, 2012.

Maputo, September 20, 2012

岡田 光彦	
Mitsuhiko Okada	Dr. Ana Matusse Dimande
JICA Team Leader	Coordinator,
The Project for Improvement of	Nacala Port Development Project
Nacala Port in Republic of Mozambique	Ministry of Transport & Communications

(Attachment A)

Participants of the 2nd Joint Coordination Committee (Maputo, September 20, 2012)

Name	Organization	Position
(Mozambican side)		
Dr. Ana Matusse Dimande	MTC	Coordinator
Eng. Anibal Manave	CFM	Adviser
Mr. Radames Bongece	CFM	Engineer
Ms. Carmen Paula Quembo	GAZEDA	Technical
Ms Jeorgina Manhengane	Ministry of Energy	Adviser
Mr. Joao P.M. Fernandes	Porto de Norte	Administrator Adviser
Mr. Fabio T. P. Duarte	CDN	Executive Adviser
(Japanese side)		
Mr. Akihiro Miyazaki	JICA Mozambique office	Assistant Chief Representative
Ms. Yukiko Ohno	JICA Mozambique office	Assistant for Project Formation
Mr. Mitsuhiko Okada	JICA Expert	Team Leader / Port Planning (1)
Mr. Tatsuo Kawabata	JICA Expert	Facility & Equipment Maintenance / Training Coordination
Mr. Teruki Eto	JICA Expert	Port administration and management (2)
Mr. Susumu Kimura	JICA Expert	Port cargo handling (2)
Mr. Nobuaki Kuribayashi	JICA Expert	Liaison officer
Ms. Rosa Machava	JICA team	Assistant

Meeting Records
of
The Project for Improvement of Nacala Port
in Republic of Mozambique

The JICA expert team for the Project (hereinafter referred to as "the Project Team") visited Nacala from September 8 to September 18, 2012. In addition to interviews, meetings, and site surveys, the Project Team held a workshop on September 11 at the CDN Nacala office as a measure of technology transfer to Mozambican counterparts (Attachment 1).

At the workshop, the Project Team made presentations on the first progress report, port planning, port operation and management, infrastructure maintenance, and equipment maintenance. The Project Team explained how project components were prioritized and bundled into three investment packages and made several suggestions aimed to improve Nacala Port. Following are main points of the suggestions in need of urgent attention.

1. Establishment of monitoring indicators (Attachment 2)
2. Strengthening of monitoring functions of MTC/CFM on the port's performance
3. Strengthening of marketing functions of CDN
4. Enforcement of the Regulation of Nacala Port
5. Achievement of higher container productivity using attachment with flippers and ropes
6. Renaming and striping of the container yard
7. Addition of reach stackers
8. Employment of civil engineers for infrastructure maintenance
9. Monthly maintenance of civil infrastructure
10. Establishment of a maintenance management plan for cargo handling equipment

The Mozambican side will take into account these suggestions in the future management and operation of Nacala Port. Both sides will jointly monitor the improvement of Nacala Port based on the monitoring indicators.

The Mozambican side will keep the Project Team informed as to how the transition of the management and operation of Nacala Port from CDN to Porto de Norte will be progressing. Accordingly, the Project Team will continue to tailor its technology transfer program to the needs

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of the Mozambican side. The next visit of the Project Team to Nacala is expected from December 9 to December 20, 2012. Mr. Nobuaki Kuribayashi, a JICA expert, started his activity as the resident coordinator of the Project on September 5, 2012 and will act as a liaison officer for the Project.

Nacala, September 13, 2012

岡田光彦

Mitsuhiko Okada
JICA Team Leader
The Project for Improvement of
Nacala Port

Mr. Agostinho F. Langa Jr.
Executive Director of Port
CDN

(Attachment 1)

Participants of the 1st Workshop in CDN Nacala

Name	Organization	Position
1. Braulio F Catutula	CFM - Norte	MGT& OPS officer
2. Eusebio A.R.logiveca	CDN – Port DNCL	Phaeros System Supervisor
3. Lucas Jose CePrian	CDN – Nacala Port	Port operations manager
4. Antonio Frederico Candido	CDN – Nacala Port	Maintenance Director
5. A. Langa	CDN	Port Director
6. Cristiono de Oliveira	CFM	Infrastructure Supervisor
7. Jose Jogfoim Lands	CFM - Norte	Delegado / NCL
8. Danilo A. Laice	Petromoc	Superintendence
9. W.G.D Nishantha	Terminas do Norte	Port Operation Manager
10. I.H.Sumbane	CDN - Nacala	CH maintenance service
11. Afonso Vasco da cunha junior	CDN - Port	Instalacoet Portuartis
12. Bonifacio A Muassabao	CDN - Porto	General cargo manager
13. Eusebio Armando	CDN - Porto	DOP-CCOP
14. Loni Shott	CDN	Logistics manager
15. Freeman Dickie	CDN	Container Terminal manager
16. Fernanda de Carvalho	Admar - Nacala	Accountant
17. A. Bafael Sigola	CFM	Mainatenance
1. Mitsuhiko Okada	OCDI	Team Leader
2. Teruki Eto	OCDI	Expert
3. Susumu Kimura	OCDI	Expert
4. Tatsuo Kawabata	OCDI	Expert
5. Nobuaki Kuribayashi	JICA	Expert

(Attachment 2) Monitoring Indicators

Subject	Indicators	Milestones/goals	Baseline
Port development planning	Progress of investment packages	Start of Grant aid Start of Loan-1 Start of Loan-2	Investment packages not started yet as of September 2012.
Port administration and management	Number of participants in CP training in Japan Number of participants in seminars and workshops	Training in Japan in 2012, 2013 and 2014 Training in Angola in 2013 Training in Nacala and Maputo	10 counterparts received training in Japan in August /September 2012 Workshop was held in Nacala in September 2012 and attended by 17 Mozambican participants
Cargo handling	1. Gross vessel productivity of container handling 2. Net vessel productivity of container handling 3. Net gang /crane productivity of container handling 4. Dwelling time of containers	3. 10 boxes (=13.0 TEU) /ship gear/hour as net productivity 4. Dwelling time of 6.6 days	1. 6.7 box/hour/vessel (2011) 2. 7.6 box/hour /vessel (2011) 3. 5.0 box/hour/gang (2011) 4. 8.55 days (2012)
Maintenance of facilities	Frequency of port area patrol (regular inspection) Annual budgetary allocation for facility maintenance	Regular inspection is started Budget for maintenance is allocated.	Number of patrol is zero. Annual budget is zero.
Maintenance of equipment	Working time ratio of equipment Annual budgetary allocation for equipment maintenance	60 – 70 % Sufficient amount of budget is allocated	51.77% (as of 1 Jun 2012) MT27,770,000- (Year 2011)

3. 5º Envio (2013-04)

**Progress
of
The Project for Improvement of Nacala Port
in Republic of Mozambique**

The JICA expert team for the Project (hereinafter referred to as "the Project Team") visited Mozambique from April 7 to April 19, 2013. On April 10, The Project Team presented the progress and technical assistance plans of the Project to the Mozambican side in a meeting attended by representatives of MTC, CFM, CDN, and PN (The attendance list of the meeting is attached (Attachment A)).

1. At the meeting, the Mozambican side gave a presentation on the transfer of the port operation from CDN to PN.
2. PN expressed its commitment to achieve efficient and professional port operation following the suggestions of the Project Team emphasizing that PN's introduction of a new reach stacker in March was an example of the commitment.
3. The Mozambican side appreciated the progress of the Project and expressed its strong interest in receiving continued technical assistance from the Project Team. The Project Team expressed its intention to continue its technical assistance responding to the needs arising from recent developments surrounding Nacala Port. The Project Team also highly appreciated the Mozambican side's proactive actions in responding to the Team's suggestions aimed to improve Nacala Port.
4. The Mozambican side agreed to this year's counterpart training plan in Japan (One for three key counterparts planned in July and another for up to ten middle-level counterparts planned in September).
5. Both sides agreed that PN should appoint focal persons for the Project Management Unit for the following areas: port planning, port administration, cargo handling, and maintenance (The record of discussions of the meeting is attached (Attachment B)).

The Project Team gave several lectures at Nacala for Mozambican counterparts including participants from Pemba Port (The lecture program is attached (Attachment C)). The Team also carried out site inspections of infrastructure (South Wharf and North Wharf) and equipment as well as interviews and confirmed the latest monitoring indicators related to cargo handling and maintenance (February/March 2013) as follows:

1. Net crane/gang productivity: 7 Box/vessel/hour
2. Working time ratio of equipment: 67 %

The Project Team found that the South Wharf container yard area 30-m behind the quay line suffered significant settlement due to the continued deterioration the Wharf. The Team is therefore suggesting that the South Wharf deck structure should avoid excessive forces and/or loads (The Team's findings and suggestions are attached (Attachment D)). The use of heavy equipment on the South Wharf deck structure is not recommendable.

The Project Team suggested to the Mozambican side that a civil engineer of PN should be involved in the preparation and implementation of the maintenance action plan for infrastructure. The Project Team also requested the Mozambican side to regularly provide the record of latest monitoring indicators. The next visit of the Project Team is expected from June 4 to 22, 2013.

Maputo, April 18, 2013

岡田光彦

Mitsuhiko Okada
JICA Team Leader
The Project for Improvement of
Nacala Port in Republic of Mozambique

Dr. Ana Matusse Dimande
Coordinator,
Nacala Port Development Project
Ministry of Transport & Communications

(Attachment A)

Technical Coordination Meeting of the Project for Development of Nacala Port

Date: 14:30 - 17:30, April 10, 2013

Venue: PN Conference Room

No.	Name	Title / Section	Org.
1	Ana Dimande	Project Coordinator	MTC
2	Jose Joaquim Daude	Representative	CFM
3	Paulo Tarmamade		CFM
4	Aderval Acioli	Port Operation	CDN
5	Fernando Couto	CEO	PN
6	Agostinho Langa	Operational Dierctor	PN
7	Matos Fernandes	Advisor	PN
8	Mitsuhiko Okada	JICA Expert/ Team Leader	JICA
9	Kiyoshi Nakashima	JICA Expert	JICA
10	Tatsuo Kawabata	JICA Expert	JICA
11	Susumu Kimura	JICA Expert	JICA
12	Nobuaki Kuribayashi	JICA Mozambique	JICA

April 2013

April, 10th 2013

RECORD OF THE MEETING
ON NACALA PORT TECHICALL ASSISTANCE PROJECT

BETWEEN
JICA TECNHICAL ASSISTANCE TEAM
AND
MINISTRY OF TRANSPORT AND COMMUNICATIONS-PMU

The Port of Nacala is since 15th March 2013, under the management of a new Terminal Operating Company by subcontract between Corredor de Desenvolvimento Norte,SARL (the concessionaire with the Government of Mozambique for the Nacala Port and the Nacala railway system) and Portos de Norte (a Mozambican private company).

As follow up of the meetings held in Maputo on March, 22nd 2013 and April 2nd 2013 a technical coordinating meeting was held in Nacala on 10th April 2013 from 14.30hrs with JICA Technical Assistance Team (TAT) from OCDI (Overseas Coastal Development Institute of Japan) with the following objectives:

1. To Adjust and harmonize the Existing Plans and Programs of the Technical Assistance to the with the new management of the Port;
2. Present the Progress Report on the recommendations made by the TAT in September 2012
3. To Review the training Plan Out of Mozambique

The meeting was Chaired by the Project Coordinator and attend by representatives from CFM, CDN, Portos do Norte and the JICA TAT from OCDI (**the list attached I**).

Introductory Remarks
The chair person explained the objectives of the meeting and informed about the changes on the management of the Nacala Port.

Following the agenda Mr F Couto the chairperson for Portos do Norte did a brief statement of their commitment on the Nacala Port Development Project and presented the summary of challenges that count to encourage the project to continue be implemented, such as the need of the improvement of the capacity of the port . Informed that Portos do Norte purchase a new reach starker and the other one is to be placed before the end of 2013; Portos do Norte is in the process of introducing CCTV System for surveillance of the port area; there is ongoing activity to name the container yard and to introduce circulation ways for vehicles within the port.He also committed to assign a representative as counterpart to the project to work within the PMU.

CDN informed the conditions of the contract with Portos do Norte and the area of interventions and responsibilities of each company in the Ports and Portos do Norte were invited to present the Progress report (**attached II**) as the new entity directly involved on the TA, due to the workers of the port having been transferred from CDN to Portos do Norte.

Portos de Norte confirmed to the meeting their commitment to implement the with the existing Steps Plan for Nacala port Operations and Traing Programs, to follow the established KPIs and informed that the harmonization was finished with CD, MTC and CFM (**attached III, doc 1,2,3**).

JICA TAT made a presentation of the Progress Report2 on the TA (**attached IV**) and after that where made the considerations and recommendations:

Considerations

The meeting noted with that :

1. The changes on the management of the Port from CDN to Portos do Norte did not affect the progress of the implementation of the Nacala Port Development Project.
2. That there is a strong commitment and support of Portos do Norte to the Project.
3. The Port is already congested before the new expected shipping line start to call Nacala
4. The need of standardization of the equipment to be acquired for the port within Portos do Norte and the Consultant could contribute for a better training plan on the maintenance. In the other hand it was noted that the 2 Reach Starker supported by Grant Aide should be available to the port before the end of the year 2013.

Recommendations

1. The Traing Programs need to be focus on the specific needs of the CFM Portos do Norte and CDN. Therefore the Consultant will receive from those institution the appropriate list of trainee in Mozambique and Japan.
2. Portos do Norte as part of the project will assign before end of April their counterpart to the TA project.
3. JICA TAT in the next step will help the Mozambican side to produce the draft Port Regulations and will help the PMU to prepare the Working Document binding the Contractor, Portos do Norte, CFM, CDN and the PMU during the construction phase.
4. Portos do Norte should avail their organization chart to the TAT

The meeting ended at 18hrs.20 with notes from the representatives of participants

Ministério dos Transportes e Comunicações
Dra. Ana Matusse Dimande____________________
(Project Coordenator)

Empresa Corredor de Desenvolvimento do Norte
Eng. Adeval Acioli____________________
(Port Operatios)

Empresa Portos e Caminhos-de-ferro
Dr Paulo Tarmamade____________________
(Advisor to the Board)

Portos do Norte
Fernando Amado Couto
Chief Executive Oficer____________________

JICA Technical Assistance Team
Mitsuhiko Okada
Team Leader____________________ 岡田光彦

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(Attachment C)

Schedule for Technical Transfer in April, 2013

Area	Subject	April 12	April 13	April 15	Expert
Cargo Handling	IT system for CT Operation	9:30-11:00	10:00-11:00		Kimura
Maintenance for cargo handling equipment	Preventive Maintenance	Review of Dec'12 session	-		Kimura
	Maintenance Management	Review of Dec'12 session	-	-	Kimura
	Spare Parts Inventory	Review of Dec'12 session	-	10:00-16:00 (Field training with mechanical engineer and store keeper in charge)	Kimura
Maintenance for port facilities	Preventive Maintenance	11:00-12:00	9:00-10:00	11:00-12:30 (Field training with civil engineer in charge)	Kawabata
	Maintenance Management				Kawabata
Port planning	Port Planning system	14:00-15:00	11:00-12:00	-	Okada
	Demand Forecast	-	-	14:00-15:00	Okada
Port administration and management	Laws and Regulations	15:00-16:00	-	-	Nakashima
	Marketing of the port	-	-	15:00-16:00	Nakashima

(yellow)	Lecture
(blue)	Field Study

(Attachment D)

Issues on the South Wharf of Nacala port

2013 April 17th
JICA TA team

1. F/S report's recommendation and conclusion on the South Wharf
(Page 4-22 ～ Page 4-25)

① (Recommendation of F/S report)
Measures for extending residual life for South Wharf
i) Installation of fenders (DONE)
ii) Minimization of surcharge loads (NOT done)
✓Clearance of loaded containers from the deck as stated above
iii) Measures for the alleviation of excessive forces by infrastructure management (NOT done)
✓Control of approaching velocity of ships to be less than 10cm/sec
✓Prohibition of mooring ships in a cyclone
iv)Monitoring of the structure (NOT done)
✓Regular monitoring of cracks on piles and front/rear walls once in three months
✓Regular monitoring of openings between the concrete deck and container yard
✓Regular measurement of compression strength of the structural members with a rebound hammer

② (Conclusion of F/S report)
Even when the renovation of rear wall and anchor wall is successfully completed, the vulnerability of the structure will remain unchanged because it is impossible to recover bending resistance of damaged piles head. Therefore, the realistic method of overall repair of the structure would be to demolish the entire structure and to construct a new structure.

2. Issues on South Wharf (as of 2013 April)

①The Pavement behind the rear wall has settled more than 9 cm from the original level. This settlement was not noticeable in 2010 during F/S stage.

②Laden Heavy containers are stacked on the deck of the South Wharf.

as observed in the photos below

April 2013

Photo-① Settlement behind the rear wall (2013 April)

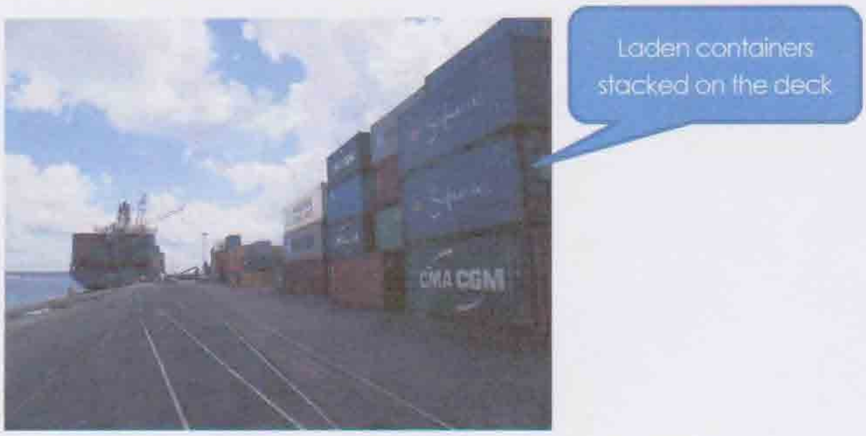
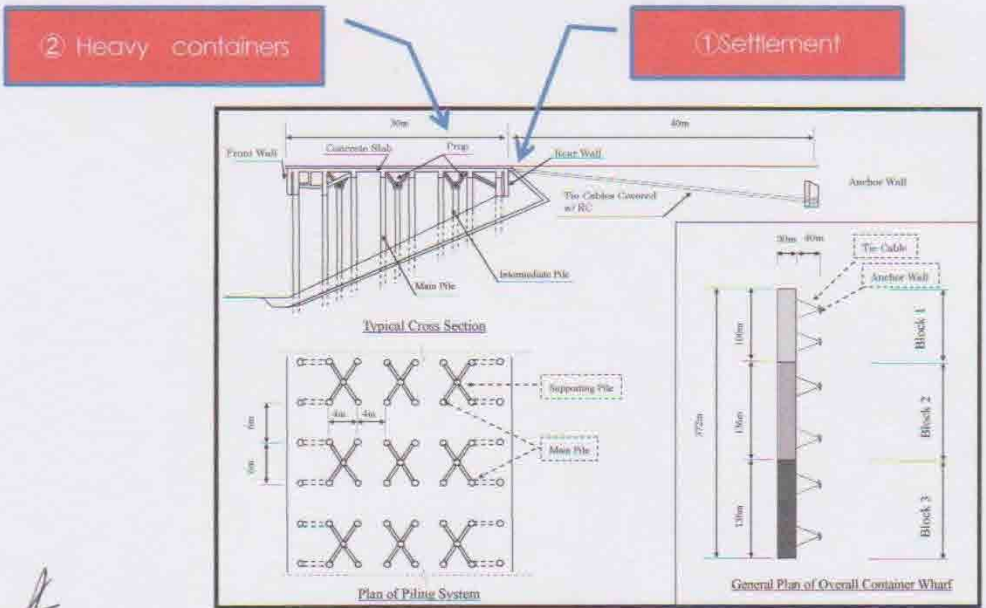


Photo-② Laden containers stacked on the deck of South Wharf (2013 April)



April 2013

3. Recommendations of JICA TA team

①As recommended in F/S report (page 4-24), monitoring of the deck structure and settlement shall be implemented on a regular basis according to the maintenance action plan.

②As recommended in F/S report (page 4-23), clear all the laden containers from the deck and minimize the active loads for handling containers by heavy equipment.

AS

4. 6º Envio (2013-06)

Progress
of
The Project for Improvement of Nacala Port
in Republic of Mozambique

The JICA expert team for the Project (hereinafter referred to as "the Project Team")visited Mozambique fromJune11 to June29, 2013 as its 6th dispatch.

1. Training program for 6th dispatch

On June 14,The Project Team presented the program of technical assistancefor the Team's 6th dispatch to the Mozambican side in a meeting attended by representatives of MTC, CFM, CDN, and PN(the attendant list is as per Attachment B, and the program as per Attachment C). According to the program, the Project Team organized 13 sessions of discussions and lectures at Nacala for Mozambican counterparts including participants from CFM South and Central.The Project Team also carried out site inspections and interviews with counterparts.

2. Discussions in Nacala

Following issues have been discussed in Nacala between the Mozambican side and the Project Teamon June 14 and 18, 2013 (the attendant lists areas per Attachment B):

1) Facility maintenance:

Being the entity responsible for the regular inspection of the facilities as per the Concession Contract, CFM nominated 3 civil engineers who would hereafter become a part of the counterpart.

2) South Wharf issues:

The Project Team revised its previous report "Issues on the South Wharf of Nacala Port" based on the discussion above and findings through the site inspection on June 19 (the revised report is as per Attachment A).

The Project Team agreed to give a technical assistance for those measures taken by Mozambican side as a part of its scope of work for facility maintenance.

3) Safety regulation:

Following to the suggestion of the Project Team duringits last dispatch, the Mozambican side elaborated and presented its draft of the Safety Regulation of Nacala Port to the Project Team. The Project Team agreed to feed back its comments by the end of July, so that the Mozambican side can complete the draft for approval.

4) Phaeros system

PN explained that it would have discussions with IT technicians and Phaeros' agent from mid-July to September to identify the functions supported by the system and evaluate cost-effectiveness of the system, then it would make decision to use the system or not.

3. Assistance of the Project Team to PN's own training program

In addition to 1.and 2. above, the Project Team gave an assistance to the training program organized by PN's own on June 17, 2013.The Project Team highly appreciated this voluntary program organized by Mozambican side's initiative.

4. Training programs in July, September and November, 2013

1) Study program in Japan in July, 2013

The Mozambican side agreed to the detailed study program for 4 key counterparts in

Japan in July, 2013 including the receptions.

2) Training program in Japan in September, 2013

The Project Team explained that the tentative schedule for training program for 10mid-level counterparts is considered from August 30 to September 15, 2013.

3) The next dispatch of the Project Team

The Project Team explained that its next dispatch is considered tentatively from October 27 to November 15, 2013.

Maputo, June 27, 2013

中島 孫

Kiyoshi Nakashima
The Project Team
The Project for Improvement of
Nacala Port in Republic of Mozambique

Dr. Ana MatusseDimande
Project Coordinator,
Nacala Port Development Project
Ministry of Transport & Communications

**Meeting Records
of
The Project for Improvement of Nacala Port
in Republic of Mozambique**

The JICA expert team for the Project (hereinafter referred to as "the Project Team") visited Nacala from June 13 to 27, 2013 as its 6th dispatch. The Project Team organized 14 sessions of discussions and lectures for the technical transfer including the assistance to PN's own training program on June 17, 2013 (the program as per the attachment). The Project Team also carried out site inspections and interviews with PN staffs.

In the wrap-up meeting on June 24, 2013, PN and the Project Team confirmed on the progress of technical transfer in line with the items of suggestion made by the Project Team on September 13, 2012 as follows:

1. Strengthening of marketing functions
   - PN will establish its own web site in August, 2013, which will contribute a lot to the strengthening of its marketing functions.
   - PN will soon assign the personnel in charge of marketing in its Commercial Dept.
   - The CEO of PN has made a sales call at CMA CGM's head quarter in France. PN is planning to visit other existing and potential users time to time.
2. Enforcement of the Regulation of Nacala Port
   - This issue shall be under the primal responsibility of CDN.
3. Achievement of higher container productivity using attachment with flippers and ropes.
   - PN will order TN to use ropes for the loading/discharge of containers, and request TN in writing to purchase the spreaders with flippers.
4. Renaming and striping of the container yard
   - This has not been realized yet due to PN's limited budget, while PN will soon carry out the marking of traffic signs in the container yard.
5. Addition of reach stackers
   - In addition to 3 units of the reach stackers (No. 5, 6, 7) that were available at the time of September, 2012, 1 unit (No. 8) newly joined in operation in May, 2013, and 1 unit (SMV 5) is now under repair. In August or September, 2 units of Sany are supposed to join in operation. Furthermore, 2 units will be given by the Grand Aid. Number of top lifters has remain unchanged as 3 units (No.1 & 2 for laden, No.4 for empty).
6. Employment of civil engineers for infrastructure maintenance
   - PN has contracted a Portuguese private company "Geoibéricos" to conduct a survey and make a plan of regular inspections and repairs under the supervision of CFM. The contract period will be 90 days commencing from the end of June, 2013.

- CFM has assigned 3 civil engineers (Ms. Anabela Matsinha, Ms. Camona Mocobora and Mr. Crisiano Oliveira) who will supervise the above, and carry out periodical inspections of the port facilities.

- 2 staffs of PN (Mr. Neimo Induna, Container Yard Manager & Mr. Matos Fernandes, Adviser) will be involved in the facility maintenance time to time, as both have a background in civil engineering.

7. Monthly maintenance of civil infrastructure

   - The plan for periodical inspections and maintenance will be established in reference to the advice to be given by Geoibéricos as per the contract.

8. Establishment of a maintenance management plan for cargo handling equipment

   - PN has contracted Aitken Spence to establish maintenance management plan. The contract period is 2 years commencing from May, 2013, in which 4 technicians of Aitken Spence will be assigned.

9. The latest monitoring indicators related to cargo handling and maintenance (April/May 2013) were as follows:

   - Net crane/gang productivity: 7 boxes/vessel/hour

   - Working time ratio of equipment: 65 %

Training programs in July, September and November, 2013 are expected as follows:

- Japan study program for 4 key counterparts (fixed) from July 6 (leave Maputo) to July 22 (arrive at Nacala), 2013.

- Japan training program for mid-level counterparts (temporary) from August 31 (leave Maputo) to September 15 (arrive at Maputo), 2013.

- The next dispatch of the Project Team (temporary) from October 28 (arrive at Maputo) to November 15 (leave Maputo), 2013.

Nacala, June 26, 2013

中島 謙

Kiyoshi Nakashima
The Project Team
The Project for Improvement of
Nacala Port in Republic of Mozambique

Mr. Agostinho F. Langa Júnior
Comissão Executiva
Director de Operações
Portos do Norte, SA

(Attachment)

Technical Assistance Program in Nacala Port in June 2013

Day		Time	Session No.	Category	Lecturer	Title	Type
14-Jun	Fri	9:00-10:30	1	General	All TA Team	Kick-off meeting with CP	Discussion
		10:30-12:00	2	General	All TA Team	Discussion for PN's training on 17th	Discussion
17-Jun	Mon	7:00-18:00			All TA Team	Assistance to PN's training program	
18-Jun	Tue	9:00-10:30	3	Port Administration & Management	Capt. Etoh	Discussion on the terminal operation system (Phaeros)	Discussion
		10:30-12:00	4	Facility & Equipment Maintenance	Mr. Komoto	Discussion on structure integrity of South Wharf	Discussion
		15:00-16:30	5	Port Planning	Dr. Kunita	Grain terminal planning	Lecture
19-Jun	Wed	9:00-10:30	6	Port Administration & Management	Mr. Nakashima	Discussion on the Safety Regulation of Nacala Port	Discussion
		10:30-12:00	7	Port Planning	Dr. Kunita	Discussion on the safety during construction works	Lecture
		15:00-16:30		All		Site inspections & on-site suggestions	
20-Jun	Thu	9:00-10:30	8	Facility & Equipment Maintenance	Mr. Komoto	Discussion on the progress of the facility maintenance action plan	Discussion
		10:30-12:00	9	Port Administration & Management	Capt. Etoh	Lecture on container terminal operations	Lecture
		15:00-16:30	10	Port Administration & Management	Mr. Nakashima	Lecture on the regulation of port operations	Lecture
21-Jun	Fri	9:00-10:30	11	Port Administration & Management	Capt. Etoh	Discussion on the use of flippers	Discussion
		10:30-12:00	12	Port Administration & Management	Mr. Nakashima	Lecture on the regulation of port operations	Lecture
		15:00-16:30				Site inspections, on-site suggestions & interviews	
24-Jun	Mon	9:00-12:00	13	General	All TA Team	Wrap-up meeting, review of the progress of 10 suggestions	Discussion
		14:00-15:30	14	Facility & Equipment Maintenance	Mr. Komoto	Monitoring of civil infrastructures	Lecture
26-Jun	Wed	9:00-17:00				Site inspections, on-site suggestions & interviews	

June 2013

(Attachment A)

Issues on the South Wharf of Nacala Port

2013 April 17th
Updated on 2013 June 14th and 18th
JICA TA team

1. F/S reports' recommended measures and conclusions on the South Wharf (Page 4-22 ～ Page 4-25)

① (Recommendation of F/S reports)
Measures for extending residual life for South Wharf

i) Installation of fenders (DONE)

ii) Minimization of surcharge loads (NOT done)

➔ PN explained that they have set limits to the stacking of containers at maximum of 2 rows x 3 layers of laden 40' on the land side edge of concrete deck at Block 3, and maximum of 1 row x 3 layers of laden 40' on the land side edge of concrete deck at Block 2. The Project Team appreciated their actions but explained that it would be difficult to identify the exact loads allowed on the deck since there is no design data or drawing available.

iii) Measures for the alleviation of excessive forces by infrastructure management (NOT done)

✓Control of approaching velocity of ships to be less than 10cm/sec

➔ It will be included in the "Safety Regulation of Nacala Port".

✓Clearance of loaded containers from the deck as stated above

➔ As above

✓Prohibition of mooring ships in a cyclone

➔ It will be included in the port regulation but it must be a common sense known by everybody working in the port.

iv) Monitoring of the structure (NOT done)

✓Regular monitoring of cracks on piles and front/rear walls once in three months

➔ It will be discussed in an additional session scheduled on June 24 PM.

✓Regular monitoring of openings between the concrete deck and container yard

➔ As above

✓Regular measurement of compression strength of the structural members with a rebound hammer

➔ As above

② (Conclusion of F/S reports)
Even when the renovation of rear wall and anchor wall is successfully completed, the vulnerability of the structure will remain unchanged because it is impossible to recover bending resistance of damaged piles head. <u>Therefore, the realistic method of overall repair of the structure would be to demolish the entire structure and to construct a new structure.</u>

➔ C/P has an intention to somehow find a way to prolong its life not by demolition but through partial repairs.

2. Issues on South Wharf (as of 2013 April)

①The Pavement behind the rear wall has settled more than 9 cm from the original level. This settlement was not noticeable in 2010 during F/S stage.

➔ PN has contracted with a private company to conduct a survey and make a plan of regular inspections and repairs under the supervision of CFM. The

June 2013

Project Team suggested that an investigation needs to be done by this company to identify the reason of the settlement and establish further countermeasures.

➔ The Project Team suggested that the laden containers placed just behind the deck slab shall also be relocated to reduce unnecessary load on the concrete/interlocking block pavement where further settlement or collapsing may take place due to underground voids.

②Laden Heavy containers are stacked on the deck of the South Wharf.

➔ See 1 ① ii)

as observed in the photos below

Photo-① Settlement behind the rear wall (2013 April)

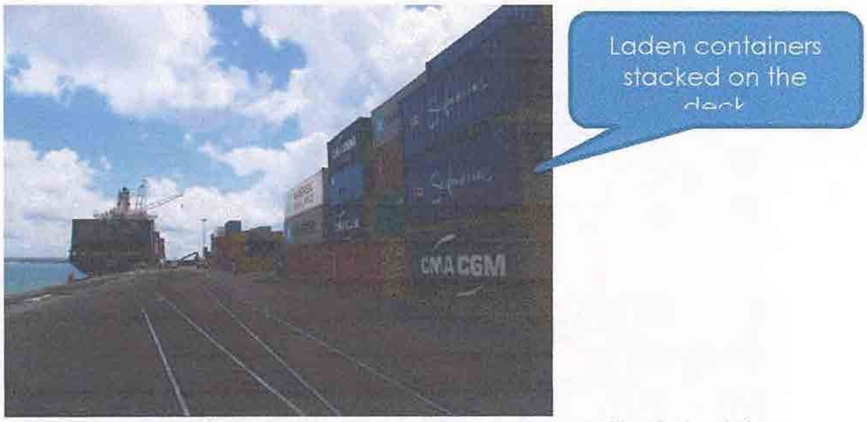
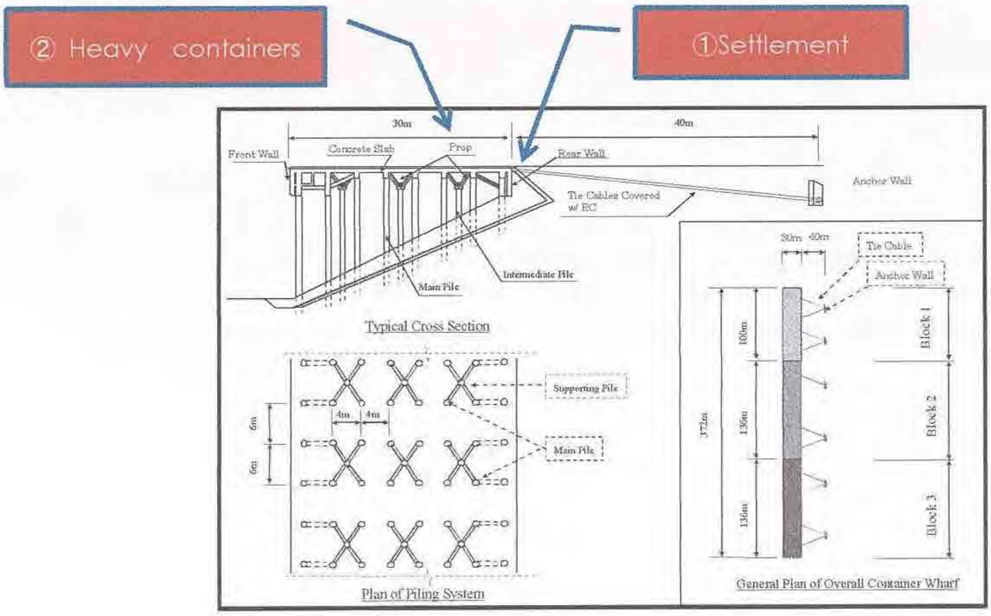


Photo-② Laden containers stacked on the deck of South Wharf (2013 April)



3. Recommendations of JICA TA team

① As recommended in F/S report (page 4-24), monitoring of settlement shall be implemented.

➔ It will be discussed in an additional session scheduled on June 24.

②As recommended in F/S report (page 4-23), clear all the laden containers from the deck and to minimize the active loads for handling containers by heavy equipment.

➔ See 1 ① ii)
➔ C/P has limited their container operation on the deck to 1 laden container at a time.

Photos taken on June 17

Number of containers on the deck has been limited to 2 rows x 3 layers at Block 3

Number of laden containers on the deck has been limited to 1 row x 3 layers at Block 2
Laden containers just behind the deck are recommended to be relocated to reduce unnecessary load onto the pavement.

(Attachment B)

Attendance List for the Training Sessions provided by the JICA expert team (June 2013)

Theme	Kick-off meeting with C/Ps	Session No	01
Date & Time	9:00-10:30, June 14, 2013		
Participants	All JICA team with C/Ps		
Venue	PN Conference Room		

No	Name	Title / Section	Org.	Signature
1	Ana Mabasso Dimande	Project Coordinator	MTC	
2	Agostinho [illegible] Langa Jr	Chief Operational Officer	PN	
3	Kyuei NAKASHIMA	JICA Expert	JICA	
4	Osamu KUNITA	JICA Expert	JICA	Osamu Kunita
5	Tetsuo EIJO	JICA Expert	JICA	
6	Masaomi KOMOTO	JICA Expert	JICA	
7	Nobuaki KURIBAYASHI	JICA Mozambique	JICA	
8	[illegible]	Adviser - Board CFM	CFM	
9	[illegible]	[illegible]	CFM	
10	[illegible]	[illegible]	[illegible]	
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The Project for the Improvement of the Nacala Port

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June 2013

8

Attendance List for the Training Sessions provided by the JICA expert team (June 2013)

Category/Area of Training	Facility & Equipment Maintenance	Session No.	01
Title	Discussion on structure integrity of South Wharf		
Date & Time	10:30-12:00, June 18, 2013		
Lecturer	Mr. Komoto, JICA Expert		
Venue	PN Conference Room		

No.	Name	Title / Section	Org.	Signature
1	Ana Matusse Cimande	Project Coordinator	VTC	
2	Anabela Mataruna	Civil Engineer	CFM	
3	Aquila Agy Ibrahimo	Mechanical Engineer		
4	Arsenio Zimba	Hydraulic Engineer		
5	Atanasio Neves	Mechanical Engineer		
6	Cristino de Oliveira	Civil Engineer		
7	Miguel Jamisse	Mechanical Engineer		
8	Agostinho F. Langa Jr	Operation Director/Executive Committee	PN	
9	Afonso Vasco da Cunha J	Chief of the Maintenance Division		
10	Nelma Inrula	Container Yard Manager		
11	Sérgio Simão	Nacala Port Manager	CFM	
12	[illegible]	CFM - Representative - [illegible]	CFM	
13	[illegible]	[illegible]	[illegible]	
14	[illegible]	[illegible]	CFM	
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The Project for the Improvement of the Nacala Port

June 2013

9

(Attachment C)

Day		Time	Session No.	Category	Lecturer	Title
14-Jun	Fri	9:00-10:30	1	General	All TA Team	Kick-off meeting with CP
		10:30-12:00	2	General	All TA Team	Discussion for CP's training on 17th
17-Jun	Mon	9:00-17:00			All TA Team	Reserved for CP's training
18-Jun	Tue	9:00-10:30	3	Port Administration & Management	Capt. Etoh	Discussion on the terminal operation system (Phaeros)
		10:30-12:00	4	Facility & Equipment Maintenance	Mr. Komoto	Discussion on structure integrity of South Wharf
		15:00-16:30	5	Port Planning	Dr. Kunita	Bulk terminal planning
19-Jun	Wed	9:00-10:30	6	Port Administration & Management	Mr. Nakashima	Discussion on the safety policy of Nacala Port
		10:30-12:00	7	Port Planning	Dr. Kunita	Discussion on the safety during construction works
		15:00-16:30		All		Site inspections & on-site suggestions
20-Jun	Thu	9:00-10:30	8	Facility & Equipment Maintenance	Mr. Komoto	Discussion on the progress of the facility maintenance action plan
		10:30-12:00	9	Port Administration & Management	Capt. Etoh	Lecture on container terminal operations
		15:00-16:30	10	Port Administration & Management	Mr. Nakashima	Lecture on the regulation of port operations
21-Jun	Fri	9:00-10:30	11	Port Administration & Management	Capt. Etoh	Discussion on the use of flippers
		10:30-12:00	12	Port Administration & Management	Mr. Nakashima	Lecture on the regulation of port operations
		15:00-16:30				Site inspections & on-site suggestions
24-Jun	Mon	9:00-12:00	13	General	All TA Team	Wrap-up meeting, review of the progress of 10 suggestions
		13:00-16:30				Spare (depending on the progress of discussions/lectures)
26-Jun	Wed	9:00-17:00				Spare (depending on the progress of discussions/lectures)

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5. 3º JCC (7º Envio, 2013-12)

Conclusion
of
The Third Joint Coordination Committee
for
The Project for Improvement of Nacala Port
in Republic of Mozambique

The third meeting of the Joint Coordination Committee (hereinafter referred to as "JCC") for the Project for Improvement of Nacala Port in Republic of Mozambique (hereinafter referred to as "the Project") was held on December 19, 2013 at the MTC office in Maputo. The attendants are listed in Attachment A.

At the meeting of JCC, the JICA expert team for the Project (hereinafter referred to as "the Project Team") presented the progress of the Project since April, 2013 (Attachment B) and steps to be taken to make Nacala Port more efficient identified during its 7th dispatch (Attachment C).

The Project Team commended significant progress achieved in such areas as the preparation of maintenance plan, implementation of on-site infrastructure monitoring, improvement in equipment availability ratio, and upgrading of the Phaeros system. The Project Team emphasized that further efforts would be needed to improve Nacala Port in such areas as: increase in container handling efficiency, effective use of the dry terminal, start of the periodical infrastructure maintenance, and determination of reinforcement of the structures of the South Wharf.

JCC appreciated the progress of the Project and concurred on the need of further efforts aimed to the improvement of Nacala Port. Toward this goal, the Mozambican side and the Project Team will jointly monitor the improvement of Nacala Port and pursue technology transfer. The next visit of the Project Team is expected in April 2014.

Maputo, December 19, 2013

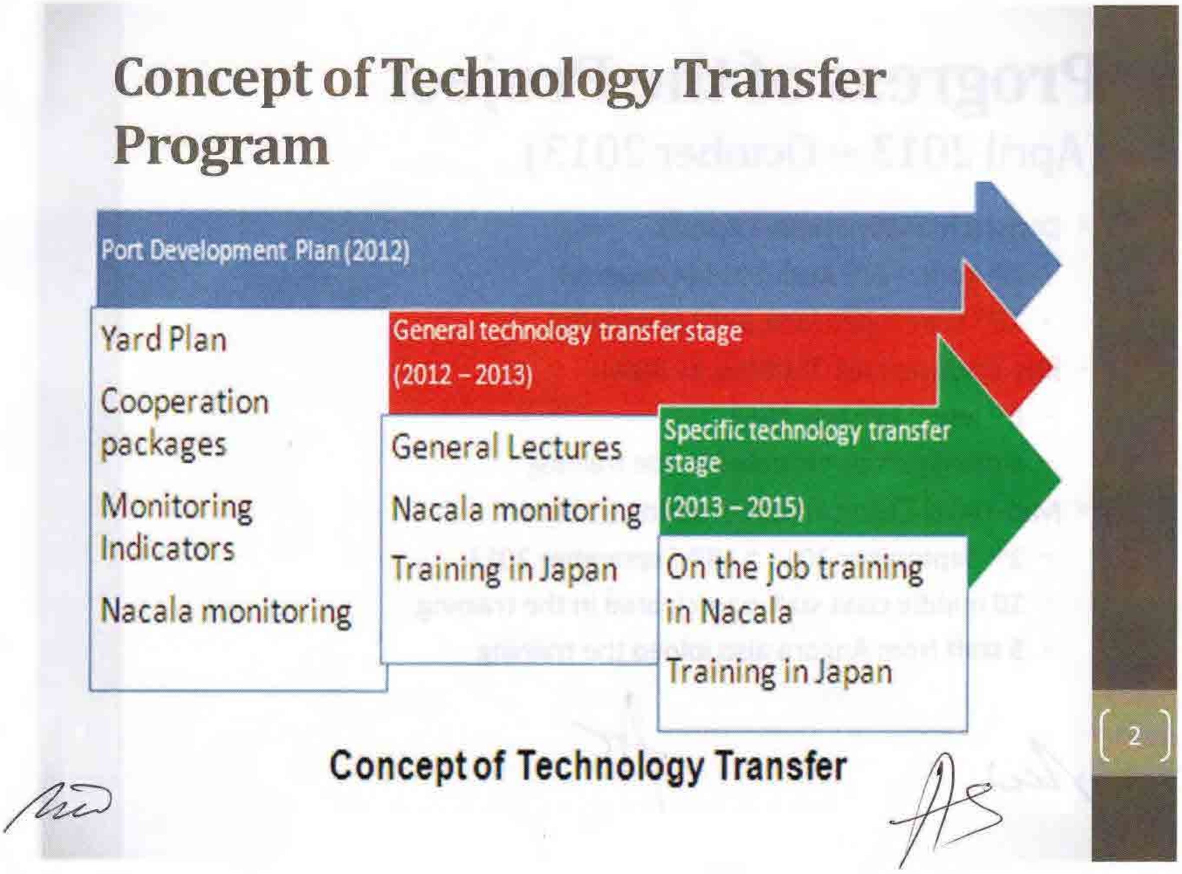
岡田光彦	
Mitsuhiko Okada	Dr. Ana Matusse Dimande
JICA Team Leader	Coordinator,
The Project for Improvement of	Nacala Port Development Project
Nacala Port in Republic of Mozambique	Ministry of Transport & Communications

(Attachment A)

Participants of the 3rd Joint Coordination Committee (Maputo, December 19, 2013)

Name	Organization	Position
(Mozambican side)		
Dr. Ana Matusse Dimande	MTC	Coordinator
Mr. Paulo Tarmamade	CFM	Advisor to the Board of Directors
Mr. Amado Mabasso	CDN	CEO
Mr. Pedro Barreto	CDN	CFO
Ms. Leonilde Loide Bazar	PN	Director of Administration & Human Resources
(Japanese side)		
Mr. Katsuyoshi Sudo	JICA Mozambique office	Resident Representative
Ms. Chiharu Morita	JICA Mozambique office	Assistant Resident Representative
Mr. Mitsuhiko Okada	JICA Expert	Team Leader / Port Planning (1)
Mr. Masaomi Komoto	JICA Expert	Facility & Equipment Maintenance / Training Coordination
Mr. Teruki Eto	JICA Expert	Port administration and management (2)
Mr. Susumu Kimura	JICA Expert	Port cargo handling (2)
Mr. Nobuaki Kuribayashi	JICA Expert	Liaison officer


Attachment B
Third Progress Report
The Project for Improvement of Nacala Port
November 2013
Japan International Cooperation Agency (JICA)
The Overseas Coastal Area Development Institute of Japan (OCDI)
1


Concept of Technology Transfer Program
Port Development Plan (2012)
Yard Plan
Cooperation packages
Monitoring Indicators
Nacala monitoring
General technology transfer stage (2012 – 2013)
General Lectures
Nacala monitoring
Training in Japan
Specific technology transfer stage (2013 – 2015)
On the job training in Nacala
Training in Japan
Concept of Technology Transfer
2

Attachment (C)

Steps to be taken to make Nacala Port more efficient

2013-12-19

	Steps	Timeline	
		January	before April 2014
Mozambican side	◦Start of infrastructure monitoring and maintenance based on the Geoibericos report and employment of a civil engineer (PN, CDN, CFM)	✓	
	◦Review of the JICA Team's comments on Phaeros upgrading and start of the Phaeros system (PN)		✓
	◦Review of the JICA Team's comments on the safety regulations (CDN)	✓	
	◦Monitoring of the container handling productivity based on 3 indicators (PN)	✓	
	◦Determination of the pavement design of the dry terminal (TN, PN)		✓
	◦Review of the rehabilitation measures for the South Wharf indicated in the Geoibericos report (CDN, CFM)		✓
	◦Procurement of spreaders with flippers (TN)		✓
JICA Team	◦Review of rehabilitation measures for the South Wharf indicated in the Geoibericos report	✓	
	◦Review of the infrastructure maintenance plan proposed in the Geoibericos report	✓	
	◦Preparation of lecture materials on "5S"		✓
	◦Preparation of lecture materials on environmental management		✓
	◦Start of the procurement process for survey equipment (preparation of an equipment list needed for quantitative monitoring)		✓

6. 8º Envio (2014-04)

Progress
of
The Project for Improvement of Nacala Port
in the Republic of Mozambique

The JICA expert team for the Project (hereinafter referred to as "the Project Team") visited Mozambique from April 16 to May 3, 2014. After a series of discussions, presentations, and site monitoring, the Project Team and Mozambican counterparts had a wrap-up meeting on April 28 (the attendance list of the meeting is as attached (Attachment A)). In the meeting, the Project Team summarized the outcome of the 8th dispatch (Attachment B). Both sides then examined and acknowledged the progress of the Project in reference to the Project Design Matrix (Attachment C) and agreed on the following main points:

1. With respect to port planning, the Project accomplished the target resulting in the start of ODA projects. In response to the changing needs of port and hinterland, a new port master plan needs to be formulated outside the scope of the Project.

2. With respect to port administration/management, significant progress has been made resulting in drafting of safety and operation regulations. These regulations need to be finalized and implemented as soon as possible. In order to clearly define the responsibility of the pertinent organizations, the revision of the concession agreement needs to be finalized.

3. With respect to cargo handling, significant progress has been made in such areas as upgrades of the Phaeros (container terminal operation system), strengthening of the dry terminal functions, and procurement of new spreaders. Their steady progress and implementation need to be monitored. Since the Phaeros does not include automatic yard planning functions, yard planners need to be trained either by overseas training or onsite OJT for a considerable amount of time. Monitoring of container handling productivity by three universally applied indicators (berth productivity, gross productivity per crane, and net productivity per crane) is also recommended.

4. With respect to maintenance, some progress has been made in such areas as the assignment of civil engineers of CFM and PN for infrastructure maintenance and decrease in the equipment downtime. On the other hand, periodical inspection/monitoring of infrastructure are not yet started. The Project Team will provide technical assistance for this area by means of onsite training during the next dispatch. Further study and policy decision on the rehabilitation of the South Wharf are needed in consideration of the Project Team's suggestions. Delivery of spare parts needs to be expedited to further reduce the equipment downtime.

The Project Team and Mozambican counterparts confirmed the latest monitoring indicators related to cargo handling and maintenance as follows:

1. Gross productivity: 8 Box/gang/hour (December 2013)
2. Working time ratio of equipment: 85 % (March 2014)

The next visit of the Project Team is expected in September 2014.

Nacala, April 28, 2014

April 2014

1

岡田 光彦

Mitsuhiko Okada
JICA Team Leader
The Project for Improvement of
Nacala Port in Republic of Mozambique

Agostinho F. Langa Junior
Operation Director
Portos do Norte, SA

Attendance List for the Training Sessions provided by the JICA Expert Team (April 2014)

Category/Area of Training	General	Session No.	11
Title	# Wrap-up Meeting		
Date & Time	09:30-11:30, April 28, 2014		
Lecturer	Mr. Okada(JICA)		
Venue	PN Conference Room		

No.	Name	Title / Section	Org.	Signature
1	Ana Matusse Dimande	Project Coordinator	MTC	
2	Anabela Matsinha	Civil Engineer	CFM	
3	Alfredo Lipeque	Branch Manager	CFM (North)	
4	Alfredo Sigola	Maintenance Manager		
5	Abubacar Mecuta	Inspection Manager		
6	Alfredo Mafuca	Operations Manager		
7	Braulio Catutula	I.T. Manager		
8	Agostinho F. Langa Junior	Chief Operating Officer	PN	
9	Loni Shott	Chief of the Commercial Division		28.4.14
10	Luis Machado	Chief of the Port Operation Division		
11	Lucas José Cipriano	Project Management Unit		
12	Vasco da Cunha	Maintenance Division		
13	Luis Alvito Diogo	Maintenance Division		
14	Abudo Sele	Project Management Unit		
15	Mitsuhiko Okada	JICA Expert	JICA	
16	Kiyoshi Nakashima			
17	Susumu Kimura			S. Kimura
18	Masaomi Komoto			
19	Nobuaki Kuribayashi	JICA Mozambique		
20	Ibraimo Musa	CDN – Port Nacala	CDN	
21	ANTONIO F. CANDIDO	CDN	CDN	
22				
23				
24				
25				

April 2014

3

Outcome of the 8th dispatch
– Steps to be taken to make Nacala Port more efficient

JICA Technical Assistance Team
April 2014

1

Session 1 (Morning, Apr. 21) Technical assistance plan of 8th dispatch

- Both sides agreed on the time table of the 8th dispatch presented by JICA Team
- JICA Team presented a tentative plan of the this year's counterpart training in Japan and asked for the designation of participants

2

Progress of the Project based on the PDM (Project Design Matrix)

April 28. 2014

Description of PDM		Progress and further actions		
Narrative summary of outputs	Objectively verifiable indicators	Outputs up to April 2014	Evaluation of the progress as of April 2014	Recommendable actions (Items in parenthesis are out of the scope of the current TA project)
Port development strategy is developed	Port development strategy is drafted	# Revised port development plan was prepared and agreed on among pertinent parties (September 2012)	Targets accomplished	# (Master plan beyond the short-term development) # (Rehabilitation plan of the South Wharf)
The implementation structure of the short-term development is revised and established	Short-term development plan is revised	# Grant aid project started (March 2014) # Loan-1 project is starting D/D		
The capacity of the port administration and management is developed	# Regulation on port administration and management is drafted # Port is administered and managed according to the regulation	# Operational regulation and safety regulation are drafted # Safety regulation was announced to stakeholders in a seminar (April 2014)	In progress	Operational regulation and safety regulation need to be finalized and implemented (soon)

Description of PDM		Progress and further actions		
Cargo handling skill is improved	# Cargo handling capacity per hour increases # Accident rate decreases # Number of seminar/training and participants who pass the training exam increases	# Cargo handling efficiency is gradually improving # Accidents are recorded and preventive measures are analyzed # 98 counterparts participated in 7 sessions of lecture/discussions on cargo handling # Phaeros (terminal operation system) is in a trial (April 2014) # Upgrades of the dry terminal was started (January 2014) # Purchase order for new spreaders was placed	In progress	# Container handling productivity needs to be monitored by 3 universally applied indicators (constantly) # (Yard planners need to be trained either by training overseas or onsite OJT (for a considerable amount of time))

Description of PDM		Progress and further actions		
Maintenance skills of the port facility and equipment is developed	# Number of maintenance technicians increases # Maintenance cost for existing facility and equipment decreases # Number of seminar/training and participants who pass the training exam increases	# Two civil engineers of CFM is assigned for infrastructure maintenance # A civil engineer of PN is assigned for infrastructure maintenance # Downtime ratio of equipment decreased (from 20 % to 15 %) # 86 counterparts participated in 11 sessions of lecture/discussions on infrastructure maintenance # Counterparts understood the survey and analysis needed to determine the measures to rehabilitate the South Wharf # 74 counterparts participated in 8 sessions of lecture/discussions on equipment maintenance # Periodical maintenance plan for equipment is developed and implemented	In progress	# Start of the periodical inspection/monitoring of infrastructure (immediately) # Preparation for the on-site infrastructure monitoring (before September 2014) # On-site infrastructure monitoring training using survey equipment (September 2014) # Further study and policy decision on the rehabilitation of the South Wharf considering the suggestions of JICA Team

7. 9º Envio (2014-09)

Progress
of
The Project for Improvement of Nacala Port
in the Republic of Mozambique

The JICA expert team for the Project (hereinafter referred to as "the Project Team") visited Mozambique from August 31 to September 19, 2014. After a series of discussions, presentations, and site monitoring, the Project Team and Mozambican counterparts had a wrap-up meeting on September 15 (the attendance list of the meeting is as attached (Attachment A)). In the meeting, the Project Team summarized the outcome of the 9th dispatch (Attachment B). Both sides then examined and acknowledged the progress of the Project in reference to the Project Design Matrix (Attachment C) and signed a record of discussions (Attachment D).

The Project Team and Mozambican side had a wrap-up meeting in Maputo on September 18 (the attendance list of the meeting is as attached (Attachment E)). In this meeting, both sides had additional discussions and revised the common understanding as follows:

1. With respect to port planning, the Project accomplished the target resulting in the start of ODA projects. In response to the changing needs of port and hinterland, a Nacala Port land use plan covering the Nacala Bay needs to be formulated outside the scope of the Project. A new port master plan (a draft TOR is attached as Attachment F) would be a part of the land use plan. The Mozambican side will submit its request for the land use plan study to JICA.

2. With respect to port administration/management, significant progress has been made resulting in the implementation of the safety regulation and drafting of the operational regulation. The latter needs to be finalized and implemented as soon as possible. In order to clearly define the responsibility of the pertinent organizations, the revision of the concession agreement needs to be finalized.

3. With respect to cargo handling, significant progress has been made in such areas as upgrades of the Phaeros (container terminal operation system), strengthening of the dry terminal functions, and procurement of new spreaders. Their steady progress and implementation need to be monitored. Since the Phaeros does not include automatic yard planning functions, yard planners need to be trained by overseas training and onsite OJT for a considerable amount of time. Monitoring of container handling productivity by three universally applied indicators (berth productivity, gross productivity per crane, and net productivity per crane) is also recommended.

4. With respect to maintenance, significant progress has been made in such areas as the assignment of civil engineers of CFM and PN for infrastructure maintenance, start of periodical inspection/monitoring of infrastructure and decrease in the equipment downtime. Mozambican civil engineers need to be trained by overseas training and onsite OJT. The Mozambican side needs to clarify the responsible party and the preparation for the maintenance of equipment introduced in ODA projects. On the other hand, a policy decision on the rehabilitation of the South Wharf is needed in consideration of the Project Team's suggestions. A seminar on the South Wharf (which could be developed as Phase 3) and the North Wharf can be held in Japan in November 2014 (The Mozambican side will soon propose the date).

5. With respect to safety, additional attention should be paid during the rehabilitation projects. Lessons learned from accidents need to be circulated to all employees.
6. With respect to the arrangement of the last dispatch, the Mozambican side requested a two-week delay from the proposed schedule due to the difficulty in allocating the new fiscal year budget. In this case, the last dispatch will start around January 23.
7. With respect to the need of the future technical assistance, a preliminary TOR (Attachment G) was prepared based on the requests from the Mozambican side.

Maputo, September 18, 2014

岡田光彦

Mitsuhiko Okada
JICA Team Leader
The Project for Improvement of
Nacala Port in Republic of Mozambique

Ana MM Dimande
Project Coordinator,
Nacala Port Development Project,
Ministry of Transport and Communications

Attachment A

Attendance List for the Training Sessions provided by the JICA Expert Team (September 2014)

Category/Area of Training	General	Session No.	13
Title	# Progress of the Project Based on PDM and Review of PN Statistics (CFM, CDN, PN, TN, JICA) # Wrap-up Meeting		
Date & Time	09:30 - 11:30, September 15, 2014		
Lecturer	-		
Venue	PN Meeting Room		

No.	Name	Title / Section	Org.	Signature
1	Martinho F. Mafumo	Maritime Administrator	MTC	[signature]
2	Edgar Jorge	Superviser Chief Engineer	CFM	
3	Anabela Matsinha	Supervisor Civil Engineer	CFM	[signature]
4	Alfredo Artur Mafuca	Oil Terminal Manager	CFM	
5	Alfredo Rafael Sigola	CFM Nacala Infrastructure Chief	CFM	
6	Braulio Franco Catutula	Port Operation	CFM	
7	Arzilio Mata	Supervisor Civil Engineer	CFM	[signature]
8	Milione Changala	Supervisor Electrical Engineer	CFM	[signature]
9	Abubacar Mecuta	Port security	CFM	
10	Tomas Ngoca	Supervisor Mechanical Engineer	CFM	
11	Goncalves Chizuzu	Port Operation	CFM	Chizuzu
12	Ibraimo Mussa	Port Operations Analyst	CDN	[signature]
13	Fabio Frasao	Port Director	CDN	
14	Antonio Frederico	Chief of Infrastructure Mainantance department	CDN	
15	Zacaria Andarusse	Safety Assistant Oficcer	CDN	
16	Francisco David	Safety Consultant Officer	CDN	
17	Loni Shott	Chief of the Commercial Division	PN	
18	Luis Machado	Chief of the Port Operations Division	PN	[signature]
19	Lucas Cipriano	Project Management Unit (PMU)	PN	[signature]
20	Denilson Hamide	Branch Manager	TN	
21	Sunil Ratnasiri	TN Officer	TN	[signature]
22	Hélvio Salomão	TN Officer	TN	
23	Mitsuhiko OKADA	JICA Expert/ Team Leader	JICA	[signature]
24	Teruki ETO	JICA Expert	JICA	Eto
25	Susumu KIMURA	JICA Expert	JICA	S. Kimura
26	Masaomi KOMOTO	JICA Expert	JICA	[signature]
27	Nobuaki KURIBAYASHI	JICA Mozambique	JICA	[signature]
28	Abudo Sale	Project Management Unit	PN	[signature]
29	Flecinda	CFM	CFM	[signature]
30	Chauo	CFM	CFM	[signature]

The Project for the Improvement of the Nacala Port

Attachment B

OUTCOME OF THE 9TH DISPATCH
- STEPS TO BE TAKEN TO MAKE NACALA PORT MORE EFFICIENT

JICA Technical Assistance Team
September 2014

Session 1 (Morning, Sep. 4)
Technical assistance plan of the 9th dispatch

- Both sides agreed on the program of the 9th dispatch presented by JICA Team
- Mozambican counterparts were requested to participate and present the progress since the 8th dispatch in relevant sessions

Attachment C

Progress of the Project based on the PDM (Project Design Matrix)

September 15 2014

Description of PDM		Progress and further actions		
Narrative summary of outputs	Objectively verifiable indicators	Outputs up to September 2014	Evaluation of the progress as of September 2014	Recommendable actions (Items in parenthesis are out of the scope of the current TA project)
Port development strategy is developed	Port development strategy is drafted	# Revised port development plan was prepared and agreed on among pertinent parties (September 2012)	Targets accomplished	# (Master plan beyond the short-term development) # (Rehabilitation plan of the South Wharf)
The implementation structure of the short-term development is revised and established	Short-term development plan is revised	# Grant aid project started (March 2014) # Loan-1 project started D/D		
The capacity of the port administration and management is developed	# Regulation on port administration and management is drafted # Port is administered and managed according to the regulation	# Operational regulation and safety regulation are drafted # Safety regulation was announced to stakeholders in a seminar (April 2014) and approved by the CDN board (June 2014)	In progress	Operational regulation needs to be finalized and implemented (soon)

Description of PDM		Progress and further actions		
Cargo handling skill is improved	# Cargo handling capacity per hour increases # Accident rate decreases # Number of seminar/training and participants who pass the training exam increases	# Cargo handling efficiency is gradually improving # Accidents are recorded and preventive measures are analyzed # 114 counterparts participated in 9 sessions of lecture/discussions on cargo handling # Phaeros (terminal operation system) is in a trial participated by 2 shipping agents (September 2014) # Leveling of the dry terminal was completed (September 2014) # New spreaders arrived (September 2014)	In progress	# Use of Phaeros by all shipping agents (soon) # Review of the Phaeros system to decide whether it is useful for the entire container terminal operation # Use of new spreaders (soon) # Container handling productivity needs to be monitored by 3 universally applied indicators (constantly) # (Yard plannersand vessel planners need to be nominated and then trained either by training overseas or onsite OJT (for a considerable amount of time)) # Lessons learned from accidents should be circulated among all employees (immediately)

Description of PDM		Progress and further actions		
Maintenance skills of the port facility and equipment is developed	# Number of maintenance technicians increases # Maintenance cost for existing facility and equipment decreases # Number of seminar/training and participants who pass the training exam increases	# Three civil engineers (two from CFM and one from PN) is assigned for infrastructure maintenance # Counterparts received infrastructure monitoring training using survey equipment (September 2014) # Downtime ratio of equipment decreased (from 39 % in 2012 to 21 % in 2014) # 102 counterparts participated in 14 sessions of lecture/discussions on infrastructure maintenance # Counterparts understood the survey and analysis needed to determine the measures to rehabilitate the South Wharf # 94 counterparts participated in 10 sessions of lecture/discussions on equipment maintenance # Periodical maintenance plan for equipment is developed and implemented	In progress	# Periodical inspection/monitoring of infrastructure (constantly) # Further study and policy decision on the rehabilitation of the South Wharf considering the suggestions of JICA Team # Compilation of an spare parts inventory list (immediately) # Clarification of the responsible party and start of preparation for the maintenance of equipment introduced in ODA projects (soon) # Sharing the information on the conditions of each equipment (immediately)

Attachment E

REPÚBLICA DE MOÇAMBIQUE

MINISTÉRIO DOS TRANSPORTES E COMUNICAÇÕES

PROJECTO DE DESENVOLVIMENTO DO PORTO DE NACALA

TECHNICAL ASSISTANCE MISSION - PHASE II PDPN **18-09-2014**

Ord. Nr.	Name	Position	Institution	Contacts		Signature
				Email	Cell	
1	Ana dimande	Project Manager	INATTER/PDPN	anadimande@yahoo.com.br	825308568	
	Martinho Mafumo	ADMAR NACALA	INAMAR - Nampula	timpswalo@yahoo.com.br	849794983	
2	Anibal Manave	ASSESSOR	CFM	anibal.manave@cfm.co.mz	824346430	
3	Amado Mabasso		CDN	amado.mabasso@cdncear.com	823013863	
4	Agostinho Langa		Portos do Norte	paulobauque@ane.gov.mz	823229519	
5	Antonio Bulande	Jurista	INATTER	antoniobulande@yahoo.com.br	824691060	
6	Mitsuhiko Okada		JICA	m-okada@ocdi.or.jp	829076128	
7	Susumu Kimura		JICA	kimura@ocdi.or.jp	82370773	
8	Masaomi Komoto		JICA	komoto@ocdi.or.jp	820007877	
9	TERUKI ETO		JICA	eto@ocdi.or.jp	826844954	
10	FABIO TERRA DUARTE	EXECUTIVE COMMITTEE ADVISOR	CDN	FABIO DUARTE@CDNCEAR.COM	823090967	
11	Rosa Machava	Assistant	MTC/PDPN	rosamachava@gmail.com	829168190	

Attachment F

(DRAFT)

Terms of Reference
for Master Plan Study of Nacala Port
in
the Republic of Mozambique

May 2014

1. **Project Title**
   Master Plan Study of Nacala Port in the Republic of Mozambique

2. **Executing Agency**
   Ministry of Transport and Communications

3. **Proposed Source of Assistance**
   Japanese Government through the Japan International Cooperation Agency (JICA)

4. **Background**
   JICA and the Ministry of Transport and Communications of Mozambique are implementing a grant aid project for the rehabilitation of Nacala Port, and preparing for a Yen Loan project for further development of the port. These projects will greatly contribute to the economic development of the country as Nacala Port is the cornerstone of northern Mozambique and will serve as a regional hub of maritime and land transportation.

   Recently a huge gas field was found off the northern coast of Mozambique. This will have great impacts on port activities and industrial activities in northern Mozambique including Nacala. At the same time, ProSAVANA-JBM, a large-scale tripartite agricultural development project, is underway along the Nacala Corridor and poised to produce export products. Inland road and railway networks are being rapidly improved by both public and private sector. A large-scale coal export facility is about to start operation in Nacala-a-Velha. In 2013, CDN, the concessionaire of Nacala Port, subcontracted the port operation to a newly created entity, PN. These developments, though having significant impacts on port development and port administration, were not envisaged when the existing master plan was formulated with the assistance of JICA. Therefore, there is a strong justification for the formulation of a new comprehensive port master plan responding to the changing needs in and around Nacala Port.

5. **Study Area**
   The Study shall cover Nacala Port and its hinterland including the Nacala Corridor.

6. **Objectives of the Study**
   The objectives of the Study are:
   1) To identify the potential of port development around Nacala in providing an efficient maritime transport system as well as sustaining industrial activities behind the port, taking into account future economic, industrial and trade policies of Mozambique.
   2) To prepare a strategic concept for port development.
   3) To prepare a comprehensive master plan for Nacala Port in the port's vicinity (Target year 2030).
   4) To prepare an urgent development plan for prioritized projects including facility requirements and

implementation schemes (Target year 2020).

5) To give technical advice on the development and maintenance of the port.
6) To examine measures to minimize negative environmental impacts.
7) To make recommendations on the project implementation scheme including PPP
8) To make recommendations on efficient port administration including proper distribution of functions among pertinent agencies
9) To carry out technology transfer through the conduct of the Study.

7. Scope of the Study

To achieve the objectives mentioned above, the Study shall cover the following items:

7-1 Preparation of a strategic concept of port development

1) To set up a future socio-economic framework in the port's hinterland.
2) To assess the future demand for maritime transport and industrial activities in northern Mozambique paying due consideration to the evolving maritime network in East Africa. Implications of grain export originating inland, impacts of gas exploitation in northern Mozambique, and the growing potential of Nacala Port as a fuel import/distribution hub for the hinterland shall be duly considered as well.
3) To examine appropriate port and industrial functions to be provided by Nacala Port.
4) To prepare a strategic concept of port development in Nacala.

7-2 Preparation of a port development master plan (target year 2030)

1) To forecast the future maritime transportation demand.
2) To acquire data on natural conditions and environmental conditions around the development area.
3) To prepare a development master plan including physical port development/layout plans and industrial land-use plans.
4) To recommend technical measures to efficiently develop the port.
5) To recommend appropriate managerial/institutional settings for port administration and project implementation.
6) To make a rough cost estimate of the plans.

7-3 Preparation of an urgent development plan (target year 2020)

1) To prioritize the development projects proposed in the master plan.
2) To prepare an urgent development plan including development requirements of the selected projects, physical facility planning, and cost estimate.
3) To examine funding schemes for the priority projects including PPP.
4) To evaluate the urgent development plan from the economic, financial, institutional and environmental viewpoints.

7-4 Utilization of Japanese Cooperation Schemes

Applicability of Japanese ODA scheme options would be examined for the effective implementation of the urgent development plan.

7-5 Technology Transfer

During the study period, technology transfer to the counterparts shall be pursued. A series of seminars on various planning issues shall be held with the attendance of counterparts. Some of the counterpart personnel shall be invited to Japan to participate in relevant port training courses.

8. Tentative Schedule

The Study will be completed in approximately twelve (12) months after commencement and be carried out according to the study schedule attached below. The following reports in English /Portuguese shall be submitted to the relevant authorities.

#1 Inception Report
  Detailed contents and schedule of the study work
#2 Progress Report
  Strategic concept for port and industrial development
#3 Interim Report
  Development master plan
#4 Draft Final Report
  Provisional results of the Study
#5 Final Report
  Final results of the Study prepared in consideration of the feedback from the Mozambique side to the Draft Final Report

Study Schedule (tentative)

	1	2	3	4	5	6	7	8	9	10	11	12
Work in Mozambique	↔	↔		↔	↔		↔	↔		↔		
Work in Japan			↔			↔			↔		↔	
Reports	#1			#2			#3			#4		#5

4

Attachment G

Phase 2 of the technical assistance for the improvement of Nacala Port (draft)

1. Duration
   Start from April 2015 and last until a few months after the completion of the rehabilitation projects

2. Counterpart agency
   MTC, INATTER, CFM, CDN, PN

3. Scope
   Port administration, cargo handling, terminal operation, infrastructure maintenance, equipment maintenance

4. Objectives
   1) To strengthen the counterpart agencies aiming to develop sustainable port administrative capacity in Mozambique
   2) To help optimize the use of the facility and equipment provided by Japanese ODA aiming to increase the cargo handling productivity
   3) To help maintain the facility and equipment in good condition aiming to prolong their serviceable life
   4) To reform legal frameworks regarding Mozambican ports.

5. Backgrounds
   Since 2012, JICA has been extending technical assistance to the Mozambican side for the improvement of Nacala Port and achieved considerable capacity development for counterparts. Continuing the technical assistance will strengthen the institutional capacity of the Mozambican side and thus maximize the benefit of the port rehabilitation projects currently carried out by JICA and MTC. INATTER, a newly created governmental entity, will serve as a regulator for the port sector as well and is in need of capacity building.

6. Programs of technical assistance
   The technical assistance team and Mozambican counterparts will jointly carry out the following programs through discussions, lectures in Mozambique and Japan, and site monitoring. With respect to port administration, Nacala Port will be taken

up as a showcase of conceded ports in Mozambique.

1) Port administration (Counterparts: MTC (INATTER), CFM, CDN)
   A) Review of the legal frameworks regarding Mozambican ports in comparison with those in other countries
   B) Prepare guidelines to build a proper legal framework for Mozambican ports
   C) Suggestions on the desirable legal framework for Mozambican ports responding to the draft legislation prepared by the Mozambican side
2) Terminal operation (Counterparts: CDN, PN)
   A) OJT for Vessel operation planning
   B) OJT for Yard operation planning
   C) Documentation works
   D) Terminal operation management
3) Infrastructure maintenance (Counterparts: MTC, CFM, CDN, PN)
   A) Suggestions on the rehabilitation of the South Wharf
   B) Suggestions on time-series analyses of the periodically monitored data
   C) On-site study of civil works
4) Equipment maintenance (Counterparts: CFM, CDN, PN)
   A) OJT for RTG maintenance
   B) OJT for RTG operation

8. 4º JCC (10º Envio, 2015-01)

**Conclusion
of
The Fourth Joint Coordination Committee
for
The Project for Improvement of Nacala Port
in Republic of Mozambique**

The fourth meeting of the Joint Coordination Committee (hereinafter referred to as "JCC") for the Project for Improvement of Nacala Port in Republic of Mozambique (hereinafter referred to as "the Project") was held on February 10, 2015 at the MTC office in Maputo. The attendants are listed in Attachment 1.

At the meeting of JCC, the JICA expert team for the Project (hereinafter referred to as "the Project Team") presented the project completion report outlining the project achievements (Attachment 2). In the presentation, the Project Team appreciated proactive actions taken by the Mozambican side in such areas as the clarification of technology transfer needs, preparation of infrastructure inspection report and maintenance plan, compilation of safety regulations, implementation of on-site infrastructure monitoring, improvement in equipment availability ratio, and upgrading of the Phaeros system. The Project Team applied PDM (project design matrix) and monitoring indicators to show that the Project had achieved the expected outcomes. PDM and monitoring indicators were completed and confirmed in the wrap-up meeting in Nacala (Attachment 3). The Project Team also identified areas in need of further improvement such as port administration, terminal operation, infrastructure maintenance, and equipment maintenance.

JCC agreed that the Project was successfully completed and commended the active participation of all parties concerned. JCC also concurred on the importance of further improvement of Nacala Port. The Mozambican side requested technical support from JICA in pursuing efforts to further improve Nacala Port. JICA responded that it would support those efforts through dispatch of short term experts and overseas training, and the Mozambican side agreed to the basic concept of the idea proposed by JICA.

Maputo, February 10, 2015

Masahiro Yoshimi
Executive Technical Advisor to
Director General
Infrastructure and Peacebuilding
Department, JICA

Dr. Ana Matusse Dimande
Coordinator,
Nacala Port Development Project
Ministry of Transport & Communications

Mitsuhiko Okada
JICA Team Leader
The Project for Improvement of
Nacala Port in Republic of Mozambique

(Attachment 1)

REPÚBLICA DE MOÇAMBIQUE
MINISTÉRIO DOS TRANSPORTES E COMUNICAÇÕES
PROJECTO DE DESENVOLVIMENTO DO PORTO DE NACALA

TECHNICAL ASSISTANCE FOR NACALA PORT REHABILITATION

4th JCC

10-02-2015

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11					

REPÚBLICA DE MOÇAMBIQUE

MINISTÉRIO DOS TRANSPORTES E COMUNICAÇÕES

PROJECTO DE DESENVOLVIMENTO DO PORTO DE NACALA

TECHNICAL ASSISTANCE FOR NACALA PORT REHABILITATION

4th JCC

10-02-2015

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19					
20					
21					
22					
23					

(Attachment 2)

PROJECT COMPLETION REPORT

THE PROJECT FOR IMPROVEMENT OF NACALA PORT

FEBRUARY 2015

Japan International Cooperation Agency (JICA)

The Overseas Coastal Area Development Institute of Japan (OCDI)

Outline of the Project

Based on the Record of Discussions signed on December 22, 2011 between the Mozambican and Japanese sides

The first technical assistant mission (Project Team) arrived in Mozambique in April 2012

JICA dispatched10 missions to Mozambique and received 35 counterparts in Japan during the course of the Project

The Project Team and Mozambican counterparts jointly held 66 taskforce meetings dealing with specific needs in Nacala Port

(Attachment 3)

Records of activities of the JICA Project Team in Nacala

The JICA expert team for the Project for Improvement of Nacala Port (hereinafter referred to as "the Project Team") visited Nacala from January 29 to February 7, 2015. During the visit, the Project Team and Mozambican counterparts jointly carried out various activities including discussions, presentations, and site monitoring. At the wrap-up meeting on February 6 (Attendant list is as attached (Attachment A)), both sides confirmed that the Project had achieved the expected outcomes as indicated by the Project Design Matrix (Attachment B) and monitoring indicators (Attachment C). Mozambican counterparts appreciated the achievements of the Project and expressed expectations of continuous technical assistance from Japan. The Project Team suggested that following steps would be meaningful for the efficient operation of Nacala Port:

1. To enhance storm readiness, Nacala Port should establish a special committee responsible for measures to be taken against strong winds. Nacala Port needs to keep track of wind conditions by installing anemometers and following weather forecast (CDN).
2. To provide off-dock container storage capacity, the dry terminal should be paved when the rainy season ends in April (PN/TN).
3. To prevent excessive congestion of the container yard, Nacala Port should keep track of container inventory and keep it under sustainable condition. It is advisable to move out long dwelling containers to off-dock container yards (PN).
4. To keep the container yard behind the South Wharf in operable condition, subsided areas should be repaired when the rainy season ends in April. Periodical inspection would be useful to know the progress of deterioration (CFM/CDN/TN).

On February 5, JICA and MTC jointly organized a seminar to make pertinent agencies informed of the Project achievements and to exchange views on the future functions of Nacala Port among people concerned. This seminar turned out successful thanks to the active participation of port-related organizations (Seminar program and attendant list are as attached (Attachment D)).

Nacala, February 6, 2015

岡田光彦

Mitsuhiko Okada
JICA Team Leader
The Project for Improvement of
Nacala Port in Republic of Mozambique

Martinho F. Mafumo
Maritime Administrator,
Maritime Administration of Nacala

February 2015

1

(Attachment A)

Attendance List for the Technical Transfer Sessions provided by the JICA Expert Team (Jan.-Feb. 2015)

Category/Area of Training	General	Session No.	6
Title	Wrap-up Meeting		
Date & Time	14:00-16:00, February 06, 2015		
Lecturer	JICA Expert Team		
Venue	PN Conference Room		

No.	Name	Title / Section	Org.	Signature
1	Martinho F. Mafumo	Maritime Administrator	MTC	[signature]
2	Arzílio Josué Mata	Supervisor/ Civil Engineer	CFM (Office of Nacala Port Rehabilitation Project)	Arzilio Mata
3	Anabela Emilia Matsinha	Supervisor/ Civil Engineer		[signature]
4	Tomás Fortunato Ngca	Supervisor/ Mechanical Engineer		Tomás Ngca
5	Milione Changala	Supervisor/ Electrical Engineer		[signature]
6	José Osias Cherinda	Supervisor/ H.S.T		[signature]
7	Carmona Macobola	Civil Engineer	CFM (DEPE)	
8	Alfredo Rafael Sigola	Chef of Infrastructure Dept.	CFM North (Nacala)	
9	Drasnildo Luis Monteiro	Chef of Infrastructure Dept.		
10	Alfredo Artur Mafuca	Oil Terminal Manager		
11	Braulio Franco Catutula	Port Operation		
12	Nino Jorge Lobo	Port Operation		
13	Abubacar Mecuta	Port Security		[signature]
14	Fabio Frasao	Port Director	CDN	[signature]
15	Francisco David	Safety Consultant		
16	Ibraimo Mussa	Operation Analyst		[signature]
17	Agostinho Langa	PN Director/COO	PN	[signature]
18	Loni Shott	Chief of Comercial Division		[signature]
19	Luis Machado	Chief of Port Operations Division		[signature]
20	Abudo Selle	Project Management Unit		[signature]
21	Vasco Cunha	Chief of Maintenance Division		[signature]
22	António Gabriel	Chief of Security Division		
23	Neimo Induna	CCOP		[signature]
24	Denilson Hamide	Branch Manager	TN	[signature]
25	Helvio Salomao	Operation Manager		[signature]
26	Carmen Amaral	Safety Officer		
27	Abdurremane cadre	General Cargo Supervisor		
28	Mitsuhiko OKADA	JICA Expert/ Team Leader	JICA	岡田光彦
29	Kiyoshi NAKASHIMA	JICA Expert		中島 潔
30	Teruki ETO	JICA Expert		Eto
31	Susumu KIMURA	JICA Expert		S. Kimura
32	Nobuaki KURIBAYASHI	JICA Mozambique		[signature]
33	Camilo Madeira	EHS PN	PN	[signature]
34	Anibal Mamwe	Adviser to the Board	CFM	[signature]

The Project for the Improvement of the Nacala Port

(Attachment B)

Project Design Matrix

Description of PDM		Achievements and future actions		
Narrative summary of outputs	Objectively verifiable indicators	Outputs up to January 2015	Evaluation of the progress as of January 2015	Forthcoming actions and recommendable actions (Items in parenthesis are out of the scope of the current TA project)
Port development strategy is developed	Port development strategy is drafted	# Revised port development plan was prepared and agreed on among pertinent parties (September 2012)	Targets accomplished	# (Master plan beyond the short-term development) # (Rehabilitation plan of the South Wharf)
The implementation structure of the short-term development is revised and established	Short-term development plan is revised	# Grant aid project started (March 2014) # Loan-1 project started D/D		
The capacity of the port administration and management is developed	# Regulation on port administration and management is drafted # Port is administered and managed according to the regulation	# Operational regulation and safety regulation are drafted # Safety regulation was announced to stakeholders in a seminar (April and November 2014), approved by the CDN board (June 2014) and then implemented (December 2014)	Targets accomplished	Operational regulation will be finalized and implemented (targeted for May 2015)
Cargo handling skill is improved	# Cargo handling capacity per hour increases # Accident rate decreases # Number of seminar/training and participants who pass the training exam increases	# Cargo handling efficiency is gradually improving through the introduction of Phaeros and segregation of containers which has resulted in a decrease in vehicle turn-round time # Accidents are recorded and preventive measures are analyzed # 148 counterparts participated in 13 sessions of lecture/discussions on cargo handling # Phaeros (terminal operation system) is operational and all agents are participating in the system # Leveling of the dry terminal was completed (September 2014) but severe rain falls caused damages requiring the terminal to be paved # New spreaders arrived (September 2014) and are now in use	Targets accomplished	# Wireless data transmission will be installed before mid-March # Container handling productivity needs to be monitored by 3 universally applied indicators # 4 yard planners will be hired # Lessons learned from accidents should be circulated among all employees
Maintenance skills of the port facility and equipment is developed	# Number of maintenance technicians increases # Maintenance cost for existing facility and equipment decreases # Number of seminar/training and participants who pass the training exam	# Three civil engineers (two from CFM and one from PN) are assigned for infrastructure maintenance # Counterparts received infrastructure monitoring training using survey equipment (September 2014) # Downtime ratio of equipment decreased (from 39 % in 2012 to 21 % in 2014) # In daily operation meetings.	Targets accomplished	# Further study and policy decision on the rehabilitation of the South Wharf considering the suggestions of JICA Team # Compilation of a spare parts inventory list

February 2015

3

Description of PDM		Achievements and future actions		
	increases	equipment conditions are reported and shared among all people concerned # 110 counterparts participated in 15 sessions of lecture/discussions on infrastructure maintenance # Counterparts understood the survey and analysis needed to determine the measures to rehabilitate the South Wharf # A Mozambican delegation had a technical meeting on the South Wharf with Japanese counterparts in Japan (November 2014) # 84 counterparts participated in 9 sessions of lecture/discussions on equipment maintenance # Periodical maintenance plan for equipment is developed and implemented		

(Attachment C)

Monitoring Indicators

Subject	Indicators	Milestones/goals	Baseline	Achievements
Port development planning	Progress of investment packages	Start of Grant aid Start of Loan-1 Start of Loan-2	Investment packages not started yet as of April 2012.	Grant aid project started (March 2014) # Loan-1 project started D/D (May 2014)
Port administration and management	Number of participants in seminars and workshops	Training in Japan in 2012, 2013 and 2014 Training in Angola in 2013 Training in Nacala and Maputo		Training in Japan in 2012, 2013, 2014 (In total, 31 counterparts received technical transfer in Japan) Key counterpart training in 2013 substituted for Training in Angola
Cargo handling	1. Gross vessel productivity of container handling 2. Net vessel productivity of container handling 3. Net gang productivity of container handling 4. Dwelling time of containers	10 boxes (=13.0 TEU) /SG/hour as Net Productivity	1. 6.7 box/hour/vessel (2011) 2. 7.6 box/hour /vessel (2011) 3. 5.0 box/hour/gang (2011) 4. 8.55 days for transit containers (2012)	1. 8.2 box/hour/vessel (2014) 2. 10.6 box/hour/vessel (estimated by the Project Team, 2014) 3. 6.3 box/hour/gang (estimated by the Project Team, 2014) 4. Average dwelling time is not recorded
Maintenance of facilities	Frequency of port area patrol (regular inspection)	Regular inspection is started Budget for maintenance is allocated.	No regular inspection No budgetary allocation	Inspection of infrastructure started in August 2014 MT 15,380,000 is requested to the management for FY 2015 budget
Maintenance of equipment	Working time ratio of equipment Annual budgetary allocation for facility maintenance	60-70 % Sufficient amount of budget	51.77 % (2012) MT 27,770,000 (2011)	79 % (2014) MT 92,369,000 is allocated in FY 2015 budget

February 2015

5

(Attachment D)

Nacala Port Development Project
Technical Assistance Project in Nacala-Porto

República de Moçambique
Ministério dos
Transportes e Comunicaçoes

Japan International
Cooperation Agency

Seminar Program

5th February, 2015

1. Venue

Conference Center, Afrin Nacala Hotel, Nacala
(Rua 1, Talão A7, Bairro Maiaia, Nacala-Porto, Tel:26-526 600)

2. Time & Date

09:30-12:00, 5th February, 2015

3. Program (6 presentations, 20 minutes each = 120 minutes)

(1) JICA technical assistance for Nacala Port – achievements and future challenges (by JICA Team)
Mr. Mitsuhiko Okada, Team Leader, Japan International Cooperation Agency (JICA)

(2) Improvement in infrastructure and equipment (by CFM)
Mr. Arzílio Josué Mata, Supervisor/ Civil Engineer, Portos e Caminhos de Ferro de Moçambique (CFM)

(3) Strengthening of port functions at Nacala, the gateway of the Nacala Corridor (by CDN)
Mr. Fabio Frasão, Port Director, Corredor de Desenvolvimento do Norte (CDN)
Mr. Ibraimo Mussa, Operation Analyst, Corredor de Desenvolvimento do Norte (CDN)

(4) Improvement in terminal operation (by PN)
Mr. Neimo Induna, CCOP, Portos do Norte (PN)

(5) Expectations for future development of Nacala Port (by CMACGM and MSC)
Mr. Hinelder Ferreira, Branch Manager, CMA CGM Mozambique
Mr. Simon Kanjanga, Branch Manager, Mediterranean Shipping Company (MSC) Mozambique

12:00-13:30 Lunch

6

JICA

Attendance List for the Seminar on Nacala Port (February 05, 2015)

Category/Area of Training	General	Session No.	
Title	Seminar on Nacala Port		
Date & Time	09:30 - 12:00, February 05, 2015		
Organizer	JICA Expert Team		
Venue	Conference Center, Nacala Afrin Hotel		

No.	Name	Title / Section	Org.	Signature
1	Mitsuhiko OKADA	JICA Expert/ Team Leader		
2	Kiyoshi NAKASHIMA	JICA Expert		
3	Teruki ETO	JICA Expert		
4	Susumu KIMURA	JICA Expert	JICA	
5	Akiko SHIMOHIRA	JICA Mozambique		
6	Nobuaki KURIBAYASHI	JICA Mozambique		
7	Dionísio Vinhereck	Interpreter		
8	Martinho F. Mafumo	Maritime Administrator	MTC	
9	Anibal Manave	Advisor of the Board	CFM (Maputo)	
10	Arzílio Josué Mata	Supervisor/ Civil Engineer		
11	Anabela Emilia Matsinha	Supervisor/ Civil Engineer		
12	Tomás Fortunato Ngca	Supervisor/ Mechanical Engineer	CFM (Office of Nacala Port Rehabilitation Project)	
13	Milione Changala	Supervisor/ Electrical Engineer		
14	José Osias Cherinda	Supervisor/ H.S.T		
15	Carmona Macobola	Civil Engineer	CFM (DEPE)	
16	Alfredo Manuel Lipeque	CFM Nacala Director		
17	Alfredo Rafael Sigola	Chef of Infrastructure Dept.		
18	Drasnildo Luis Monteiro	Chef of Infrastructure Dept.		
19	Alfredo Artur Mafuca	Oil Terminal Manager	CFM North (Nacala)	
20	Braulio Franco Catutula	Port Operation		
21	Nino Jorge Lobo	Port Operation		
22	Abubacar Mecuta	Port Security		
23	Fabio Frasão	Port Director		
24	Francisco David	Safety Consultant	CDN	
25	Ibraimo Mussa	Operation Analyst		

7

The Project for the Improvement of the Nacala Port

No.	Name	Title / Section	Org.	Signature
26	Agostinho Langa	PN Director/COO	PN	
27	Loni Shott	Chief of Comercial Division		
28	Luis Machado	Chief of Port Operations Division		
29	Neimo Induna	CCOP		
30	António Gabriel	Chief of Security Division		
31	Vasco Cunha	Chief of Maintenance Division		
32	Abudo Sele	Project Management Unit	PN	
33	Cremildo/Márcio	DASSO		
34	Denilson Hamide	Branch Manager	EN	
35	Helvio Salomao	Operation Manager		
36	Carmen Amaral	Safety Officer		
37	Jose Samo	RH/Adm		
38	JAIME PEDRO ~~Abdurremane cadre~~	General Cargo Supervisor		
39	Domingos Magaia	Representative	Custom Office in Nacala	
40	Renato Manuel Furruma	Chief Officer	Migration Office in Nacala	
41	Emilia Miranda Abuchir	Officer	INAHINA	
42	Stelio Rodrigues	General Director	Kudumba Investments	
43	Geoffrey Chintingiza	Operation manager	Mocargo Nacala	
44	Ibraimo Assumane	Branch Manager	Manica Freight Services	
45	Hinelder FERREIRA	Branch Manager	CMA-CGM	
46	Simon Kanjanga	Branch Manager	MSC	
47	Carolyn Kathewera	Nacala Branch Manager	Maersk Line	
48	CHAKI ABOOBACAR	ASSESSOR DO PRESIDENTE	CMCN	
49	Carlos Muchiquezer	Sector de Monitoring	GAZEDA	
50	Luis Diogo	Maintenance	PN	

(3)

Apêndice-3: Registro das Reuniões de Força-Tarefa

1. Geral

Dispatch	Session No.	Title
7th	1	Discussion on TA plan of 7th dispatch and monitoring indicators
7th	9	Wrap-up meeting
8th	1	Discussion on Technical Assistance plan of 8th dispatch
8th	11	Wrap-up Meeting: Steps to be taken until the 9th dispatch (September, 2014) and Progress of the Project based on PDM
9th	1	Discussion on Technical Assistance plan of 9th dispatch
9th	2	Discussion on Progress since April
9th	3	Review of PN statistics
9th	13	Wrap-up meeting
10th	1	Presentation of Completion Report
10th	6	Wrap-up Meeting

Session 1 (General)	Discussion on TA plan of 7th dispatch and monitoring indicators
7th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 11th December, 2013 **Time:** 09:30 to 11:30

Participants

CFM North	Braulio Catutula	Operations Officer
	Abubacar Mecuta	Chief of Security & Safety
	Draisnildo Luis Monteiro	Civil Technician A
CDN	Antonio Frederico Candido	Deputy Port Director
	Ibraimo Mussa	Port Operation
PN	Loni Shott	Deputy Port Director
	Lucas Jose Cipriano	Port Operation Director
JICA Expert Team	Okada, Eto, Kimura and Komoto	
JICA Mozambique	Ohno and Kuribayashi	

Agenda

1. JICA TA Team presented the 7th dispatch program and was basically agreed.
2. JICA TA Team presented the 3rd Progress Report.

Session 9 (General)	**Wrap-up meeting**
7th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 16th December, 2013 **Time:** 17:00 to 18:00

Participants

MTC	Ana Matusse Dimande	Project Coordinator
CFM	Paulo Tarmamade Abubacar Mecuta	Advisor of the Board of Directors Chief of Security & Safety
CDN	Ibraimo Mussa	Port Operation
PN	Lucas Jose Cipriano Afonso Vasco da Cunha Neimo da Esperanca Indunia Bonifacio Muassabao Cremildo Rafael Madeira Gabriel Joao Antonio	Port Operation Director Maintenance Director Maintenance/CCOP Port Operation Division (POD) Environment, Health & Safety Security
TN	Julio Sunil Ratnasiri Carmen	Supervisor Supervisor Security
JICA Expert Team JICA Mozambique	Okada, Eto, Kimura and Komoto Kuribayashi	

Agenda

1. Steps to be taken until the 8th dispatch (scheduled in April 2014) were discussed.

Session 1 (General)	**Discussion on Technical Assistance plan of 8th dispatch**
8th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 21st April, 2014 **Time:** 09:30 to 11:30

Participants

CFM	Braulio Catutula	IT Manager
	Alfredo Artur Mafuca	Operations Manger
	Alfredo Segola	Maintenance Manager
CDN	Antonio Frederico Candido	Deputy Port Director
PN	Loni Shott	Deputy Port Director
	Lucas Jose Cipriano	Project Management Unit
	Luis Jorge Machado	Chief of Port Operation Division
	Abudo Sele	Project Management Unit
TN	Denilson Hamide	Director
JICA Expert Team	Okada, Nakashima, Kimura and Komoto	
JICA Mozambique	Kuribayashi	

Agenda

1. Both sides agreed on the time table of the 8th dispatch presented by JICA Team
2. JICA TA Team presented the 4th Progress Report
3. JICA Team presented a tentative plan of the this year's counterpart training in Japan and asked for the designation of participants

Session 11 (General)	**Wrap-up Meeting: Steps to be taken until the 9th dispatch (September, 2014) and Progress of the Project based on PDM**
8th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 28th April, 2014 **Time:** 09:30 to 11:30

Participants

MTC	Ana Matusse Dimande	Project Coordinator
CFM	Anabela Matsinha	Civil Engineer
CDN	Antonio Frederico Candido	Deputy Port Director
	Ibraimo Mussa	CDN Officer (Port Operation)
PN	Agostinho F. Langa Jr.	Operation Director/Executive Committee
	Lucas Jose Cipriano	Project Management Unit
	Luis Jorge Machado	Chief of Port Operation Division
	Loni Schott Ribeiro	Deputy Port Director
	Abudo Sele	Project Management Unit
JICA Expert Team	Okada, Nakashima, Kimura and Komoto	
JICA Mozambique	Kuribayashi	

Agenda

It was agreed that the following steps should be taken by both sides before the 9th dispatch.

1. By the Mozambican counterparts
   - Start of the periodical monitoring of infrastructure
   - Preparation for the introduction of survey equipment
   - Completion of the dry terminal upgrades
   - Introduction of new spreaders with flippers
   - Monitoring of the three container handling productivity indicators (Berth productivity, Gross productivity per crane, net productivity per crane)
   - Implementation of the safety regulation and operation regulation
   - Monitoring of EMS for urgent rehabilitation
   - Review of JICA Team's suggestions on the South Wharf
2. By the JICA Team
   - Procurement of survey equipment
   - Preparation of an onsite training program for infrastructure monitoring

Session 1 (General)	**Discussion on Technical Assistance plan of 9th dispatch**
9th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 4th September, 2014 **Time:** 09:30 to 10:30

Participants

MTC	Martinho F. Mafumo	Maritime Administrator
CFM	Alfredo Artur Mafuca	Oil Terminal Manager
	Alfredo Rafael Sigola	Ncala Infrastructure Chiel
	Anabela Matsinha	Supervisor Civil Engineer
	Alfredo Manuel Lipeque	Branch Manager
	Edgar Jorge	Supervisor Chief Engineer
CDN	Ibraimo Mussa	Port Operations Analyst
	Fabio Frasao	Port Director
PN	Agostinho F. Langa Jr.	Director/COO
	Lucas Jose Cipriano	Project Management Unit
	Loni Schott Ribeiro	Chief of the Commercial Division
	Abudo Sele	Project Management Unit
JICA Expert Team	Okada, Eto, Kimura and Komoto	
JICA Mozambique	Kuribayashi	

Agenda

1. Both sides agreed on the program of the 9th dispatch presented by JICA Team
2. Mozambican counterparts were requested to participate and present the progress since the 8th dispatch in relevant sessions

Session 2 (General)	Discussion on Progress since April
9th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 4th September, 2014 **Time:** 14:30 to 16:00

Participants

MTC	Martinho F. Mafumo	Maritime Administrator
CFM	Alfredo Rafael Sigola	Ncala Infrastructure Chiel
	Edgar Jorge	Supervisor Chief Engineer
	Goncalves Chizuzu	Port Operation
CDN	Ibraimo Mussa	Port Operations Analyst
PN	Lucas Jose Cipriano	Project Management Unit
	Luis Jorge Machado	Chief of Port Operation Division
	Afonso Vasco da Cunha Jr.	Maintenance Director
	Loni Schott Ribeiro	Chief of the Commercial Division
	Abudo Sele	Project Management Unit
TN	Sunil Ratnasiri	Supervisor
	Denilson Hamide	Director
	Jose Samu	Operation
JICA Expert Team	Okada, Eto, Kimura and Komoto	
JICA Mozambique	Kuribayashi	

Agenda

JICA Team reminded the participants of the steps to be taken agreed on in April.

1. For Mozambican counterparts
   - Start of the periodical monitoring of infrastructure [done]
   - Preparation for the introduction of survey equipment [done]
   - Completion of the dry terminal upgrades [underway]
   - Introduction of new spreaders with flippers [underway]
   - Monitoring of the three container handling productivity indicators (Berth productivity, Gross productivity per crane, net productivity per crane) [underway]
   - Implementation of the safety regulation [done] and operation regulation [underway]
   - Monitoring of EMS for urgent rehabilitation [not done]
   - Review of JICA Team's suggestions on the South Wharf [not done]
2. For JICA Team
   - Procurement of survey equipment [done]
   - Preparation of an onsite training program for infrastructure monitoring [done]

Session 3 (General)	Review of PN statistics
9th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 5th September, 2014 **Time:** 9:30 to 11:00

Participants

MTC	Martinho F. Mafumo	Maritime Administrator
CFM	Braulio Franco Catutula	Port Operation
	Edgar Jorge	Supervisor Chief Engineer
	Goncalves Chizuzu	Port Operation
CDN	Antonio Frederico Candido	Cheif of Infrastructure Maintenance Dept.
	Ibraimo Mussa	Port Operations Analyst
PN	Lucas Jose Cipriano	Project Management Unit
	Loni Schott Ribeiro	Chief of the Commercial Division
	Mohamad Richard	Commercial Division
JICA Expert Team	Okada, Eto, Kimura and Komoto	
JICA Mozambique	Kuribayashi	

Agenda

JICA Team made a presentation on the performance of Nacala Port based on the PN statistics

Through discussions, backgrounds of the statistical trend were identified and suggestions were made accordingly

1. For accidents:
   - In 2013, registered accidents increased significantly due to the improved awareness of safety issues and the increase in oversize cargo
   - JICA Team suggested that a safety committee should be organized and lessons learned from accidents should be circulated to all employees
   - JICA Team urged that people should exercise additional caution responding to the port congestion during urgent rehabilitation projects
2. For cargo volume:
   - The decrease in 2012 and the remarkable increase in 2013 was due to the decline of transit cargo for Malawi and the increase in project cargo respectively
   - Natural gas exploitation related cargo and timber pallets are among the additional prospective cargo
   - JICA Team suggested that Nacala Port should keep track of the progress of PROSAVANA
3. For container cargo:
   - PN explained that coastal container traffic decreased due to its costs higher than trucking
   - PN referred to a recent stakeholder meeting aimed to reduce the coastal shipping costs
   - JICA Team responded that coastal shipping was generally more economical and eco-friendly than trucking and encouraged the efforts currently undertaken among stakeholders
4. For vessel calls:
   - PN explained that the increase of vessel calls in 2013 was due to gas exploration activities and

would not be sustainable

5. For container handling productivity
   - Container handling productivity has not improved during the last two years
   - PN explained that the continued use of inefficient ship gears and a lack of spreaders with flippers were the main reasons behind the lack of improvement
   - JICA Team suggested that PN should request shipping agents to improve vessel plans and also have its own ship planners
6. For available time ratio of equipment
   - Availability of cargo handling equipment has remarkably improved due to the following factors: introduction of new equipment resulting in less strain in old equipment, OJT for maintenance personnel, and improvement in the spare parts procurement system
   - Both sides recognized the need of renewed efforts to deal with the increase in the number of models of reach stackers

Session 13 (General)	Wrap-up meeting
9th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 15th September, 2014 **Time:** 9:30 to 11:30

Participants

MTC	Martinho F. Mafumo	Maritime Administrator
CFM	Anabela Matsinha	Supervisor Civil Engineer
	Arzilio Mata	Supervisor Civil Engineer
	Milione Changala	Supervisor Electrical Engineer
	Goncalves Chizuzu	Port Operation
	Floclordo Cumbane	Port Operation
	Ohairo Mario	Port Security
CDN	Ibraimo Mussa	Port Operations Analyst
PN	Lucas Jose Cipriano	Project Management Unit
	Luis Jorge Machado	Chief of Port Operation Division
	Abudo Sele	Project Management Unit
TN	Sunil Ratnasiri	Supervisor
JICA Expert Team	Okada, Eto, Kimura and Komoto	
JICA Mozambique	Kuribayashi	

Agenda

Both sides confirmed the progress of the Project and agreed that the following areas were in need of continuous efforts and attention

1. Infrastructure
   - Periodical inspection
   - Policy decision on the rehabilitation of the South Wharf
2. Cargo handling
   - Nomination of yard planners and vessel planners and their capacity development
   - Start of handling laden containers in the dry terminal upon completion of its upgrades and introduction of reach stackers
   - Review of the Phaeros system to decide whether it is useful for the entire container terminal operation
   - Monitoring of 3 container handling productivity indicators
3. Equipment
   - Clarification of the responsible party and start of preparation for the maintenance of equipment introduced in ODA projects
   - Sharing the information on the conditions of each equipment
   - Compilation of an spare parts inventory list
4. Safety/Operation
   - Additional attention during urgent rehabilitation projects

- Circulation of the lessons learned from accidents among all employees
- Finalization and implementation of the Operational Regulations

The need of continued technical assistance was discussed and the following subjects were identified as priority areas

1. Port administration
   - Review of the Mozambican port administration system in comparison with those in other countries
   - Suggestions on the desirable distribution of administrative functions among pertinent agencies (government, concessionaire, and operator)
   - Suggestions on the desirable legal framework for national port administration
2. Terminal operation
   - OJT for Vessel planning
   - OJT for Yard planning
   - Documentation works
   - Terminal operation management
3. Infrastructure maintenance
   - Suggestions on the rehabilitation of the South Wharf
   - Suggestions on time-series analyses of the periodically monitored data
   - On-site study of civil works
4. Equipment maintenance
   - OJT for RTG maintenance
   - OJT for RTG operation

2. TF-1: Planejamento Portuário

Dispatch	Session No.	Title
4th	3	Meeting for Port Plan and Meeting for Port Administration and Management
4th	4	Meeting for Port Plan (World Shipping Trend)
4th	5	Meeting for Port Plan
5th	3	Meeting for Port Plan
5th	6	Meeting for Port Plan
5th	8	Meeting for Port Plan
6th	5	Meeting for Port Plan
6th	7	Meeting for Port Plan

Session 3 (TF-1)	Meeting for Port Plan and Meeting for Port Administration and Management
4^{th} Dispatch	**Date:** 12th December, 2012 **Time:** 14:00 pm to 16:30 pm **Place:** Conference Room of CDN Nacala

Participants

MTC	Dr. Ana Dimande	Project Coordinator
CFM	Alfredo Mafuca	Manager, Port Operations/Data Handling
	Abubacar Mecuta	Manager, Port Environment
	Assane Daudo	Manager, Port Operations/Data Handling
	Ossufo Bacar	Coordinator, Port Operations
	Braulio Catutula	Coordinator, Port Operations
	Lucilia Mangue	Coordinator, Port Operations
	Cesar Antonio	Coordinator, Maintenance/Infrastructures
	Jose Muapalame	Coordinator, Maintenance/Infrastructures
	Emanuel Rosse	Floorwalker, Port Operations
	Goncalves Chizuzu	Floorwalker, Port Operations
	Nino Lobo	Floorwalker, Port Operations
CDN	Loni Shot	Director, Logistics
	Lucas Cipriano	Director, Port Operations
	Bonifacio Muassabao	Manager, Port Operations
	Eusebio Amando	Pilot/Manager, Port Operations
	Eusebio Anania	Coordinator, Port Operations
	Atumane Quinane	Coordinator, Port Operations
PN	Rui Fonseca	
TN	Denilson Hamide	Director
	Raime Pachinuapa	Manager
	Julio	Coordinator
JICA Expert Team	Nakashima, Miyaji, Eto, Kimura and Kuribayashi	

Agenda

1. Port management
2. Port planning system
3. World trends related to Ports and Harbours
4. Laws and regulations for port planning

Materials

1. Port Management
2. Japan's Port Management and The United States' Port Management

Session 4 (TF-1)	**Meeting for Port Plan (World Shipping Trend)**
4th Dispatch	**Date**: 13th December, 2012 **Time**: 14:00 pm to 16:00 pm **Place**: Conference Room of CDN Nacala

Participants

CFM	Alfredo Mafuca	Manager, Port Operations/Data Handling
	Abubacar Mecuta	Manager, Port Environment
	Assane Daudo	Manager, Port Operations/Data Handling
	Ossufo Bacar	Coordinator, Port Operations
	Braulio Catutula	Coordinator, Port Operations
	Lucilia Mangue	Coordinator, Port Operations
	Cesar Antonio	Coordinator, Maintenance/Infrastructures
	Jose Muapalame	Coordinator, Maintenance/Infrastructures
	Draisnildo Monteiro	Supervisor, Port Operations
	Emanuel Rosse	Floorwalker, Port Operations
	Goncalves Chizuzu	Floorwalker, Port Operations
	Nino Lobo	Floorwalker, Port Operations
CDN	Loni Shot	Director, Logistics
	Lucas Cipriano	Director, Port Operations
	Eusebio Anania	Coordinator, Port Operations
	Atumane Quinane	Coordinator, Port Operations
JICA Expert Team	Nakashima, Miyaji, Eto, Kimura and Kuribayashi	

Agenda

1. World Shipping Trend

Materials

1. Business of Shipping

Main Discussion Points

1. Mr. Nakashima, a JICA expert, made a presentation on the business of shipping and its recent trend.

Session 5 (TF-1)	**Meeting for Port Plan**
4th Dispatch	**Date**: 14th December, 2012 **Time**: 14:00 pm to 16:30 pm **Place**: Conference Room of CDN Nacala

Participants

MTC	Dr. Ana Dimande	Project Coordinator
CFM	Alfredo Mafuca	Manager, Port Operations/Data Handling
	Abubacar Mecuta	Manager, Port Environment
	Assane Daudo	Manager, Port Operations/Data Handling
	Ossufo Bacar	Coordinator, Port Operations
	Braulio Catutula	Coordinator, Port Operations
	Lucilia Mangue	Coordinator, Port Operations
	Cesar Antonio	Coordinator, Maintenance/Infrastructures
	Jose Muapalame	Coordinator, Maintenance/Infrastructures
	Draisnildo Monteiro	Supervisor, Port Operations
	Emanuel Rosse	Floorwalker, Port Operations
	Goncalves Chizuzu	Floorwalker, Port Operations
	Nino Lobo	Floorwalker, Fie Fighting Team
CDN	Loni Shot	Director, Logistics
	Lucas Cipriano	Director, Port Operations
	Bonifacio Muassabao	Manager, Port Operations
	Eusebio Anania	Coordinator, Port Operations
	Atumane Quinane	Coordinator, Port Operations
TN	Julio	Coordinator
JICA Expert Team	Nakashima, Miyaji, Eto, Kimura and Kuribayashi	

Agenda

1. Environment considerations
2. Coastal Zone Management and Bay Ares Management

Materials

1. Coastal Zone Management and Bay Ares Management

Main Discussion Points

1. Mr. Miyaji, who is JICA expert made a speech of reviews of previous lecture.
2. Mr. Miyaji made a special presentation of Coastal Zone Management and Bay Ares Management
3. In addition, Tokyo Bay Area was introduced as a case study including the history of reclamation, port's activities and navigation of channels

Session 3 (TF-1)	**Meeting for Port Plan**
5th Dispatch	**Date:** 12th April, 2013 **Time:** 14:00 to 15:00 **Place:** Conference Room of CDN, Nacala

Participants

MTC	Ana Matusse Dimande	Project Coordinator
CFM	Braulio Catutula	Coordinator, Port Operations/Data Handling
	Alfredo Artur Mafuca	Manager, Port Operations/Data Handling
	Emanuel Rosse	Floorwalker, Port Operations
	Gonçalves Chizuzu	Floorwalker, Port Operations
	Abubacar Mecuta	Manager, Port Environment
	Ossufo Bacar	Coordinator,
CDN	Aderval Acioli Matos	Port Director
	Candido Frederico	Maintenance Department
	Antonio F. Candido	
PN	Agositnho F. Langa	Operation Director/Executive Committee
	Lucas Cipriano	Port Operations
	Eusebio Ananias	Port Operations
	Atumane Quinane	Port Operations
	Gabriel Joao	Port Operations
	Cremildo Madeira	EHS/Safety
JICA Expert Team	Okada, Nakashima, Kimura, Kawabata, and Kuribayashi	

Agenda

1. How to evaluate the congestion of the terminal
2. How to find ways to improve productivity
3. How to come up with the appropriate berth number

Materials

Port planning tools (1) berth occupancy

Session 6 (TF-1)	Meeting for Port Plan
5th Dispatch	**Date:** 13rd April, 2013 **Time:** 11:00 to 12:00 **Place:** Conference Room of CFM, Nacala

Participants

CFM	Jose Muapalame	Coordinator, CFM Pemba
	Assane Daude	Manager, Port Operations, CFM Pemba
	Cesar Antonio	Coordinator, Maintenance / Infrastructure, CFM Pemba
	Ossufo Bacar	CFM Pemba
JICA Expert Team	Okada, Nakashima, Kimura, Kawabata and Kuribayashi	

Agenda

1. How to evaluate the congestion of the terminal
2. How to find ways to improve productivity
3. How to come up with the appropriate berth number

Materials

Port planning tools (1) berth occupancy

Session 8 (TF-1)	**Meeting for Port Plan**		
5th Dispatch	**Date:** 15th April, 2013 **Time:** 14:00 to 15:00 **Place:** Conference Room of CDN, Nacala		

Participants

CFM	Braulio Catutula	Coordinator, Port Operations/Data Handling
	Alfredo Artur Mafuca	Manager, Port Operations/Data Handling
	Emanuel Rosse	Floorwalker, Port Operations
	Ossufo Bacar	Coordinator,
	Assane Daudo	
CDN	Candido Frederico	Maintenance Department
PN	Agositnho F. Langa	Operation Director/Executive Committee
	Lucas Cipriano	Port Operations
	Neimo Induma	Port Operations
	Luis Machado	Port Operations
	Evaristo Simoco	Law
JICA Expert Team	Okada, Nakashima, Kimura, Kawabata, and Kuribayashi	

Agenda

1. Macro forecast and micro forecast
2. Difference between ASEAN ports and sub-Saharan ports
3. Impacts of the productivity increase on the future cargo volume of Nacala Port
4. Strength of Nacala Port

Materials

Port planning tools (2) demand forecast

Session 5 (TF-1)	Meeting for Port Plan
6th Dispatch	**Place**: Conference Room of PN Nacala **Date**: 18th June, 2013 **Time**: 15:00 pm to 16:30 pm

Participants

CFM	Balamade Andinane	Technician (Category A)
	Nauria Mahonca	Technician (Category A)
	Aquital Agy Ibrahimo	Mechanical Engineer
	Arsenio Zimba	Hydraulic Engineer
	Atanasio Neves	Mechanical Engineer
	Miguel Jamisse	Mechanical Engineer
	Sergio Simao	Manager of Mosala
PN	Eusebio Ananias Ramos	Coordinator, Port Operations
	Cremildo Madeira	EHS/Safety
	Gabriel Joao	Chief of the Security Division
	Neimo Induna	Container Yard Manager
	Lucas Cipriano	Port Operation Manager
	Bonifacio Musabao	Port Operation
	Atmane Quinane	Port Operation
TN	Aboul Cadre	Technician
	Maricio Cleosego	Technician
	Denilson Hanli Pasolnard	Technician
JICA Expert Team	Nakashima, Eto, Kunita, Komoto, and Kuribayashi	

Agenda

Discussion on Safety During the Construction Works

Materials

Safety and Health Guide Osamu Kunita.pptx

Main Discussion Points

1. Dr.Kunita, who is JICA expert made a presentation on safety issues during the construction period.
2. Dr. Kunita made a presentation on the systematic way how to prevent the accident.
3. As the result, it is confirmed that the material provided by Dr. Kunita will be utilized to prevent or decrease the accidents.

Session 7 (TF-1)	**Meeting for Port Plan**
6th Dispatch	**Place**: Conference Room of PN Nacala **Date**: 19th June, 2013 **Time**: 10:30 am to 12:00 noon

Participants

CFM	Anabela Matsinha	Civil Engineer
	Balamade Andinane	Technician (Category A)
	Nauaia Mahonca	Technician (Category A)
	Aquital Agy Ibrahimo	Mechanical Engineer
	Arsenio Zimba	Hydraulic Engineer
	Atanasio Neves	Mechanical Engineer
	Miguel Jamisse	Mechanical Engineer
	Eusebio Ananias Ramos	Coordinator, Port Operations
	Sergio Simao	Matola Port Manager
CDN	Aderval Acioli Matos	Port Director
PN	Afonso Vasco da Cunha Jr.	Chief of the Maintenance Division
	Cremildo Madeira	EHS/Safety
	Gabriel Joao	Chief of the Security Division
	Neimo Induna	Container Yard Manager
	Marsio Connea	PN-SP Euope Coastal Engineer
JICA Expert Team	Nakashima, Eto, Kunita, Komoto, and Kuribayashi	

Agenda

Bulk Terminal Planning

Materials

Grain_Terminal_Kunita 2013_6.pptx

Main Discussion Points

1. Dr. Kunita, who is JICA expert made a presentation on grain terminal in the world and in Japan.
2. Dr. Kunita made a presentation on the key issues for planning the grain terminal.
3. The reserved area for grain terminal in the short term plan of Nacala Port was reviewed and confirmed as suitable.

3. TF-2: Administração e Gestão Portuária

Dispatch	Session No.	Title
4th	8	Meeting for Port Administration and Management (Port EDI system of Japan)
4th	9	Meeting for Process Management Port Administration and Management (Project management)
5th	4	Meeting for Port Administration & Management (Laws and Regulations)
5th	9	Meeting for Port Administration and Management (Privatization of CT)
6th	6	Meeting for Port Administration & Management
6th	10	Meeting for Port Administration & Management
6th	12	Meeting for Port Administration & Management
7th	5	Discussion on the regulation of safety and the regulation of port operations (based on the comments of JICA TA Team)
8th	9	Seminar for safety regulation of Nacala Port
8th	10	Lectures on “5S” and Environmental Management
9th	10	“5S” Training: Guidance
9th	11	“5S” Training: Field Training (1)
9th	12	“5S” Training: Field Training (2)

Session 8 (TF-2)	**Meeting for Port Administration and Management (Port EDI system of Japan)**
4th Dispatch	**Date**: 17th December, 2012 **Time**: 15:30 pm to 17:00 pm **Place**: Conference Room of CDN Nacala

Participants

CFM	Alfredo Mafuca	Manager, Port Operations/Data Handling
	Assane Daudo	Manager, Port Operations/Data Handling
	Ossufo Bacar	Coordinator, Port Operations
	Braulio Catutula	Coordinator, Port Operations
	Lucilia Mangue	Coordinator, Port Operations
	Emanuel Rosse	Floorwalker, Port Operations
	Goncalves Chizuzu	Floorwalker, Port Operations
	Nino Lobo	Floorwalker, Port Operations
CDN	Lucas Cipriano	Director, Port Operations
	Antonio Candido	Director, Maintenance
	Bonifacio Muassabao	Manager, Port Operations
	Eusebio Ananias	Coordinator, Port Operations
	Atumane Quinane	Coordinator, Port Operations
	Gabriel Cossa	Coordinator, Port Operations
JICA Expert Team	Nakashima, Miyaji, Eto, Kimura and Kuribayashi	

Agenda

1. Government to business relation and business to business relation
2. Port procedures of shipping company
3. Port procedures and locations where applications should be submitted
4. Convention on facilitation of international marine traffic
5. The past and future of the single window system of Japan

Materials

1. Port EDI system of Japan

Main Discussion Points

1. Mr. Miyaji made a special presentation on port EDI system of Japan
2. Present condition of port procedures in Nacala port

Session 9 (TF-2)	**Meeting for Process Management** **Port Administration and Management (Project management)**
4th Dispatch	**Date**: 18th December, 2012 **Time**: 14:00 pm to 16:00 pm **Place**: Conference Room of CDN Nacala

Participants

CFM	Alfredo Mafuca	Manager, Port Operations/Data Handling
	Assane Daudo	Manager, Port Operations/Data Handling
	Abubacar Mecuta	Manager, Port Environment
	Feliciano Antonio	Manager, Maintenance/Infrastructures
	Ossufo Bacar	Coordinator, Port Operations
	Braulio Catutula	Coordinator, Port Operations
	Gabriela Cossa	Coordinator, Port Operations
	Draisnildo Monteiro	Supervisor, Port Operations
	Emanuel Rosse	Floorwalker, Port Operations
CDN	Loni Shott	Director, Logistics
	Lucas Cipriano	Director, Port Operations
	Antonio Candido	Director, Maintenance
	Bonifacio Muassabao	Manager, Port Operations
	Atumane Quinane	Coordinator, Port Operations
	Eusebio Ananias	Coordinator, Port Operations
JICA Expert Team	Nakashima, Miyaji, Eto, Kimura and Kuribayashi	

Agenda

1. Process Management
2. Phases of project such as plan, design ,implementation, operation, and management
3. Matters to manage such as quality, time, budget, human resource, information, risk, and environment and social considerations
4. Tools for project management
5. PDCA cycle

Materials

1. Project Management for Port Development

Main Discussion Points

1. Mr. Miyaji made a special presentation on project management for port development
2. Mr. Miyaji made a special presentation of project management including PDCA
3. Mr. Nakashima, who is JICA expert made a closing remarks of workshops at Nacala.

Session 4 (TF-2)	**Meeting for Port Administration & Management (Laws and Regulations)**
5th Dispatch	**Time:** 15:00 to 16:00 **Place:** Conference Room of CDN, Nacala **Date:** 12th April, 2013

Participants

MTC	Ana Matusse Dimande	Project Coordinator
CFM	Braulio Catutula	Coordinator, Port Operations/Data Handling
	Alfredo Artur Mafuca	Manager, Port Operations/Data Handling
	Emanuel Rosse	Floorwalker, Port Operations
	Gonçalves Chizuzu	Floorwalker, Port Operations
CDN	Aderval Acoale Hatos	Port Director
	Antonio F. Candido	
	Candido Frederico	Maintenance Department
PN	Agositnho F. Langa	Operation Director/Executive Committee
	Lucas Cipriano	Port Operations
	Eusebio Ananias	Port Operations
	Atumane Quinane	Port Operations
	Gabriel Joao	Port Operations
	Cremildo Madeira	EHS/Safety
JICA Expert Team	Okada, Nakashima, Kimura, Kawabata, and Kuribayashi	

Agenda

"Regulation of Nacala Port" ; Chapter 7–Occupational Safety

Materials

Kobe Port Container Terminal Safety Policy (English)

Session 9 (TF-2)	Meeting for Port Administration and Management (Privatization of CT)
5th Dispatch	**Date:** 15th April, 2013 **Time:** 15:00 to 16:00 **Place:** Conference Room of CDN, Nacala

Participants

CFM	Braulio Catutula	Coordinator, Port Operations/Data Handling
	Alfredo Artur Mafuca	Manager, Port Operations/Data Handling
	Emanuel Rosse	Floorwalker, Port Operations
	Ossufo Bacar	Coordinator,
	Assane Daudo	Manager, Port Operations/Data Handling
CDN	Candido Frederico	Maintenance Department
PN	Agositnho F. Langa	Operation Director/Executive Committee
	Lucas Cipriano	Port Operations
	Neimo Induma	Port Operations
	Luis Machado	Port Operations
	Evaristo Simoco	Law
JICA Expert Team	Okada, Nakashima, Kimura, Kawabata, and Kuribayashi	

Agenda

1. Marketing of the Port
   1) 4Ps for marketing; Product, Price, Place & Promotion
   2) How a shipping line determines an extra port calling

Materials

1. Marketing of the Port
2. Calculation of marginal TEUs required for extra calling at Nacala

Session 6 (TF-2)	Meeting for Port Administration & Management
6th Dispatch	**Place**: Conference Room of PN Nacala **Date**: 19th June, 2013 **Time**: 09:00 am to 10:30

Participants

MTC	Ana Matusse Dimande	Project Coordinator
CFM	Paulo Tarmamade	Advisor to the Board of Directors
	Seirgio Simao	Matola Port Manager
	Anabela Matsinha	Civil Engineer
	Balamade Andinane	Technician (Category A)
	Nauaia Mahonca	Technician (Category A)
	Aquital Agy Ibrahimo	Mechanical Engineer
	Arsenio Zimba	Hydraulic Engineer
	Atanasio Neves	Mechanical Engineer
	Miguel Jamisse	Mechanical Engineer
CDN	Aderval Acioli Matos	Port Director
PN	Cremildo Madeira	EHS/Safety
	Gabriel Joao	Chief of Security Division
	Loni Schott Ribeiro	Chief of Commercial Division
	Lucas Cipriano	Port Operation Manager
	Marcio Correia	DASSO
TN	Arlindo Noellete	Advocado
	Carmen Amaral	PortOperations
JICA Expert Team	Nakashima, Eto, Kunita, Komoto, and Kuribayashi	

Agenda

Discussion on the Safety Regulation of Nacala Port

Materials

1. Nacala Port Safety Regulation (PowerPoint slides in English)
2. Draft of Nacala Port Safety Regulation (Word document in Portuguese)

Main Discussion Points

1. Mr. Aderval Matos of CDN made a presentation to summarize the draft of Nacala Port Safety Regulation.
2. Q & A on the contents of draft regulation.
3. Mozambican side requested JICA Expert Team to feed back with comments on the draft by the end of July 2013.

Session 10 (TF-2)	Meeting for Port Administration & Management
6th Dispatch	**Place**: Conference Room of PN Nacala **Date**: 20th June, 2013 **Time**: 15:00 am ~ 16:30 am

Participants

CFM	Anabela Matsinha	Civil Engineer
	Aquital Agy Ibrahimo	Mechanical Engineer
	Arsenio Zimba	Hydraulic Engineer
	Atanasio Neves	Mechanical Engineer
	Balamade Andinane	Technician (Category A)
	Miguel Jamisse	Mechanical Engineer
	Sergio Simao	Electronic Engineer (Matola Port Manager)
PN	Cremildo Madeira	EHS/Safety
	Lucas Cipriano	Port Operation Manager
	Neimo Induna	Container Yard Manager
	Luis Jorge Machado	Asst. Port Operation
JICA Expert Team	Nakashima, Kunita, Eto, Komoto, and Kuribayashi	

Agenda

Regulation of Port Operations

Materials

Points to be discussed/clarified (Word document), Chapter 3 of Nacala Port Regulation (Portuguese original), Chapter 3 of Nacala Port Regulation (English version)

Main Discussion Points

1. The contents of Charpter 3 of Nacala Port Regulation were checked article by article.
2. The contents of Article 45 to 74 were confirmed almost as per the original.

Session 12 (TF-2)	Meeting for Port Administration & Management
6th Dispatch	**Place**: Conference Room of PN Nacala **Date**: 21st June, 2013 **Time**: 10:30 am ~ 12:00 am

Participants

CFM	Paulo Tarmamade	Adviser to the Board of Directors
	Anabela Matsinha	Civil Engineer
	Balamade Andinane	Technician (Category A)
	Nauaia Mahonca	Technician (Category A)
	Sergio Simao	Electronic Engineer (Matola Port Manager)
	Aquital Agy Ibrahimo	Mechanical Engineer
	Arsenio Zimba	Hydraulic Engineer
	Atanasio Neves	Mechanical Engineer
	Miguel Jamisse	Mechanical Engineer
PN	Agostinho F. Langa Jr	Operation Director/Executive Comittee
	Loni Shott Ribeiro	Chief of Commercial Division
	Lucas Cipriano	Port Operation Manager
	Cremildo Madeira	EHS/Safety
	Luis Jorge Machado	Asst. Port Operation
	Neimo Induna	Container Yard Manager
	Evaristo Joao Simoco	Jurist
JICA Expert Team	Nakashima, Kunita, Eto, Komoto, and Kuribayashi	

Agenda

Regulation of Port Operations

Materials

Points to be discussed/clarified (Word document), Chapter 3 of Nacala Port Regulation (Portuguese original), Chapter 3 of Nacala Port Regulation (English version)

Main Discussion Points

1. The contents of Charpter 3 of Nacala Port Regulation were checked article by article.
2. The contents of Article 75 to 117 were confirmed almost as per the original.
3. Mr. Nakashima commented that :
    1) the difference in the extent of shipping line's liability between conventional cargoes and container cargoes shall be reflected in Chapter 3.
    2) the provisions on the documentation for container cargoes such as EIR shall be added to Chapter 3.

Session 5 (TF-2)	**Discussion on the regulation of safety and the regulation of port operations (based on the comments of JICA TA Team)**
7th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 13th December, 2013 **Time:** 09:30 to 11:30

Participants

CFM North	Abubacar Mecuta	Chief of Security & Safety
CDN	Antonio Frederico Candido	Deputy Port Director
	Ibraimo Mussa	CDN Officer (Port Operation)
	Zacarias Andalusse	CDN Officer (Safety & Security)
	Francisco Davide	CDN Officer (Safety & Security)
PN	Roni Shott	Deputy Port Director
	Lucas Jose Cipriano	Port Operation Director
	Cremildo Eafael Madeira	Environment, Health & Safety
	Gabriel Joao Antonio	Security
	Neimo da Esperanca Indunia	Maintenance/CCOP
	Luis Machado	CCOP
TN	Helvio	Supervisor
	Julio	Supervisor
	Sunil Ratnasiri	Supervisor
	Carmen	Security
JICA Expert Team	Okada, Eto, Kimura and Komoto	
JICA Mozambique	Kuribayashi	

Agenda

1. CDN presented a revised draft of the safety regulation.
2. JICA TA Team suggested further review incorporating specific rules on cargo handling.
3. CDN requested a lecture material on "5S" (Japanese workplace management methodology – Seiri[sort], Seiton[Straighten], Seisou[Shine], Seiketsu[Standardize] and Shitsuke[Sustain]).
4. JICA TA Team suggested that productivity of container handling shall be based on 1) berth productivity, 2) gross productivity per ship gear (gang) and 3) net productivity per ship gear (gang).
5. JICA TA Team reminded that the goal of Nacala port productivity was set at 10 boxes/hour as net productivity per ship gear (gang).

Session 9 (TF-2)	Seminar for safety regulation of Nacala Port
8th Dispatch	**Place:** Afrin Nacala Hotel **Date:** 25th April, 2014 **Time:** 10:00 to 11:30

Participants

CFM	Alfredo Artur Mafuca	Operations Manager
	Abubacar Mecuta	Inspection Manager
	Anabela Matsinha	Civil Engineer
	Alfredo Manuel Lipeque	Branch Manager
CDN	Aderval Acioli Matos	Port Director
	Ibraimo Mussa	CDN Officer (Port Operation)
	Zacarias Andaluss	CDN Officer (Safety & Security)
	Francisco Davide	Consultant
PN	Agostinho F. Langa Jr.	Operation Director/Executive Committee
	Lucas Jose Cipriano	Project Management Unit
	Cremildo Rafael Madeira	EHS/Safety
TN	Helvio Salomao	Supervisor
	Denilson Hamide	Director
JICA Expert Team	Okada, Nakashima, Kimura and Komoto	
JICA Mozambique	Kuribayashi	

Agenda

1. MTC and JICA Team jointly organized a seminar on the Nacala Port Safety Regulation
2. CDN gave a presentation on the draft regulation formulated in consideration of JICA Team's suggestions
3. PN emphasized its commitment to make Nacala Port a respectable port in the region
4. Participants from port-related agencies/companies actively gave their feedback


Session 10 (TF-2)	**Lectures on "5S" and Environmental Management**
8th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 25th April, 2014 **Time:** 14:30 to 16:30

Participants

CFM	Braulio Catutula	IT Manager
	Anabela Matsinha	Civil Engineer
	Alfredo Manuel Lipeque	Branch Manager
	Alfredo Segola	Maintenance Manager
CDN	Francisco Davide	Consultant
PN	Agostinho F. Langa Jr.	Operation Director/Executive Committee
	Lucas Jose Cipriano	Project Management Unit
	Cremildo Rafael Madeira	EHS/Safety
	Marcio Correia	EHS/Safety
	Abudo Sele	Project Management Unit
	Emmanuel Rassul	EHS/Safety
JICA Expert Team	Okada, Nakashima, Kimura and Komoto	
JICA Mozambique	Kuribayashi	

Agenda

1. JICA Team made presentations on "5S" and environmental management systems (EMS)
2. JICA Team encouraged the Mozambican side to try "5S" in the workplace. For smooth implementation, commitment of the top management and identification of benefits for the company and employees are important
3. JICA Team pointed out that EMS targeted to the urgent rehabilitation should be prepared and monitored in cooperation with the contractor/consultant

Session 10 (TF-2)	**"5S" Training: Guidance**
9th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 11th September, 2014 **Time:** 14:30 to 16:30

Participants

MTC	Martinho F. Mafumo	Maritime Administrator
CFM	Braulio Franco Catutula	Port Operation
	Nino Jorge Lobo	Port Operation
	Milione Changala	Supervisor Electrical Engineer
PN	Lucas Jose Cipriano	Project Management Unit
	Luis Jorge Machado	Chief of Port Operation Division
	Cremildo Rafael Madeira	EHS/Safety
	Afonso Vasco da Cunha Jr.	Maintenance Director
	Loni Schott Ribeiro	Chief of the Commercial Division
	Marcio Correia	EHS/Safety
TN	Helvio Salomao	Supervisor
	Carmen Amaral	Security
JICA Expert Team	Okada, Eto, Kimura and Komoto	
JICA Mozambique	Kuribayashi	

Agenda

1. JICA Team made a presentation on a practical application of "5S" (Japanese workplace organization system) in the PN maintenance shop
2. JICA Team gave a detailed explanation on the field training of "5S" scheduled on Sep. 12 aimed to identify unnecessary parts and materials
3. JICA Team suggested that PN should decide the official criteria for red-tagging and yellow-tagging by themselves taking into account the lessons learned in the field training

Session 11/12 (TF-2)	**"5S" Training: Field Training**
9th Dispatch	**Place:** PN Maintenance Shop **Date:** 12th September, 2014 **Time:** 9:30 to 11:30 and 14:30 to 16:30

Participants

Session 11

PN	Jaime Jerafe	Secretary
	Santos Damião	Maintenance Manager
	Loni Schott Ribeiro	Chief of the Commercial Division
	Vitria Matsinhe	HR
	Abudo Hadulale	
TN	Helvio Salomao	Supervisor
	Carmen Amaral	Security
	Denilson Hamide	Director
JICA Expert Team	Okada, Eto, Kimura and Komoto	
JICA Mozambique	Kuribayashi	

Session 12

PN	Luis Jorge Machado	Chief of Port Operation Division
	Afonso Vasco da Cunha Jr.	Maintenance Director
	Luís Alvito Diogo	Maintenance Division
	Santos Damião	Maintenance Manager
	Vitria Matsinhe	HR
	R. P. A. Arunna Shathe	Maintenance
	Lozato Plasselo	Maintenance
TN	Carmen Amaral	Security
JICA Expert Team	Kimura and Komoto	
JICA Mozambique	Kuribayashi	

Agenda

1. JICA Team and Mozambican counterparts jointly carried out field training of "5S" in the PN maintenance shop
2. Red-tagged parts will be listed and the Management will authorize their disposal based on the list

4. TF-3: Movimentação de Carga

Dispatch	Session No.	Title
4th	2	Cargo Handling: IT technology in CT Business and its Necessity
4th	7	Cargo Handling: Methods of Handling Shipping Data
5th	1	Meeting for Cargo Handling: IT System of CT Operation
6th	3	Meeting for Cargo Handling
6th	9	Meeting for Cargo Handling
6th	11	Meeting for Cargo Handling
7th	3	Discussion on the revision of Phaeros system (upgrading plan by Phaeros engineers)
7th	6	Survey of Nacala 2nd Port (Dry Port)
7th	10	Discussion on productivity of container handling operation including dry port issues (extra session 1)
8th	7	Discussion on the progress of the Phaeros system upgrading
8th	8	Discussion on improvement of dry port and procurement of spreaders with flippers
9th	4	Visit to the dry terminal and TEEN terminal
9th	9	Upgrade status of Phaeros system
10th	3	Site Monitoring (Dry Terminal)
10th	4	Discussion on Data Completion
10th	5	Countermeasure against Strong Wind in the Container Yard

Session 2 (TF-3)	Cargo Handling: IT technology in CT Business and its Necessity
4th Dispatch	**Date**: 11th December, 2012 **Time**: 15:00 pm to 16:30 pm **Place**: Conference Room of CDN Nacala

Participants

MTC	Ana Dimande	Project Coordinator
CFM	Gabriel Cossa	Coordinator
	Alfred Mafuca	Manager
	Braulio Catutula	Coordinator
	Draisnildo Monteiro	Floor worker
	Assante Daudo	Manager
	Ossufo Bacar	Coordinator
CDN	Loni shott	Director
	Lucas Ciprriano	Director
	Bonifacio Muassabao	Manager
	Eusebio Amando	Pilot/Manager
	Eusebio Anania	Coordinator
	Atumane Quinane	Coordinator
	Raime Pachinuapa	Manager
	Denilson Hamide	Director
	Nish	Manager
	Helvio Salomao	Coordinator
	Julio	Coordinator
	Sunil Ratnasiri	TN-Stevedoring
JICA Expert Team	Kiyoshi Nakashima	
	Yutaka Miyaji	
	Teruki Eto	
	Susumu Kimura	
	Nobuaki Kuribayashi	Liaison Officer / Operational Coordinator

Agenda

1. Why is a Computerized Container Terminal Management System (CTMS) Necessary?
2. Information and Data Interchanging between CT and the Customers.
3. How the Container data is shown in a System?
4. Information Flow at Modern CT.
5. Conclusion: By introducing a modern computerized system.

Materials

1. Copy set of the presentation material.

Main Discussion Points

1. CTM System providers (makers) in the world and their qualities.
2. Importance of the error-free data and information of CT Operators.

Session 7 (TF-3)	**Cargo Handling: Methods of Handling Shipping Data**
4th Dispatch	**Date**: 17th December, 2012 **Time**: 14:00 pm to 15:30 pm **Place**: Conference Room of CDN Nacala

Participants

MTC	Ana Dimande	Project Coordinator
CFM	Gabriel Cossa	Coordinator
	Alfred Mafuca	Manager
	Braulio Catutula	Coordinator
	Draisnildo Monteiro	Floor worker
	Assante Daudo	Manager
	Ossufo Bacar	Coordinator
CDN	Loni shott	Director
	Lucas Ciprriano	Director
	Bonifacio Muassabao	Manager
	Eusebio Amando	Pilot/Manager
	Eusebio Anania	Coordinator
	Atumane Quinane	Coordinator
	Raime Pachinuapa	Manager
	Denilson Hamide	Director
	Nish	Manager
	Helvio Salomao	Coordinator
	Julio	Coordinator
	Fuanvi Rods	Floor worker
JICA Expert Team	Kiyoshi Nakashima	
	Yutaka Miyaji	
	Teruki Eto	
	Susumu Kimura	
	Nobuaki Kuribayashi	Liaison Officer / Operational Coordinator

Agenda

1. Roles of Modern CTs in the World for Operating CTs Efficiently and Productively.
2. Required Capabilities for Key Persons/Teams to Operate Modern CTs Effectively.
3. Key Functions/Teams to Operate & Manage CTs Efficiently.
4. Recommendable Organization/Teams of Nacala Port CT & Its Roles.
5. Work Flows in between Functions/Teams in Modern CTs to Operate & Manage CTs Efficiently.

Materials

Copy-set of the presentation material.

Main Discussion Points

1. How to introduce systematic CT operation and management in Nacala Port CT.
2. Importance of well-trained experts in various sections of CT, and their cooperative works.

Session 1 (TF-3)	Meeting for Cargo Handling: IT System of CT Operation
5th Dispatch	**Date:** 12th April, 2013 **Time:** 09:30 to 11:00 **Place:** Conference Room of CDN Nacala

Participants

CFM	Braulio Catutula	Coordinator, Port Operations/Data Handling
	Alfredo Artur Mafuca	Manager, Port Operations/Data Handling
	Emanuel Rosse	Floorwalker, Port Operations
	Gonçalves Chizuzu	Floorwalker, Port Operations
	Ossufo Bacar	Coordinator, Port Operations/Data Handling
	Jose Muapalame	Coordinator, CFM Pemba
	Assane Daude	Manager, Port Operations/Data Handling, CFM Pemba
	Cesar Antonio	Coordinator, Maintenance/Infrastructure, CFM Pemba
	Ossufo Bacar	CFM Pemba
PN	Agostinho F. Langa	Operation Director/Executive Committee
	Joao Matos Fernandes	Advisor
	Lucas Cipriano	Port Operations
	Neimo Induma	Port Operations
	Bonifacio Muassabão	Port Operations
	Eusebio Ananias	Port Operations
	Luis Machado	Port Operations
	Atumane Quinane	Port Operations
	Gabriel Joao	Security
	Cremildo Madeira	EHS / Safety
CDN	Aderval Acioli Matos	Port Director
	Abubacar Meanto	Manager, Port Operations
JICA Expert Team	Okada, Nakashima, Kimura, Kawabata and Kuribayashi	

Agenda

1. Merits of the introduction of TOS (CTMS)
2. System Configuration
   - Yard Plan Computer System (YPCS)
   - Yard Planning System (YP)
   - Vessel Planning System (VP)
   - Job Control (JC)
   - Yard Operation System (YO)
   - Radio Handheld Terminal (RHT)
   - Integrated Gate System (IGS)
   - Web System (WEB)
3. In case of Nacala Container Terminal

Session 3 (TF-3)	Meeting for Cargo Handling
6th Dispatch	**Place**: Conference Room of PN Nacala **Date**: 18th June 2013 **Time**: 9:00 am ~ 10:30 am

Participants

CFM	Balamade Andinane	Technician (Category A)
	Nauaia Mahonca	Technician (Category A)
	Paulo Tarmamade	Adviser of the Board of Directors
	Sergio Simao	Electronic Engineer (Matola Port Manager)
	Aquital Agy Ibrahimo	Mechanical Engineer
	Arsenio Zimba	Hydraulic Engineer
	Atanasio Neves	Mechanical Engineer
	Miguel Jamisse	Mechanical Engineer
PN	Agostinho F. Langa Jr.	Operation Director/Executive Committee
	Leonel do Rodorigues	IT Technician
	Neimo Induna	Container Yard Manager
	Lucas Cipriano	Port Operation Manager
	Luis Jorge Machado	Asst. Port Operation
	Eusebio Ananias Ramos	Coordinator, Port Operations
JICA Expert Team	Nakashima, Kunita, Eto, Komoto, and Kuribayashi	

Agenda

Restructuring of Phaeros, a Terminal Operating System (TOS)

Materials

1. Restructuring Plan prepared by PN for Improving their existing TOS, Phaeros.
2. Possible Operational Data Flows by a TOS at Nacala Port CT as an example/reminder.

Main Discussion Points

1. Mr. Eto, a JICA expert, started the discussion by presenting "Possible data flow in various operation phases at Nacala Port CT" through some figures.
2. Mr. Eto, also, emphasized that Phaeros (TOS) is just a tool, not a solution; accordingly, operation staff in PN must master basic technologies and skills (know-how) on CT Operation to run the CT properly.
3. Mr. Eto and other JICA experts confirmed re-engineering/up-grading schedule of Phaeros through Mr.Eusebio and other attendees.

Session 9 (TF-3)	**Meeting for Cargo Handling**
6th Dispatch	**Place**: Conference Room of PN Nacala **Date**: 20th June, 2013 **Time**: 10:30 am ~ 12:00 am

Participants

CFM	Balamade Andinane	Technician (Category A)
	Nauaia Mahonca	Technician (Category A)
	Paulo Tarmamade	Adviser of the Board of Directors
	Sergio Simao	Electronic Engineer (Matola Port Manager)
	Anabela Matsinha	Civil Engineer
	Aquital Agy Ibrahimo	Mechanical Engineer
	Atanasio Neves	Mechanical Engineer
	Miguel Jamisse	Mechanical Engineer
PN	Neimo Induna	Container Yard Manager
	Lucas Cipriano	Port Operation Manager
	Luis Jorge Machado	Asst. Port Operation
	Eusebio Ananias Ramos	Coordinator, Port Operations
	Bonifacio Muassabao	Port Operations
	Atumane Quinane	Port Operations
	F. Ribeiro	Port Coordinator
CDN	Aderval Acioli Matos	Port Director
TN	Abdui Cadre	Supervisor
JICA Expert Team	Eto, Nakashima, Kunita, Komoto, and Kuribayashi	

Agenda

How to manage Container Yard Operations given current conditions.

(The agenda was changed because Nacala CT (CY) was facing a very critical condition at the time, namely, that a lot of long-dwelling import laden containers were being piled in the CY.)

Materials

Power Point Material: Urgent Necessity on Nacala Port Container Yard (CY) Management

Main Discussion Points

1. Capt. Eto, a JICA expert, started the discussion emphasizing that Nacala Port CY would continue to face problems unless management took the necessary actions immediately.
2. The reason for the difficult situation is that there are more than 3,500 TEU of containers in total in the CY, while it's sustainable Max CY Capacity is 2,520 TEU (stacking containers at 3 highs overall).
3. Mr. Eto, accordingly, made various suggestions to PN for easing the conditions such as;
   1) Secure spaces outside of the Port (Off Dock CY) and move all the available empty containers.
   2) Also, move import laden containers as well after receiving permission from Customs.
4. Mr. Langa, Operation Director of PN, explained that PN has been contacting with Customs since 2-3 months ago but has received no answer from Customs yet.
5. In conclusion, PN and JICA Team confirmed that Mr. Langa will continue his efforts to obtain permission from Customs as soon as possible.

Session 11 (TF-3)	**Meeting for Cargo Handling**
6th Dispatch	**Place**: Conference Room of PN Nacala **Date**: 21st June, 2013 **Time**: 9:00 am ~ 10:30 am

Participants

CFM	Balamade Andinane	Technician (Category A)
	Nauaia Mahonca	Technician (Category A)
	Paulo Tarmamade	Adviser of the Board of Directors
	Sergio Simao	Electronic Engineer (Matola Port Manager)
	Anabela Matsinha	Civil Engineer
	Aquital Agy Ibrahimo	Mechanical Engineer
	Arsenio Zimba	Hydraulic Engineer
	Atanasio Neves	Mechanical Engineer
	Miguel Jamisse	Mechanical Engineer
PN	Agostinho F. Langa Jr	Operation Director/Executive Comittee
	Lucas Cipriano	Port Operation Manager
	Eusebio Ananias Ramos	Coordinator, Port Operations
	Bonifacio Muassabao	Port Operations
JICA Expert Team	Nakashima, Kunita, Eto, Komoto and Kuribayashi	

Agenda

Necessity of the use of "Spreader with Flippers”

Materials

Power Point Material: Why it’s better to Use “Spreaders with Flippers” at Ship-gear Ops

Main Discussion Points

1. Capt. Eto, a JICA expert, began by discussing the efforts of PN in attaching flippers on their existing spreaders in just several months by themselves.
2. However, spreaders as well as flippers were made by soft irons; thus, the flippers were all bent and broken.
3. PN, then, had intended to purchase some spreaders, but “without” flippers.
4. However, Mr. Eto told PN that they cannot increase a ship’s operational productivity with such spreaders without flippers because of the nature of “ships gear” operation.
5. PN understood the importance of using spreaders with flippers, and agreed to purchase a sufficient number of spreaders with flippers.

Session 3 (TF-3)	Discussion on the revision of Phaeros system (upgrading plan by Phaeros engineers)
7th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 12th December, 2013 **Time:** 09:30 to 11:30

Participants

CFM North	Braulio Catutula	Operations Officer
	Abubacar Mecuta	Chief of Security & Safety
PN	Matos Fernandes	General Director/Adviser
	Lucas Jose Cipriano	Port Operation Director
	Neimo da Esperanca Indunia	Maintenance/CCOP
	Luis Machado	CCOP
	Eusebio Ananias	Port Operation Division (DOP)
	Leonel Rodorigues	IT Section
	Bruno Perreira	IT Section
TN	Denilson Hamide	Director
	Helvio	Supervisor
	Noroda	TN Officer
	Sunil Ratnasiri	Supervisor
JICA Expert Team	Okada, Eto, Kimura and Komoto	
JICA Mozambique	Kuribayashi	

Agenda

1. PN presented the Phaeros system upgrade program and its timeline which will become operational in March 2014.
2. Detailed configuration of the system is still under review and introduction of EDI is also under discussion.
3. JICA TA Team provided the typical system requirement in flow charts for import and export containers.

Session 6 (TF-3)	Survey of Nacala 2nd Port (Dry Port)
7th Dispatch	**Place:** Nacala 2nd Port (Dry Port) **Date:** 16th December, 2013 **Time:** 14:30 to 16:30

Participants

PN	Lucas Jose Cipriano	Port Operation Director
TN	Denilson Hamide	Director
JICA Expert Team	Okada, Eto, Kimura and Komoto	
JICA Mozambique	Kuribayashi	

Agenda

1. The dry port currently handles empty container only.
2. The dry port can reduce the congestion of the container yard inside the port if it handles laden import containers.
3. The following actions are necessary to improve the situation
   - Yard pavement to have enough bearing capacity to handle laden containers with reach stackers
   - Redesigning the yard arrangement to maximize the capacity
   - Consideration of the bonded area

Session 10 (TF-3)	**Discussion on productivity of container handling operation including dry port issues (extra session 1)**
7th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 17th December, 2013 **Time:** 09:30 to 11:30

Participants

CDN	Ibraimo Mussa	Port Operation
PN	Lucas Jose Cipriano Neimo da Esperanca Indunia	Port Operation Director Maintenance/CCOP
TN	Denilson Hamide	Director
JICA Expert Team JICA Mozambique	Okada, Eto, Kimura and Komoto Kuribayashi	

Agenda

1. JICA TA Team provided a modified yard design of the dry terminal aimed to handle containers at a level comparable to the global standard.
2. JICA Team transferred practical knowhow of the efficient and safe use of container yards such as
   - Collection and sorting of ships' data by shipping lines and service loops needed to prepare efficient stacking / marshalling plans
   - Assignment of 3 documentation clerks and 3 ship planners to provide effective yard operations

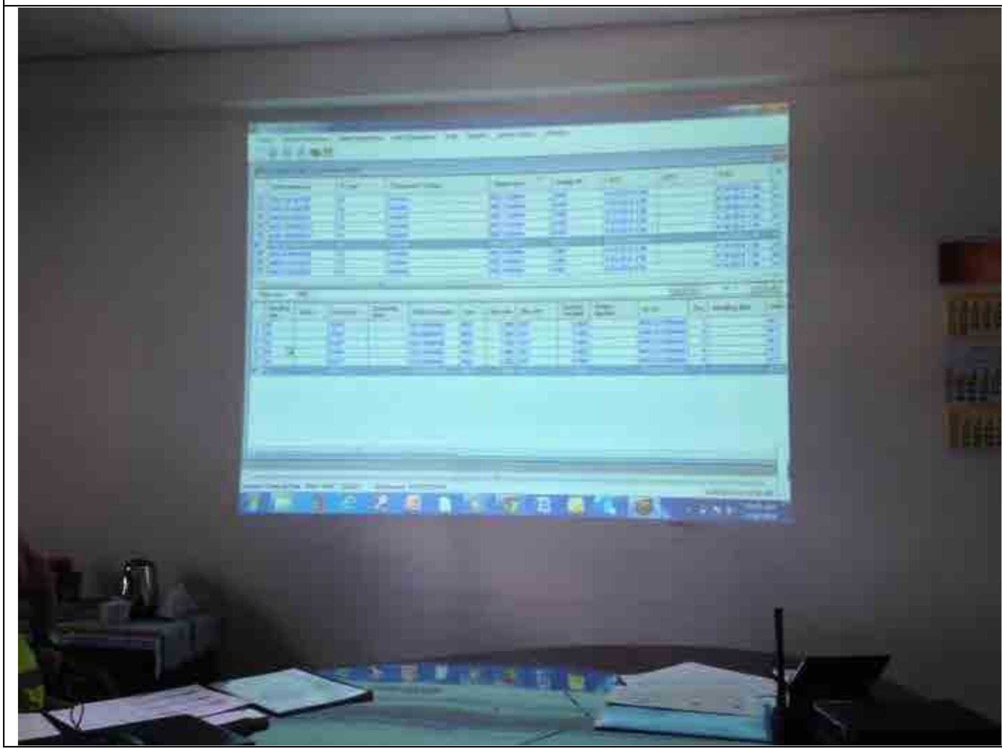
Session 7 (TF-3)	Discussion on the progress of the Phaeros system upgrading
8th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 24th April, 2014 **Time:** 09:30 to 11:30

Participants

CFM	Anabela Matsinha	Civil Engineer
	Nino Lobo	Fire Brigade Manager
PN	Agostinho F. Langa Jr.	Operation Director/Executive Committee
	Neimo da Esperanca Induna	Maintenance/CCOP
	Eusebio Ananias Ramos	Port Operation Division (DOP)
	Luis Jorge Machado	Chief of Port Operation Division
	Leonel do Rodorigues	IT Technician
JICA Expert Team	Okada, Nakashima, Kimura and Komoto	
JICA Mozambique	Kuribayashi	

Agenda

1. PN presented the upgraded Phaeros system consisting of several modules including vessel operation, gate operation, yard operation, and tally operation. In future, communication among operators will be done with iPads through wifi
2. The new system is now in a trial in cooperation with two shipping agents and would become fully operational in May.
3. Since this system does not include automatic yard planning functions, JICA Team suggested that PN should develop capable yard planners either through overseas training or onsite expert assistance



Session 8 (TF-3)	**Discussion on improvement of dry port and procurement of spreaders with flippers**
8th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 24th April, 2014 **Time:** 14:30 to 16:30

Participants

CFM	Anabela Matsinha	Civil Engineer
PN	Agostinho F. Langa Jr. Lucas Jose Cipriano Luis Jorge Machado	Operation Director/Executive Committee Project Management Unit Chief of Port Operation Division
TN	Denilson Hamide Sunil Ratnasiri	Director Supervisor
JICA Expert Team JICA Mozambique	Okada, Eto, Kimura and Komoto Kuribayashi	

Agenda

1. TN started to upgrade the dry terminal by paving the yard and installing lighting poles. The upgraded terminal will start operation in September 2014
2. Through talks with customs, it was agreed to remove import containers staying in the port terminal for more than 25 days and move them to the TEEN terminal
3. TN has placed an order of four spreaders with flippers to a South African firm
4. JICA Team suggested that Nacala port should keep track of container handling productivity by three universally applied indicators

Session 4 (TF-3)	Visit to the dry terminal and TEEN terminal
9th Dispatch	**Place:** Dry Terminal and TEEN Terminal **Date:** 5th September, 2014 **Time:** 14:30 to 16:30

Participants

MTC	Martinho F. Mafumo	Maritime Administrator
CFM	Alfredo Artur Mafuca	Oil Terminal Manager
CDN	Ibraimo Mussa	Port Operations Analyst
PN	Lucas Jose Cipriano	Project Management Unit
TN	Jose Samu	Operation
JICA Expert Team	Okada, Eto, Kimura and Komoto	
JICA Mozambique	Kuribayashi	

Agenda

JICA Team and Mozambican counterparts visited the dry terminal and TEEN terminal

1. At the dry terminal:
   - Surface leveling and compaction have been completed
   - Lighting poles are under construction
   - Two reach stackers will be introduced in November
   - JICA team asked for the final layout plan
2. At the TEEN terminal:
   - Designed for export containers inspection but used for import containers on an ad-hoc basis when the need arises
   - Annual capacity of 100,000 TEUs with 552 ground slots


Session 9 (TF-3)	**Upgrade status of Phaeros system**
9th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 11th September, 2014 **Time:** 9:30 to 11:30

Participants

MTC	Martinho F. Mafumo	Maritime Administrator
CFM	Braulio Franco Catutula	Port Operation
	Milione Changala	Supervisor Electrical Engineer
PN	Lucas Jose Cipriano	Project Management Unit
	Neimo da Esperanca Induna	Maintenance/CCOP
	Eusebio Ananias Ramos	Port Operation Division (DOP)
	Luis Jorge Machado	Chief of Port Operation Division
	Loni Schott Ribeiro	Chief of the Commercial Division
	Leonel Caetano	IT
TN	Sunil Ratnasiri	Supervisor
	Denilson Hamide	Director
JICA Expert Team	Okada, Eto, Kimura and Komoto	
JICA Mozambique	Kuribayashi	

Agenda

- JICA Team presented IT system requirements for a modern container terminal
- PN demonstrated the current operations and functions of Phaeros (getting fully operational in September)
- JICA Team and Mozambican counterparts jointly identified what functions are lacking in the current Phaeros system (PN-TN data link, yard planning, vessel planning)
- JICA Team confirmed the progress of the dry terminal upgrading and procurement of spreaders (arriving in September)
- JICA Team presented ways for PN to acquire world-standard operational skills and thereby generate sufficient revenue
- JICA Team emphasized the need of capacity development for ship planners and yard planners

Session 3 (TF-3)	Site Monitoring (Dry Terminal)
10th Dispatch	**Place:** PN's dry terminal, Nacala **Date:** 2nd February, 2015 **Time:** 09:30 to 11:00

Participants

CFM North (Nacala)	Nino Jorge Lobo	Port Operation
PN	Luis Machado	Chief of Port Operations Division
	Abudo Sele	Project Management Unit
TN	Denilson Hamide	Branch Mnager
	Jose Samo	RH, Administration
	Castro Juma	Operation Manager
	Julio Quinhane	Port Operations
	Jaime Pedro	
JICA Expert Team	Okada (Team Leader), Eto, Kimura, Nakashima	
JICA Mozambique	Kuribayashi	

Agenda

To identify the current status of the dry terminal

Observation

1. The ground condition of dry terminal has become rough due to the flood happened in early January.
2. The ground needs to be paved when the rainy season ends in April, 2015 to improve durability of the surface against the stacking of empty containers as well as laden containers.

Photo

Session 4 (TF-3)	**Discussion on Data Compilation**
10th Dispatch	**Place:** Conference Room of PN, Nacala **Date:** 2nd February, 2015 **Time:** 14:00 to 16:00

Participants

CFM (Office of Nacala Port Rehabilitation Project)	Arzilio Josué Mata	Supervisor/Civil Engineer
	Tomás Fortunato Ngca	Supervisor/Mechanical Engineer
	Milione Changala	Supervisor/Electrical Engineer
	José Osias Cherinda	Supervisor/H.S.T.
CFM (DEPE)	Carmona Macobola	Civil Engineer
PN	Loni Schott Ribeiro	Chief of Commercial Division
	Luis Machado	Chief of Port Operations Division
	António Gabriel	Chief of Security Division
	Abudo Sele	Project Management Unit
	Neimo Induna	CCOP
	Eusebio Ananias	Port Operation
TN	Denilson Hamide	Branch Mnager
	Sunil Ratnasiri	Operation Assistant
	Niroda	Operation Assistant
JICA Expert Team	Okada (Team Leader), Eto, Kimura, Nakashima	
JICA Mozambique	Kuribayashi	

Agenda

1. CY capacity management through reduction of container dwell time
2. PN's presentation on the current status and issues of CY operations

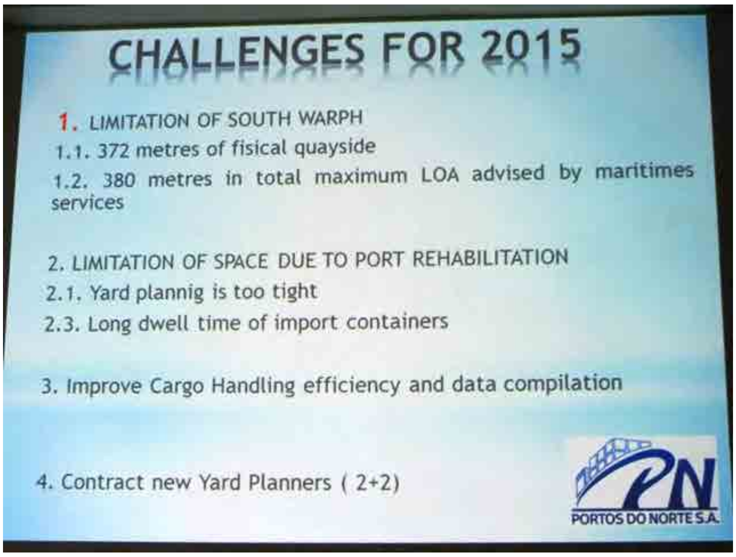
Materials

3. "Key Points on Operation & Management of Nacala Port CT at Present & in the Near Future" (JICA Team)
4. "Cargo Handling" (PN)

Discussions

5. JICA Team presented how to manage CY capacity in a sustainable condition.
   - JICA Team recommended that the container dwell time needs to be measured regularly and reduced to secure more CY capacity
   - Also recommended that an appropriate area of off-dock CYs need to be prepared so that over-flow containers can be accommodated.
   - JICA Team provided a soft copy of Excel sheet to PN so that they can calculate CY capacity.
6. PN presented on the current status of CY operations.
   - In 2014, the Port achieved the largest handling volume ever in both of containers & bulk despite the rehabilitation works of Grant Aid Project.
   - Phaeros is now used online by all shipping lines.
   - Segregation of export containers is now in practice.
   - Vehicle turn-around time has reduced.
   - WiFi will be installed to cover entire CY area by mid-March, followed by RDTs to be equipped.
   - 4 yard planners are considered to be employed.

Photo


CHALLENGES FOR 2015
1. LIMITATION OF SOUTH WARPH
1.1. 372 metres of fisical quayside
1.2. 380 metres in total maximum LOA advised by maritimes services
2. LIMITATION OF SPACE DUE TO PORT REHABILITATION
2.1. Yard plannig is too tight
2.3. Long dwell time of import containers
3. Improve Cargo Handling efficiency and data compilation
4. Contract new Yard Planners (2+2)
PORTOS DO NORTE S.A.

Session 5 (TF-3)	Countermeasures Against Strong Wind in the Container Yard
10th Dispatch	**Place:** Conference Room of PN, Nacala **Date:** 4th February, 2015 **Time:** 09:30 to 11:00

Participants

CFM (Office of Nacala Port Rehabilitation Project)	Tomás Fortunato Ngca	Supervisor/Mechanical Engineer
	Milione Changala	Supervisor/Electrical Engineer
	José Osias Cherinda	Supervisor/H.S.T.
CFM (DEPE)	Carmona Macobola	Civil Engineer
CFM North (Nacala)	Alfredo Rafael Sigola	Chief of Infrastructure Dept.
	Alfredo Artur Mafuca	Oil Terminal Manager
	Abubacar Mecuta	Port Security
CDN	Ibraimo Mussa	Port Operations Analyst
	Zacaries Andaluse	Safety Consultant
PN	Agostinho F. Langa Jr.	Director/COO
	Loni Schott Ribeiro	Chief of Commercial Division
	Luis Machado	Chief of Port Operations Division
	Vasco Cunha	Chief of Maintenance Division
	Abudo Sele	Project Management Unit
	Neimo Induna	CCOP
	Cremildo Márcio	DASSO
TN	Denilson Hamide	Branch Mnager
	Helvio Salomao	Operation Manager
	Carmen Amaral	Safety Officer
	Jaime Pedro	
JICA Expert Team	Okada (Team Leader), Eto, Kimura, Nakashima	
JICA Mozambique	Kuribayashi	

Agenda

1. To make a suggestion on the countermeasures against high wind in the container yard
2. To give a numerical base for the decision making related to strong wind

Materials

1. “Countermeasures against Strong Wind in the Container Yard”
2. “Study of Turn-over of Containers”

Discussions

1. JICA Team recommended Mozambican side to establish a special committee responsible for measures to be taken against strong wind.
2. JICA Team made a suggestion how to operate cargo handling equipment and how to stack empty and laden containers in CY in time of strong wind.
3. Also recommended Mozambican side to install anemometers to keep track of wind conditions and follow weather forecasts.
4. Any measures established in the above need to be reflected in the Safety Regulations.

Photo

5. TF-4: Manutenção de Equipamentos de Movimentação de Carga

Dispatch	Session No.	Title
4th	1	Meeting for Maintenance of CHE
4th	6	Meeting for Maintenance of CHE
5th	5	Meeting for Maintenance of Cargo Handling Equipment: Action Plan on the Improvement of Handling Equipment
5th	10	Training session of Maintenance of Cargo Handling Equipment: Spare Part List for Periodically Replaced Parts and Emergency Parts
7th	8	Discussion on equipment maintenance
8th	5	Joint site monitoring of the equipment
8th	6	Discussion on Equipment Maintenance
9th	7	Equipment maintenance (1)
9th	8-2	Equipment maintenance (2)
10th	2	Site Monitoring (Maintenance Shop, Infrastructure)

Session 1 (TF-4)	Meeting for Maintenance of CHE
4th Dispatch	**Date:** 11th December, 2012 **Time:** 14:00 pm to 15:00 pm **Place:** Conference Room of CDN Nacala

Participants

MTC	Ana Dimande	Project Coodinator, Derectorate of Infrastucture
CFM	Gabriel Cossa	Coordinator, Port Operators
	Alfredo Mafuca	Manager, Port Operations/Data Handling
	Braulio Catutula	Coordinator, Port Operations/Data Handling
	Draisnildo Monteio	Floorwalker, Port Operations
CDN	Loni Shot	Director, Logistics
	Lucas Cipriano	Director, Port Operations
	Bonifacio Muassabao	Manager, Port Operations
	Eusebio Amando	Pilot/Manager, Port Operations
	Eusebio Anania	Coordinator, Port Operations
	Atumane Quinane	Coordinator, Port Operations
	Raime Pachinuapa	Manager, TN-Stevedoring Co.
	Denilson Hamide	Director, TN-Stevedoring Co.
	Nishi	Manager, TN-Stevedoring Co.
	Helvio Salomao	Coordinator, TN-Stevedoring Co.
	Julio	Coordinator, TN-Stevedoring Co.
	Suuil Ratuasiri	General Manager, TN-Stevedoring Co.
JICA Expert Team	Kiyoshi Nakashima	
	Yutaka Miyaji	
	Teruki Eto	
	Susumu Kimura	
	Nobuaki Kuribayashi	Liaison Officer / Operational Coordinator

Agenda

1. Explanation of Improvement of Procurement of Parts
   - Current Procurement Flow
   - Review on Procurement of Parts
   - Improvement of Procurement of Parts
2. Explanation of Improvement of Inventory Management
   - List of Stock Parts

Materials

1. PPT of " Improvement of Procurement of Parts and Inventory Management"
2. Procurement Part List (attached in PPT above)
3. List of Stock Parts (Example of RTG) (attached in PPT above)

Main Discussion Points

1. Mr. Kimura, who is JICA expert, made a special presentation on "Improvement of Procurement of Parts & Inventory Management".
2. Existing problems found: Example 1 and 2 – These 2 problems were found during the last visit to Nacala Port
3. The comparison between present procurement method and "Data Base method by Personal computers"

4. The merit in case of adoption of format of Procurement Part List and List of Stock Parts as a first step of Digitization of procurement data by Personal computers

Session 6 (TF-4)	Meeting for Maintenance of CHE
4th Dispatch	**Date**: 17th December, 2012 **Time**: 14:00 pm to 15:30 pm **Place**: Conference Room of CDN Nacala

Participants

CFM	Abubacar Mecuta	Manager, Port Environment
	Feliciano Antonio	Manager, Maintenance/Infrastucture
	Draisnildo Monteio	Floorwalker, Port Operations
	Cesar Antonio	Coordinator, Maintenance/Infrastucture
	Jose Muapalame	Coordinator, Maintenance/Infrastucture
CDN	Antonio Candido	Director, Maintenance
	Afonso Vasco	Manager, Maintenance/Infrastucture
	Cremildo Madeira	Manager, EHS
JICA Expert Team	Kiyoshi Nakashima	
	Yutaka Miyaji	
	Teruki Eto	
	Susumu Kimura	
	Nobuaki Kuribayashi	Liaison Officer / Operational Coordinator

Agenda

1. Planning and Management of Lubrication of the Container Handling Equipment
   - Importance of Lubrication (Lubricant Manner, etc.)
   - Guide Drawing of Lubrication Points Lubrication Period (Frequency) and Lube and Lubricant List
   - Guide Drawing of Lubrication Points < Example of Guide Drawing using photos >
   - The Next Actions to be carried out by the end of March
2. Periodical Inspections and Maintenance Management of Container Handling Equipment
   - Purpose and Importance of Periodical Inspections
   - Division of roles between the Owner and User
   - Periodical Inspections and Records
   - Flow of Maintenance Management
   - Maintenance management of Container Handling Equipment

Materials

1. PPT of " Improvement of Procurement of Parts and Inventory Management"
2. PPT of " Periodical Inspections and Maintenance Management of Container Handling Equipment"
3. Examples of Guide Drawing of Lubrication Points Lubrication Period (Frequency) and Lube and Lubricant List
4. Format of Records of Inspection and Measures (Example: Refer to the Figure 1.)

Main Discussion Points

1. Mr. Kimura, who is JICA expert, made a special presentation on "Planning and Management of Lubrication of the Container Handling Equipment".
   - Necessity of Guide Drawing of Lubrication, Points Lubrication Period (Frequency) and Lube and Lubricant List
   - The Next Actions to be carried out by the end of March

2. Mr. Kimura made a special presentation on “Periodical Inspections and Maintenance Management of Container Handling Equipment”.
   - Purpose and Importance of Periodical Inspections and Division of roles between the Owner and User
   - Items of Periodical Inspections and Records

Session 5 (TF-4)	Meeting for Maintenance of Cargo Handling Equipment: Action Plan on the Improvement of Handling Equipment
5th Dispatch	**Date:** 12th April, 2013 **Time:** 15:00 to 17:00 **Place:** Conference Room of Warehouse No. 03 0f Nacala Port

Participants

CFM	Tomás Kumwanga	Engineer
	Rafael Sigola	Engineer
PN	Afonso Vasco da Cunha	Director of the Maintenance Division
		Technical Bureau
	Luís Alvito Diogo	Secretary
	Jaime Jerafe	Chief of the Vehicle Maintenance Department
	Santos Damião	Supervisor of the Electrical Machinery Section
	Lubato Masseco	
JICA Expert Team	Susumu Kimura	

Agenda

1. Explanation of "Action Plan on the Improvement of Handling Equipment
2. Examples of Spare Part List

Session 10 (TF-4)	**Training session of Maintenance of Cargo Handling Equipment: Spare Part List for Periodically Replaced Parts and Emergency Parts**
5th Dispatch	**Date:** 15th April, 2013 **Time:** 15:00 to 17:00 **Place:** Conference Room of Warehouse No. 03 0f Nacala Port

Participants

CFM	Tomás Kumwanga	Engineer
	Rafael Sigola	Engineer
PN	Jose Muapalame	Coordinator, Maintenance/Infrastructure
	Afonso Vasco da Cunha	Director of the Maintenance Division
	Luís Alvito Diogo	Technical Bureau
	Santos Damião	Chief of the Vehicle Maintenance Department
	Lubato Masseco	Supervisor of the Electrical Machinery Section
JICA Expert Team	Susumu Kimura	

Agenda

1. List of Parts Periodically Replaced for (2) Year Operation
2. List of Emergency Parts to prevent stoppage of Operation

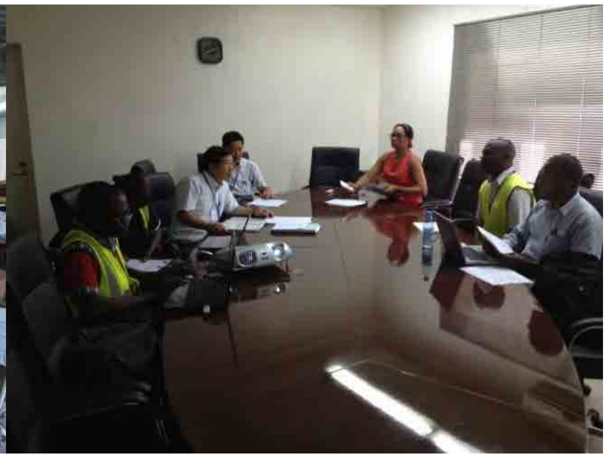
Session 8 (TF-4)	Discussion on equipment maintenance
7th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 16th December, 2013 **Time:** 14:30 to 16:30

Participants

CFM	Paulo Tarmamade	Advisor of the Board of Directors
	Abubacar Mecuta	Chief of Security & Safety
CDN	Ibraimo Mussa	Port Operation
PN	Roni Shott	Deputy Port Director
	Lucas Jose Cipriano	Port Operation Director
	Afonso Vasco da Cunha	Maintenance Director
	Neimo da Esperanca Indunia	Maintenance/CCOP
	Luis A. Diogo	Maintenance
	Wilmida C. Juma	Maintenance
JICA Expert Team	Okada, Eto, Kimura and Komoto	
JICA Mozambique	Kuribayashi	

Agenda

1. JICA Team and PN carried out a joint inspection of equipment.
2. PN has presented a preventive maintenance plan, daily equipment checklist, equipment availability records, organization chart and annual maintenance budget.
3. Average equipment availability ratio has improved significantly due to the following reasons;
   - Introduction of new equipment (2 new reach stackers)
   - Streamlining of spare parts procurement



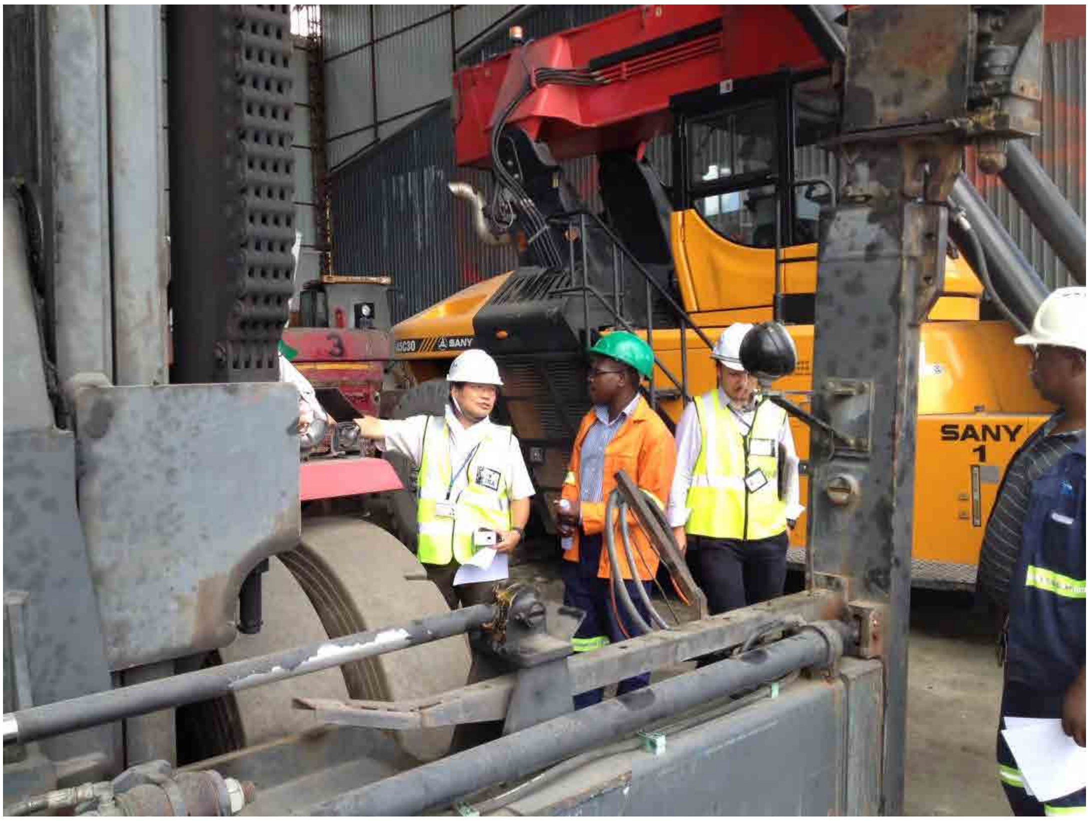
Session 5 (TF-4)	**Joint site monitoring of the equipment**
8th Dispatch	**Place:** Maintenance Workshop **Date:** 23rd April, 2014 **Time:** 09:30 to 11:30

Participants

CFM	Abubacar Mecuta	Inspection Manager
	Alfredo Segola	Maintenance Manager
	Anabela Matsinha	Civil Engineer
CDN	Ibraimo Mussa	CDN Officer (Port Operation)
PN	Lucas Jose Cipriano	Project Management Unit
	Santos Damião	Maintenance Manager
	Luís Alvito Diogo	Maintenance Division
	Wilmida C. Juma	Maintenance
	Abudo Sele	Project Management Unit
JICA Expert Team	Kimura and Komoto	
JICA Mozambique	Kuribayashi	

Agenda

1. JICA Team and Mozambican counterparts carried out a joint site monitoring of the equipment
2. It was found that the delivery of some parts were delayed resulting in prolonged downtime of equipment



Session 6 (TF-4)	Discussion on Equipment Maintenance
8th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 23rd April, 2014 **Time:** 14:30 to 16:30

Participants

CFM	Braulio Catutula	IT Manager
	Draisnildo Luis Monteiro	Civil Technician A
	Abubacar Mecuta	Inspection Manager
	Anabela Matsinha	Civil Engineer
	Alfredo Segola	Maintenance Manager
TN	Lucas Jose Cipriano	Project Management Unit
	Luís Alvito Diogo	Maintenance Division
	Wilmida C. Juma	Maintenance
JICA Expert Team	Okada, Eto, Kimura and Komoto	
JICA Mozambique	Kuribayashi	

Agenda

1. PN presented the maintenance record of equipment. Equipment is generally kept in a good condition but some equipment remains out of order due to the delay in the delivery of spare parts
2. JICA Team gave two presentations suggesting major points to be noted and examined by the operation department and maintenance department before the delivery of two RTGs
3. Aiming to reduce the equipment downtime, JICA Team suggested:
   - Periodically replaced parts should be stored in the workshop
   - Comprehensive maintenance service contract with a reliable supplier could be an answer
   - PN Nacala could be authorized for minor expenditure of maintenance procurement

Session 7 (TF-4)	**Equipment maintenance (1)**
9th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 10th September, 2014 **Time:** 9:30 to 11:30

Participants

MTC	Martinho F. Mafumo	Maritime Administrator
CDN	Ibraimo Mussa	Port Operations Analyst
PN	Lucas Jose Cipriano	Project Management Unit
	Afonso Vasco da Cunha Jr.	Maintenance Director
	Luís Alvito Diogo	Maintenance Division
	Loni Schott Ribeiro	Chief of the Commercial Division
TN	Helvio Salomao	Supervisor
	Denilson Hamide	Director
	Johny Verter	Technician
JICA Expert Team	Okada, Eto and Kimura	
JICA Mozambique	Kuribayashi	

Agenda

- PN presented the recent records of the working conditions of cargo handling equipment
- Availability of equipment has increased to as high as 80 % resulting from the implementation of periodical maintenance
- JICA Team suggested that detailed information on each equipment (such as accumulated operation hours, downtime, date of the placement of spare parts orders) should be shared by the management
- JICA Team also suggested that the Mozambican side should decide who is responsible for the maintenance of equipment introduced in ODA projects and get ready for its maintenance.

Session 8-2 (TF-4)	**Equipment maintenance (2)**
9th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 10th September, 2014 **Time:** 14:30 to 16:30

Participants

MTC	Martinho F. Mafumo	Maritime Administrator
CFM	Milione Changala	Supervisor Electrical Engineer
CDN	Ibraimo Mussa	Port Operations Analyst
PN	Lucas Jose Cipriano	Project Management Unit
PN	Afonso Vasco da Cunha Jr.	Maintenance Director
PN	Luís Alvito Diogo	Maintenance Division
PN	Santos Damião	Maintenance Manager
PN	Lubato Masseco	Supervisor of the Electrical Machinery Section
PN	Antonio Sitdra	Maintenance
PN	Johnny Venker	TECON:SE
JICA Expert Team	Eto and Kimura	
JICA Mozambique	Kuribayashi	

Agenda

- JICA Team presented components of RTG and its periodical inspection procedures
- JICA Team suggested that monthly maintenance of 2 RTGs should be carried out in 5 hours by 5 mechanics
- Additional lectures will be given in the next dispatch

Session 2 (TF-4)	**Site Monitoring (Maintenance Shop, Infrastructure)**
10th Dispatch	**Place:** Nacala Port, maintenance shop, North Wharf and South Wharf **Date:** 30th January, 2015 **Time:** 14:00 to 15:30

Participants

CFM (Office of Nacala Port Rehabilitation Project)	Arzilio Josué Mata	Supervisor/Civil Engineer
	Tomás Fortunato Ngca	Supervisor/Mechanical Engineer
	Milione Changala	Supervisor/Electrical Engineer
	José Osias Cherinda	Supervisor/H.S.T.
CFM North (Nacala)	Alfredo Rafael Sigola	Chief of Infrastructure Dept.
	Drasnildo Luis Monteiro	Chief of Infrastructure Dept.
	Braulio Franco Catutula	Port Operation
	Nino Jorge Lobo	Port Operation
PN	Vasco Cunha	Chief of Maintenance Division
	Abudo Sele	Project Management Unit
JICA Expert Team	Okada (Team Leader), Kimura, Nakashima	
JICA Mozambique	Kuribayashi	

Observations

1. Maintenance shop
   (ア) Debris used be found in the reach stacker maintenance house have already been taken away and the house seems to be kept in good order.
   (イ) The items red-tagged in the 9th dispatch were still found at the warehouses. Those items are supposed to be removed after the new warehouse is built.
   (ウ) 2 units of Ferrari reach stackers provided by the Grand Aid Project have already been in operation. PN staffs commended for their quicker responses than those of the existing reach stackers.
2. North Wharf
   (ア) Construction works of the Grant Aid Project seems to be performed in good order, while 1 month delay is reported due to Christmas vacation and the rough weather in early January, 2015.
   (イ) No accident has been reported at the construction sites until now.
3. South Wharf
   (ア) The survey of the deteriorated places was conducted by CFM/PN once in November, 2014. The next survey is scheduled in March, 2015 after the rainy season is over.
   (イ) A simple repair work is under consideration after the Grant Aid Project is completed.

Photo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6. TF-5: Manutenção de Infraestrutura

Dispatch	Session No.	Title
5th	2	Meeting of Maintenance of Port Facilities: Preventive Maintenance / Maintenance Management
5th	7	Meeting for Maintenance of Port Facilities: Preventive Maintenance / Maintenance Management
6th	4	Meeting of Maintenance of Port Facilities
6th	8	Meeting for Maintenance of Port Facilities
6th	13	Meeting for Maintenance of Port Facilities
7th	2	Discussion on the maintenance plan of infrastructures (based on the result of survey by Geoibericos)
7th	4	Survey of infrastructures with Mozambican counterpart
7th	7	Discussion on the result of infrastructure monitoring carried out by Mozambican counterpart
7th	11	Monitoring of infrastructures (extra session 2)
8th	2	Discussion on the maintenance plan of infrastructures
8th	3	Joint site monitoring of the infrastructure
8th	4	Discussion on South Wharf Countermeasures
9th	5	Infrastructure maintenance (1): Infrastructure Monitoring & Basics of Level Survey
9th	6	Infrastructure maintenance (2): Joint Inspection
9th	8-1	Infrastructure maintenance (3): Field Training of Level Survey

Session 2 (TF-5)	**Meeting of Maintenance of Port Facilities: Preventive Maintenance / Maintenance Management**
5th Dispatch	**Date:** 12th April, 2013 **Time:** 11:00 to 12:00 **Place:** Conference Room of CDN Nacala

Participants

CFM	Assane Daudo	Manager, Port Operations
	Draisnildo Luis	Floorwalker, Port Operations
	Monteiro	Engineer
	Tomas Kumwanga	Engineer
	Rafael Sigola	Manager, Port Environment
	Abubacar Mecuta	Coordinator, Maintenance/Infrastructure
	Cesar Antonio	
CDN	Aderval Acioli Matos	Port Director
PN	Lucas Cipriano	Port Operations
	Neimo Induma	Port Operations
	Eusebio Ananias	Port Operations
	Luis Machado	Port Operations
	Atumane Quinane	Port Operations
TN	Helvio Salomao	Port Operations
	Julio Quinhane	Port Operations
JICA Expert Team	Okada, Nakashima, Kimura, Kawabata and Kuribayashi	

Agenda

1. Review of the recommendation made in September, 2012
2. Explanation of Objectives of Maintenance Planning
3. Concept of Maintenance Plan
4. Flow of preparation of the maintenance plan for existing facilities
5. Preparation of the documented maintenance plan
6. (Homework)
   Maintenance Action Plan to be prepared by CDN/PN by June, 2013
   CDN/PN to organize/assign necessary manpower

Session 7 (TF-5)	**Meeting for Maintenance of Port Facilities: Preventive Maintenance / Maintenance Management**
5th Dispatch	**Date:** 13th April, 2013 **Time:** 10:00 to 11:00 **Place:** Conference Room of CFM Nacala

Participants

CFM	Jose Muapalame	Coordinator, CFM Pemba
	Assane Daude	Manager, Port Operations, CFM Pemba
	Cesar Antonio	Coordinator, Maintenance / Infrastructure, CFM Pemba
	Ossufo Bacar	CFM Pemba
JICA Expert Team	Okada, Nakashima, Kimura, Kawabata and Kuribayashi	

Agenda

1. Review of the F/S report descriptions for Pemba port
2. Explanation of Objectives of Maintenance Planning
3. Discussions for Issues of Pemba port as of today
4. (Recommendations)
   Rubber fenders shall be installed as Nacala port did.
   To organize/assign necessary manpower
   Seek JICA experts' advices for technical transfer to the employees of CFM Pemba

Session 4 (TF-5)	**Meeting of Maintenance of Port Facilities**
6th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 18th June, 2013 **Time:** 10:30 to 12:00

Participants

MTC	Ana Matusse Dimande	Project Coordinator
CFM	Aquital Agy Ibrahimo	Mechanical Engineer
	Arsenio Zimba	Hydraulic Engineer
	Atanasio Neves	Mechanical Engineer
	Sergio Simao	Matola Port Manager
	Paulo Tarmamade	Advisor of the Board of Directors
	Balamade Andiane	Technician (Category A)
	Nauaia Mahonca	Technician (Category A)
PN	Agostinho F. Langa Jr.	Operation Director/Executive Committee
	Afonso Vasco da Cunha Jr.	Chief of the Maintenance Division
	Neimo Indunia	Container Yard Manager
JICA Expert Team	Nakashima, Kunita, Eto, Komoto and Kuribayashi	

Agenda

Preventive Maintenance / Maintenance Management

Main discussion points

1. Review of "Issues on the South Wharf of Nacala Port – 17 Apr, 2013"
2. Explanation of actions taken by C/P on the issues
3. Explanation of current condition of the South Wharf
4. Discussions for the Issues and future measures
5. (Recommendations)
   Monitoring program shall be established and enforced
   Minimize laden container placement on both wharf deck and yard just behind
   C/P requested to continue the discussion on how to prolong the life of the South Wharf

Session 8 (TF-5)	**Meeting for Maintenance of Port Facilities**
6th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 20th June, 2013 **Time:** 9:00 to 10:30

Participants

CFM	Anabela Matsinha	Civil Engineer
	Aquital Agy Ibrahimo	Mechanical Engineer
	Arsenio Zimba	Hydraulic Engineer
	Atanasio Neves	Mechanical Engineer
	Sergio Simao	Matola Port Manager
	Paulo Tarmamade	Advisor to the Board of Directors
	Balamade Andiane	Technician (Category A)
	Nauaia Mahonca	Technician (Category A)
PN	Agostinho F. Langa Jr.	Operation Director / Executive Committee
	Afonso Vasco da Cunha Jr.	Chief of the Maintenance Division
	Neimo Indunia	Container Yard Manager
JICA Expert Team	Nakashima, Kunita, Eto, Komoto and Kuribayashi	

Agenda

Preventive Maintenance / Maintenance Management

Main discussion points

1. Discussion on the progress of the facility maintenance action plan
2. Explanation of CP's plan to employ an investigation company to do facility mapping, producing maintenance plan etc.
3. Explanation of current condition of the South Wharf based on the result of joint inspection on 19 June
4. (Recommendations)
   Monitoring program shall be established and enforced
   Obtain the result of monitoring to present TA team on the next visit for further discussion

Session 13 (TF-5)	Meeting for Maintenance of Port Facilities
6th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 24th June, 2013 **Time:** 14:00 to 15:30

Participants

CFM	Anabela Matsinha	Civil Engineer
	Arsenio Zimba	Hydraulic Engineer
PN	Agostinho F. Langa Jr.	Operation Director / Executive Committee
	Afonso Vasco da Cunha Jr.	Chief of the Maintenance Division
	Neimo Indunia	Container Yard Manager
JICA Expert Team	Nakashima, Kunita, Eto, Komoto and Kuribayashi	

Agenda

Preventive Maintenance / Maintenance Management

Materials

Monitoring of Civil Infrastructure,

Main Discussion Points

1. Brief explanation of every wharf Structures at Nacala Port
2. What shall be inspected/monitored
3. Method of inspection/monitoring
4. Handover of measuring equipment (Rebound hammer, Measuring Tape etc.)
5. (Recommendations)
   Inspection/monitoring shall be started as soon as possible (equipment handed over)
   Present the result of inspection/monitoring to TA team on the next visit for further discussion

Session 2 (TF-5)	**Discussion on the maintenance plan of infrastructures (based on the result of survey by Geoibericos)**
7th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 11th December, 2013 **Time:** 14:30 to 16:30

Participants

CFM North	Braulio Catutula	Operations Officer
	Abubacar Mecuta	Chief of Security & Safety
CDN	Ibraimo Mussa	Port Operation
PN	Joao Matos Fernandes	General Director/Advisor
	Loni Shott	Deputy Port Director
	Lucas Jose Cipriano	Port Operation Director
	Afonso Vasco da Cunha	Maintenance Director
	Neimo da Esperanca Indunia	Maintenance/CCOP
JICA Expert Team	Okada, Eto, Kimura and Komoto	
JICA Mozambique	Ohno and Kuribayashi	

Agenda

1. PN presented the outcome of Geoibericos studies carried out in Jul~Aug 2013.
   The results of investigation show the similar findings as JICA's on deterioration of Southfindings.
   PN will carry out routine maintenance of infrastructures while implementation of pile rehabilitation is required within 2 years according to the study.
2. JICA TA Team presented the latest Nacala Port Development schedule and explained that the South Wharf must be maintained operational until the new North Container berth becomes available.
3. Since the reports have been just issued in Portuguese, JICA TA Team and C/P will study the reports and will discuss in detail during the next dispatch.

Session 4 (TF-5)	**Survey of infrastructures with Mozambican counterpart**
7th Dispatch	**Place:** South Wharf and North Wharf **Date:** 12th December, 2013 **Time:** 14:30 to 16:30

Participants

CFM North	Braulio Catutula	Operations Officer
CDN	Antonio Frederico Candido	Deputy Port Director
PN	Lucas Jose Cipriano Neimo da Esperanca Indunia	Port Operation Director Maintenance/CCOP
JICA Expert Team JICA Mozambique	Kimura and Komoto Kuribayashi	

Agenda

1. JICA TA Team and counterpart jointly inspected current condition of South and North Wharf.
2. JICA TA Team pointed out CY adjacent to the South Wharf seems settled compare with the last dispatch as well as deterioration of the concrete structure generally progressing.
3. Corrupted concrete pavement adjacent to the South Wharf discovered in the last dispatch has been repaired by PN. Photos taken during the repair work were given to JICA TA Team after the inspection.
4. Counterpart explained that the soil underneath the pavement seems seeping out due to the wave and tidal water flow based on their observation from underneath the deck slab.
5. Laden containers in the yard adjacent to the South Wharf have been removed following JICA Team suggestion.

Session 7 (TF-5)	**Discussion on the result of infrastructure monitoring carried out by Mozambican counterpart**
7th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 16th December, 2013 **Time:** 09:30 to 11:30

Participants

CFM	Paulo Tarmamade	Advisor of the Board of Directors
	Alfredo Manuel Lipego	
CDN	Ibraimo Mussa	Port Operation
PN	Roni Shott	Deputy Port Director
	Lucas Jose Cipriano	Port Operation Director
	Afonso Vasco da Cunha	Maintenance Director
	Neimo da Esperanca Indunia	Maintenance/CCOP
JICA Expert Team	Okada, Eto, Kimura and Komoto	
JICA Mozambique	Kuribayashi	

Agenda

1. Discussion on the joint inspection result showing progressing deterioration.
2. JICA TA Team will examine the monitoring plan produced by Geoibericos.
3. PN will soon employ a competent civil engineer in charge of monitoring and maintenance.
4. JICA TA Team will consider providing survey equipment for doing monitoring by counterpart.

Session 11 (TF-5)	**Monitoring of infrastructures (extra session 2)**
7th Dispatch	**Place:** CFM Maputo **Date:** 18th December, 2013 **Time:** 09:30 to 11:30

Participants

CFM	Paulo Tarmamade	Advisor of the Board of Directors
	Anabela Matsinha	Civil Engineer
	Arcelio Lopes Bainha	Civil Engineer
JICA Expert Team	Okada, Eto, Kimura and Komoto	

Agenda

1. CFM presented their report of the site inspection of North/South Wharves carried out on 5th and 6th Dec identifying ongoing degradation.
2. CFM will review the Geoibericos report to decide what to do.
3. JICA TA Team will inform a list of survey equipment needed for quantitative monitoring of the degradation.
4. CFM requested capacity building on the use of survey equipment procured by CFM and/or JICA TA Team.

Session 2 (TF-5)	Discussion on the maintenance plan of infrastructures
8th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 21st April, 2014 **Time:** 14:30 to 16:30

Participants

CFM	Paulo Tarmamade	Adviser of the Board of Directors
	Alfredo Manuel Lipeque	Branch Manager
	Braulio Catutula	IT Manager
	Abubacar Mecuta	Inspection Manager
	Alfredo Segola	Maintenance Manager
	Anabela Matsinha	Civil Engineer
CDN	Francisco Davide	Consultant
PN	Loni Shott	Deputy Port Director
	Lucas Jose Cipriano	Project Management Unit
	Afonso Vasco da Cunha	Maintenance Director
	Abudo Sele	Project Management Unit
	Luís Alvito Diogo	Maintenance Division
JICA Expert Team	Okada, Nakashima, Kimura and Komoto	
JICA Mozambique	Ohno and Kuribayashi	

Agenda

1. JICA Team asked about the progress of the infrastructure maintenance (inspection, monitoring, repair)
2. The Mozambican side responded:
   - The concessionaire (CDN) will remain responsible for the infrastructure maintenance after the concession contract is revised
   - PN has just assigned a civil engineer for infrastructure maintenance
3. JICA Team pointed out:
   - Infrastructure maintenance needs to be started immediately taking into account the Geoibericos report

Session 3 (TF-5)	**Joint site monitoring of the infrastructure**
8th Dispatch	**Place:** Nacala Port South Wharf and North Wharf **Date:** 22nd April, 2014 **Time:** 09:30 to 11:30

Participants

CFM	Alfredo Segola	Maintenance Manager
	Abubacar Mecuta	Inspection Manager
	Anabela Matsinha	Civil Engineer
PN	Lucas Jose Cipriano	Project Management Unit
	Abudo Sele	Project Management Unit
JICA Expert Team	Okada, Kimura and Komoto	
JICA Mozambique	Kuribayashi	

Agenda

4. JICA Team demonstrated how the elevation of structures would be monitored with survey equipment to be provided later on
5. Mozambican counterparts will have completed preparatory field works before the delivery of the equipment
6. JICA Team demonstrated how to measure the concrete strength with a rebound hammer and a crack scale
7. Mozambican counterparts will start monitoring the state of infrastructure

Session 4 (TF-5)	**Discussion on South Wharf Countermeasures**
8th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 22nd April, 2014 **Time:** 14:30 to 16:30

Participants

MTC	Ana Matusse Dimande	Project Coordinator
CFM	Paulo Tarmamade	Adviser of the Board of Directors
	Alfredo Manuel Lipeque	Branch Manager
	Alfredo Segola	Maintenance Manager
	Braulio Catutula	IT Manager
	Abubacar Mecuta	Inspection Manager
	Anabela Matsinha	Civil Engineer
PN	Lucas Jose Cipriano	Project Management Unit
	Neimo da Esperanca Indunia	Maintenance/CCOP
	Abudo Sele	Project Management Unit
JICA Expert Team	Okada, Nakashima, Kimura and Komoto	
JICA Mozambique	Kuribayashi	

Agenda

1. JICA Team presented:
   - Necessary steps to be taken before the Mozambican side decides countermeasures
   - Measures to analyze the residual strength of concrete and steel structures
   - Alternative reinforce measures
   - Viewpoints in the comparison of new construction and rehabilitation
   - Points to be noted during the implementation
2. CFM and CDN will consider what to do with the South Wharf taking account of JICA Team's view

Session 5 (TF-5)	**Infrastructure maintenance (1): Infrastructure Monitoring & Basics of Level Survey**
9th Dispatch	**Place:** Conference Room of PN Nacala **Date:** 9th September, 2014 **Time:** 9:30 to 11:30

Participants

MTC	Martinho F. Mafumo	Maritime Administrator
CFM	Anabela Matsinha	Supervisor Civil Engineer
	Arzilio Mata	Supervisor Civil Engineer
	Floclordo Cumbane	Port Operation
	Ohairo Mario	Port Security
PN	Lucas Jose Cipriano	Project Management Unit
	Afonso Vasco da Cunha Jr.	Maintenance Director
	Abudo Sele	Project Management Unit
JICA Expert Team	Okada, Eto, Kimura and Komoto	
JICA Mozambique	Kuribayashi	

Agenda

- PN presented its results on concrete cracks and strength inspection of the South Wharf
- In response, JICA Team suggested periodical inspection at the fixed location
- JICA Team presented basics of level survey and settlement monitoring

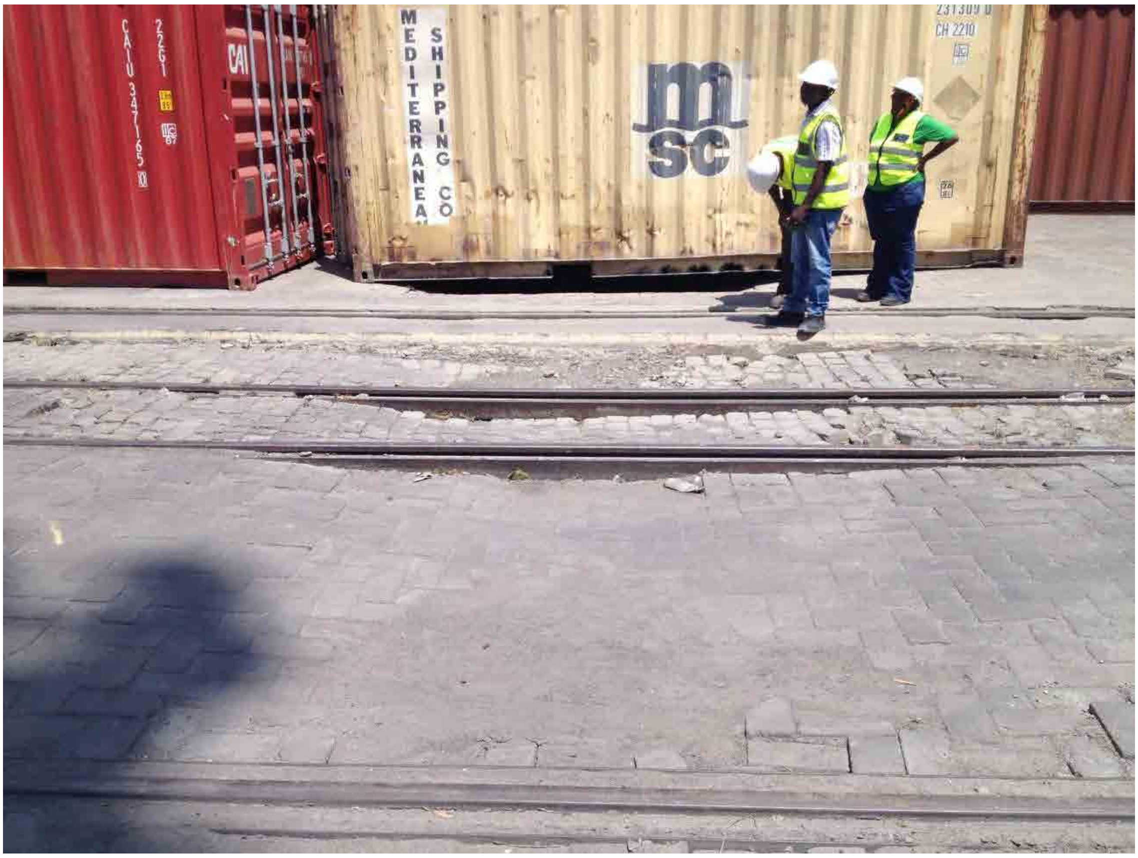
Session 6 (TF-5)	Infrastructure maintenance (2): Joint Inspection
9th Dispatch	**Place:** South Wharf and North Wharf **Date and Time:** 14:30 to 16:30 9th September, 2014 and 9:30 to 11:30 10th September, 2014

Participants

CFM	Abubacar Mecuta	Port Security
CFM	Anabela Matsinha	Supervisor Civil Engineer
CFM	Arzilio Mata	Supervisor Civil Engineer
PN	Afonso Vasco da Cunha Jr.	Maintenance Director
PN	Abudo Sele	Project Management Unit
JICA Expert Team	Komoto	
JICA Mozambique	Kuribayashi	

Agenda

- JICA Team and Mozambican counterparts jointly carried out infrastructure inspection
- Inspection of the South Wharf using a small boat was postponed to Sep. 10 due to the high tide
- It was found that most of the preparation works had been carried as requested in the previous dispatch
- Serious deterioration of the South Wharf was confirmed by joint inspection on Sep. 10
- It was also found that rock scouring protection behind the rear wall was partially lost at many locations resulting in a leak of filled soil



Session 8-1 (TF-5)	Infrastructure maintenance (3): Field Training of Level Survey
9th Dispatch	**Place:** South Wharf **Date:** 10th September, 2014 **Time:** 14:30 to 16:30

Participants

CFM	Anabela Matsinha	Supervisor Civil Engineer
PN	Neimo da Esperanca Induna	Maintenance/CCOP
PN	Abudo Sele	Project Management Unit
JICA Expert Team	Okada and Komoto	

Agenda

- JICA Team and Mozambican counterparts jointly carried out a field training program on leveling survey
- During the field training, practical methods of leveling survey works were demonstrated by JICA Team and experienced by Mozambican counterparts
- JICA Team provided counterparts with further suggestions so that they would be able to carry out precise surveys on their own

Apêndice-4: Seminário sobre o Porto de Nacala realizado em 05 FEV 2015

Seminar on Nacala Port

10th Dispatch	
	Place: Conference Center of Afrin Nacala Hotel, Nacala **Date:** 5th February, 2015 **Time:** 09:30 to 12:00, followed by luncheon

Participants

Customs Office in Nacala	Domingos Magaia	Representative
Migration Office in Nacala	Renato Manuel Furruma	Chief Officer
INAHINA	Emilia Miranda Abuchir	Officer
GAZEDA	Carlos Muchigera	Marketing Sector
Conselho Municipal da Cidade de Nacala Port	Chakil Aboobacar	Advisor to the President
Kudumba Investments	Stelio Rodorigues	General Director
Manica Freight Services	Ibraimo Assumane	Branch Manager
CMA-CGM	Hinelder Ferreira	Branch Manager
MSC	Simon Kanjanga	Branch Manager
Maersk Line	Carolyn Kathewera	Branch Manager
MTC (moderator)	Martinho F. Mafumo	Maritime Administrator
CFM (Maputo)	Anibal Manave	Advisor to the Board
CFM (Office of Nacala Port Rehabilitation Project)	Arzilio Josué Mata	Supervisor/Civil Engineer
	Anabela Emilia Matsinha	Supervisor/Civil Engineer
	Tomás Fortunato Ngca	Supervisor/Mechanical Engineer
	Milione Changala	Supervisor/Electrical Engineer
	José Osias Cherinda	Supervisor/H.S.T.
CFM (DEPE)	Carmona Macobola	Civil Engineer
CFM North (Nacala)	Alfredo Manuel Lipeque	CFM Nacala Director
	Alfredo Artur Mafuca	Oil Terminal Manager
	Nino Jorge Lobo	Port Operation
	Abubacar Mecuta	Port Security
CDN	Fabio Frazão	Port Director
	Ibraimo Mussa	Port Operations Analyst
PN	Agostinho F. Langa Jr.	Director/COO
	Loni Schott Ribeiro	Chief of Commercial Division
	Luis Machado	Chief of Port Operations Division
	Vasco Cunha	Chief of Maintenance Division
	Abudo Sele	Project Management Unit
	Neimo Induna	CCOP
	Luis Diogo	Maintenance
TN	Denilson Hamide	Branch Mnager
	Helvio Salomao	Operation Manager
	Carmen Amaral	Safety Officer
	Jaime Pedro	
JICA Mozambique	Akiko Shimohira, Nobuaki Kuribayashi	
JICA Expert Team	Mitsuhiko Okada (Team Leader), Teruki Eto, Susumu Kimura, Kiyoshi Nakashima	

Program.

1. JICA technical assistance for Nacala Port – achievement and future challenges
   (by Mr. Mitsuhiko Okada, Leader of JICA Team)
2. Improvement in infrastructure and equipment
   (by Mr. Arzilio Josué Mata, Supervisor/Civil Engineer, CFM

3. Strengthening of port functions at Nacala, the gateway of Nacala Corridor
   (by Mr. Ibraimo Mussa, Operation Analyst, CDN))
4. Improvement in terminal operation
   (by Mr. Neimo Induna, CCOP, PN)
5. Expectations for future development of Nacala Port
   (by Mr. Hinelder Ferreira, Branch Manager, CMA CGM Mozambique
   and Mr. Simon Kanjanga, Branch Manager, MSC Mozambique)

Materials

・ Seminar Program
・ The Project for Improvement of Nacala Port – Major Achievements, Roles a Good Port can Play (JICA Team)

Discussions

1. JICA Team, Mozambican side and port users made presentations as per the program above.
2. In Q&A afterwards, CDN and PN explained to the audience that the port's capacity and operational efficiency will be enhanced once the renovation works of the Grant Aid and Yen Loan Projects are all completed, and asked for their cooperation until then.

Photo

Apêndice-5: Tendências Estatísticas de Desempenho Portuário

Table 1 Historical number of accidents at Nacala Port

Type of accident	2011	2012	2013
Damages to cargoes/properties	5	4	22
Human fatal/injury accidents	8	7	15
Total	13	11	37

Source: CDN, PN (monthly/yearly reports)

Table 2 Number of workers at Nacala Port

Company	Department	Nos of employees
PN	Port Operations	55
	Maintenance	69
	S. Total	124
TN	Stevedoring	575
	Packing	197
	Machine operators	151
	Dry port workers	13
	S. Total	936
Total		1,060

Notes:

i. Number of PN workers based on previous CDN's head-count as of Dec. 31, 2011.
ii. Number of TN workers as of Jul.15, 2014
iii. Clerical workers are excluded

Source: CDN, TN

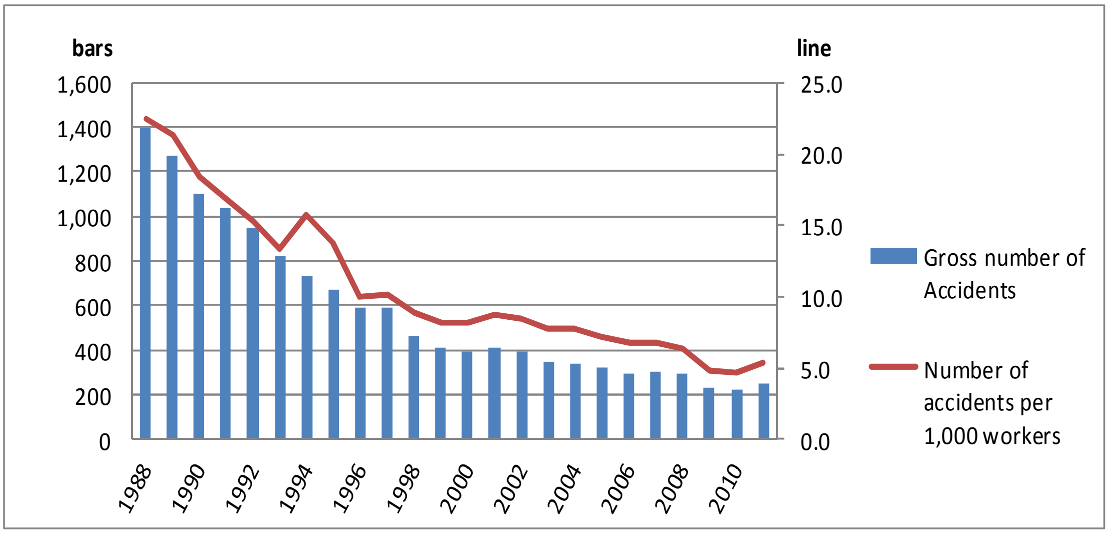


Figure 1 Historical number of fatal/injury accidents in Japan's Port Transport Industry

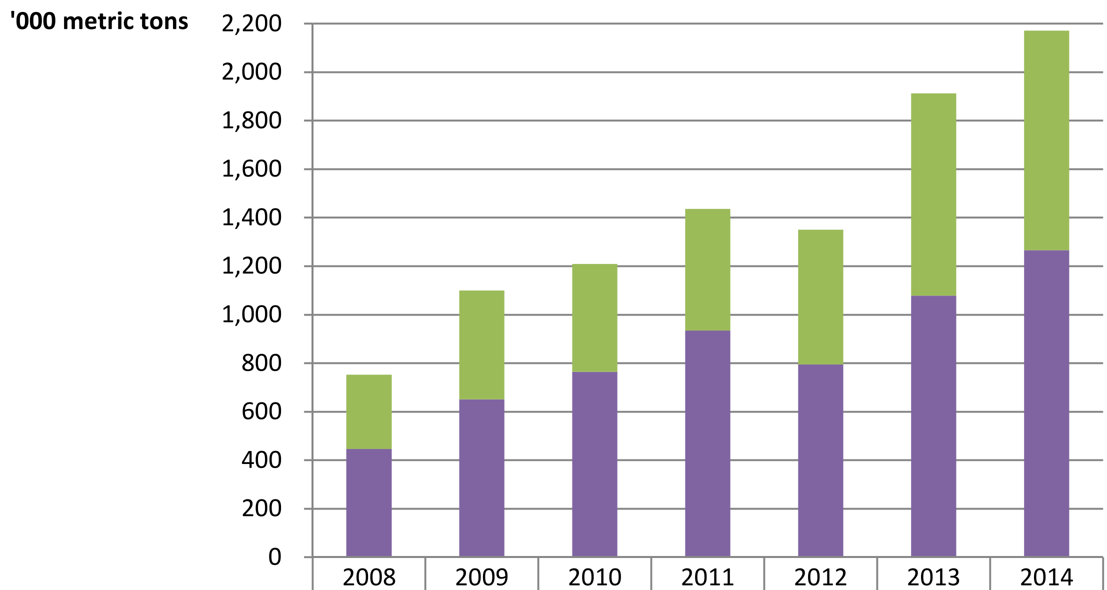
Source: Japan Port Transport Industry Safety & Health Association

Table 3 Historical cargo volume handled at Nacala Port (excluding liquid bulk handled by CFM)

('000 metric tons)

Trade			Commodity	2008	2009	2010	2011	2012	2013	2014
International	Export	Local	Iron Ore							28.5
			Maize	8.9	3.6		29.0			
			Scrap	13.8	5.0	8.0	11.3			
			Machinery						0.5	0.9
			Woods	2.8						
			Others					0.1	6.2	0.1
			Bulk S.total	25.5	8.6	8.0	40.3	0.1	6.7	29.5
			Containers	42.1	225.4	327.8	305.8	294.1	405.2	520.3
			S.total	70.4	234.0	335.8	346.1	294.2	411.9	549.8
		Transit	Scrap				8.3			
			Sugar	28.3	15.7	8.2	6.1	23.2	14.8	25.2
			Bulk S.total	28.3	15.7	8.2	14.4	23.2	14.8	25.2
			Containers	44.6	49.8	40.7	74.4	32.1	65.9	74.8
			S.total	72.9	65.5	48.9	88.8	55.3	80.7	100.0
		Export total		143.3	299.5	384.7	434.9	349.5	492.6	649.8
	Import	Local	Clinker	133.6	134.3	158.5	182.5	153.1	202.7	206.0
			Palm oil	26.5	38.9	49.8	66.9			
			Wheat	54.0	89.7	63.0	59.1	63.2	49.2	128.9
			Machinery			0.8	6.3	10.1	15.3	12.8
			Vehicles						2.6	0.4
			Rails						37.4	50.5
			Crossties						18.3	22.8
			Plaster/gypsum			2.4	5.5	17.0		25.1
			Cement	3.6	53.8	4.6	5.0	75.5	247.8	250.1
			Rice			9.8	4.2	25.1	16.6	12.2
			Vegetable oil				2.0			
			Frozen fish			1.7	1.2	2.1	2.2	1.5
			Others		7.6	1.9	0.7	11.9	27.3	32.2
			Bulk S.total	217.7	324.3	292.5	333.4	358.0	619.4	742.5
			Containers	165.5	201.5	229.5	364.4	396.1	529.3	588.3
			S.total	383.2	525.8	522.0	697.8	754.1	1,148.7	1,330.8
		Transit	Wheat		49.9	97.5	68.4	164.6	163.9	92.6
			Fertilizer	30.0	43.4	36.9	14.3	10.0	11.0	13.6
			Vegetable oil	2.9	7.2		5.2			
			Bulk S.total	32.9	100.5	134.4	87.9	174.6	174.9	106.2
			Containers	76.6	90.7	38.2	38.5	30.0	35.8	44.8
			S.total	109.5	191.2	172.6	126.4	204.6	210.7	151.0
		Import total		492.7	717.0	694.6	824.2	958.7	1,359.4	1,481.8
	Tranship		Wheat				25.0			
			Woods						2.9	0.4
			Bulk S.total	0.0	0.0	0.0	25.0	0.0	2.9	0.4
			Containers	80.2	56.4	99.8	115.9	29.9	20.2	9.2
			S.total	80.2	56.4	99.8	140.9	29.9	23.1	9.6
	Restow		Containers				23.2	10.0	10.9	25.8
	International Total			716.2	1,072.9	1,179.1	1,423.2	1,348.1	1,886.0	2,167.0
Coastal	Loading		Cement						2.8	
			Machinery						0.1	
			Others	0.4			0.2		1.5	
			Bulk S.total	0.4	0.0	0.0	0.2	0.0	4.4	0.0
			Containers	8.8	8.3	7.3	4.4	0.2	1.3	1.0
			S.total	9.2	8.3	7.3	4.6	0.2	5.7	1.0
	Discharging		Cement						10.0	
			Others	0.8	0.3	1.3				0.3
			Bulk S.total	0.8	0.3	1.3	0.0	0.0	10.0	0.3
			Containers	29.3	18.7	21.4	7.9	2.8	10.6	2.3
			S.total	30.1	19.0	22.7	7.9	2.8	20.6	2.6
	Coastal Total			39.3	27.3	30.0	12.5	3.0	26.3	3.6
G.total				755.5	1,100.2	1,209.1	1,435.7	1,351.1	1,912.3	2,170.6

Source: CDN, PN (arranged by the Project Team)



	2008	2009	2010	2011	2012	2013	2014
Dry bulk/general cargoes	305.6	449.4	444.4	501.2	555.9	833.1	904.1
Containers	447.1	650.8	764.7	934.5	795.2	1,079.2	1,266.5

Figure 2 Historical cargo volume handled at Nacala Port (excluding liquid bulk handled by CFM)

Source: CDN, PN (arranged by the Project Team)

Table 4 Containers handled at Nacala Port

(TEUs)

			2008	2009	2010	2011	2012	2013	2014
International	Export	Local	18,758	17,381	26,669	33,253	28,107	35,840	42,511
		Transit	3,246	3,368	2,558	4,303	1,739	2,768	4,123
		S.total	22,004	20,749	29,227	37,556	29,846	38,608	46,634
	Import	Local	18,138	20,881	25,748	37,424	30,160	38,950	45,297
		Transit	2,962	2,810	2,373	1,937	1,744	1,791	2,259
		S.total	21,100	23,691	28,121	39,361	31,904	40,741	47,556
	Tranship		2,879	3,824	8,114	10,149	2,084	1,490	519
	Rehandling		0	0	0	0	1,004	1,317	1,953
	Total		45,983	48,264	65,462	87,066	64,838	82,156	96,662
Coastal	Loading		1,501	2,133	2,899	1,516	123	210	229
	Discharging		2,286	2,223	2,978	1,132	202	442	190
	Total		3,787	4,356	5,877	2,648	325	652	419
G.total			49,770	52,620	71,339	89,714	65,163	82,808	97,081

Source: CDN, PN (arranged by the Project Team)

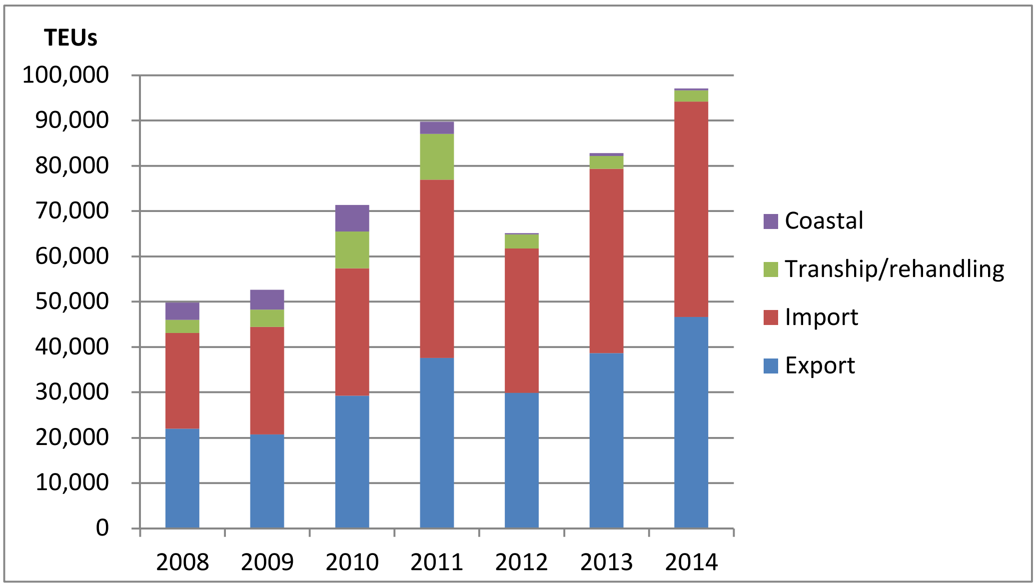


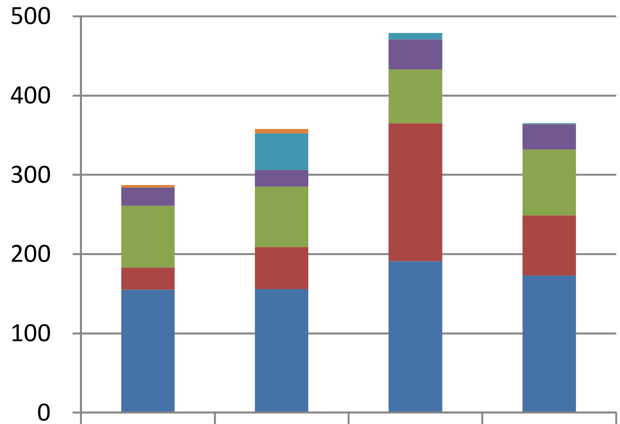
Figure 3 Containers handled at Nacala Port

Source: CDN, PN (arranged by the Project Team)

Table 5 Number of vessel calls at Nacala Port

		2011	2012	2013	2014
International	Container vessels	155	156	183	173
	Tankers	52	49	47	53
	Dry bulk vessels	23	21	38	32
	G/C & others	28	53	165	70
	S. Total	258	279	433	328
Coastal	Tankers	26	27	21	30
	Container vessels			8	
	G/C & others			9	6
	S. Total	26	27	38	36
Non -commercial	Utility ships		46	8	1
	Fishing boats	3	6		
	S. Total	3	52	8	1
Total		287	358	479	365

Source: CDN, PN (arranged by the Project Team)



	2011	2012	2013	2014
Fishing boats	3	6	0	0
Utility ships	0	46	8	1
Dry bulk vessels	23	21	38	32
Tankers	78	76	68	83
G/C & others	28	53	174	76
Container vessels	155	156	191	173

Figure 4 Number of vessel calls at Nacala Port (by vessel type)

Source: CDN, PN (arranged by the Project Team)

Table 6 Liner services/vessels calling at Nacala Port (as of June 30, 2014)

Shipping Line (slot charterer)	Service Area	Service Name	Vessel Name	Capacity (TEU)	LOA (m)	Draft (m)	Beam (m)	DWT	GT	Service Freqency	Calling Ports
CMA CGM, Maersk Line	East Asia	Mozex	Ada S	2,546	208.91	11.60	29.85	34,334	26,435	weekly	Maputo-Beira-**Nacala**-Port Louis-Port Klang-Tanjung Pelepas-Pointes des Galets-Toamasina-Maputo
			Amalia C	2,452	199.95	11.55	29.80	34,362	25,500		
			CMA CGM La Tour	2,272	195.60	11.01	30.20	30,442	26,050		
			Em Chios	2,506	207.20	11.40	29.80	32,321	25,294		
			Jula S	2,474	207.40	11.40	29.80	33,796	25,414		
			Marie Delmas	2,207	195.60	11.01	30.20	30,453	26,061		
			Natalie Schulte	2,474	207.40	11.40	29.80	33,651	25,674		
			RT Aegir	2,468	208.16	11.40	30.08	34,015	25,608		
CMA CGM (Emirates Shipping Line)	Middle East, East Africa	Swahili Express	Apulia	2,764	207.89	11.50	32.24	35,741	30,047	weekly	Jebel Ali-Khor Fakkan-Mombasa-Dar es Salaam-Zanzibar-**Nacala**-Mombasa-Jebel Ali
			Auguste Schulte	2,590	210.00	11.52	30.17	34,622	27,093		
			Bella	2,674	207.92	11.50	32.24	35,600	30,024		
			Commodore	2,764	275.00	13.62	37.19	61,152	51,836		
			HS Challenger	2,755	207.95	11.50	32.24	35,924	30,024		
			Katharina	2,452	199.85	11.55	29.84	33,900	25,535		
PIL (MOL)	East Asia, East Africa	EA2	Kota Fajar	2,135	193.90	10.27	32.20	28,879	25,497	weekly	Huangpu-Shekou-Nansha-Singapore-Colombo-Dar es Salaam-**Nacala**-Colombo-Pasir Gudang-Singapore-Huangpu
			Kota Nasrat	1,810	179.63	10.70	27.64	25,985	20,902		
			Kota Nebula	1,810	179.67	10.70	27.64	25,985	20,902		
			Kota Nanhai	1,810	179.65	10.70	27.64	25,985	20,902		
			Kota Naga	1,810	179.65	10.70	27.64	25,985	20,902		
			Kota Nabil	1,810	179.65	10.70	27.65	26,000	20,902		
			Kota Nelayan	1,810	179.64	10.70	27.66	25,985	20,902		
			Kota Nekad	1,810	179.67	10.70	27.64	25,985	20,902		
MSC	Feeder	Saf-Moz	MSC Jasmine	2,073	198.91	12.20	32.20	41,771	31,430	weekly	Durban-Maputo-Beira-Mombasa-Dar es Salaam-**Nacala**-Beira-Maputo-Durban
			MSC Nicole	2,073	198.25	12.20	32.24	41,787	31,430		
			MSC Chiara	2,073	198.89	12.20	32.26	41,815	31,430		
			MSC Positano	2,468	206.00	11.42	29.80	34,083	25,713		
			MSC Denisse	2,073	198.89	12.20	32.20	41,771	31,430		
United Africa Feeder Line	Feeder	Mozambique Coastal Express	Falshoeft	903	134.15	8.35	20.40	12,007	8,861	every 36 days	Durban-**Nacala**-Longoni-Mutsamudu-Mtwara-Durban
		Mozambique Coastal Express 2	MCP Linz	629	117.00	6.45	19.74	7,852	5,272	every 12 days	Durban-Maputo-Beira-**Nacala**-Pemba-Durban
			Onego Buran	1,162	117.00	6.40	18.00	7,661	5,338		

Source: Shipping lines' web sites

Table 7 Container handling productivity and the relevant handling data in 2012 ~ 2014

2012	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total / Ave.
Container Handling Volume (TEU)	7,672	5,254	4,913	4,724	4,381	3,908	6,194	5,635	5,960	6,899	4,495	5,128	65,163
Number of Container Ships Berthed (ship)	13	14	12	12	14	9	16	11	14	15	13	13	156
Average Container Volume (TEU) per Call	590	375	409	394	313	434	387	512	426	460	346	394	418
Average Berthing Time per Ship (hour)	68.60	47.70	47.30	43.60	43.90	56.60	45.60	56.20	52.30	55.56	49.62	57.70	
Total Berting Time (hour)	789.1	607.6	487.2	522.0	512.4	428.4	684.8	596.2	687.4	815.7	617.1	725.0	7,472.9
Average Container Handling Volume per Ship Berthing Time (box/hour)	7.0	8.0	7.0	7.0	6.0	8.0	4.0	6.0	6.0	7.0	7.0	3.0	6.3
Average Container Handling Time per Ship (hour)	53.8	34.2	32.3	31.4	26.7	35.2	30.3	47.5	40.7	43.4	37.9	52.7	
Total Container Handling Time (hour) Number of Ships x Average Handling Time	699.0	478.5	387.6	376.8	373.8	316.8	484.8	522.2	569.7	651.0	492.8	685.6	6,038.6
Average Container Handling Volume per Container Handling Time (box/hour)	8	10	9	9	9	9	6	7	7	9	9	4	8.0
Dwelling Time (Average) (day)													

2013	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total / Ave.
Container Handling Volume (TEU)	7,404	5,646	7,196	6,498	6,450	6,650	5,394	6,953	7,318	7,684	7,644	7,971	82,808
Number of Container Ships Berthed (ship)	15	11	13	12	15	16	18	18	18	16	15	16	183
Average Container Volume (TEU) per Call	494	513	554	542	430	416	300	386	407	480	510	498	453
Average Berthing Time per Ship (hour)													
Total Berting Time (hour)	789.1	607.6	487.2	522.0	512.4	428.4	684.8	596.2	687.4	815.7	617.1	725.0	7,472.9
Average Container Handling Volume per Ship Berthing Time (box/hour)													
Average Container Handling Time per Ship (hour)													
Total Container Handling Time (hour) Number of Ships x Average Handling Time													
Average Container Handling Volume per Container Handling Time (box/hour)				5	7	10	9	8	10	8	9	8	8.2
Dwelling Time (Average) (day)													

2014	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total / Ave.
Container Handling Volume (Box)	5,592	6,413	5,436	3,594	4,992	5,461	5,261	6,575	6,926	7,681	6,865		64,796
Container Handling Volume (TEU)	7,208	8,752	7,658	5,986	7,403	7,596	7,247	8,826	8,873	10,113	9,140		88,802
Number of Container Ships Called (Ship/mth)	14	17	16	15	20	17	15	16	10	16	15		171
Average Container Volume (Box/ Call)	399	377	340	240	250	321	351	411	693	480	458		393
Average Container Volume (TEU/Call)	515	515	479	399	370	447	483	552	887	632	609		535
Gross Ships Working Hour by 1~3 Gang (Hr)	622.2	930.8	659.2	581.1	624.7	732.4	630.0	739.1	644.0	897.0	868.0		7,928.5
Ave. Gross Ships Working Hour (Hour/Call)	44.4	54.8	41.2	38.7	31.2	43.1	42.0	46.2	64.4	56.1	57.9		46.4
Gross Productivity per Ships Working Hour (Box/hour by 1~3 Ship-gears)	9.0	6.9	8.2	6.2	8.0	7.5	8.4	8.9	10.8	8.6	7.9		8.2
Gross Productivity per Ships Working Hour (TEU/hour by 1~3 Ship-gears)	11.6	9.4	11.6	10.3	11.9	10.4	11.5	11.9	13.8	11.3	10.5		11.2
Dwelling Time (Average) (day)													

Source: The Monthly and annual reports of the Operation Department of Portos do Norte

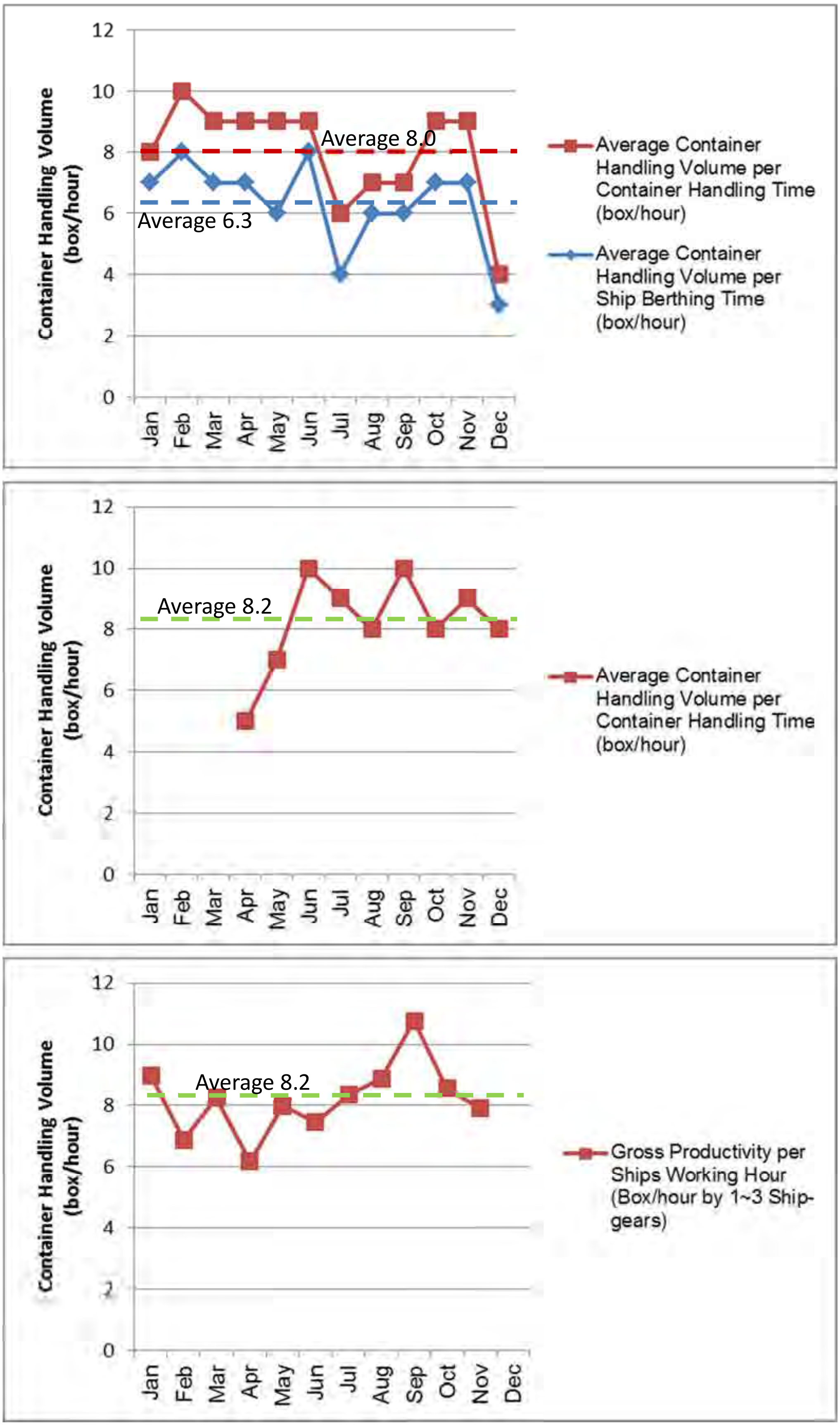


Figure 5 Container handling productivity in 2012 and 2013

Source: The Monthly and annual reports of the Operation Department of Portos do Norte

Table 8 List of Cargo Handling Equipment in the Port of Nacala

No.	MACHINE	TIPE/ CAPACITY	MODEL	PRINCIPAL USE	OPERATION AREA
1	Kalmar nº 6	Reach stacker/45Ton	DRF 450-60S5	Full Container	Container Terminal
2	Kalmar nº 7	Reach stacker/45Ton	DRF 450-60S5	Full Container	Container Terminal
3	Kalmar nº 8	Reach stacker/45Ton	DRF 450-60S5	Full Container	Container Terminal
4	Kalmar nº 9	Forklift/42Ton	DC 42-1200	Empty Container / General cargo	Container Terminal / General cargo Terminal
5	SANY RS01	Reach sacker/45Ton	Private (Semi-registered)	Full Container	Container Terminal
6	SANY RS02	Reach stacker/45Ton	Private (Semi-registered)	Full Container	Container Terminal
7	SANY RS03	Reach sacker/45Ton	Private (Semi-registered)	Full Container	Container Terminal
8	SANY RS04	Reach stacker/45Ton	Private (Semi-registered)	Full Container	Container Terminal
8-05	SANY RS05	Reach stacker/45Ton	Private (Semi-registered)	Full Container	Container Terminal
8-06	SANY RS06	Reach stacker/45Ton	Private (Semi-registered)	Full Container	Container Terminal
9	SMV nº1	Top lift/45Ton	SL 45-1200G4	Full Container	Container Terminal
10	SMV nº2	Top lift/45Ton	SL 45-1200G4	Full Container	Container Terminal
11	SMV nº4	Top lift/16Ton	SMV5/6ECB90	Empty Container	Container Terminal
12	SMV nº5	Reach stacker/45Ton	SC4531 TA 5	Full Container	Container Terminal
13	FOTON nº1	Loader 3m³	LF 958G	Trimming	General cargo
14	FOTON nº2	Loader 3m³	LF 958G	Trimming	General cargo
15	CATERPILLAR	Loader 1.5 m³	IT 12	Trimming	General cargo
16	TOYOTA nº1	Forklift 3 Ton	02-7FD35	Stuff Handling	General cargo/Container Terminal
17	T0YOTA nº2	Forklift 2.5 Ton	02- 6FD25	Workshop Stuff Handling	Workshop
18	Container Transfer Crane	LIEBHERR 25 Ton		Full Container	Container Terminal

Source: The Maintenance Department of Portos do Norte As of May 2, 2015

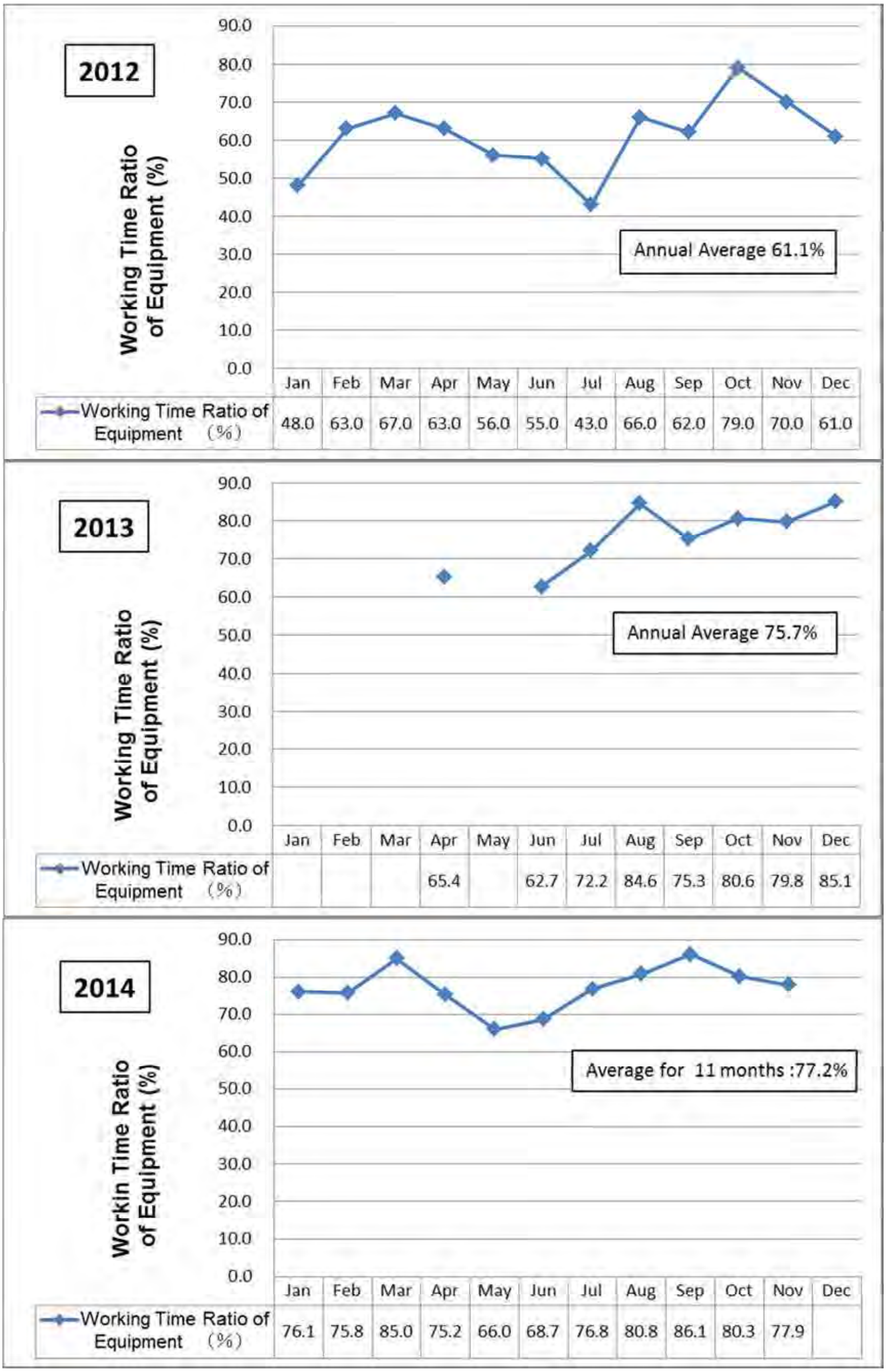


Figure 6 Working time ratio of equipment

Source: Monthly report of the Maintenance Department of Portos do Norte

Table 9 Annual Budget for Maintenance of Container Handling Equipment

2014

CUSTOS DA MANUTENÇÃO 【メンテナンスコスト】
Custos Projectados 予算
MZM
TC = 32,00 MZM

		2014	2014	2014	2014	2014	2014	2014	2014	2014	2014	2014	2014	Total
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	Descritivo 項目	1月	2月	3月	4月	5月	6月	7月	8月	9月	10月	11月	12月	
														0.00
63212	Electricidade 電気	195,500.00	195,500.00	195,500.00	195,500.00	195,500.00	195,500.00	195,500.00	195,500.00	195,500.00	195,500.00	195,500.00	195,500.00	2,346,000.00
632121	Electricidade de Escritorio 事務所電気代	195,500.00	195,500.00	195,500.00	195,500.00	195,500.00	195,500.00	195,500.00	195,500.00	195,500.00	195,500.00	195,500.00	195,500.00	2,346,000.00
	Gerador (Edifício Principal) 発電機													
63213	Combustíveis 燃料	630,696.00	630,696.00	630,696.00	630,696.00	630,696.00	630,696.00	630,696.00	630,696.00	630,696.00	630,696.00	630,696.00	630,696.00	7,568,352.00
														0.00
632131119	Gasoleo - Maquinas 軽油ー機械	28,196.00	28,196.00	28,196.00	28,196.00	28,196.00	28,196.00	28,196.00	28,196.00	28,196.00	28,196.00	28,196.00	28,196.00	338,352.00
														0.00
632132	Restantes combustíveis その他の燃料	2,500.00	2,500.00	2,500.00	2,500.00	2,500.00	2,500.00	2,500.00	2,500.00	2,500.00	2,500.00	2,500.00	2,500.00	30,000.00
														0.00
632133	Lubrificantes 潤滑油	600,000.00	600,000.00	600,000.00	600,000.00	600,000.00	600,000.00	600,000.00	600,000.00	600,000.00	600,000.00	600,000.00	600,000.00	7,200,000.00
														0.00
63214	Ferrementas e utens. desgast rapido 工具類(消耗品)				50,000.00						50,000.00			100,000.00
	Material de Reparação e manutenção 修理・メンテナンス資機材	1,601,977.00	1,601,977.00	1,796,052.00	2,736,325.00	1,601,977.00	1,883,442.00	1,601,977.00	1,601,977.00	1,968,727.00	1,601,977.00	1,601,977.00	1,755,677.00	21,354,062.00
														0.00
63215	Material de manutenção e reparação メンテナンス・修理資機材	1,502,977.00	1,502,977.00	1,657,052.00	2,637,325.00	1,502,977.00	1,744,442.00	1,502,977.00	1,502,977.00	1,829,727.00	1,502,977.00	1,502,977.00	1,616,677.00	20,006,062.00
632151	De equipat e inst operacionais オペレーション関連資機材				1,134,348.00					147,500.00				1,281,848.00
632152	De equipat e inst habitacionais 施設関連資機材													0.00
632153	De Viaturas 車輌関連													0.00
6321531	Viaturas-Direccao 車輌ー港湾管理事務所			16,600.00			56,965.00			16,600.00			16,600.00	106,765.00
6321532	Viaturas-Administracao & Financas 車輌ーアドミ&会計・経理													0.00
6321533	Viaturas-R humanos 車輌ー人事			90,375.00			50,000.00			115,550.00			50,000.00	305,925.00
6321534	Viaturas-Op portuarias 車輌ーオペレーション			13,600.00			57,300.00			13,600.00			13,600.00	98,100.00
6321535	Viaturas-Servico Maritimo 車輌ー航海サービス													0.00
6321536	Viatura-Manutencao 車輌ーメンテナンス			69,475.00			69,475.00			29,100.00			29,100.00	197,150.00
6321537	Viatura-Gestao Ambiental 車輌ー環境管理			33,500.00			77,200.00			33,500.00			33,500.00	177,700.00
632154	Material de maquinas 機械関連機材	1,502,977.00	1,502,977.00	1,502,977.00	1,502,977.00	1,502,977.00	1,502,977.00	1,502,977.00	1,502,977.00	1,502,977.00	1,502,977.00	1,502,977.00	1,502,977.00	18,035,724.00
632155	Material M.Equip.Informatico 情報管理機器													0.00
632159	Outros その他													0.00
														0.00
63216	Material de escritório 事務所資機材													0.00
632166	Material Escritorio-Manutencao メンテナンス事務所資機材	5,826.00	5,826.00	5,826.00	5,826.00	5,826.00	5,826.00	5,826.00	5,826.00	5,826.00	5,826.00	5,826.00	5,826.00	69,912.00
														0.00
63221	Manutenção e reparação メンテナンス・修理	99,000.00	99,000.00	139,000.00	99,000.00	99,000.00	139,000.00	99,000.00	99,000.00	139,000.00	99,000.00	99,000.00	139,000.00	1,348,000.00
632211	De instal. e equipament. Operaciona オペレーション関連資機材	99,000.00	99,000.00	99,000.00	99,000.00	99,000.00	99,000.00	99,000.00	99,000.00	99,000.00	99,000.00	99,000.00	99,000.00	1,188,000.00
632212	De instal. e equipament.habitaciona 施設関連資機材			40,000.00			40,000.00			40,000.00			40,000.00	160,000.00
														0.00
														31,438,326.00
Legendas:		2,433,999.00	2,433,999.00	2,628,074.00	3,618,347.00	2,433,999.00	2,715,464.00	2,433,999.00	2,433,999.00	2,800,749.00	2,483,999.00	2,433,999.00	2,587,699.00	31,438,326.00

Totais das contas principais 合計
Subtotais 小計

Annual Maintenance Cost 31,438,326.00
Monthly Average Maintenance Cost 2,619,860.50

2015

MAINTENANCE COSTS
Projected costs
MZM

TC = 32,50 MZM TI = 8%

	Descriptive	2015 January	2015 February	2015 March	2015 April	2015 May	2015 June	2015 July	2015 August	2015 September	2015 October	2015 November	2015 December	Total
GLOBAL		7,101,539.49	7,107,499.49	7,175,089.49	11,130,957.86	7,093,213.49	7,144,539.49	7,199,919.49	7,158,763.49	10,222,164.86	7,247,473.49	6,917,323.86	6,870,653.86	92,369,138.36
63212	Electricity	480,000.00	480,000.00	480,000.00	480,000.00	480,000.00	480,000.00	480,000.00	480,000.00	480,000.00	480,000.00	480,000.00	480,000.00	5,760,000.00
632121	Port Electricity	480,000.00	480,000.00	480,000.00	480,000.00	480,000.00	480,000.00	480,000.00	480,000.00	480,000.00	480,000.00	480,000.00	480,000.00	5,760,000.00
63213	Fuels	1,259,289.69	1,259,289.69	1,259,289.69	1,259,289.69	1,259,289.69	1,259,289.69	1,259,289.69	1,259,289.69	1,259,289.69	1,259,289.69	1,259,289.69	1,259,289.69	15,111,476.28
632131116	Diesel for maintenance	19,200.00	19,200.00	19,200.00	19,200.00	19,200.00	19,200.00	19,200.00	19,200.00	19,200.00	19,200.00	19,200.00	19,200.00	230,400.00
632131119	Diesel for Machines	96,040.00	96,040.00	96,040.00	96,040.00	96,040.00	96,040.00	96,040.00	96,040.00	96,040.00	96,040.00	96,040.00	96,040.00	1,152,480.00
632132	Petrol	2,700.00	2,700.00	2,700.00	2,700.00	2,700.00	2,700.00	2,700.00	2,700.00	2,700.00	2,700.00	2,700.00	2,700.00	32,400.00
632133	Lubricants	1,160,549.69	1,160,549.69	1,160,549.69	1,160,549.69	1,160,549.69	1,160,549.69	1,160,549.69	1,160,549.69	1,160,549.69	1,160,549.69	1,160,549.69	1,160,549.69	13,926,596.28
63214	Tools				65,000.00						65,000.00			130,000.00
63215	Material Repair and maintenance	5,342,775.33	5,348,735.33	5,404,325.33	9,307,193.70	5,334,449.33	5,373,775.33	5,441,155.33	5,399,999.33	8,451,400.70	5,423,709.33	5,158,559.70	5,099,889.70	71,085,968.44
632151	Oper. equip. and electric. installations	223,885.63	223,885.63	223,885.63	4,195,450.00	223,885.63	223,885.63	223,885.63	223,885.63	3,336,511.00	223,885.63			9,323,046.04
632152														0.00
632153	Vehicles													0.00
6321531	Vehicles - Direction		53,710.00	26,250.00		39,424.00	26,250.00	53,710.00	39,424.00	26,250.00	39,424.00	63,710.00	26,250.00	394,402.00
6321532	Vehicles - Administration & Finance	22,750.00		10,000.00	22,750.00		10,000.00			10,000.00			10,000.00	85,500.00
6321533	Vehicles - Human Resources			22,500.00			22,500.00	53,710.00	65,550.00	22,500.00	65,550.00		22,500.00	274,810.00
6321534	Vehicles - Port Operations	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00	53,710.00			188,710.00
6321535	Vehicles - Security	20,000.00					35,000.00					53,710.00		108,710.00
6321536	Vehicle - Maintenance		15,000.00		32,854.00	15,000.00		53,710.00	15,000.00					131,564.00
6321537	Vehicle - Safety	20,000.00		65,550.00										85,550.00
632154	Parts of machines	5,041,139.70	5,041,139.70	5,041,139.70	5,041,139.70	5,041,139.70	5,041,139.70	5,041,139.70	5,041,139.70	5,041,139.70	5,041,139.70	5,041,139.70	5,041,139.70	60,493,676.40
632155														0.00
632159														0.00
63216														0.00
632166	Material-Office Maintenance	9,474.47	9,474.47	9,474.47	9,474.47	9,474.47	9,474.47	9,474.47	9,474.47	9,474.47	9,474.47	9,474.47	9,474.47	113,693.64
63221	Maintenance and Repair	10,000.00	10,000.00	22,000.00	10,000.00	10,000.00	22,000.00	10,000.00	10,000.00	22,000.00	10,000.00	10,000.00	22,000.00	168,000.00
632211	Installation and operating equipment	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	120,000.00
632212	Installation and Housing equipment			12,000.00			12,000.00			12,000.00			12,000.00	48,000.00

Legend
Total of key accounts
Subtotals

Source: The Maintenance Department of Portos do Norte