

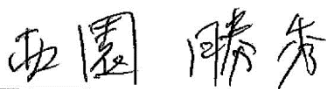
(2) 第二回現地調査時（署名日：2018年6月29日）

Minutes of Discussions
on the Preparatory Survey for the Project for
The Rehabilitation of Kigoma Port
in
THE UNITED REPUBLIC OF TANZANIA
(Explanation on Draft Preparatory Survey Report)

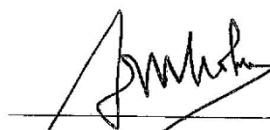
With reference to the minutes of discussions signed between Tanzania Ports Authority (hereinafter referred to as "TPA"), Ministry of Works, Transport and Communication (Transport) (hereinafter referred to as "MoWTC"), Ministry of Finance and Planning (hereinafter referred to as "MoFP") and the Japan International Cooperation Agency (hereinafter referred to as "JICA") on 7th December, 2017, JICA dispatched the Preparatory Survey Team (hereinafter referred to as "the Team") to The United Republic of Tanzania (hereinafter referred to as "Tanzania") for the explanation of Draft Preparatory Survey Report (hereinafter referred to as "the Draft Report") for the Project for The Rehabilitation of Kigoma Port (hereinafter referred to as "the Project").

As a result of the discussions, both sides agreed on the main items described in the attached sheets.

Dodoma, 29th JUNE 2018



Mr. Katsuhide NISHIZONO
Leader
Preparatory Survey Team
Japan International Cooperation Agency
Japan



Eng. Deusededit C.V. Kakoko
Director General
Tanzania Ports Authority
Tanzania

(Witness)



Dr. Leonard M. Chamuriho
Permanent Secretary
Ministry of Works, Transport
and Communication (Transport)
Tanzania



Mr. Doto M. James
Permanent Secretary and Pay Master General
Ministry of Finance and Planning
Tanzania



1. Objective of the Project

The objective of the Project is to improve safety and efficiency for the embarkation and disembarkation of passengers and the cargo handling operation through the rehabilitation of passenger terminal of Kigoma port, construction of cargo warehouse on the cargo terminal and the pavement of access road, thereby contributing to the improvement of commercial exchange and transportation in central corridor.

2. Project site

Both sides confirmed that the site of the Project is in Kigoma port, which is shown in Annex 1.

3. Contents of the Draft Report

After the explanation of the contents of the Draft Report by the Team, the Tanzania side principally agreed to its contents subject to comments which will be submitted by 30th June 2018.

4. Cost estimate

Both sides confirmed that the cost estimate including the contingency explained by the Team is provisional and will be examined further by the Government of Japan for its approval. The contingency would cover the additional cost against natural disaster, unexpected natural conditions, etc.

5. Confidentiality of the cost estimate and technical specifications

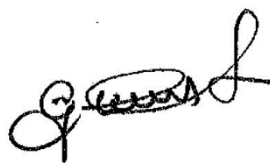
Both sides confirmed that the cost estimate and technical specifications of the Project should never be disclosed to any third parties until all the contracts under the Project are concluded.

6. Timeline for the project implementation

The Team explained to the Tanzania side that the expected timeline for the project implementation is as attached in Annex 3. However the Tanzanian side requested for a reduction in the project implementation time if possible.

7. Expected outcomes and indicators

Both sides agreed that key indicators for expected outcomes are as follows. The Tanzania side will be responsible in facilitating the achievement of agreed key



indicators targeted in year 2024 and shall monitor the progress based on those indicators.

[Quantitative indicators]

Index	Base Line (2017)	Target (2024) (3 years after completion of the Project)
The number of passenger ships directly berthing to passenger wharf (ships / year)	0	26
Passenger embarkation time (minutes / ship)	120 * ¹	80
Passenger disembarkation time (minutes / ship)	90 * ²	50

*¹ Embarking time is scheduled by Marine Services Company Ltd.

*² Disembarking time from berthing to the moment all passengers pass through customs, immigration and quarantine smoothly (The number of passengers is assumed to be 500)

[Qualitative indicators]

- 1). Improvement of services provision to passengers and commodity distribution on central corridor.
- 2). Improvement of safety and service level of passenger terminal due to setting of flow line of passenger and cargo, and resolution of congestion
- 3). Reduction of economic cost at passenger terminal
- 4). Safe storage of cargo in the general cargo warehouse

8. Undertakings of the Project

Both sides confirmed the undertakings of the Project.

- i) With regard to secure temporary yard as stipulated in Annex 4. (1)-5, Tanzania side agreed to be sure to secure temporary construction yard to be necessary for the implementation of the Project, which is shown in Annex 1, before notice of the bidding document (beginning of February 2019).
- ii) With regard to removal of land passenger terminal facilities and construction of temporary passenger facility as stipulated in Annex 4. (1)-6-3), Tanzania side assured that TPA would complete the removal work before notice of the bidding document (beginning of February 2019).

- iii) With regard to the construction of a temporary passenger facility as stipulated in Annex 4. (1)-6-4), Tanzania side confirmed the place of temporary passenger terminal during the construction works, and assured that TPA would complete the relocation work, which is shown in Annex 2, before notice of the bidding document (beginning of February 2019).
- iv) Both side agreed that MOFP will facilitate to ensure smooth implementation of tax exemptions stipulated in Annex 4. (2) 6. In case customs duties, internal taxes and other fiscal levies are not exempted, TPA will bear them.
- v) The Tanzania side assured to take the necessary measures and coordination including allocation of the necessary budget which are preconditions of implementation of the Project. It is further agreed that the costs are indicative, i.e. at Outline Design level. More accurate costs will be calculated at the Detailed Design stage.
- vi) Both sides also confirmed that the Annex 4 will be used as an attachment of Grant Agreement.

9. Monitoring during the implementation

The Project will be monitored by the Executing Agency and reported to JICA by using the Project Monitoring Report (PMR) form attached as Annex 5. The timing of submission of the PMR is described in Annex 4.

10. Project completion

Both sides confirmed that the Project completes when all the facilities constructed and equipment procured by the grant are in operation. The completion of the Project will be reported to JICA promptly, but in any event not later than six months after completion of the Project followed by one year defect liability, which is shown in Annex 3.

11. Ex-Post Evaluation

JICA will conduct ex-post evaluation after three (3) years from the project completion, in principle, with respect to five evaluation criteria (Relevance, Effectiveness, Efficiency, Impact, Sustainability). The result of the evaluation will be publicized. The Tanzania side is required to provide necessary support for the data collection.

12. Schedule of the Study

JICA will finalize the Preparatory Survey Report based on the confirmed items. The



report will be submitted to the Tanzania side in October 2018.

13. Environmental and Social Considerations

13-1 General Issues

13-1-1 Environmental Guidelines and Environmental Category

The Team explained that 'JICA Guidelines for Environmental and Social Considerations (April 2010)' (hereinafter referred to as "the Guidelines") is applicable for the Project. The Project is categorized as B because the Project is not considered to be a large-scale ports and harbors project, is not located in a sensitive area, and has none of the sensitive characteristics under the JICA guidelines for environmental and social considerations(April 2010), it is not likely to have a significant adverse impact on the environment..

13-1-2 Environmental Checklist

The environmental and social considerations including major impacts and mitigation measures for the Project are summarized in the Environmental Checklist attached as Annex 6. Both sides confirmed that in case of major modification of the content of the Environmental Checklist, the Tanzania side shall submit the modified version to JICA in a timely manner.

13-2 Environmental Issues

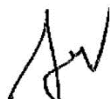
13-2-1 Environmental Impact Assessment (EIA)

Both sides confirmed variation of an EIA certificate approved by National Environmental Management Council in February/2016 has to be issued because cargo warehouse was added to the project components. Tanzania side assures that TPA gets variation of an EIA Certificate and submit to JICA no later than end of July 2018.

The Tanzania side agreed JICA's disclosure of provided original EIA certificate and variation of it on JICA's website.

13-2-2 Environmental Management Plan and Environmental Monitoring Plan

Both sides confirmed Environmental Management Plan (EMP) and Environmental Monitoring Plan (EMoP) of the Project is as Annex 7, respectively. Both side agreed that environmental mitigation measures and monitoring shall be conducted based on the EMP and EMoP, which may be updated during the detailed design stage.



13-2-3 Other specific environmental issues which need to be confirmed/agreed between the parties.

With regard to removal of existing facilities on the site of new general cargo warehouse, TPA reported to Japanese side that 6 WFP tents on the site of new general cargo warehouse had been removed at WFP's own expenses based on the agreement between TPA and WFP.

13-3 Social Issues

13-3-1 Land Acquisition and Resettlement

Both sides confirmed that land acquisition outside Kigoma port is not needed for this project.

13-4 Environmental and Social Monitoring

13-4-1 Environmental and social Monitoring

Both sides agreed that the Tanzania side will submit results of environmental and social monitoring to JICA by using the monitoring form attached as Annex 8. The timing of submission of the monitoring form is described in Annex 4.

13-4-3 Information Disclosure of Monitoring Results

Both sides confirmed that the Tanzania side will disclose results of environmental and social monitoring to local stakeholders through their website.

The Tanzania side agreed JICA will disclose results of environmental and social monitoring submitted by the Tanzania side as the monitoring forms attached as Annex 8 on its website.

14. Other Relevant Issues

14-1. Disclosure of Information

Both sides confirmed that the Preparatory Survey Report from which project cost is excluded will be disclosed to the public after completion of the Preparatory Survey.

The comprehensive report including the project cost will be disclosed to the public after all the contracts under the Project are concluded.

14-2. Obtaining of ERB, CRB, Working VISA and Business licence

Facilitation for
General
Application of Engineer Registration Board (ERB) and Contractor Registration Board (CRB) at the project implementation stage will be undertaken by TPA. Necessary documents for ERB and CRB will be prepared and submitted to TPA by the construction company and the consulting company.

14-3. Old general cargo warehouse

Japanese side requested TPA to demolish the old general cargo warehouse because there is a serious safety concern. Tanzania side expressed their intention to rehabilitate and use the old general cargo warehouse once the future demand exceeds the capacity of the new warehouse.

Annex 1 Project Site

Annex 2 Site clearance and facilities relocation

Annex 3 Project Implementation Schedule

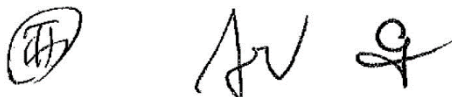
Annex 4 Major Undertakings to be taken by the Government of Tanzania

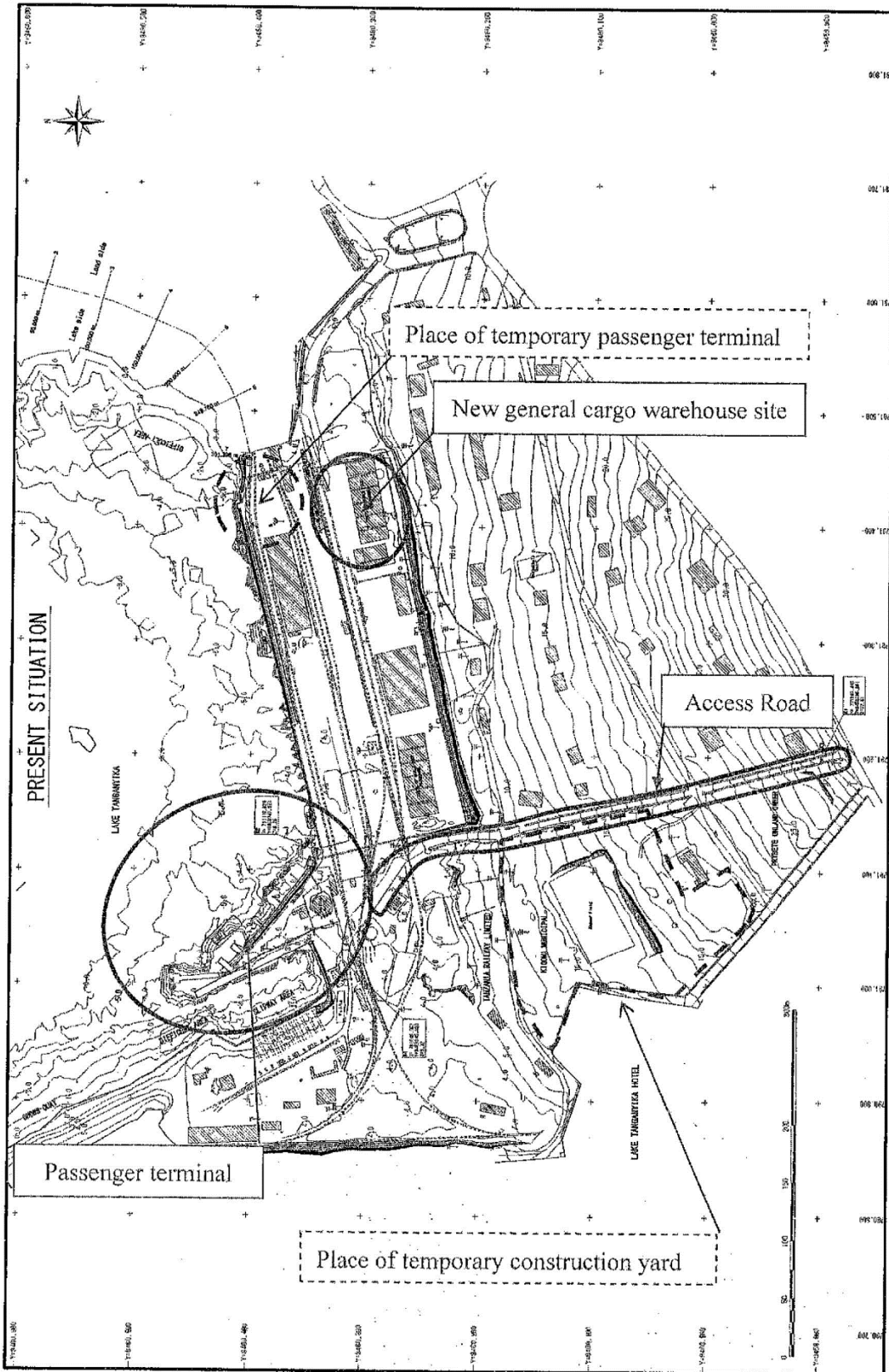
Annex 5 Project Monitoring Report (template)

Annex 6 Environmental Check List

Annex 7 Environmental Management Plan/Environmental Monitoring Plan

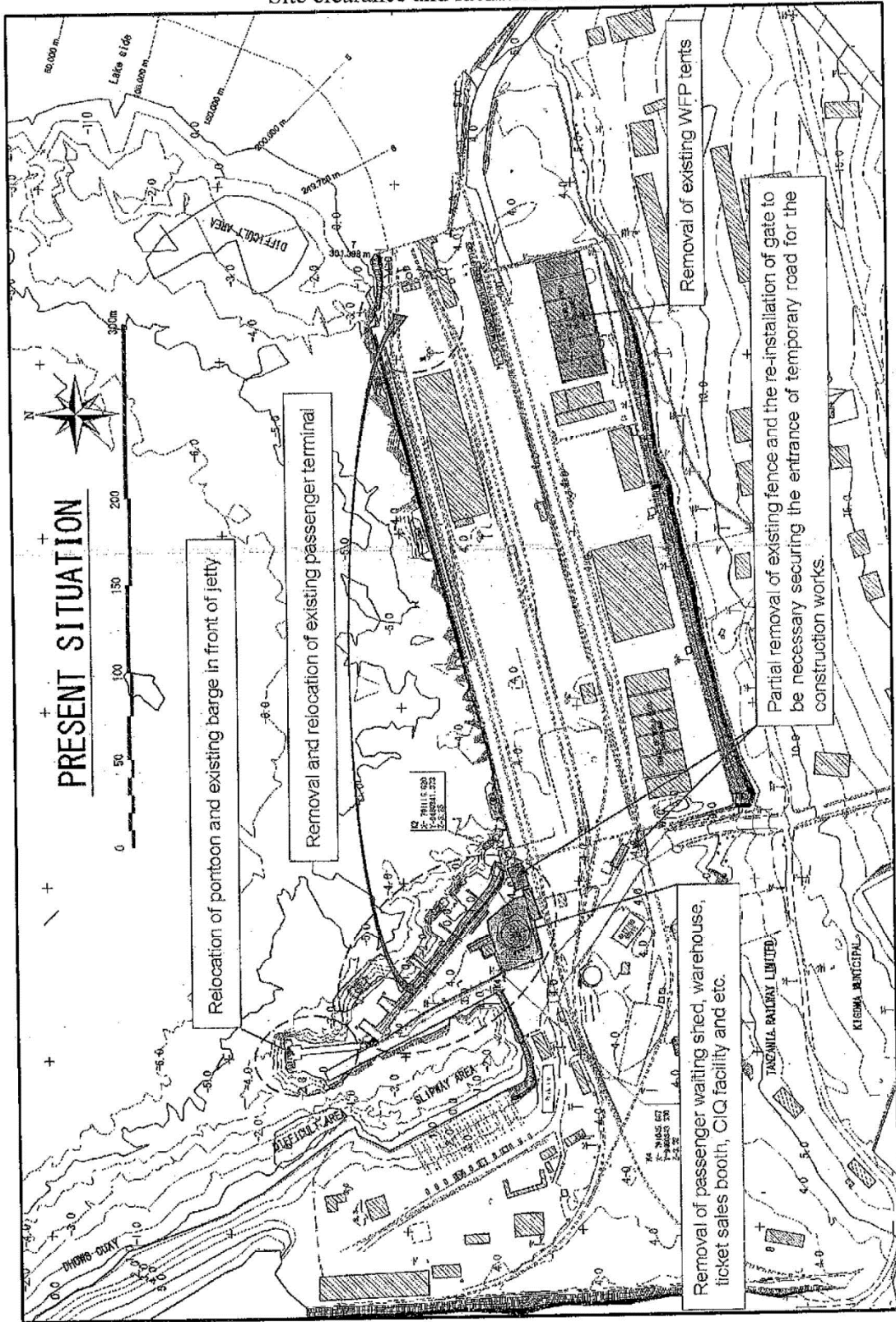
Annex 8 Environmental and Social Monitoring Form

A handwritten signature in black ink, consisting of stylized letters, is positioned to the right of a circular stamp. The stamp contains a stylized emblem or logo.



Handwritten signatures and initials, including a circular stamp on the left and several illegible signatures to its right.

Site clearance and facilities relocation



(47) *[Handwritten signature]* *[Handwritten signature]*

Annex 3 : Project Implementation Schedule

Estimated Timeline for the Project Implementation is as follows:

E/N and G/A	October 2018
Detailed Design and Procurement of the Contractor	November 2018 – May 2019
Construction of Civil and Building Facilities	June 2019 – March 2021
Defect Liability Inspection	March - 2022

The image shows three handwritten signatures in black ink. The first signature on the left is enclosed within a circular stamp. The second and third signatures are written in a cursive style.

Major Undertakings to be taken by the Government of Tanzania

1. Specific obligations of the Government of Tanzania which will not be funded with the Grant

(1) Before the Tender

NO	Items	Deadline	In charge	Estimated Cost(Tsh)	Ref.
1	To open bank account (B/A)	within 1 month after the signing of the G/A	MOFP	N/A	
2	To issue A/P to a bank in Japan (the Agent Bank) for the payment to the consultant	within 1 month after the signing of the contract with Consultant	MOFP/ MOWTC/ TPA	N/A	
3	To approve variation of the EIA(Conditions of approval should be fulfilled, if any), provide the permission of construction for execution of the project, if necessary and secure the necessary budget for implementation.	before the signing of the G/A	MOWTC/ TPA	20 Million	
4	To secure project site.	before notice of the bidding document(s).	MOWTC/ TPA	N/A	
5	To secure temporary yard, and access area for the construction works.	before notice of the bidding document(s)	MOWTC/ TPA	N/A	
6	To remove and relocate the following facilities. 1) Removal of existing WFP tents located at the land to be constructed general cargo warehouse 2) Relocation of pontoon and existing barge in front of jetty 3) Removal of existing passenger terminal facilities (passenger waiting shed, CIQ booth, ticket booth, water tank, container warehouse, fences, gates and etc.) 4) Construction of temporary passenger terminal (Passenger waiting facility, CIQ booth, ticket booth, access road to the temporary passenger facility, berthing facilities for passenger ships, pontoon and etc.) 5) Cutting trees at the project site	before notice of the bidding document(s)	MOWTC/ TPA	73.3 Million	
7	To submit Project Monitoring Report (with the result of Detail Design)	before preparation of bidding documents	MOWTC/ TPA	N/A	

(B/A: Banking Arrangement, A/P: Authorization to pay, N/A: Not Applicable)

(2) During the Project Implementation

NO	Items	Deadline	In charge	Estimated Cost(Tsh)	Ref.
1	To issue A/P to a bank in Japan (the Agent Bank) for the payment to the Contractor(s) and Supplier(s)	within 1 month after the signing of the contract(s) with Contractor(s) and supplier(s)	MOWTC/ TPA	N/A	
2	To bear the following commissions to a bank in Japan for the banking services based upon the B/A		MOFP	53,0 Million	
	1) Advising commission of A/P	within 1 month after the signing of the contract(s)			
	2) Payment commission for A/P	every payment			
3	Partial removal of existing fence and the installation of gate to be necessary securing the entrance of temporary road for the construction works.	within 1 month after the signing of the contract(s) with Contractor(s) and supplier(s)	TPA	N/A	
4	To facilitate prompt unloading and customs clearance at ports of disembarkation in the recipient country and to assist the Contractor(s) and the Supplier(s) with internal transportation therein	during the Project	MOWTC/ TPA/ MOFP	N/A	
5	To assist Japanese nationals and/or persons of third party countries whose services may be required in connection with the supply of the products or services, such facilities as may be necessary for their entry into the country of the Recipient and stay therein for the performance of their work	during the Project	MOWTC/ TPA/ POPSM	N/A	
6	To ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the country of the Recipient with respect to the purchase of the products and/or the services be exempted.	during the Project	MOFP	N/A	
7	To bear all the expenses, other than those covered by the Grant, necessary for the implementation of the Project	during the Project	MOWTC/ TPA/ MOFP	N/A	
8	To submit Project Monitoring Report	every month	MOWTC/ TPA	N/A	
	1) To submit Project Monitoring Report (final)	within one month after signing of Certificate of Completion for the works under the contract(s)	MOWTC/ TPA		
9	To submit a report concerning completion of the Project	within six months after completion of the Project	MOWTC/ TPA	N/A	
10	To provide facilities for distribution of electricity, water supply and drainage and other incidental facilities necessary for the implementation of the Project outside the site(s)			N/A	
	1) Electricity The distributing line to the site	before start of the construction	MOWTC/ TPA		
	2) Water Supply The city water distribution main to the site	6 months before completion of the construction	MOWTC/ TPA		
	3) Drainage The city drainage main (for storm, sewer and others) to the site	6 months before completion of the construction	MOWTC/ TPA		

11	To implement EMP and EMoP	during the construction	MOWTC/TPA	36.0 Million	
12	To submit results of environmental monitoring to JICA, by using the monitoring form, on a quarterly basis as a part of Project Monitoring Report	during the construction	MOWTC/TPA	N/A	
13	To implement RAP (livelihood restoration program, if needed)	for a period based on livelihood restoration program	MOWTC/TPA	N/A	

(3) After the Project

NO	Items	Deadline	In charge	Estimated Cost(Tsh)	Ref.
1	To implement EMP and EMoP	for a period based on EMP and EMoP	MOWTC/TPA	4.0 Million / year	
2	To submit results of environmental monitoring to JICA, by using the monitoring form, semiannually - The period of environmental monitoring may be extended if any significant negative impacts on the environment are found. The extension of environmental monitoring will be decided based on the agreement between TPA and JICA.	for three years after the Project	MOWTC/TPA	N/A	
3	Installation of fence and gate in accordance with SOLAS Treaty (if necessary)	After completion of the construction	MOWTC/TPA	N/A	
4	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid 1) Allocation of maintenance cost and staff (Electric power rate, Water rate, Maintenance management of septic tank, Terminal maintenance and Maintenance dredging for necessary water depth) 2) Operation and maintenance structure 3) Routine check/Periodic inspection 4) Collection of garbage and others in the facility	After completion of the construction	MOWTC/TPA	40.6 Million / year	
5	To provide necessary equipment, furniture etc. for administration offices, ticket booth, Kiosk and others after completion of facilities.	After completion of the construction	MOWTC/TPA	90.2 Million	

(Ch) Jw G

2. Other obligations of the Government of Tanzania funded with the Grant

NO	Items	Deadline	Amount (Million Japanese Yen)*
1	(Consulting Service) To implement detailed design, bidding support and construction supervision		
2	(Construction works) 1) To rehabilitate passenger wharf · east berth · north berth · passenger wharf · access road · front open space of passenger terminal · passenger terminal building 2) To rehabilitate on-land facility of cargo wharf · general cargo warehouse 3) To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities a) Electricity · The drop wiring and internal wiring within the site · The main circuit breaker and transformer b) Water Supply · The supply system within the site (receiving and/or elevated tanks) c) Drainage · The drainage system (for toilet sewer, ordinary waster, storm drainage and others) within the site 4) To remove existing jetties and dolphins (Mobilization) 1) To conduct the following transportation a) Marine(Air) transportation of the products from Japan to the recipient country b) Internal transportation from the port of disembarkation to the project site 2) To construct temporary access roads for construction work a) Within the site 3) To construct the temporary building for construction work.		
	Contingencies		
	Total		

*The Amount is provisional. This is subject to the approval of the Government of Japan.

Project Monitoring Report
on
Project Name
Grant Agreement No. XXXXXXX
 20XX, Month

Organizational Information

Signer of the G/A (Recipient)	Person in Charge (Designation) _____ _____ Contacts Address: _____ _____ Phone/FAX: _____ _____ Email: _____
Executing Agency	Person in Charge (Designation) _____ _____ Contacts Address: _____ _____ Phone/FAX: _____ _____ Email: _____
Line Ministry	Person in Charge (Designation) _____ _____ Contacts Address: _____ _____ Phone/FAX: _____ _____ Email: _____



General Information:

Project Title	
E/N	Signed date: Duration:
G/A	Signed date: Duration:
Source of Finance	Government of Japan: Not exceeding JPY _____ mil. Government of (_____): _____

1: Project Description

1-1 Project Objective

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1-2 Project Rationale

- Higher-level objectives to which the project contributes (national/regional/sectoral policies and strategies)
- Situation of the target groups to which the project addresses

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1-3 Indicators for measurement of "Effectiveness"

Quantitative indicators to measure the attainment of project objectives		
Indicators	Original (Yr)	Target (Yr)
Qualitative indicators to measure the attainment of project objectives		

2: Details of the Project

2-1 Location

Components	Original <i>(proposed in the outline design)</i>	Actual
1.		

2-2 Scope of the work

Components	Original* <i>(proposed in the outline design)</i>	Actual*
1.		

Reasons for modification of scope (if any).

(PMR)

2-3 Implementation Schedule

Items	Original		Actual
	(proposed in the outline design)	(at the time of signing the Grant Agreement)	

Reasons for any changes of the schedule, and their effects on the project (if any)

2-4 Obligations by the Recipient

2-4-1 Progress of Specific Obligations

See Attachment 2.

2-4-2 Activities

See Attachment 3.

2-4-3 Report on RD

See Attachment 11.

2-5 Project Cost

2-5-1 Cost borne by the Grant(Confidential until the Bidding)

Components			Cost (Million Yen)	
	Original (proposed in the outline design)	Actual (in case of any modification)	Original ^{1),2)} (proposed in the outline design)	Actual
1.				
Total				

Note: 1) Date of estimation:

2) Exchange rate: 1 US Dollar = Yen

2-5-2 Cost borne by the Recipient

Components			Cost (1,000 Taka)	
	Original <i>(proposed in the outline design)</i>	Actual <i>(in case of any modification)</i>	Original ^(1,2) <i>(proposed in the outline design)</i>	Actual
	1.			

Note: 1) Date of estimation:
 2) Exchange rate: 1 US Dollar =

Reasons for the remarkable gaps between the original and actual cost, and the countermeasures (if any)

(PMR)

2-6 Executing Agency

- Organization's role, financial position, capacity, cost recovery etc,
- Organization Chart including the unit in charge of the implementation and number of employees.

Original *(at the time of outline design)*

name:
 role:
 financial situation:
 institutional and organizational arrangement (organogram):
 human resources (number and ability of staff):

Actual *(PMR)*

2-7 Environmental and Social Impacts

- The results of environmental monitoring based on Attachment 5 (in accordance with Schedule 4 of the Grant Agreement).
- The results of social monitoring based on in Attachment 5 (in accordance with Schedule 4 of the Grant Agreement).
- Disclosed information related to results of environmental and social monitoring to local stakeholders (whenever applicable).

3: Operation and Maintenance (O&M)

3-1 Physical Arrangement

- Plan for O&M (number and skills of the staff in the responsible division or section, availability of manuals and guidelines, availability of spareparts, etc.)

Original (at the time of outline design)

Actual (PMR)

3-2 Budgetary Arrangement

- Required O&M cost and actual budget allocation for O&M

Original (at the time of outline design)

Actual (PMR)

4: Potential Risks and Mitigation Measures

- Potential risks which may affect the project implementation, attainment of objectives, sustainability
- Mitigation measures corresponding to the potential risks



Assessment of Potential Risks (at the time of outline design)

Potential Risks	Assessment
1. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:
	Contingency Plan (if applicable):
2. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:
	Contingency Plan (if applicable):
3. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:
	Contingency Plan (if applicable):

Actual Situation and Countermeasures	
(PMR)	

5: Evaluation and Monitoring Plan (after the work completion)

5-1 Overall evaluation

Please describe your overall evaluation on the project.

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5-2 Lessons Learnt and Recommendations

Please raise any lessons learned from the project experience, which might be valuable for the future assistance or similar type of projects, as well as any recommendations, which might be beneficial for better realization of the project effect, impact and assurance of sustainability.

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5-3 Monitoring Plan of the Indicators for Post-Evaluation

Please describe monitoring methods, section(s)/department(s) in charge of monitoring, frequency, the term to monitor the indicators stipulated in 1-3.

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Attachment

1. Project Location Map
2. Specific obligations of the Recipient which will not be funded with the Grant
3. Monthly Report submitted by the Consultant
- Appendix - Photocopy of Contractor's Progress Report (if any)
 - Consultant Member List
 - Contractor's Main Staff List
4. Check list for the Contract (including Record of Amendment of the Contract/ Agreement and Schedule of Payment)
5. Environmental Monitoring Form / Social Monitoring Form
6. Monitoring sheet on price of specified materials (Quarterly)
7. Report on Proportion of Procurement (Recipient Country, Japan and Third Countries) (PMR (final) only)
8. Pictures (by JPEG style by CD-R) (PMR (final) only)
9. Equipment List (PMR (final) only)
10. Drawing (PMR (final) only)
11. Report on RD (After project)



Monitoring sheet on price of specified materials

1. Initial Conditions (Confirmed)

Items of Specified Materials	Initial Volume A	Initial Unit Price (¥) B	Initial total Price C=A x B	1% of Contract Price D	Condition of payment Price (Decreased) E=C-D	Price (Increased) F=C+D
Item 1	●●t	●	●●	●●	●●	●●
Item 2	●●t	●	●●	●●		
Item 3						
Item 4						
Item 5						

2. Monitoring of the Unit Price of Specified Materials

(1) Method of Monitoring : ●●

(2) Result of the Monitoring Survey on Unit Price for each specified materials

Items of Specified Materials	1st month, 2015	2nd month, 2015	3rd month, 2015	4th	5th	6th
Item 1	●	●	●			
Item 2						
Item 3						
Item 4						
Item 5						

(3) Summary of Discussion with Contractor (if necessary)

-
-
-

Report on Proportion of Procurement (Recipient Country, Japan and Third Countries)
 (Actual Expenditure by Construction and Equipment each)

	Domestic Procurement (Recipient Country) A	Foreign Procurement (Japan) B	Foreign Procurement (Third Countries) C	Total D
Construction Cost	(A/D%)	(B/D%)	(C/D%)	
Direct Construction	(A/D%)	(B/D%)	(C/D%)	
Cost				
others	(A/D%)	(B/D%)	(C/D%)	
Equipment Cost	(A/D%)	(B/D%)	(C/D%)	
Design and Supervision	(A/D%)	(B/D%)	(C/D%)	
Cost				
Total	(A/D%)	(B/D%)	(C/D%)	

Environmental Check List

Table 1 Environmental Check List (draft)

	Environmental item	Main checking item	Concrete environmental and social considerations
1 Approval/ Explanation	1. EIA and environmental approval	(a) Was EIA report prepared? (b) Was the EIA report approved by the government of sponsor country? (c) Any additional conditions with the approval of EIA report? If any, can it be satisfied? (d) Other than the above, were necessary approvals obtained by local competent authorities?	(a) TPA which is implementation agency in Tanzania prepared EIA report of this project in 2012 according to the project plan to be implemented. (b) Environmental approval (EIA certificate) was already issued by the government authority of Tanzania in February 2016. (c) Environmental approval issued has expiry date and the additional condition is to take some actions concerning with project implementation within 3 years from the issued date. (d) It is not necessary after obtaining environmental approval of EIA.
	2. Explanation to local stakeholders	(a) Was proper explanation made to local stakeholders about project content and the impact including information disclosure and gained their understanding? (b) Were comments from residents and others reflected to project content?	(a) Stakeholder's meeting was held on October 10, 2017. Explanation of implementation of this project was made to half of surrounding residents and gained the understanding. Also, the explanation was made to fishermen operating neighboring beach and gained understanding. (b) It is to reflect the method of lane restriction and installation of drains commented from residents into the design.
	3. Study of Alternative	(a) Was a number of alternative plans for the project plan studied?	(a) The alternative plans were studied concerning scale and content of construction facilities.
2 Pollution Measure	1. Ambient Air	(a) Do air pollutant (Sox, NOx, Dust and etc.) discharged from facilities and ancillary facilities of this project meet with the discharge standard, environmental standard of host country?	(a) Air pollutant is not discharged from the Kigoma Port site area to be constructed. However, as there will be possibility to generate dust caused by construction heavy vehicles and others during construction period, watering is carried out.
	2. Water quality	(a) Does the discharging water from infrastructure and other ancillary facilities meet with discharge standard, environmental standard of host country?	(a) It is to clear Tanzania discharge water standard by installing proper drainage treatment and sewage facility for toilets in Kigoma Port to be constructed.
	3. Waste	(a) Are the waste from infrastructure and other ancillary facilities properly treated and disposed according to the rules and regulations of host country?	(a) It is to be treated general waste and etc. by Waste Treatment Committee of Kigoma Port.
	4. Soil pollution	(a) Does the measure perform not to pollute soil and groundwater by discharging, seeping water and etc. from infrastructure facilities and the ancillaries?	(a) Soil pollution is not generated by the implementation of this project.
	5. Noise and Vibration	(a) Does noise and vibration fit together with its standard and others of host country?	(a) There is no concrete value set for the rules and regulations of noise and vibration in Tanzania. Noise and vibration are predicted to generate going with the construction works by this project however, the generation of noise can be controlled by limiting to the day time works only and no night works.
	6. Land subsidence	(a) Is there any fear that land subsidence is generated when a lot of underground water is pumped up?	(a) Land subsidence is not generated by this project.
	7. Offensive Odor	(a) Are there any offensive odor emission sources and any protective measures can be taken?	(a) General waste and etc. are to treat by TPA, Kigoma Port.
3	1. Protected Areas	(a) Does the project site locate within the protected areas established by laws	(a) The project site is not located at protected areas established by laws of Tanzania, international

		of the host country, international treaties and others? Does this project affect to protected areas?	treaties and others. And the project does not affect to protected areas.
	2.Ecosystem	(a) Does the site include primary forest, tropical natural forest and ecologically important habitat (coral reef, mangrove wetland, tidal flat and etc.)? (b) Does the site include habitat of precious species being necessary protection by laws in host country, international treaties and etc.? (c) Does the measure execute to decrease impact to ecosystem when significant impact to ecosystem is predicted? (d) Does the water utilization by this project affect to water area environment like river? Does the measure to decrease impact to aquatic organism and etc. execute?	(a) The site is located at the existing facilities and does not include primary forest, tropical natural forest and ecologically important habitat (coral reef, mangrove wetland, tidal flat and etc.) (b) The site does not include habitat of precious species being necessary protection by laws in host country, international treaties and etc. (c) Significant impact to ecosystem is not predicted. (d) As this project uses clear water as daily life water, there is not impact to underground water or lakes.
	3.Hydrological Situation	(a) Does any adverse impact affect to the stream of surface water and underground water going with the change of water system by this project?	(a) The impact to hydrological situation is not generated by this project.
	4.Topography and geology	(a) Are large scale change of topography and geological structure, land subsidence and natural beach loss generated around the site?	(a) There is no impact by the works in this project.
4 Social Environment	1.Resettlement	(a) Is involuntary resettlement by the implementation of this project generated? If yes, is the effort to minimize the impact by resettlement made? (b) Does proper explanation make to people to relocate before resettlement concerning compensation and livelihood? (c) Can survey for resettlement carry out and resettlement action plan including the compensation for reacquisition prices and restitution of local infrastructure after resettlement establish? (d) Can compensation money pay before the resettlement? (e) Does the compensation policy prepare in writing? (f) Is the action plan properly considered to the socially vulnerable especially such as woman, child, puberty group, minorities and indigenous people out of relocating people. (g) Can obtain the agreement of resettlement before the relocation? (h) Can establish a system to properly execute resettlement, enough implementation capability and budget? (i) Monitoring plan for the impact of resettlement (j) Does the framework of complaint establish?	(a) Involuntary resettlement is not predicted to generate. (b) Explanatory meeting to local residents is not held due to no generation of resettlement. (c) It is no need due to no generation of resettlement (d) It is no need due to no generation of resettlement (e) It is no need due to no generation of resettlement (f) It is no need due to no generation of resettlement (g) It is no need due to no generation of resettlement (h) It is no need due to no generation of resettlement (i) It is no need due to no generation of resettlement (j) It is no need due to no generation of resettlement
	2.Life and Livelihood	(a) Is adverse impact to resident life generated by this project? If yes, does mitigation measure consider?	(a) It is no need due to no generation of resettlement

	3.Cultural heritage	(a) Is there any fear to lose archaeological, historical, cultural and religiously precious heritages and historic sites by this project? And is any legal step in the host country considered?	(a) There are 3 large trees having cultural and landscape values are existed on the access roadside and are used as the shade s for the local residents and they are required their conservation.
	4.Landscape	(a) In case that there exists the landscape where is especially considered; does it affect the adverse impact? If yes, can be necessary measure taken? (b) Is there any fear to lose landscape by large scale accommodation facilities or buildings?	(a)It is desired to conserve 3 large trees existed on the access roadside. (b) As the facilities are considered to be flat building, there is almost no impact to landscape.
Others	1.Impact during construction period	(a) Is there any mitigation measure to pollution during construction period (noise, vibration, muddy water, dust, exhaust, waste and etc.)? (b) Is there any adverse impact to natural environment (ecosystem) by construction works? Does mitigation measure prepare to the impact? (c) Is there any adverse impact to social environment by construction works? Does mitigation measure prepare to the impact?	(a) Monitoring items are related to water quality, noise, vibration and waste. (b) The adverse impact to ecosystem by construction works is slightly predicted, however, the impacts can be considered to be minimized by mitigation measure such as the measure to water turbidity. (c) It is predicted that the accident is generated by passage vehicles to workers and nearby residents during construction period, necessary cost and staff allocation to prevent accidents are prepared by the Contractor.
	2.Monitoring	(a) Are monitoring planned and executed to items to be affected out of the above environmental items by the project proponent? (b) How were the original planned items, method, frequency and etc. set? (c) Can monitoring system (organization, personnel, equipment, budget and etc.) by the project proponent establish? (d) Are the method and frequency of report to competent authorities from project proponent set?	(a) Monitoring items are planned and executed. (b) It is regarded that items, method, frequency of this project is appropriate. (c) TPA prepares necessary fees and allocates personnel. (d) The execution of works according to the plan with the EIA inspection of the host country.
Attention	Reference of other environmental checklist	(a) Additional evaluation of checklist concerning road, railway and bridge is required when necessary (in case that access road and etc. are installed related to infrastructure facilities) (b) Additional evaluation of checklist for transmission, transformation and distribution of power when needed concerning laying telephone line, steel tower, submarine cable and etc. are required.	(a) Not especially affected and no need to confirm (b) Not especially affected and no need to confirm

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Environmental Management Plan (EMP) <Draft>

1. Impact Assessment

(1) Categorization of this project based on the JICA Guidelines for Environmental and Social Considerations

This project is considered to be classified as category-B according to the JICA Guideline for Environmental and Social Considerations at the time of preparatory survey of this project. The reason is that adverse effects in views of social and natural environments are not significant, but the generation can be predicted. In addition, the generation of involuntary resettlement, land acquisition of private land and commercial relocation are not predicted.

(2) Impact Assessment

The results of impact assessment after surveying environmental and social aspects of the following items are shown on the table below.

Table 1 Results of impact assessment

Category	No.	Impact Item	Scoping		Assessment after survey		Assessment Reason
			Before and during construction	After completion	Before and during construction	After completion	
Measures for pollution control		Air Pollution	B-	D	B-	D	During construction period, dust going with the demolition of existing port facilities will be generated and discharging gas by construction vehicles is increased. After completion, no influence can be predicted by this project.
		Water Contamination	B-	B-	B-	B-	During construction period, the construction activities of lake shore area will generate to flow surface soil to the lake and some mechanical oil generated by the machinery and construction vessels flow to the lake thus the water contamination of the lake around the construction site will occur. Upon completion of the new Kigoma Port, water contamination will occur due to the flow of the toilet sewerage into the lake generated by both toilets installed in office compartment and public facility of new Kigoma Port.
		Wastes	B-	B-	B-	B-	During construction period, construction debris will be generated by the demolish of existing buildings at the site. After completion, wastes will be generated by littering from Kigoma Port users and others if the garbage pots are not installed properly. No wastes affecting soil contamination will be generated in any phases - before construction, during construction and after completion - of this project.
		Soil Contamination	D	D	D	D	Soil contamination is not predicted in any phases - before construction, during construction and after completion - of this project. The major reason is that the wastes generated by implementation of this project will not include items of generating soil contamination.

	Noise and Vibration	B-	D	B-	D	Noise and vibration by heavy machines and construction vehicles are generated at the site during construction period. No noise nor vibration are not predicted to increase after completion.
	Land Subsidence	D	D	D	D	Land subsidence is not predicted by this project.
	Offensive Odor	D	D	D	D	Offensive odor is not predicted by this project.
	Bottom Sediment	D	D	B-	D	Adverse impact on bottom sediment is predicted by the construction activities of this project. Construction activities such as land reclamation (0.35ha) and dredging (0.6ha) will generate the diffusion of sediment soil and the surface soil will flow into the lake thus the construction area of the lake's bottom sediment will be affected.
Natural environment	Protected Areas	D	D	D	D	There no protected areas in this project site and the vicinity.
	Eco system	B-	D	B-	D	Adverse impact to water area eco system by water contamination and land filling is anticipated going with execution of water area facility construction works by this project.
	Hydrological Situation	D	D	D	D	Adverse impact to hydrological situation is not predicted by this project.
	Topography and geology	D	D	D	D	Adverse impact to topography and geology is not predicted by this project.
Social Environment	Involuntary resettlement and land acquisition	C	D	D	D	Resettlement is not predicted to happen by construction of new Kigoma Port. And, neither the land acquisition is proceeded.
	The poor	D	D	D	D	Adverse impact to the poor is not predicted by this project.
	Minorities and Indigenous people	D	D	D	D	Adverse impact to minorities and indigenous people is not predicted by this project.
	Local economy such as employment, livelihood & etc.	C	D	B-	D	The impact is predicted to street vendors engaging business on the access road in Kigoma Port during construction period. After the completion of the new port, no significant negative impacts on employment and livelihood will be generated.
	Utilization of land and local resources	D	D	D	D	The adverse impact by this project is not found.
	Water utilization	D	D	D	D	The adverse impact on water utilization by the implementation of this project is not predicted. Major water utilization of construction period will be for the cement and operation of the port which will consume the water as the same volume as usual. After the completion of the new port, since there are no specific plans of this project to consume more volume of water, water utilization of operation of the new port will be as the same volume as present situation. Therefore, the volume of the water utilization will not be significantly increase comparing with the present situation.
	Existing social infrastructure and social service	D	D	B-	D	The adverse impact to the operation of MV Liemba vessel liner service is predicted.
	Social organization like social capital and local decision-making body	D	D	D	D	The adverse impact by this project is not found.
	Uneven distribution of damages and benefits	D	D	D	D	The adverse impact by this project is not found.





	Conflict of interest in the area	D	D	D	D	Conflict of interest among races is not occurred in the existing Kigoma Port. After completion, the adverse impact is not predicted by the implementation of this project.
	Cultural heritage	C	D	D	D	There are no cultural heritage or historic site at the site and the influence by implementation of this project is not found.
	Landscape	D	D	B-	D	3 large trees located at border of the site provide shade to local people and have the landscape value. During construction period, the influence on tree roots and branches by heavy machines and vehicles to be used in the construction is anticipated.
	Gender	D	D	B+	B+	As this project plans to install sanitary toilets for both sexes thus the favorable effect to gender is predicted.
	Children's right	D	D	D	D	The adverse impact by this project is not anticipated.
	Infectious diseases such as HIV/AIDS	D	D	D	D	The adverse impact by this project is not anticipated.
	Vocational environment (including labor safety)	B-	D	B-	D	The accident may occur to workers during construction period.
Others	Accidents	B-	B-	B-	B-	The accident to workers may occur during construction period. After completion, traffic accidents may occur between the vehicles to come to new Kigoma Port and the users and port workers.
	Transboundary impact and climate change	D	D	D	D	The adverse impact is not anticipated by this project.

A+/-: serious impact is predicted
B+/-: Not serious but middle level impact is predicted
C+/-: Impact is unknown
D+/-: Almost no impact is predicted

2. Environmental Mitigation Measures

The system of the implementation of the mitigation measures for this project is shown on the table below. Prior to construction and time of construction period, a construction contractor will carry out the mitigation measures and report the results to TPA which will act as a responsible organization except for the aspect of "Existing social infrastructure and social service". As for the "Existing social infrastructure and social service", TPA will carry out the mitigation measures and at the same time it will be a responsible organization for this matter. After completion of the new port, TPA will carry out the mitigation measures and at the same time it will be a responsible organization for the aspects indicated on the table below. TPA will also report the results to JICA Tanzania office.

Table 2 Implementation System of Environmental Mitigation Measures

No.	Items of Adverse Impacts for Mitigation Measures	Responsible Organization	Executing / Implementing Organization
Prior to Construction			
1	Existing social infrastructure and social service	TPA	TPA
2	Landscape (conservation of exiting 3 large trees)	TPA	Construction Contractor
During Construction Period			
1	Existing social infrastructure and social service	TPA	TPA

2	Local economy such as employment and livelihood	TPA	Construction Contractor
3	Air Pollution	TPA	Construction Contractor
4	Water Contamination	TPA	Construction Contractor
5	Bottom Sediment	TPA	Construction Contractor
6	Wastes	TPA	Construction Contractor
7	Noise and Vibration	TPA	Construction Contractor
8	Ecosystem	TPA	Construction Contractor
9	Landscape (conservation of exiting 3 large trees)	TPA	Construction Contractor
10	Vocational environment	TPA	Construction Contractor
11	Accidents	TPA	Construction Contractor
After Completion			
1	Water Contamination	TPA	TPA
2	Wastes	TPA	TPA
3	Accidents	TPA	TPA

The mitigation measures to the items of adverse impact to be predicted on environmental and social aspects by the implementation of this project are shown on the table below.

Table 3 Environmental Mitigation Measures

Items of adverse impact	Assessment	Impact's degree (scale, impact area, impact period, frequency, irreversibility etc.)	Mitigation measures
Air Pollution	B-	During construction period, dust generated by the demolition of existing facilities and structures will be generated and discharging gas by construction vehicles is increased.	<u>During construction period:</u> The mitigation measures on air pollution are, the action of cutting engines of heavy machineries and others when they are not in use for the construction activities, and execution of periodical watering to the construction site and the vicinity etc. They will be planned and implemented.
Water Contamination	B-	Water contamination will be generated to the neighboring lake during construction period. After completion, toilet sewage generated by new port's office facilities and others will generate water contamination.	<u>Planning stage:</u> The mitigation measure to toilet sewage generated from administration building is to install septic tank satisfying the drainage standard of Tanzania. <u>During construction period:</u> As the measure to minimize water contamination, silt curtain /fence will be installed at water area of construction activities on the lake and the proper maintenance work will be made to prevent oil leakage from machineries when they will be used.
Wastes	B-	During construction period, the construction debris is generated such as construction material. After commencement of service, wastes are generated by littering in Kigoma Port and the vicinity.	<u>During construction period:</u> The construction debris / wastes will be recycled, and the remaining wastes will be transport to the waste disposal center of Kigoma-Ujiji municipal. The concrete debris as the debris of construction will be utilized as materials of land reclamation and the remaining will be transported to the wastes disposal centre managed by the municipal located Msimba planned to be open in 2018. The centre has two cells with each capacity of approximately 6 ha in area size and 10m in depth. <u>After completion:</u> Waste treatment by TPA will be carries out as usual.
Noise and vibration	B-	There exist resident houses around the project site. Noise and vibration are generated by heavy machines and others during construction period. After completion, noise and vibration are not predicted to increase.	<u>During construction period:</u> Utilization of low noise heavy machines and installing of noise shielding is planned to mitigate the noise and vibration. Also, regulation for night works is planned to mitigate noise and vibration. They will be implemented.
Bottom Sediment	B-	Construction activities such as land reclamation (0.35ha) and dredging (0.6ha) will affect	<u>During construction period:</u> The area of dredging is fixed thus the impacts will be inevitable. To mitigate the impacts on the bottom sediments,

		lake's bottom sediment.	silt curtain will be installed around the construction activities' area on the lake to reduce the further negative impacts.
Ecosystem	B-	Construction activities on lake's water area will generate water contamination and impact on bottom sediment of the lake.	<u>During construction period:</u> During construction period, mitigation measures to water contamination and bottom sedimentation are planned and will be implemented to minimize the impacts on the ecosystem of the lake.
Local economy such as employment and livelihood	B-	It is predicted to negatively affect to street vendors' business on the access road in Kigoma Port during construction period.	<u>During construction period:</u> It is possible to minimize the negative impacts on street vendors' business activities by providing business space for street vendor's even when the time for restriction of vehicles' passage during construction period.
Existing social infrastructure and social service	B-	It is anticipated to have trouble to use MV Liemba, existing liner ship during construction period.	<u>During construction period:</u> By relocating the boarding place of MV Liemba to a vacant space in Kigoma Port and ensuring the operation of the passenger vessels as to the same operation schedule as it present. Thus, the operation of the passenger vessels is to be minimized.
Landscape	B-	3 large trees located at along the access road of the site provide shade to local people and have some landscape value. During construction period, the impacts on those trees' roots will be generated by usage of heavy machines and vehicles for the construction activities.	<u>During construction period:</u> The negative impacts on the roots of those 3 large trees are located at roadside of the access road can be minimized the influence by protecting roots on ground surface.
Vocational environment	B-	Accidents may occur to workers during construction period	<u>During construction period:</u> Safety measures such as safety education will be carried out to workers.
Accidents	B-	It is possible to occur accidents like traffic accidents by using heavy machines at the site and the vicinity during construction period. And, workers may have accidents as well. After completion, traffic accidents or breaking out fire are possible in new Kigoma Port.	<u>During construction period:</u> Safety measure including safety education is carried out to workers. <u>After completion:</u> The reduction of traffic accidents and the smooth flow of traffic vehicles will be projected since related staff of TPA does traffic control properly.

3. Mitigation measure and the costs

The costs to execute mitigation measure for environmental and social adverse impacts are as follows.

Table 4 Mitigation measures and their costs

No	Impact Item	Adverse impact degree	Mitigation measure	Responsible organization	Implementation organization	Cost (Tsh)
Planning stage and during construction period						
1	Existing social infrastructure and social service	During construction period, it is predicted to have troubles with the utilization of liner ship, MV Liemba and the works of customs and quarantine	During construction period, MV Liemba uses low usage rate wharf in Kigoma Port. And the works of customs and quarantine are continued to have a temporarily office near the wharf that MV Liemba uses.	TPA	TPA	Cost to install temporarily tent and etc.: 10 million
2	Ambient air	During construction period, dust generation by demolition of existing market is	The generation of dust and etc. is controlled by watering to road and construction site.	TPA	Contractor	Watering cost is included in the construction cost

		generated and the discharge gas from construction vehicles is increased.				
3	Water contamination	Water contamination to neighboring lake is generated during construction period	Oil leakage generated in using heavy machines is controlled by adequate maintenance works to heavy machinery. And, the education concerning water contamination to workers can also control its generation. In addition, silt curtain will be installed to mitigate the negative impacts.	TPA	Contractor	Water quality monitoring cost: 5 million The cost of installing silt curtain is included in the construction cost
4	Bottom Sediment	Negative impacts on the lake's bottom sediments of the area close to the site will be generated by construction activities.	To mitigate the impacts, silt curtain will be installed during construction period	TPA	Contractor	The cost of installing silt curtain is included in the construction cost
5	Wastes	Generation of wastes such as construction material going with construction works during construction period is predicted.	Construction debris generated going with the demolition of existing building at the site are recycled by TPA and the remaining is transported to waste treatment plant of Ujiji city and disposed.	TPA	Contractor	Disposal cost: included in the construction cost
6	Noise and Vibration	There exists residential property within 100m around the site. Noise and vibration are generated during construction period by heavy machineries and others. After completion, the increase of noise and vibration are not predicted.	Influence on surroundings can be controlled by working daytime as construction working time and no works after 8 pm. And construction workers are enlightened to use heavy machinery and drive vehicles for controlling noise.	TPA	Contractor	Cost is not especially incurred
7	Ecosystem	Aquatic creatures inhabiting lake's bottom of the area close to the existing jetty will have negative influences.	Mitigation measures of water contamination and bottom sediments will act as to mitigate the negative impacts on demersal creatures.	TPA	Contractor	The cost of installing silt curtain is included in the construction cost
8	Landscape	It is desired to preserve 3 large trees standing roadside of access road.	Wrapping protection shield around root core part when commencing construction works and avoiding branches to be cut when vehicles are passing.	TPA	Contractor	Cost is not especially incurred
9	Vocational environment	The occurrence of accident to construction workers is possible during construction period.	The occurrence of accident can be avoided before happens by adequate safety education for the usage of heavy machinery and operation of vehicles.	TPA	Contractor	Cost is not especially incurred
10	Accidents	During construction period, traffic accidents may possibly occur at the site or the vicinity by using heavy machinery and others.	The installation of safety fence and allocation of traffic control person are done. And adequate safety education is executed for how to use heavy machinery and the operation of vehicles.	TPA	Contractor	Cost is not especially incurred
After completion						
1	Water contamination	Going with the toilet water sewage from office facility and etc. after completion, water contamination is predicted.	Septic tank for the toilet of administration building in new Kigoma Port and final treated sewage is penetration type.	TPA	TPA	Water monitoring cost: 4 million/year
2	Wastes	Waste generation can be predicted in Kigoma Port by littering and etc. after completion	TPA piles up waste and entrusts its collection to city. Waste is transported to designate place by the city and disposed. The treatment of construction debris	TPA	TPA	Cost for transportation of waste: approximately 1.5 million/year

			going with demolition of existing old warehouse becomes necessary and transport to city designated place and dispose.			
3	Accidents	After completion, traffic accidents may occur in new Kigoma Port	Port traffic rules and regulation are crafted for the purpose of prevention of traffic accident.	TPA	TPA	Cost is not especially incurred

4. Monitoring Plan

It is proposed to have system that monitoring plan is to carry out at 3 stages, before commencing construction, during construction period and after completion. The system of monitoring on the items of environmental and social aspects which are anticipated to have negative impacts is show on the table below. Prior to the construction of this project, as for the monitoring of "Existing Infrastructure" is planned to be implemented by TPA which will inform the results to JICA Tanzania office. For the monitoring of "landscape (conservation of the 3 large trees)", it is planned to be implemented by a construction contractor. The results shall be reported by the contractor to both TPA and JICA Tanzania office. Monitoring activities during construction period will be implemented by the contractor and shall be reported by the contractor to both TPA and JICA Tanzania office, except for the aspect of "Existing Infrastructure" which will be implemented by TPA and the results shall be reported to JICA Tanzania office. After the completion of the new Kigoma Port, monitoring will be implemented by TPA and the results shall be reported to JICA Tanzania office.

Table 5 The Monitoring System

No	Items of Monitoring	Responsible Organization	Executing / Implementing Organization
Prior to Construction			
1	Existing social infrastructure and social service	TPA	TPA
2	Landscape (conservation of exiting 3 large trees)	TPA	Construction Contractor
During Construction Period			
1	Existing social infrastructure and social service	TPA	TPA
2	Local economy such as employment and livelihood	TPA	Construction Contractor
3	Landscape (conservation of exiting 3 large trees)	TPA	Construction Contractor
4	Ambient Air	TPA	Construction Contractor
5	Water Quality	TPA	Construction Contractor
6	Wastes	TPA	Construction Contractor
7	Noise and Vibration	TPA	Construction Contractor
8	Vocational environment	TPA	Construction Contractor
9	Prevention of Accidents	TPA	Construction Contractor
After Completion			
1	Water Quality	TPA	TPA
2	Wastes	TPA	TPA
3	Prevention of Accidents	TPA	TPA

(1) Monitoring prior to the commencement of construction (draft)

Table 6 Relocation of existing infrastructure facilities and preservation of trees

Classification	Item	Performance Status	Frequency/Timing
Existing Infrastructure	Relocation of boarding place to passenger ship, MV Liemba		Monthly one time starting from 3 months before the commencement of construction works.

Table 7 Landscape (conservation of trees)

Classification	Item	Performance Status	Frequency/Timing
Landscape(conservation of trees)	Conservation status of the 3 large trees along the access road		Monthly one time starting from 3 months before the commencement of construction works.

(2) Monitoring during construction period (draft)

Table 8 Water quality

Item	Unit	Survey Value	Survey value before construction	Standard of host country *1	Referred international standard *2	Survey place & frequency
pH	-			6.5-8.5	7.8-8.3	Survey place: 2 places in front of the site Frequency: every 3 months
COD	mg/l			60	<20	
DO	Mg/l				>7.5	
coliform	MPN /100 ml				<1000	
SS	Mg/l				SS artificially added is less than 2mg/l	
Oil	Mg/l			5	Based on no detection	
Turbidity	NTU				<150	

*1: Standard of Tanzania *2: Standard for fishery water (Japan Fisheries Resource Conservation Association) and USA Maryland State water quality regulations

Table 9 Wastes

Item	Purpose	Survey item	Survey Value	Survey value before construction	Survey place and frequency
Wastes treatment	Confirming the relevancy of treatment and disposal of general waste in Kigoma Port	Interview survey to TPA staff of Kigoma Port			Survey place: in Kigoma Port in every 6 months

Table 10 Ambient Air

Item	Purpose	Survey item	Survey Value	Survey value before construction	Survey place and frequency
Dust and Gas Emission	Confirming impact by dust caused by construction vehicles and others during construction period	Interview survey of scattering situation of dust and gas emission to surrounding residents			Survey place: project site Frequency: appropriately at the time of strong wind and carrying in of large truck

Table 11 Noise and Vibration

Item	Purpose	Survey item	Survey Value	Survey value before construction	Standard of host country	Survey place and frequency
Noise and Vibration	Confirming the impact of noise and vibration caused by construction vehicles and others during construction period	Interview survey of noise and vibration to surrounding residents			Not especially specified	Survey place: project site, Frequency: at the time of carrying-in of large truck and operation of large machineries

Table 12 Occupational Safety Measure

Monitoring item	Performance Status	Frequency
Reconfirming the safety education to workers and prevention measures on accidents		Every 3 months

Table 13 Accidents Prevention Measure

Monitoring item	Performance Status	Frequency
Reconfirming the safety education to workers and prevention measures on accidents		Every 3 months

Table 14 Employment and livelihood

Monitoring item	Performance Status	Frequency
Reconfirming available business space for the street vendors		Every 3 months

Table 15 Relocation of existing infrastructure facilities and preservation of trees

Classification	Item	Performance Status	Frequency/Timing
Existing Infrastructure	Relocation of boarding place to passenger ship, MV Liemba		Every 3 months



Table 16 Landscape (conservation of trees)

Classification	Item	Performance Status	Frequency/Timing
Landscape(conservation of trees)	Conservation status of the 3 large trees along the access road		Every 3 months

(3) Monitoring after completion (draft)

Table 17 Water quality

Item	Unit	Survey Value	Survey value before construction	Standard of host country *1	Referred international standard *2	Survey place & frequency
pH	-			6.5-8.5	7.8-8.3	Survey place: 2

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COD	mg/l			60	<2	places in front of the site, Frequency: every 6 months
SS	mg/l				SS artificially added is less than 2mg/l	
Coli form	MPN/100ml				<1000	

*1: Standard of Tanzania *2: Standard for fishery water (Japan Fisheries Resource Conservation Association)

Table 18 Wastes

Item	Purpose	Survey item	Survey Value	Survey value before construction	Standard of host country
Treatment of wastes	Confirming the relevancy of treatment and disposal situation of general waste in Kigoma Port	Hearing survey to Waste Treatment Committee			Survey place: Kigoma Port in every 6 months

Table 19 Accidents Prevention Measure

Monitoring item	Performance Status	Frequency
Reconfirming the status of Kigoma Port traffic control, allocation of security guards and prevention measures on accidents		Every 3 months

(1) Monitoring before commencement of construction (draft)

Table 1 Relocation of existing infrastructure facilities and preservation of trees

Classification	Item	Performance State	Frequency/Timing
Existing Infrastructure	Relocation of boarding place to passenger ship, MV Liemba		Monthly one time starting from 3 months before the commencement of construction works.

Table 2 Landscape (conservation of trees)

Classification	Item	Performance Status	Frequency/Timing
Landscape (conservation of 3 large trees)	Conservation status of the 3 large trees along the access road		Monthly one time starting from 3 months before the commencement of construction works.

(2) Monitoring during construction period (draft)

Table 3 Water quality

Item	Unit	Survey Value	Survey value before construction	Standard of host country *1	Referred international standard *2	
pH	-			6.5-8.5	7.8-8.3	Survey place: 2 places in front of the site Frequency: every 3 months
COD	mg/l			60	<20	
DO	Mg/l				>7.5	
coliform	MPN/100 ml				<1000	
SS	Mg/l				SS artificially added is less than 2mg/l	
Oil	Mg/l			5	Based on no detection	
Turbidity	NTU				<150	

*1: Standard of Tanzania, *2: Standard for fishery water (Japan Fisheries Resource Conservation Association) and USA Maryland State water quality regulations

Table 4 Wastes

Item	Purpose	Survey item	Survey Value	Survey value before construction	Survey place and frequency
Wastes treatment	Confirming the relevancy of treatment and disposal of general waste in Kigoma Port	Interview survey to TPA staff of Kigoma Port			Survey place: in Kigoma Port in every 6 months

Table 5 Ambient Air

Item	Purpose	Survey item	Survey Value	Survey value before construction	Survey place and frequency
Dust and Gas Emission	Confirming impact by dust caused by construction vehicles and others during construction period	Interview survey of scattering situation of dust and gas emission to surrounding residents			Survey place: project site Frequency: appropriately at the time of strong wind and carrying in of large truck

Table 6 Noise and Vibration

Item	Purpose	Survey item	Survey Value	Survey value before construction	Standard of host country	Survey place and frequency
Noise and Vibration	Confirming the impact of noise and vibration caused by construction vehicles and others during construction period	Interview survey of noise and vibration to surrounding residents			Not especially specified	Survey place: project site, Frequency: at the time of carrying-in of large truck and operation of large machineries

Table 7 Occupational Safety Measure

Monitoring item	Performance Status	Frequency
Reconfirming the safety education to workers and prevention measures on accidents		Every 3 months

Table 8 Accidents Prevention Measure

Monitoring item	Performance Status	Frequency
Reconfirming the safety education to workers and prevention measures on accidents		Every 3 months

Table 9 Employment and livelihood


Monitoring item	Performance Status	Frequency
Reconfirming available business space for the street vendors		Every 3 months

Table 10 Relocation of existing infrastructure facilities

Classification	Item	Performance Status	Frequency/Timing
Existing Infrastructure	Relocation of boarding place to passenger ship, MV Liemba		Every 3 months

Table 11 Landscape (conservation of trees)

Classification	Item	Performance Status	Frequency/Timing



Landscape (conservation of 3 large trees)	Conservation status of the 3 large trees along the access road		Every 3 months
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(3) Monitoring after completion (draft)

Table 12 Water quality

Item	Unit	Survey Value	Survey value before construction	Standard of host country *1	Referred international standard *2	Survey place & frequency
pH	-			6.5-8.5	7.8-8.3	Survey place: 2 places in front of the site, Frequency: every 6 months
COD	mg/l			60	<2	
SS	mg/l				SS artificially added is less than 2mg/l	
Coli form	MPN/100ml				<1000	

*1: Standard of Tanzania *2: Standard for fishery water (Japan Fisheries Resource Conservation Association)

Table 13 Wastes

Item	Purpose	Survey item	Survey Value	Survey value before construction	Standard of host country
Treatment of wastes	Confirming the relevancy of treatment and disposal situation of general waste in Kigoma Port	Hearing survey to Waste Treatment Committee			Survey place: Kigoma Port in every 6 months

Table 14 Accidents Prevention Measure

Monitoring item	Performance Status	Frequency
Reconfirming the status of Kigoma Port traffic control, allocation of security guards and prevention measures on accidents		Every 3 months

(1) 第一回現地調査時（署名日：2017年10月19日）

**Technical Notes
on the Additional Preparatory Survey
on the Project for the Rehabilitation of Kigoma Port
in the United Republic of Tanzania**

In response to the request from the Government of the United Republic of Tanzania (hereinafter referred to as "Tanzania"), Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Additional Preparatory Survey Team for the Outline Design (hereinafter referred to as "the Team") of the Project for the Rehabilitation of Kigoma Port (hereinafter referred to as "the Project") to Tanzania, headed by Mr. Katsuichi YABUNAKA, Executive Technical Advisor to the Director General, from September 24th to October 3rd, 2017. The Team held a series of discussion with officials of the Government of Tanzania and conducted a field survey.

The Consultant members of the Team continued the field survey in the study area and carried out a preliminary analysis of collected data and information. In the course of the discussions and field survey, both sides have confirmed the main items described in the attached sheets.

Dar es Salaam, October 19, 2017



Mr. Yutaka Ochi
Chief Consultant
Additional Preparatory Survey Team
Japan International Cooperation Agency



Eng. Deusdedit C. V. Kakoko
Director General
Tanzania Ports Authority

ATTACHMENT

1. New Passenger Terminal

Canopy extended in front of the new passenger building to cater for the waiting passengers.

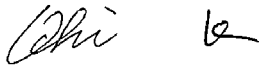
2. New Warehouse

The new warehouse including relevant offices, a meeting room and services is planned to be constructed at the WFP Tents Storage No. 1- 6 location.

3. Temporary Construction Yard

Temporary construction yard required for the project facility construction is planned to be located within the Port premises and near the passenger access road.

Over

Handwritten signature in cursive script, appearing to read 'Choi' followed by a flourish.

資料－6 既存一般貨物倉庫の構造性能評価

(1) 結論

既存一般貨物倉庫は、1927年より建設供用され、建築面積84m×21m(1764m²)の2階建てである。建屋の構造は、鉄筋コンクリートラーメン構造で、屋根は鉄骨小屋トラスが用いられている。仕上げの状況は、屋根が波鉄板貼り、壁がレンガ造・モルタル薄塗りとなっている。

建設後90年が経過しており、老朽化が著しく安全性に不安を抱えていることから、倉庫としての保管機能としては1階部分(Ground Floor)のみ利用している状況であった。

一般貨物倉庫の改修の可否を確認するため、柱・梁・スラブの構造要素について目視外観調査、コンクリートの中性化深さ試験およびシュミットハンマーによるコンクリートの圧縮強度試験を実施した。

2017年10月に実施された構造性能検査の結果は、以下のとおりである。

- ①ほとんどの構造部材において鉄筋位置まで中性化が到達している。
- ②表面にひび割れが生じていない柱であっても、梁およびスラブも含め、ほとんどの部材において鉄筋が腐食しているか、または腐食し始めている。
- ③コンクリートが剥がれ、構造的に重要な部材である柱・梁・スラブの主筋の一部が剥きだしている箇所が多い。
- ④コンクリートが剥がれていなくとも、柱、梁の主筋に沿ってひび割れが生じている箇所も随所に観察される。

通常、鉄筋コンクリート造の構造体および部材の構造安全性に最も影響する劣化現象は、鉄筋の腐食である。本施設の劣化現象は、鉄筋が表面から長い年月を経て腐食し始め、ある程度腐食が進行することで鉄筋に沿ったひび割れがコンクリートに発生している。(鉄筋の腐食が進行すると鉄筋が体積膨張を起こし、その結果、コンクリートにひび割れを生じさせる。)

以上、コンクリートの中性化がほとんどの部材で“修復限界状態”を超えて進行しているため、構造上の安全性確保の上で、既存施設を原型復旧のために補修・補強を実施することにあたっては技術的困難を伴うだけでなく多大な費用を要する。

また、梁、スラブのコンクリート片の剥離、剥落は利用者に非常に危険である。鉄筋の露出している箇所は鉄筋の断面積が局所的に減少している箇所もある。部材耐力を保有していないなかで、補修や補強を行ったとしても地震の際には非常に危険である。さらに、構造上の保証ができない施設を無償援助で補強・補修した場合、責任の所在が明確とならないなど、早期の改修・撤去などの対処が望ましい。

(2) 目視外観検査(2017年10月)

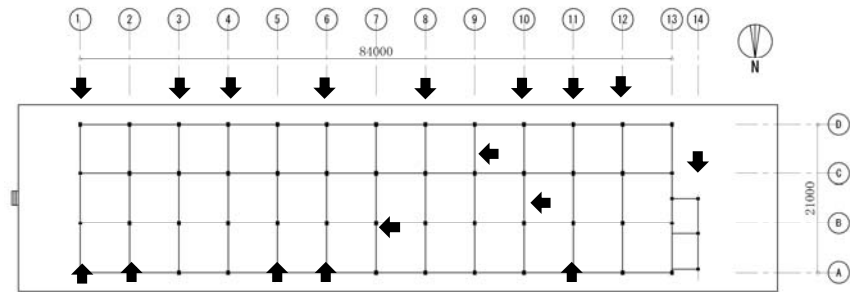
1階(Ground Floor)および2階(1st Floor)のすべての構造部材について目視外観検査を実施した。特に劣化現象の著しい1階の柱、梁およびスラブについて写真を添付する。

既にコンクリートが剥がれ、主筋が露出している箇所も多数あり、主筋にそってひび割れが生じている箇所も随所に観察される。

梁およびスラブは、柱ほど多くはないがコンクリートが剥がれ落ちている箇所がある。梁

の側面に主筋沿ったひび割れ箇所もある。

写真の柱符号は南側からタンガニーカ湖に向かって A 列から D 列の 4 列、東側より 1 列～13 列とした。14 列の柱は西側の突出部分の柱である。



既存一般貨物倉庫の写真撮影位置図



DC1



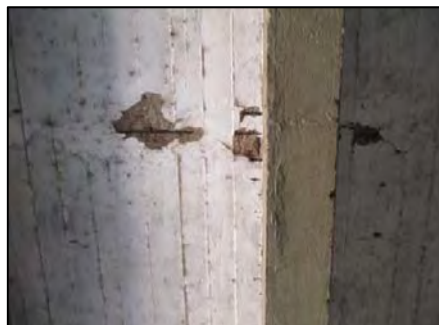
DC1



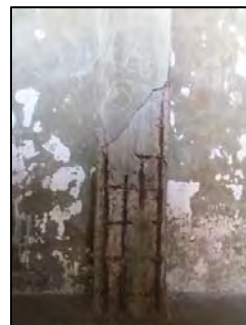
DC3



DC4



Slab Bottom



DC6



DC8



DC10



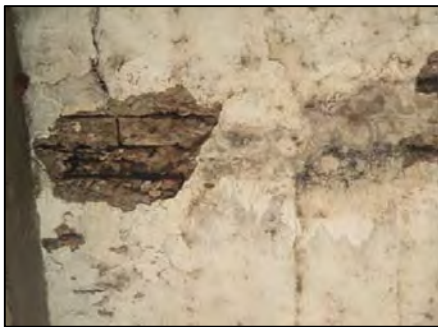
DC10



DC11



DC12



Slab



CC14



CC14



Inside Column



Inside Column



Beam Bottom



Beam Bottom



Slab Bottom



Beam Bottom



AC11



AC6



AC6



AC5



AC2



AC1



2F D10



2F D10 After Chipping



上記の 2F D10 の写真は、2 階南側 10 列の柱写真である。左の写真は柱根元にひび割れが観察される。右側 2 枚の写真は、ひび割れ箇所をチップングした後の写真である。随所に見られる主筋に沿ったひび割れは、すべて中性化が鉄筋位置まで到達し、鉄筋はこのように発錆していると判断される。

(3) コンクリート中性化試験（2017 年 10 月）

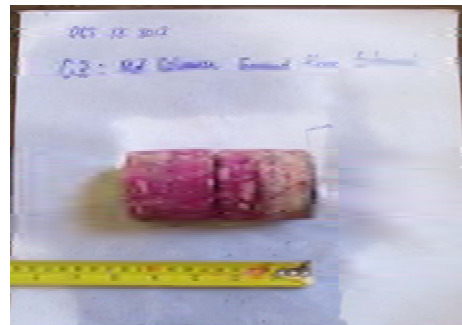
中性化試験は、柱をコア抜きして実施した。試験箇所は 1 階柱の外部と倉庫内部、2 階の外部の合計 3 カ所である。

中性化試験はコア抜きしたコンクリートにフェノールフタレン液を噴霧し、赤紫色に変化すればアルカリ性（未中性化）部、変色しない部分を中性化部と判断される。

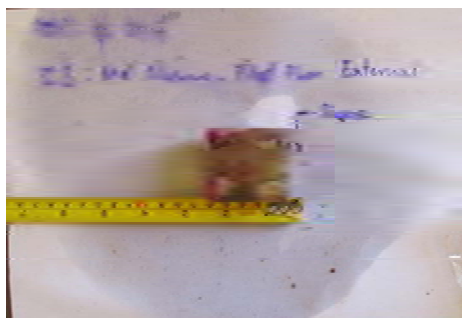
柱のかぶり厚さはおおよそ 3cm~4cm である。下の写真でわかるようにすべてテストピースで鉄筋位置まで中性化が進行していることがわかる。



1 階柱建物内部



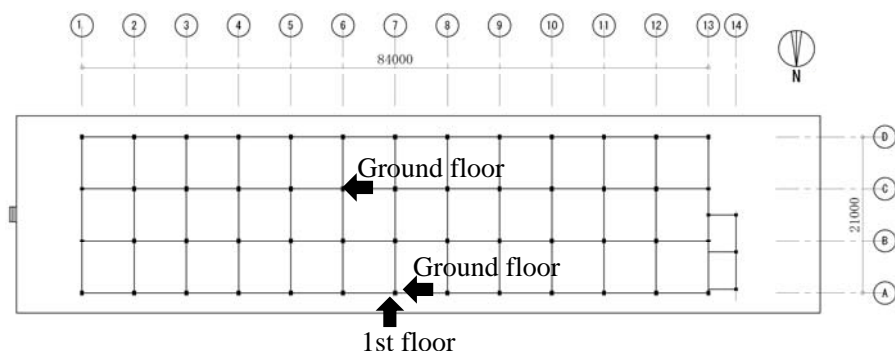
1 階柱外部



2 階柱外部



柱コア抜き後のモルタル補修



コンクリート中性化試験の位置図

注) コンクリートの中性化とは、強アルカリ性であるコンクリートが大気中の二酸化炭素によって中性化に近づく現象を言う。

鉄筋コンクリート構造は、コンクリートの強い圧縮力と鉄筋の強い引張り力を利用した複合部材である。鉄筋は空気に触れると腐食する。鉄筋は強アルカリ性であるコンクリートの内では鉄筋の表面に不動態皮膜が形成され発錆を防ぐ。

中性化が進行し鉄筋の位置まで到達すると鉄筋の不動態皮膜が破壊され、腐食が進行する。錆により鉄筋面積が減少し、膨張圧が発錆し鉄筋に沿ってひび割れが生じる。

(4) シュミットハンマーコンクリート圧縮強度 (2017年10月)

一般貨物倉庫においてシュミットハンマーによるコンクリート圧縮強度試験を行った。下表に結果を示す。一部低い数値があるものの良好な数値である。部材表面に一部を除きコンクリートジャンカが見られず、十分に管理されてコンクリートは打設されたと思われる。

シュミットハンマーによるコンクリートの圧縮強度

試験位置	コンクリート圧縮強度(N/m ²)
1階 コアを抜いた内部柱	27.1
1階 倉庫内部 左柱	30.7
1階 入り口 柱	33.3
2階 入り口 柱	20.4
2階 床	31.5
2階 湖側 外柱	32.4
2階 ひび割れ 中柱	29.3