

ANNEX - 1 Result of the Project

1. Experts

Experts	氏名
Team Leader/Bridge Maintenance Management	NAGAO Hideo
Bridge Inspection	KANGAWA Masaki
Bridge Repair	TERAI Kokichi
Bridge Routine Maintenance	SAGAWA Nobuyuki
Bridge Maintenance Outsourcing	KASAMATSU Hiroji
Project Coordinator/Assist. For Bridge Inspection/Training	ESTUDILLO Cherri
Bridge Maintenance	HASRASAKI Ikuo
Monitoring	MINAGAWA Yasunori

2. Counterparts

Counterparts		Names
Project Director	CEO	Eng. Elias Mwape (Eng. Kanyuka Mumba) (Eng. Bernard Mwape Chiwala)
Project Manager	Director, Planning & Design Department	Eng Dickson Ndhlovu (Eng. Elias Mwape) (Eng. William K Mulusa),
Project Coordinator	Senior Manager Bridge	Eng. Stephen Sondashi (Mr. Mubuyaeta Kapinda) (Mr. Lazarous Nyawali)
Counterpart Assistant Project Coordinator/ Bridge Inspection	Planning & Design	Eng. Habeene Habeenzu
Counterpart	Senior Manager, Bridge Maintenance	Eng. Mubuyaeta Kapinda

Counterpart Bridge Routine Maintenance	Principal Engineer-Bridge Maintenance	Eng. Chapwe Tumelo
Counterpart Bridge Maintenance Outsourcing	Maintenance	Eng. Gerald Phiri
Counterpart	Planning & Design	Eng. Mwape Phili
Counterpart	Principal Engineer-Planning & Design	Eng. Muyunda Maketo
Counterpart Pilot Project on Bridge Routine Maintenance	Planning & Design	Eng. Bornwell Sakanomba
Counterpart Pilot Project on Bridge Routine Maintenance	Lusaka Regional Office Regional Manager	Eng. Chabala Pandeki (Eng. Joseph Mwinga)
Counterpart Pilot Project on Bridge Routine Maintenance	Lusaka Regional Office Senior Engineer	Eng. Main Chama (Eng. George Chitonena)
Counterpart Pilot Project on Bridge Routine Maintenance	Lusaka Regional Office Planning	Eng. Victor Miti
Counterpart Bridge Routine Maintenance	Lusaka Regional Office Planning	Eng. Sithabiso Fikoloma

3. Trainings

Trainings/OJT/Seminar	Duration	Venue	Number of Participants
Routine Maintenance 1st OJT	November 25 to 26, 2015	Kitwe, Sherbourne Farms	23
2nd OJT	December 2 to 3, 2015	Lusaka Chita Lodge Kafue River	24
3rd OJT	December 9 to 10, 2015	Mpika Mango Grove Lodge	21
Routine Maintenance 1st Seminar	August 11, 2015	Lusaka Government Complex	72
2nd Seminar	June 13, 2016	Lusaka Golden Zambezi Lodge	81

Bridge Inspection 1st OJT	July 26 to 28, 2016	Lusaka Chita Lodge Kafue River	17
Bridge Inspection 2nd OJT	October 11 to 13, 2016	Lusaka Chita Lodge Kafue River	18
Pilot Project OJT (Minor Repair for Concrete Structure)	September 14 to 16, 2015	Bridge T04-01 & C01049	14
(Touch-up Paint)	September 20 to 21, 2016	Bridge T02-92	14
Bridge Routine Maintenance Field Training 1 st	February 22 to 23, 2017	Lusaka Best Western Plus Lusaka Grand Hotel	26
2 nd	April 24 to 25	Lusaka Best Western Plus Lusaka Grand Hotel	29
3 rd	July 13	Lusaka Best Western Plus Lusaka Grand Hotel	42
Japan Training (2015)	September 27 to October 8, 2015	Japan	5
(2016)	May 15 to 26, 2016	Japan	5
(2017)	May 9 to 20, 2017	Japan	5
Third Country Training (South Africa)	July 18 to 22, 2016	South Africa	3
(Philippines)	August 16 to 25, 2016	Philippines	2

ANNEX – 2 List of Products

Work Plan (2015)
Progress Report (2016)
Guidelines for Routine Maintenance on Bridge
Guidebook for Bridge Inspection
Guidebook for Bridge Repair
Report of Reviewing of Bridge Condition Inspection Data
Report of Implementation Plan of repair and/or replacement
Report of contract template on bridge routine maintenance outsourcing Report of contract template on bridge routine maintenance outsourcing
Report of technical specifications of bridge repair contracts
Report of outline of contract of pilot project for bridge repair
Report of Data by Market research in South Africa
Report of Japan training in 2015
Report of Japan training in 2016
Report of Japan training in 2017
Report of Third Country Training in Philippines
Report of Third Country Training in South Africa
Pre/Post Evaluation of OJT on Bridge Routine Maintenance
Pre/Post Evaluation of OJT on Bridge Inspection
Pre/Post Evaluation of Bridge Maintenance Seminar
Monitoring Sheet Version 0 (March 20, 2015)
Monitoring Sheet Version 1 (March 20, 2015)
Monitoring Sheet Version 1 (July 30, 2015)
Monitoring Sheet Version 1 (December 14, 2015)
Monitoring Sheet Version 1 (February 18, 2016)
Monitoring Sheet Version 1 (June 30, 2016)
Final Draft Report
Final Report

Project Design Matrix (PDM)

Project Title: The Technical Cooperation Project for

" Bridge Maintenance Capacity Building Project in Zambia"

Target Group: Engineers in the Headquarters Office and Regional Offices in RDA

Implementing Agency: RDA

Version No.2

Project Term: Feb. 2015 - Aug. 2017 (2.6 years)

Target Area: All areas under the jurisdiction of RDA

Issued: February, 2017

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Overall Goal</p> <p>Bridge maintenance activities are regularly implemented by RDA.</p>	<p>1. The bridge maintenance is budgeted in Annual Work Plan.</p> <p>2. Bridge maintenance activities are carried out.</p>	<p>Annual report in RDA.</p>	
<p>Project Purpose</p> <p>The institutional capacity of RDA is strengthened for bridge maintenance planning and operational management, which includes improvement of outsourcing contract management.</p>	<p>1. The number of bridges that are regularly maintained according to the developed guidelines, etc.</p> <p>2. The number of bridge repair conducted as planned</p> <p>3. The prepared technical specifications are used to award outsourcing contract</p>	<p>Project Final Report</p>	<p>- The importance of bridge maintenance remains high in the transport sector strategy</p>
<p>Outputs</p> <p>1. RDA engineers understand the management cycle of routine maintenance and undertake supervision of routine maintenance activities.</p> <p>2. RDA engineers utilize bridge condition inspection data for further investigation and planning of repair or replacement of bridges.</p> <p>3. The knowledge of RDA engineers on bridge repair technology are enhanced and are able to prepare a bridge repair plan for pilot bridges using the data from condition inspection and Bridge Management System.</p> <p>4. The capacity of RDA for contract</p>	<p>1-1. Guidelines on bridge routine maintenance are developed</p> <p>1-2. The level of understanding of the participants in the seminar</p> <p>1-3. The level of understanding of participants in the On-the-Job Training of bridge routine maintenance</p> <p>2-1. The bridge condition inspection data are reviewed. The number of reviewed inspection data are about 45 bridges.</p> <p>2-2. Guidebook on bridge inspection is developed</p> <p>2-3. The level of understanding of participants in On-the-Job Training of bridge inspection.</p> <p>3-1. Bridge repair plans are developed for selected pilot bridges using bridge condition inspection data.</p> <p>3-2. Guidebook on bridge repair is developed.</p> <p>3-3. Accumulation of knowledge on types of repair technology</p> <p>4-1. Technical specifications samples are produced for outsourcing contracts.</p> <p>4-2. Outsourcing contracts are prepared with relevant technical specifications on</p>	<p>1-1. Developed Guidelines</p> <p>1-2. Hearing of understanding of training</p> <p>1-3. Hearing of understanding of On-the-Job Training</p> <p>2-1. Bridge Condition Inspection Data</p> <p>2-2. Developed Guidebook</p> <p>2-3. Hearing of understanding of On-the-Job Training</p> <p>3-1. Bridge repair plan</p> <p>3-2. Developed Guidebook</p> <p>3-3. Training Report</p> <p>4-1. Developed samples</p> <p>4-2. Contracts with technical</p>	<p>- Financial resources for Bridge Maintenance shall be secured.</p> <p>- RDA fills the vacancies in the bridge Unit.</p>

management is improved in the field of routine maintenance and repair on bridges.	bridge repair.	specifications	
Activities	Inputs		Pre-conditions
<p>1. Enhancement of Routine Maintenance for Bridges</p> <p>1-1. Develop guidelines for routine maintenance on bridges</p> <p>1-2. Conduct seminars on conceptual framework of routine maintenance on bridge.</p> <p>1-3. Conduct On-the-Job Training and to assist implementation of pilot project for bridge routine maintenance.</p> <p>2. Improvement of Bridge Condition Inspection</p> <p>2-1 Review Bridge Condition Inspection Data</p> <p>2-2 Develop a Guidebook for bridge inspection</p> <p>2-3 Conduct On-the-Job Training for bridge condition inspection</p> <p>3. Improvement of Planning and Enhancement of Knowledge on Bridge Repair Technology</p> <p>3-1 Develop an implementation plan of repair and/or replacement for selected bridges based on the condition inspection data and the data in the Bridge Management System</p> <p>3-2 Develop a guidebook for bridge repair</p> <p>3-3 Provide opportunities for counterparts to get exposed to bridge repair works through actual projects.</p> <p>4. Improvement of the Capacity of RDA for Contract Management</p> <p>4-1 Develop contract templates and technical specifications (ex. Particular specification) required for bridge routine maintenance outsourcing</p> <p>4-2 Prepare technical specifications of bridge repair contracts</p>	<p>(Japanese side)</p> <p>1. Dispatch of Experts</p> <ul style="list-style-type: none"> - Team Leader/ Bridge Maintenance Management - Bridge Inspection - Bridge Repair - Bridge Routine Maintenance - Bridge Maintenance Outsourcing - Coordinator/Assistance for Bridge Inspection and Training - Bridge Maintenance - Monitoring/Evaluation <p>2. Procurement of equipment Tools/materials supply for trainings</p> <p>3. Overseas training courses Three (3) courses (Japan) Third Country (South Africa, Philippines)</p> <p>4. Expenses for the dispatched experts, transport, accommodation and other expenses</p>	<p>(Zambia Side)</p> <p>1. Assignment of counterpart engineers to the project</p> <ul style="list-style-type: none"> - Project Director - Project Manager - Project Coordinator - Counterparts <p>2. Regional Offices staff for training/seminars</p> <p>3. Office Facilities</p> <ul style="list-style-type: none"> - Workspace <p>4. Budget</p> <ul style="list-style-type: none"> - Salary and allowances of the RDA counterpart officers - Other necessary expenses 	<p>- The data in BMS will be utilized for the project</p>

ANNEX -4 R/D, M/M, Minutes of JCC

Document-1 Record of Discussions

Document-2 Minutes of Meeting

Document-3 Minutes of JCC

RECORD OF DISCUSSIONS

ON

BRIDGE MAINTENANCE CAPACITY BUILDING PROJECT

IN

THE REPUBLIC OF ZAMBIA

AGREED UPON BETWEEN


THE MINISTRY OF TRANSPORT WORKS SUPPLY AND COMMUNICATIONS
– ROAD DEVELOPMENT AGENCY

AND


JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)



Mr. Yoshihide Teranishi
Chief Representative
Zambia Office
Japan International Cooperation
Agency
Lusaka, 4 / 9 / 2014



Mr. Charles K Sipanje
Permanent Secretary
Ministry of Transport, Works, Supply
and Communications
Republic of Zambia
Lusaka, 4 / 9 / 2014



Eng. Bernard M Chiwala
Director and Chief Executive Officer
Road Development Agency
Lusaka, 4 / 09 / 2014

Based on the minutes of meetings on the Detailed Planning Survey on the Bridges Maintenance Capacity Building Project (hereinafter referred to as "the Project") signed on 21st February 2014 between the Ministry of Transport, Works, Supply and Communications (hereinafter referred to as "MoTWS"), Road Development Agency (herein after referred to as "RDA") and the Japan International Cooperation Agency (hereinafter referred to as "JICA"), JICA held a series of discussions with RDA and relevant organizations to develop a detailed plan of the Project.

Both parties agreed the details of the Project and the main points discussed as described in the Appendix.

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

The Project will be implemented within the framework of the Agreement on Technical Cooperation signed on 27th June 2006 (hereinafter referred to as "the Agreement") the Notes Verbale exchanged on 21st November 2013 between the Government of Japan and the Government of the Republic of Zambia.

Appendix: Project Description

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PROJECT DESCRIPTION

Both parties confirmed that there is no change in the Project Description agreed on in the minutes of meetings on the concerning Detailed Planning Survey on the Project signed on 21st February 2014.

I. BACKGROUND

Zambia has about 100 major bridges with their average span 100 meters in its national road network of 40,000 km. Constructed in the early seventies and or even much earlier many of them received poor or even no maintenance. About 15% of these structures are reportedly in bad condition where urgent maintenance and repair work is needed. The government has a plan to construct 144 new bridges over the rivers crossing selected roads by the end of 2015 together with its intention to replace all pontoons by bridges. New structures need to be well maintained to keep their life span as long as possible. In order to address these challenges, the Road Development Agency (RDA), which is a government implementing agency mandated to construct and maintain road and bridge infrastructure has initiated to maintain all the bridges in Zambia by setting up a bridge unit specialized in planning and management of bridge construction, inspections and maintenance. There is need for the bridge unit with its limited financial, human and knowledge resources, as in the case for a newly established entity, to strengthen its capacity to manage implementation of RDA's bridge inspection and maintenance programs.

One of the main pillars of Japan's assistance to Zambia is to support sustainable economic growth with diversification from over-dependence on mining. Well-maintained roads lower transport costs, speed up delivery of goods, and facilitate people's mobility, contributing to reduction in cost of doing business. Accordingly Japan's country assistance rolling plan for Zambia includes as one of the priority areas development of transport network (road and railway) which is expected to contribute to reduce transport costs among others for agricultural and manufacturing products.

II. OUTLINE OF THE PROJECT

Details of the Project are described in the Logical Framework (Project Design Matrix: PDM) (Annex 1) and the tentative Plan of Operation (Annex 2).

1. Implementation Structure

The roles and assignments of relevant organizations are as follows:

- (1) MoTWSA will play a coordinating role and give oversight on policy issues over the Project.

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(2) RDA will be the implementing Agency of the Project assuming responsibility of implementation of the Project activities. The Project organization chart is given in Annex 3.

(a) Project Director

Chief Executive Officer of RDA as the Project Director will bear overall responsibility for the administration and implementation of the Project.

(b) Project Manager

Director Planning & Design as the Project Manager will be responsible for the managerial and technical matters of the Project.

(c) Counterpart

Staff of the RDA Bridge Unit will be the counterparts to the Japanese Mission.

(3) Japanese Mission

The Japanese Mission will give necessary technical guidance, advice and recommendations to RDA on any matters pertaining to the implementation of the Project.

(4) Joint Coordinating Committee

Joint Coordinating Committee (hereinafter referred to as "JCC") will be established in order to facilitate inter-organizational coordination (Annex4).

2. Project Site(s) and Beneficiaries

(1) Projects sites: selected bridges across Zambia

(2) Beneficiaries are RDA counterparts and regional office staff

3. Duration

The duration of the Project is about 2 years.

4. Reports

JICA will prepare and submit the following reports to RDA and MoTWS in English.

(1) 10 copies of Inception Report at the commencement of the work

(2) 10 copies of Interim Report at 12 months after the commencement of the work

(3) 10 copies of Draft Final Report at the end of the last work period

(4) 10 copies of Final Report within one (1) month of the receipt of the comments on the Draft Final Report

III. UNDERTAKINGS OF THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF ZAMBIA

The authorities concerned of the Government of Zambia will take necessary measures to:

1. ensure that the technologies and knowledge acquired by the Zambian nationals as a result of Japanese technical cooperation contributes to the economic and social development of Zambia, and that the knowledge and experience acquired by the personnel of Zambia from technical training as well as the equipment provided by JICA will be utilized effectively in the implementation of the Project;

2. grant privileges, exemptions and benefits to members of the Japanese Mission referred to in the PDM as per attached as Annex 1 , which are no less favorable than those granted to experts and members of the missions and their families of third countries or international organisations performing similar missions in Zambia; and
3. provide other privileges, exemptions and benefits in accordance with the Agreement on Technical Cooperation signed on 27th June 2006 between the Government of Japan and the Government of Zambia.

IV. MONITORING AND EVALUATION

JICA and the RDA will jointly and regularly monitor the progress of the Project through the Monitoring Sheets based on the Project Design Matrix (PDM) and Plan of Operation (PO). The Monitoring Sheets shall be reviewed every six (6) months. Also, Project Completion Report shall be drawn up one (1) month before the termination of the Project.

V. PROMOTION OF PUBLIC SUPPORT

For the purpose of promoting support for the Project, RDA will take appropriate measures to make the Project widely known to the people of Zambia.

VI. MISCONDUCT

If information is received related to suspected corrupt or fraudulent practices in the implementation of the Project, JICA, RDA, MoTWSC and other relevant organizations should be provided with information as they may reasonably request, including information related to any concerned official/person of the government and/or public organizations.

Relevant organizations shall not, unfairly or unfavorably treat the person and/or company which provided the information related to suspected corrupt or fraudulent practices in the implementation of the Project.

VII. MUTUAL CONSULTATION

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

VIII. AMENDMENTS

The record of discussions may be amended by the minutes of meetings between JICA and RDA.

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

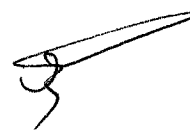
VIII. OTHERS

(Disclosure of the final report)

Both sides agreed that the Final Report shall be open to the general public in both countries.

- Annex 1 Logical Framework (Project Design Matrix: PDM)
- Annex 2 Tentative Plan of Operation
- Annex 3 Project Organization Chart
- Annex 4 Function and Provisional Composition of JCC

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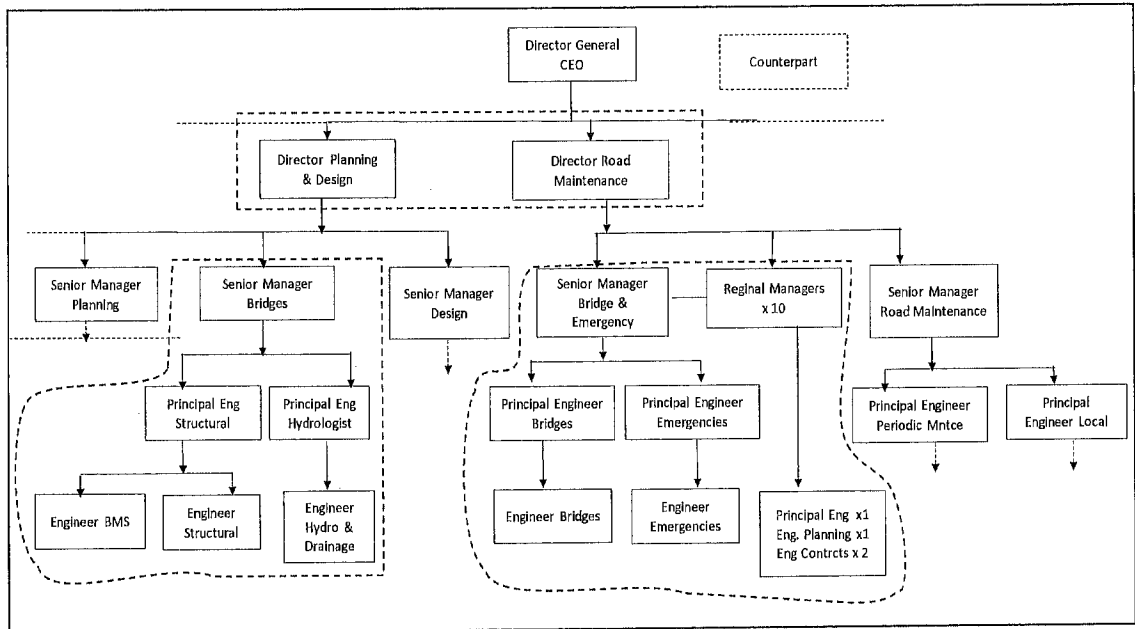


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Project Title: Bridge Maintenance Capacity Building Project in Zambia
 Implementation Period: 2014-2016 (2 years) Target: All areas under the jurisdiction of RDA
 Target Group: RDA officers

Narrative Summary	Indicators	Means of Verification	Important Assumption
Overall Goal Bridge maintenance activities are regularly implemented to keep bridges in good condition.	1. The bridge maintenance is budgeted in Annual Work Plan 2. Bridge maintenance activities carried out	RDA reports	
Project Purpose The institutional capacity of RDA is strengthened for bridge maintenance planning and operational management, which includes improvement of outsourcing contract management.	1. The number of bridges that are routinely maintained according to the developed guidelines 2. The number of bridge repair conducted as planned 3. The prepared technical specifications are used to award outsourcing contracts	Project Report Final Report	-The importance of bridge maintenance remains high in the transport sector strategy
Outputs 1. RDA officers understand the operation cycle of routine maintenance and undertake supervision of routine maintenance activities.	1. Guidelines are produced 2. The level of understanding of the seminar participants 3. The level of understanding of participants in the on-the-job training of bridge routine maintenance	1. Produced guidelines 2. Level check test 3. Level check test	-Financial resources for bridge maintenance are secured -RDA fills the vacancies in the Bridge Unit.
2. RDA officers utilize bridge condition inspection data for further investigation and planning of repair or replacement of bridges.	1. The bridge condition inspection data are reviewed 2. A guidebook is produced 3. The level of understanding of participants in on-the-job training of bridge inspection	1. Bridge Condition inspection data 2. Guidebook 3. Level check test	
3. RDA officers are able to prepare a bridge repair plan for selected bridges using the data from condition inspections and the Bridge Management System and gain enhanced knowledge on bridge repair.	1. Bridge repair plans are developed for selected bridges using the inspection data 2. A guidebook is produced 3. Accumulation of knowledge on types of repair technology	1. Bridge repair plan 2. Guidebook 3. Training report	
4. The capacity of RDA for contract management is improved in the field of bridge routine maintenance and repair.	1. Technical specifications samples are produced for outsourcing contracts 2. Outsourcing contracts are prepared with relevant technical specifications	1. Developed samples 2. Contracts with technical specifications	
Activities 1-1 Develop guidelines on routine maintenance for bridges 1-2 Conduct seminars on conceptual framework of routine maintenance on bridges 1-3 Conduct on-the-job training for routine maintenance on bridges 2-1 Review bridge condition inspection data 2-2 Develop a guidebook for bridge inspection 2-3 Conduct on-the-job training for bridge condition inspection 3-1 Develop an implementation plan of repair and/or replacement for selected bridges based on the condition inspection and the data in the Bridge Management System 3-2 Develop a guidebook on bridge repair 3-3 Provide opportunities for counterparts to get exposed to bridge repair works through actual projects 4-1 Develop contract templates and technical specifications (ex. Particular specification) required for routine bridge maintenance outsourcing 4-2 Prepare technical specifications of bridge repair contracts	Inputs (Japan) 1. Dispatch of Mission -Bridge maintenance management -Bridge routine maintenance -Bridge inspection -Bridge repair -Bridge maintenance outsourcing 2. Procurement of Equipment tools/materials for training 3. Overseas training courses: Two courses (Japan) 4. Expenses for the dispatched experts, transport, accommodation and other expenses	(Zambia) 1. Assignment of counterpart officers to the project 2. Regional Offices staff for training/seminars 2. Office facilities -Workspace 3. Budget - Salary and allowances of the RDA officers -Other necessary expenses	Pre-conditions -The data in BMS will be made available for the project

Annex 3



Note: Positions in the dotted lines are proposed Counterpart personnel for the Project

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JOINT COORDINATING COMMITTEE

1. Function

The Joint Coordinating Committee will meet at the beginning, midterm, and end of the project and or whenever the necessity arises in order to fulfill the following functions:

- 1) To consider the annual work plan of the project and its budget
- 2) To review the progress of the annual work plan
- 3) To review and discuss major issues that may arise during implementation of the project and
- 4) To discuss any other issues pertinent to the smooth implementation of the project

2. Provisional Composition

- (1) Chairperson; Permanent Secretary, Ministry of Transport Works, Supply and Communications (MoTWSC)
- (2) Member of the Zambian side
 - a) Director-Transport, MoTWSC
 - b) Director-Planning and Monitoring, MoTWSC
 - c) Chief Executive Officer/Director, RDA as Project Director
 - d) Director Planning & Design in RDA as Project Manager
 - e) Senior Manager- Bridges, RDA
- (3) Members of the Japanese side
 - a) Experts
 - b) Representative from JICA Zambia Office

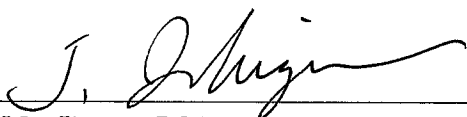
The committee may co-opt other specialists to provide input whenever need arises

**MINUTES OF MEETING
BETWEEN
JICA DETAILED PLANNING SURVEY TEAM
AND ROAD DEVELOPMENT AGENCY,
THE GOVERNMENT OF THE REPUBLIC OF ZAMBIA
ON JAPANESE TECHNICAL COOPERATION
FOR THE BRIDGE MAINTENANCE CAPACITY BUILDING PROJECT**


In response to the official request from the Government of the Republic of Zambia, the Detailed Planning Survey Team (hereinafter referred to as "the Team") of the Japan International Cooperation Agency (hereinafter referred to as "JICA") headed by Mr. Jitsuya Ishiguro, visited Zambia from 3rd to 25th February 2014, for the purpose of working out on the details of the technical cooperation project entitled "the Bridge Maintenance Capacity Building Project" (hereinafter referred to as "the Project").

The Team exchanged views and had a series of discussions with the concerned officials of the Road Development Agency (hereinafter referred to as "RDA"). In the meeting, the followings were agreed upon between RDA and the Team.

Lusaka, 21st February 2014



Mr. Jitsuya Ishiguro
Leader
Detailed Planning Survey Team
Japan International Cooperation Agency
Japan



Name CHARLES K SIPANJE
Position PERMANENT SECRETARY
Ministry of Transport, Works, Supply
and Communications
Republic of Zambia



Eng. Bernard M Chiwala
CEO
Road Development Agency
Republic of Zambia

1. PROJECT TITLE

Both sides agreed that the Project title is "the Bridge Maintenance Capacity Building Project".

2. TERM OF THE PROJECT

The term of the project will be about two (2) years from the commencement.

3. PROJECT SITE

- Project office: Lusaka
- Project sites: selected bridges across Zambia

4. RECORD OF DISCUSSIONS, PROJECT DESIGN MATRIX AND PLAN OF OPERATIONS

The Record of Discussions (R/D) will determine the framework of the Project, and include the contents of this Minutes of Meeting (M/M). A draft R/D is attached to this M/M for reference in ATTACHMENT. It will be agreed and signed among Japanese side and the relevant Zambian authorities after approval from JICA Headquarters. And both sides agreed to the contents of the draft Project Design Matrix (PDM) and Plan of Operations (PO) for the Project as shown in ANNEX 1 and 2. The PDM and PO are to be flexibly revised according to the progress and achievement of the Project, upon mutual agreement between RDA and JICA in the form of the Minutes of Meeting, according to R/D.

5. INPUT BY JICA

Both sides agreed that each component and its cost of following inputs will be prepared and born by JICA.

(1) Dispatch of a mission

JICA will dispatch a mission comprising the following tentative members:

- a) Leader/Bridge Maintenance Management
- b) Bridge Routine Maintenance
- c) Bridge Inspection
- d) Bridge Repair
- e) Bridge maintenance outsourcing (sample/template contracts)

Other mission members necessary for effective implementation of the Project may be assigned.

(2) Provision of tools and materials for training if necessary

(3) Counterpart training in Japan (twice)

6. INPUT BY RDA

Both sides agreed that the following inputs will be prepared and born by RDA.

- (1) Assignment of counterpart personnel
- (2) Provision of offices and facilities in Lusaka for the implementation of the Project for the Japanese mission members.
- (3) Budget allocation for personnel, operation and activities for implementation of the Project, including personnel costs, local traveling costs and daily subsistence allowance for counterpart personnel, and other recurrent cost.

7. ADMINISTRATION OF THE PROJECT

Joint Coordinating Committee (hereinafter referred to as "JCC") will be established in order to facilitate inter-organizational coordination. JCC will be held whenever deems it necessary

8. OTHER ISSUES

(1) Counterpart personnel to the JICA Mission will be those in the RDA Bridge Unit. The Bridge Unit has currently seven staff members to be increased to eleven according to RDA's plan. In addition to staff of the Bridge Unit in the Head Office, regional office staff in charge of road routine maintenance are expected to participate in seminars and on-the-job trainings organized under the Project.

(2) Through the interview with RDA personnel, it was found that RDA has a plan to outsource routine maintenance work on bridges in 2014 and 2015. The team is of the view that routine maintenance outsourcing may provide useful opportunities for RDA personnel to acquire hands-on-experiences on such works through on-the-job training supervised by the Japanese bridge experts. Realization of the bridge maintenance outsource by RDA during the project period is a key for effective technical transfer.

(3) It was also revealed that bridge condition inspection is scheduled in 2014 by contracting out to local consultant to update the Bridge Management System (BMS) which stores the bridge inspection data collected in 2011. Updated condition inspection data will be a useful basis for RDA staff to carry out further investigations and planning as to whether selected bridges are repaired or replaced. The Team hopes that BMS should be functioning prior to the commencement of the Project.

(4) RDA also intends to implement through outsourcing contract a detailed engineering

design program to repair damaged bridges in 2015. Linkage between the above mentioned program and JICA project needs to be sought, since this will lend itself to a model case or useful opportunities for RDA staff to make use of guidelines and templates prepared under the Project as well as have expert's advice on repair technologies and method to be used under bridge repair contract.

(5) The Team explained that 'JICA Guidelines for Environmental and Social Considerations' will be applied to the Project and that RDA is required to abide by the guidelines in order to ensure that appropriate considerations will be made for the environmental and social impacts of the Project. RDA first needs to examine the guidelines through their due process within and both sides agreed to revisit this issue prior to signing of the Record of Discussions.

ATTACHMENT

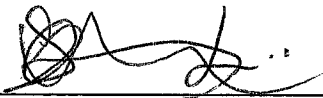
RECORD OF DISCUSSIONS (DRAFT)



(DRAFT)
RECORD OF DISCUSSIONS
ON
BRIDGE MAINTENANCE CAPACITY BUILDING PROJECT
IN
THE REPUBLIC OF ZAMBIA
AGREED UPON BETWEEN
ROAD DEVELOPMENT AGENCY (RDA)
AND
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

Lusaka, [date]

Chief Representative
Zambia Office
Japan International Cooperation
Agency



Ministry of Transport, Works, Supply
and Communications
Republic of Zambia

Director & CEO
Road Development Agency



Based on the minutes of meetings on the Detailed Planning Survey on the Bridges Maintenance Capacity Building Project (hereinafter referred to as "the Project") signed on 21th February 2014 between the Road Development Agency (herein after referred to as "RDA") and the Japan International Cooperation Agency (hereinafter referred to as "JICA"), JICA held a series of discussions with RDA and relevant organizations to develop a detailed plan of the Project.

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

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

The Project will be implemented within the framework of the Agreement on Technical Cooperation signed on 27th June 2006 (hereinafter referred to as "the Agreement") the Note Verbales exchanged on 7th October 2013 and 21st November 2013 between the Government of Japan and the Government of the Republic of Zambia.

Appendix 1: Project Description

Appendix 2: Main Points Discussed



PROJECT DESCRIPTION

Both parties confirmed that there is no change in the Project Description agreed on in the minutes of meetings on the concerning Detailed Planning Survey on the Project signed on 21st February 2014.

I. BACKGROUND

Zambia has about 100 major bridges with their average span 100 meters in its national road network of 40,000 km. Constructed in the early seventies and or even much earlier many of them received poor or even no maintenance. About 15% of these structures are reportedly in bad condition where urgent maintenance and repair work is needed. The government has a plan to construct 144 new bridges over the rivers crossing selected roads by the end of 2015 together with its intention to replace all pontoons by bridges. New structures need to be well maintained to keep their life span as long as possible. In order to address these challenges, the Road Development Agency (RDA), which is a government implementing agency mandated to construct and maintain road and bridge infrastructure has initiated to maintain all the bridges in Zambia by setting up a bridge unit specialized in planning and management of bridge construction, inspections and maintenance. There is need for the bridge unit with its limited financial, human and knowledge resources, as in the case for a newly established entity, to strengthen its capacity to manage implementation of RDA's bridge inspection and maintenance programs.

One of the main pillars of Japan's assistance to Zambia is to support sustainable economic growth with diversification from over-dependence on mining. Well-maintained roads lower transport costs, speed up delivery of goods, and facilitate people's mobility, contributing to reduction in cost of doing business. Accordingly Japan's country assistance rolling plan for Zambia includes as one of the priority areas development of transport network (road and railway) which is expected to contribute to reduce transport costs among others for agricultural and manufacturing products.

II. OUTLINE OF THE PROJECT

Details of the Project are described in the Logical Framework (Project Design Matrix: PDM) (Annex 1) and the tentative Plan of Operation (Annex 2).】

1. Implementation Structure

The roles and assignments of relevant organizations are as follows:

- (1) The Ministry of Transport, Works, Supply and Communications will play a coordinating role and give oversight on policy issues over the Project.
- (2) RDA will be the implementing Agency of the Project assuming responsibility of implementation of the Project activities. The Project organization chart is given in Annex 3.

- (a) Project Director
Chief Executive Officer of RDA as the Project Director will bear overall responsibility for the administration and implementation of the Project.
 - (b) Project Manager
Director Planning & Design as the Project Manager will be responsible for the managerial and technical matters of the Project.
 - (c) Counterpart
Staff of the RDA Bridge Unit will be the counterparts to the Japanese Mission.
- (2) Japanese Mission
The Japanese Mission will give necessary technical guidance, advice and recommendations to RDA on any matters pertaining to the implementation of the Project.
- (3) Joint Coordinating Committee
Joint Coordinating Committee (hereinafter referred to as "JCC") will be established in order to facilitate inter-organizational coordination. JCC will be held whenever deems it necessary.
2. Project Site(s) and Beneficiaries
- (1) Projects sites: selected bridges across Zambia
 - (2) Beneficiaries are RDA counterparts and regional office staff
3. Duration
The duration of the Project is about 2 years.
4. Reports
JICA will prepare and submit the following reports to RDA in English.
- (1) 10 copies of Inception Report at the commencement of the work
 - (2) 10 copies of Interim Report at the time about 12 months after the commencement of the work
 - (3) 10 copies of Draft Final Report at the end of the last work period
 - (4) 10 copies of Final Report within one (1) month of the receipt of the comments on the Draft Final Report

III. UNDERTAKINGS OF THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF ZAMBIA

The authorities concerned of the Government of Zambia will take necessary measures to:

- 1. ensure that the technologies and knowledge acquired by the Zambian nationals as a result of Japanese technical cooperation contributes to the economic and social development of Zambia, and that the knowledge and experience acquired by the personnel of Zambia from technical training as well as the equipment provided by JICA will be utilized effectively in the implementation of the Project;
- 2. grant privileges, exemptions and benefits to the Japanese personnel to undertake the activities referred to in the PDM as per attached as Annex 1, which are no less favorable than those granted to experts and members of

the missions and their families of third countries or international organisations performing similar missions in Zambia; and

3. provide other privileges, exemptions and benefits in accordance with the Agreement on Technical Cooperation signed on 27th June 2006 between the Government of Japan and the Government of Zambia.

IV. EVALUATION

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

1. Terminal Evaluation prior to the end of the Project
2. Ex-post evaluation three (3) years after the project completion, in principle
3. Follow-up surveys on necessity basis

V. PROMOTION OF PUBLIC SUPPORT

For the purpose of promoting support for the Project, RDA will take appropriate measures to make the Project widely known to the people of Zambia.

VI. MUTUAL CONSULTATION

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

VII. AMENDMENTS

The record of discussions may be amended by the minutes of meetings between JICA and RDA.

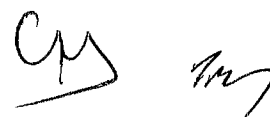
The minutes of meetings will be signed by authorized persons of each side who may be different from the signers of the record of discussions.

VIII. OTHERS

(Disclosure of the final report)

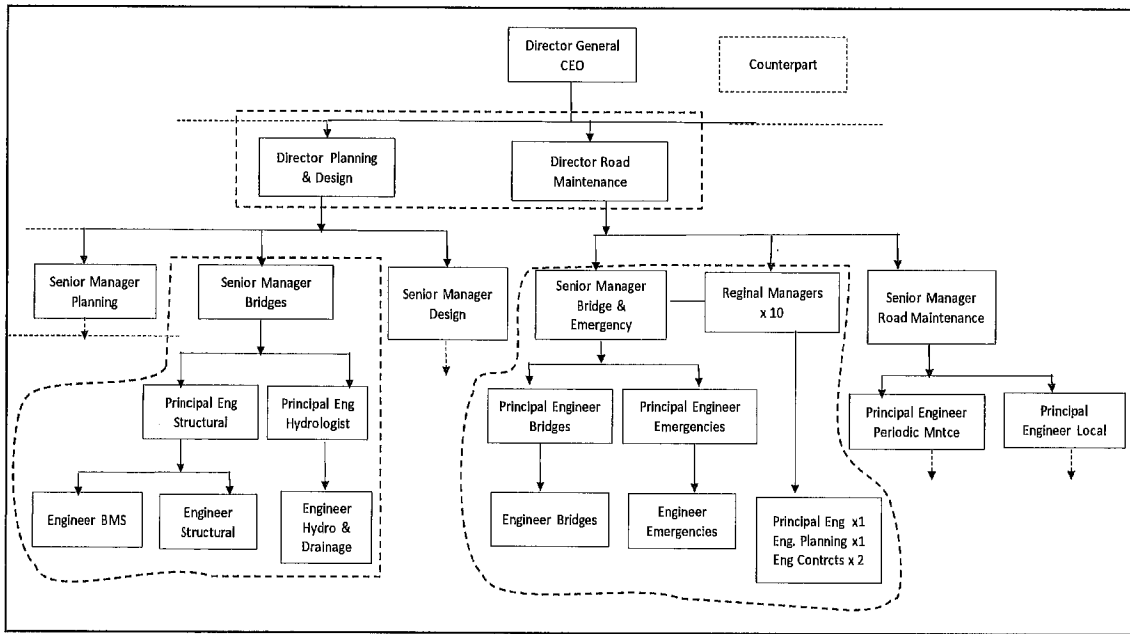
Both sides agreed that the Final Report shall be open to the general public in both countries.

- Annex 1 Logical Framework (Project Design Matrix: PDM)
- Annex 2 Tentative Plan of Operation
- Annex 3 Project Organization Chart



Project Title: Bridge Maintenance Capacity Building Project in Zambia
 Implementation Period: 2014-2016 (2 years) Target: All areas under the jurisdiction of RDA
 Target Group: RDA officers

Narrative Summary	Indicators		Means of Verification	Important Assumption
Overall Goal Bridge maintenance activities are regularly implemented to keep bridges in good condition.	1. The bridge maintenance is budgeted in Annual Work Plan 2. Bridge maintenance activities carried out		RDA reports	
Project Purpose The institutional capacity of RDA is strengthened for bridge maintenance planning and operational management, which includes improvement of outsourcing contract management.	1. The number of bridges that are routinely maintained according to the developed guidelines 2. The number of bridge repair conducted as planned 3. The prepared technical specifications are used to award outsourcing contracts		Project Final Report	-The importance of bridge maintenance remains high in the transport sector strategy
Outputs 1. RDA officers understand the operation cycle of routine maintenance and undertake supervision of routine maintenance activities.	1. Guidelines are produced 2. The level of understanding of the seminar participants 3. The level of understanding of participants in the on-the-job training of bridge routine maintenance		1. Produced guidelines 2. Level check test 3. Level check test	-Financial resources for bridge maintenance are secured -RDA fills the vacancies in the Bridge Unit.
2. RDA officers utilize bridge condition inspection data for further investigation and planning of repair or replacement of bridges.	1. The bridge condition inspection data are reviewed 2. A guidebook is produced 3. The level of understanding of participants in on-the-job training of bridge inspection		1. Bridge Condition inspection data 2. Guidebook 3. Level check test	
3. RDA officers are able to prepare a bridge repair plan for selected bridges using the data from condition inspections and the Bridge Management System and gain enhanced knowledge on bridge repair.	1. Bridge repair plans are developed for selected bridges using the inspection data 2. A guidebook is produced 3. Accumulation of knowledge on types of repair technology		1. Bridge repair plan 2. Guidebook 3. Training report	
4. The capacity of RDA for contract management is improved in the field of bridge routine maintenance and repair.	1. Technical specifications samples are produced for outsourcing contracts 2. Outsourcing contracts are prepared with relevant technical specifications		1. Developed samples 2. Contracts with technical specifications	
Activities 1-1 Develop guidelines on routine maintenance for bridges 1-2 Conduct seminars on conceptual framework of routine maintenance on bridges 1-3 Conduct on-the-job training for routine maintenance on bridges 2-1 Review bridge condition inspection data 2-2 Develop a guidebook for bridge inspection 2-3 Conduct on-the-job training for bridge condition inspection 3-1 Develop an implementation plan of repair and/or replacement for selected bridges based on the condition inspection and the data in the Bridge Management System 3-2 Develop a guidebook on bridge repair 3-3 Provide opportunities for counterparts to get exposed to bridge repair works through actual projects 4-1 Develop contract templates and technical specifications (ex. Particular specification) required for routine bridge maintenance outsourcing 4-2 Prepare technical specifications of bridge repair contracts	Inputs (Japan) 1. Dispatch of Mission -Bridge maintenance management -Bridge routine maintenance -Bridge inspection -Bridge repair -Bridge maintenance outsourcing 2. Procurement of Equipment tools/materials for training 3. Overseas training courses: Two courses (Japan) 4. Expenses for the dispatched experts, transport, accommodation and other expenses		(Zambia) 1. Assignment of counterpart officers to the project 2. Regional Offices staff for training/seminars 2. Office facilities -Workspace 3. Budget - Salary and allowances of the RDA officers -Other necessary expenses	Pre-conditions -The data in BMS will be made available for the project



Note: Positions in the dotted lines are proposed Counterpart personnel for the Project



JICA Technical Cooperation Project on
“Bridge Maintenance Capacity Building in Zambia”



Project Office: Road Development Agency (RDA) Headquarters, P.O. Box 50003 Alick Nkhata Road
Lusaka, Zambia

Minutes of
1st Joint Coordinating Committee Meeting

Date: March 20, 2015

Venue: @ RDA Conference Room

Time: 09:30 – 11:00 A.M.

ATTENDEES:

1. Mr. Hisanao Noda-Chief Representative, JICA, Zambia Office
2. Mr. Junichi Kawase – Project Formulation Advisor (Infrastructure), JICA Zambia Office
3. Mr. Takumi Sunohara – Assistant Resident Representative, JICA Zambia Office
4. Mr. Hideo Nagao-Team Leader – JICA TCP
5. Mr. Nobuyuki Sagawa –Bridge Routine Maintenance Expert, JICA-TCP
6. Ms. Cherri Estudillo – Project Coordinator – JICA TCP
7. Mr. Sydney Tembo – representative of Director of Transport, MoTWS
8. Eng. MT Simbuwa – Rep. of the Director of Planning & Monitoring, MoTWS
9. Mr. Emmanuel Kaunda – Rep. of the Director & Chief Executive Officer, RDA
10. Eng. William Mulusa – Director, Planning and Design, RDA
11. Eng. Mubuyaeta Kapinda – Senior Manager, Bridges & Coordinator, RDA
12. Eng. Gerald Phiri – Principal Engineer – Emergencies under Road Maintenance
13. Mr. Habeene Habeenzu, Bridge Principal Engineer for Structures
14. Ms. Sachiyo Matsubayashi – NE Overseas Department

MINUTES:

1. The meeting was called to order and started at 09:30hrs and Mr. Kapinda (emcee) then introduced Mr. Emmanuel Kaunda Director Maintenance (CEO representative) who welcomed the participants.
2. Mr. Emmanuel Kaunda thanked JICA for facilitating the Bridge Maintenance Capacity Building Project and pledged to support the implementation of the project,

3. Introduction of JCC members (MoTWSC, RDA and JICA)

Mr. Kapinda requested everybody to turn to page 4 of the Work Plan to look into the JCC membership. It was confirmed that MoTWSC, RDA and JICA were members of JCC.

4. Speech by JICA Chief Representative

Mr. Noda thanked the officers who represented MoTWSC, CEO, RDA counterparts, Mr. Nagao Team Leader and Bridge experts and all present. He congratulated the stakeholders for the launching of JICA's Technical Cooperation Project on Bridge Maintenance Capacity Building. He also stated that the project consists of six JICA experts and five RDA engineers in the bridge unit.

He stated that bridges in Zambia needed substantial and urgent attentions. As it was reported that some of the bridges were constructed as early as 1970's and received little or no maintenance. He said according to the survey report, out of the major bridges in Zambia, about 15% in general are in poor condition and needs urgent maintenance and repair works. He noted that this technical cooperation project can contribute to the enhancement of the maintenance needed.

He noted that roads and bridges will lower transportation cost, speed up the delivery of goods and even facilitate people's mobility in the region and eventually contributes to reducing cost of doing business in Zambia and attracts more investors for business players in Zambia in the future if roads and bridges are maintained regularly.

He urged RDA to put their best efforts and available resources to the project activities so that the expected outcome of the project will be achieved at the end of the project.

5. Presentation of RDA Status of Bridges in Zambia

Planning and Design Director Eng. William Mulusa presented the status of bridges in Zambia through PowerPoint. Find attached a copy of his presentation.

6. Presentation of JICA Team Outline of Work Plan/Monitoring Sheet

Mr. Nagao (Team Leader) welcomed everyone and presented the Outline of the Work Plan and the Monitoring Sheet.

7. Comments and Suggestions

Mr. Kapinda requested the meeting to read and look into the Work Plan and invited any comments/revisions for finalization.

Mr. Tembo from MoTWSC appreciated the initiative for bridge maintenance management but sought clarification on why RDA did not include the bridge construction component in the bridge maintenance capacity building project.

Eng. Mulusa explained that the aim of the project was to enhance the maintenance of bridges but RDA is committed to ensure that the bridge stocks in the country is kept in a safe and serviceable condition for a long time by carrying out necessary interventions. It was evident that RDA was not sufficiently maintaining these bridges due to poor maintenance culture and to some extent inadequate technical capacity.

Eng. Mulusa further stated that RDA was carrying out routine maintenance activities on roads and observed that the current crop of contractors if invited to undertake bridge routine maintenance activities will result into government losing a lot due to lack of proper specifications and guidebooks. He noted that projects like this will enhance the capacity of RDA and provide guidelines which will enable the agency to understand approaches, systems and also skills to manage these assets. He further mentioned that the focus now was on maintaining the current stocks especially looking at the list of assets that have dramatically decreased.

Mr. Kawase wanted clarification on who will be targeted during these seminars and OJTs. He wanted to find out if contractors, consultants and engineers from regional offices were the main target because a number of people are eligible to be invited to these seminars, he suggested that the team leaders should come up with some kind of

criteria on how to limit an appropriate number of offices either from the private sector or regional offices including some Government organizations like Disaster Management, Rural Road Unit, Military and also Ministry of Transport

Eng. Mulusa explained that there are ten (10) regional offices and at least one engineer from each region will be selected to attend these seminars.

8. Approval of Work Plan, Monitoring Sheet

Eng. Kapinda explained that the Work Plan was based on the Records of Discussions. He however stated that the work plan was more detailed than the record of discussion for the purposes of project implementation. He further stated that once approved, the work plan would be a basis for project supervision and monitoring.

Eng. Simbuwa said that the project had started with the consent and trust of all stakeholders and would be expected to run accordingly.

With no further comments raised, the Work Plan was approved.

9. Closing Remarks

Eng. Mulusa closed the meeting by thanking the Permanent Secretary through his representative Eng. Simbuwa, Chief representative JICA and acting CEO. He said that RDA would not be the same after this project as far as bridge management was concerned. Eng. Mulusa further said that the Bridge Maintenance Capacity Building Project will bring a different approach to the agency engineers understanding and technical knowledge that would be gained. We are hoping that this project will attract a lot of participation from important people and great support from our staff especially those from the regions as you are all aware most of our bridges are located in remote areas where accessibility is difficult hence staff support would be cardinal. Comments from stakeholders, ministries and other observers are always welcome to guide us in our operation and problems.

The meeting was closed at 11:00 A.M.

Prepared by:

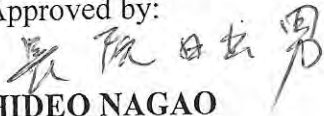
Noted by:



CHERRI C. ESTUDILLO


Coordinator, JICA

Approved by:



HIDEO NAGAO

Team Leader, JICA



ENR. MUBUYAETA KAPINDA

Senior Manager, Bridges, RDA

And Coordinator, JICA TCP



ENG. WILLIAM MULUSA

Director Planning & Design, RDA

And Project Manager, JICA TCP



JICA Technical Cooperation Project on
“Bridge Maintenance Capacity Building in Zambia”



Project Office: Road Development Agency (RDA) Headquarters, P.O. Box 50003 Alick Nkhata Road
Lusaka, Zambia

Minutes of the
2nd Joint Coordination Committee Meeting

Date: February 18th 2016

Venue: RDA Conference Room

Time: 09:30-12:00hrs

ATTENDEES

1. Mr. Noda Hisanao – Chief Representative, JICA Zambia office
2. Mr. Sunohara Takumi – Assistant Resident Representative, JICA
3. Mr. Hideo Nagao – Team Leader-JICA TCP
4. Mr. Terai Kokichi – Bridge Repair Expert – JICA TCP
5. Mr. Kangawa Masaki –Bridge Inspection Expert – JICA TCP
6. Mr. Kasamatsu Hiroji–Bridge Routine Maintenance Outsourcing Expert JICA TCP
7. Ms. Estudillo Cherri- Project Coordinator – JICA TCP
8. Mr. Mwata Sekeseke – Representative of the Permanent Secretary MOSW
9. Mr. Chalwe Mwamba – Representative of Director of Transport – MOTC
10. Eng. Titus Chansa –Director Procurement Rep. CEO-RDA
11. Eng. Elias Mwape- Director- Planning & Design – RDA
12. Eng. William Mulusa- Director Maintenance- RDA
13. Eng. Mubuyaeta Kapinda- Senior Manager –Bridges-RDA
14. Eng. Habeene Habeenzu- principal Engineer structural- RDA
15. Eng. Gerald Phiri- Principal Engineer – Emergences –RDA
16. Eng. Chapwe Tumelo-Principal Engineer- RDA
17. Eng. Muyunda Maketo- Principal Engineer-Bridges-RDA
18. Eng. Musonda Mwale –Principal Engineer – Bridges - RDA
19. Ms. Njaame Kalililo Mwila- Programme Officer JICA Zambia
20. Ms. Nosiku Lubinda- Supporting Engineer JICA TCP
21. Ms. Holliness Manase- Secretary – JICA TCP

MINUTES

1. The meeting started at 09:30 and Mr. Kapinda was the facilitator for the progression of the second JCC. He presented the agenda to the meeting and invited Mr. Sekeseke the Permanent Secretary's representative to officially open the meeting.
2. Mr. Sekeseke started with an apology from the Permanent Secretary (PS) for not attending the meeting as he was attending to an urgent government business. He said the PS would have wanted to attend the JCC because he knew that the meeting was a very important component to the ministry.

In his speech read on his behalf by Mr. Sekeseke, the PS said that the meeting was called to provide the capacity building for engineers by JICA. The government of the republic of Zambia appreciated the support that JICA had continued to provide to the Roads and Bridges construction and maintenance in the country. He said the commitment by JICA to improve the living standards of people has been consistent for a very long time and Government remains very appreciative to that effect. He said the ministry will continue encouraging the embarking of knowledge acquisition and transfer done over the years. As it is well known government has embarked on the construction of Road Network on a greater scale than ever before and constructing Roads and Bridges is a very important component of the Road Network. He further said that the ministry expects engineers involved to learn more in this project and enhance their capacity further so that they can transfer this knowledge to others. The ministry's expectations were that engineers should have a sustainability of this capacity and hope that they will pay attention and dedicate their time to what is being disseminated in this work shop and at the end of this project the beneficiary will be the people of Zambia through RDA. As that said he officially declared the meeting open.

3. The second item on the agenda was a welcome speech by Director Planning & Design Eng. Elias Mwape. Eng. Mwape appreciated that the committee attended the second JCC and that he was pleased to be a part of the meeting it being the first time for him attending such an important event under the capacity building project. He said this project was regarded as very important to RDA and as the permanent secretary said in his earlier remarks, RDA is embarking on undertaking major bridge projects which require maintenance, knowledge and capacity. He further said that this project is more of building capacity than enhancing the capacity because there is very little capacity at the moment. RDA is hoping that the outcome of this project will have good impact on the way RDA maintains its bridges. He mentioned that the committee will look at the accomplishment and implementation made in last year and approve the annual work plan. Lastly Eng. Mwape thanked the JICA team for their commitment made for this project and that he hoped the team to show the same commitment this year.

4. Introduction of JCC members

5. Mr. Hisanao Noda chief representative JICA Zambia recognized the presences of all the committee members and thanked them for taking part in the second JCC. Mr. Noda introduced the Japanese government's policy of expressing the commitment of supporting the international corridor development in Africa during TICAD5 which was held in 2013. He said JICA has been collaborating with African governments in road and bridge development. The TICAD 6 being planned in Nairobi which will highlight this commitment again. He further said that the bridge maintenance capacity project is one collaboration which aligns with Japanese government policy. Mr. Noda highlighted the achievements done by TCP such as the on the job training for routine maintenance, condition inspection, training of RDA engineers in Japan and the donations of machines and tools for maintenance to RDA and also not forgetting the guideline which are being developed for bridge inspection. In his last remarks Mr. Noda said the transport sector forms part of the core areas that are critical to the development of any given economy and for that reason projects like these are extremely significant to unlock the bottlenecks in the road network thereby enhancing human and cargo transportation for economic development. He wished every success on the second JCC and the entire project.
6. Eng. Kanyuka Mumba RDA CEO gave a speech read on his behalf by Mr. Titus Chansa Director Procurement. Attached is an original speech by the CEO.

7. **Presentation of Accomplishment.**

JICA TCP team leader Mr. Nagao presented the accomplishment through power point. Find attached a copy of his presentation.

Presentation on the report of Bridge Inspection

This presentation was made by Mr. Masaki Kangawa Bridge Inspection Expert. Find attached a copy of his presentation

Introduction of Bridge Repair Guidebook

Mr. Terai Kokichi presented the guidebook through PowerPoint as well. Find attached a copy of his presentation.

Introduction of the Pilot Project on Routine Maintenance

The presentation of the Pilot Project through power point was made by Mr. Kasamatsu Hiroji. Find attached a copy of the presentation.

Presentation of JICA Team Annual Plan and the Monitoring Sheet.

Presentation through power point. Find attached a copy of the presentation.

8. **Comments & Suggestions**

Mr. Sekeseke's comment was on the work plan. He wanted to find out why the project was not considering doing the capacity building in monitoring & evaluation of bridges as well and he also noted from one of the presentation that the contract on pilot project was already awarded and wanted to know how far that has gone. Mr. Chansa explained the contract is at the procurement committee level for approval. Mr. Sekeseke continued to appreciate the effort that the JICA team was making. He said that the presentation were well presented and since the team has provided these guide books it will be easy for one to revise and make comments.

Eng. Mwape equally recommended the team for their presentation and wanted to clarify on the BMS and the rating criteria. He wanted to know if these guide books were paired with the criteria and that if they are, RDA has no other choice but accept the change of the rating condition of bridges according to JICA's criteria.

Mr. Nagao advised that the BMS should be revised or updated and as RDA does that the JICA team will equally try to modify the description of damage areas.

Eng. Mulusa started his comment by first recommending the JICA team for the dedication that they have for this project and the presentations made, he said he wanted to make a suggestion on the repair book, considering the fact that this book was going to be with RDA for a many years and engineers were going to refer to these guide books it was important that they added a foreword page which say a bit more about this project in a summary and that in order to encourage people to take this seriously the project Director (CEO) should sign it.

Eng. Tumelo suggested that there was need for the agency to harmonies the rating criteria because currently there are about four projects running that have different criteria ratings. He mentioned that the management should decide on which criteria to adopt in order to avoid conflicts.

Comments from JICA came from Mr. Noda who commended all for participating in this project. His few remarks and suggestion were that the third and final JCC should see RDA counterparts participate in the presentation of how they have benefited in this programme and how they will use this capacity .aside from that he was happy with the smooth operation of the project.

9. Approval of Annual work plan & monitoring sheet

10. Closing remarks

Eng. Mwape closed the meeting by thanking all the committee members and participants for attending the meeting and that this fruitful meeting has identified a number of activities that RDA shall follow up and ensure that they work hand in hand to achieve the intended goal. He thanked all who did the presentations and all who have commented and dedicated their time to this project.

The meeting ended at 12:00Hrs

EM

Prepared by:



Holliness Manase
Secretary JICA

Noted by:



Eng. Mubuyaeta Kapinda
Senior Manager –Bridges &
Project Coordinator, JICA TCP

Approved by:



HIDEO NAGAO
Team Leader, JICA



END. ELIAS MWAPE
Director Planning & Design, RDA
& Project Manager, JICA TCP



JICA Technical Cooperation Project on “Bridge Maintenance Capacity Building in Zambia”



Project Office: Road Development Agency (RDA) Headquarters, P.O. Box 50003 Alick Nkhata Road
Lusaka, Zambia

Minutes of the 3rd Joint Coordination Committee Meeting

Date: February 1st 2017

Venue: RDA Conference Room

Time: 09:30-12:00hrs

ATTENDEES

1. Mr. Noda Hisanao – Chief Representative, JICA Zambia office
2. Mr. Hansaki Takashi – Assistant Resident Representative, JICA
3. Mr. Hideo Nagao – Team Leader-JICA TCP
4. Mr. Kasamatsu Hiroji–Bridge Routine Maintenance Outsourcing Expert JICA TCP
5. Mr. Minagawa Yasunori-Monitoring and Evaluation Expert- JICA
6. Ms.Matsubayashi Sachiyo- Monitoring and Evaluation- JICA
7. Ms. Estudillo Cherri- Project Coordinator – JICA TCP
8. Mr. Chembo F Mbula – Representative of the Permanent Secretary MHID
9. Eng. Danny Mfuno- Director Department of Public Infrastructure- MHID
10. Eng. Elias Mwape –Director & CEO-RDA
11. Eng. Dickson Ndhlovu- Acting Director- Planning & Design – RDA
12. Eng. William Mulusa- Director Maintenance- RDA
13. Eng. Steven Sondashi- Senior Manager – Bridges- RDA
14. Eng. Mubuyaeta Kapinda- Senior Manager –Maintenance-RDA
15. Eng. Habeene Habeenzu- Principal Engineer structural- RDA
16. Eng. Main Chama- Senior Engineer –RDA
17. Eng. Chapwe Tumelo-Principal Engineer- RDA
18. Eng. Mwape Phiri- Engineer-Bridges-RDA
19. Eng. Bornwell Siakanomba- Engineer – Bridges - RDA
20. Ms. Njaame Kalililo Mwila- Programme Officer- Infrastructure JICA Zambia
21. Ms. Nosiku Lubinda- Supporting Engineer JICA TCP
22. Ms. Holliness Manase- Secretary – JICA TCP

MINUTES

1. The meeting started at 09:30 and Mrs. Loyce Saili was the facilitator for the progression of the third JCC. She presented the agenda to the meeting and invited Eng. Elias Mwape Director and CEO of RDA to say a few remarks.
2. Eng. Mwape started by welcoming all present to the third Joint Coordination Committee Meeting. In his speech Mr. Mwape said that the meeting was a review of progress that RDA and JICA had made in implementing the Bridge Maintenance Capacity Building Project. The project commenced in February 2015 with an execution period of 24 months. It should have been completed in February 2017 but has been extended by a period of six months to allow JICA experts to continue to provide assistance with the management of the on-going pilot project for the routine maintenance of selected Bridges on the trunk, Main and District Roads in Lusaka province and RDA was very grateful to JICA for accepting the extension of the program. He mentioned that the project had four components which included the Routine Maintenance for Bridges, Bridge Condition Inspection, Bridge Repair Technology and Contract Management outsourcing works and services. Under these four components, there are various activities that had been undertaken such as providing opportunities for exposure of RDA counterpart staff in Bridge Maintenance Management and Bridge Routine Technology. Others were developing guidebooks and guidelines, conducting seminars, On-The-Job-Trainings, Dry Runs and Pilot Project on Bridge Routine Maintenance, developing contract templates and technical specification. He said he was happy to note that they had been significant progress on the project with major activities undertaken. However some activities remain outstanding and were going to be undertaken in 2017. One key contribution that the Zambian government had made was the payment of the pilot project on Bridge Routine Maintenance construction. He said he wanted to assure JICA and the project team that RDA had engaged its sister Agency NFRA to expedite payments to the contractor. RDA was grateful to JICA for providing the technical and financial assistance to the project and he hoped that the partnership was going to help achieve the set goals and targets of the technical agreements. In conclusion Eng. Mwape announced that as a result of the project RDA was intending to roll out the Bridge Routine Maintenance to other 9 provinces in 2018.
3. The second item on the agenda was a speech by the Permanent Secretary, Ministry of Housing and Infrastructure Development Mr. Charles Mushota delivered on his behalf by Mr. Chembo Mbula. His speech he began by stating that the Road Development Agency (RDA) was established under the Public Roads Act of 2002 as an institution responsible for Construction, Care and Maintenance of all public roads and bridges in Zambia. The Act is being managed by the Ministry of Housing and Infrastructure Development which now carries the mandate of public

roads among other Infrastructure Development Mandates. This followed the Realignment of Ministries by the His Excellency the President of the Republic of Zambia and the subsequent approval of parliament. He further said that a gazetted road network of 67,671 Kilometers out of which 40,454 Kilometers of roads was defined as the Core Road Network or the minimum network necessary for economic development. In addition Zambia has over 456 major bridges and over 3,000 culverts across the road network. Mr. Mbula said that over the years very little emphasis was placed on Maintenance of Bridges and as a result only 50% of major bridges were in good and fair condition. That scenario was changing as the Zambian government in an effort to improve the maintenance of bridges in the country with the support of JICA had embarked on the Bridge Maintenance Capacity Building Project through the Road Development Agency (RDA). He continued to say that he was reliably informed that there has been significant progress on the project and that most of the activities had been undertaken except for the pilot project for the Routine Maintenance of selected bridges on Track, Main and District Roads in Lusaka province which is still on-going. Once completed the project was going to serve as a starting point for Rolling out Routine Maintenance Projects throughout the country. He assured the meeting of the Ministry's commitment to ensure that the roll out happens. He was also informed that among the activities undertaken successfully under the project were, On-The-Job-Training of technical staff at RDA and from selected contractors and consulting Engineers, and the preparation of guidebooks on Routine Maintenance, Bridge Inspection, Bridge Repair and contract templates and specifications for Routine Bridge Maintenance scheduled to be published. He was further informed that as part of the project various equipment had been procured. This equipment included IT equipment, tools such as Concrete Rebound Hammers, Reinforced Concrete Detective Radar, Portable Pressure Washes and Ultrasonic Metal Thickness Gauge. The government through the RDA had also made a contribution to the project by making available and utilizing RDA's Bridge Inspection Vehicle which is a specialized vehicle for Bridge Inspection. The government of the Republic of Zambia wishes to give their gratitude to the Japanese Government for providing the technical and financial support for the project through JICA. In conclusion JICA is being assured that the Zambian government was going to continue supporting RDA in order to ensure that the Maintenance of Bridges in Zambian improves and that it becomes a sustainable core part of the RDA. On that note he declared the 3rd Joint Coordination Committee Meeting open and a successful deliberation.

4. Mr. Hisanao Noda chief representative JICA Zambia recognized the presences of all the committee members. It gave him great pleasure to be a part of the forum of the 3rd successfully held JCC meeting for the Bridge Maintenance Capacity Building Project. He said the project was one of the Technical Projects foe JICA and its significance to the development of infrastructure, specifically Bridges in Zambia cannot be overemphasized. There was no doubt that the project had

achieved milestones in the transport sector because the transfer of skills and knowledge from a fundamental component of effective infrastructure construction and management. On the 12th of January 2017 the government of Zambia and Japan had held a conference for the infrastructure sector with an emphasis on high quality infrastructure. It was important to note that high quality infrastructure can only be attained when the human resource had received adequate training and exposure to manage and maintain the infrastructure and in that regard the project is aimed at improving the Maintenance of Bridges in Zambia through the capacity building of RDA Engineers. He gave an appeal to the ministry of Housing and Infrastructure Development and the RDA to implement periodic Bridge Maintenance activities in order to increase the lifespan of bridges to enhance economic development. He implored the two institutions especially the RDA to make use of the training received in Japan by implementing the things learnt when the trainees interacted with Japanese engineers. The other appeal was to MHID and RDA was the dissemination of Bridge Routine Maintenance activities nationwide as soon as possible. It is only after such issues are taken in to consideration and implemented that the project can realize its actual benefits to the people of Zambia. he enlighten an event were an RDA engineer asked a Japanese engineer why they had given so much time and in some cases their whole life to inspect and maintain Bridges, his response was that it was dedication and love for fellowmen because maintaining bridges in good condition can save the lives of fellowmen. And true to say that bridges in sound condition save lives and this goes beyond economic activities because a life saved is preservation of Humanity. Lastly Mr. Noda wanted to take an opportunity to thank the Ministry and the RDA for the support that JICA has continued to receive throughout the course of the project. He hoped that JICA and RDA will continue working together and combining efforts in the journey towards quality Maintenance of bridges in Zambia. He wished the meeting and the project a success.

5. Presentation of Accomplishment.

JICA TCP team leader Mr. Nagao presented the annual accomplishment implementation of TCP in 2016 including Bridge Maintenance Guidelines, Bridge Inspection Guidebook and implementation plan of Bridge Repair and/or Replacement through power point. Before his presentation he explained that the Technical Cooperation Project started in February 2015 and had advanced the improvement and enhancement of the technical capabilities of RDA engineers regarding the Bridge Maintenance incorporation with counterparts which lead to a success of all activities planned for the project. He acknowledged and appreciated the cooperation and support that the Agency especially counterparts have given to JICA throughout the project which made it have an assurance that the remaining six months was going to be as successful as the last. Find attached a copy of his presentation.

Introduction of outsourcing Contract of Pilot Project on Bridge Repair

Mr. Hiroji Kasamatsu presented the project on Bridge Repair through PowerPoint as well. Find attached a copy of his presentation.

Presentation of Outcome of the Project by RDA Counterparts

The presentation was made by Eng. Tumelo Chapwe through power point. Find attached a copy of the presentation.

6. Monitoring /Evaluation of Project and Monitoring Sheet

Mr. Minagawa presented the evaluation of the project. Find attached a copy of the presentation.

7. Presentation of the 3rd term work plan

Through power point Mr. Nagao presented the third work plan to the meeting. Find attached a copy of the presentation.

8. Comments and Suggestions.

The first suggestion came from the Permanent Secretary's representative Mr. Chembo Mbula. He recommended that the National Council for Contractors be involved in such Trainings so as to disseminate stability and knowledge.

His comment was that he was aware that RDA had a department specifically for Bridges and engineers who were readily available. He was responding to Mr. Minagawa's concern of lack of dedicated staff.

Eng. Mwape's comment was to inform the meeting that the delay of implanting the pilot project was dependant on the National Road Fund Agencies funding. He also wanted a clarification on establishing an organization in RDA that would spearhead the bridge maintenance because RDA has had a Planning and Design and Bridge Maintenance department

He also said that the Agency was looking forward to its staff training other staff in other regions and to show how well they have assimilated the training.

Eng. Mulusa's suggestion was that RDA should introduce a course in Bridge Routine Maintenance to NCC to train contractors since RDA had a scoop of trainees who can train NCC staff and equally train contractors.

Eng. Ndhlovu agreed with Eng. Mulusa and said that RDA can take a step further with NCC by using the same guidebook not only for their staff but a whole number Of contractors that RDA does business with. He also commented on the issue of having undedicated staff to the project, he said it was a lesson learnt and it is one to

pick up and move forward knowing the fact that RDA has up to August to implement the project and see how they can contribute to the effectiveness of the project and achieving the full object.

Eng. Dickson said that the agency should not wait until bridges are in a worse state, but instead do repairs as soon as possible this was coming from an inspection made by the JICA team which stated that 53 bridges were inspected and 19 bridges were in a bad category. He further said that this routine repair should be considered in the 2018 budget. As much as RDA controls the budget process it needs to look at the financing from Ministry of Finance. That said Eng. Dickson assured the meeting that the agency was putting Maintenance as its highest priority and the on-going Bridge Routine Maintenance was the top priority.

He said he delighted to learn that RDA senior engineers in the regions were getting the training as well and wanted to thank the experts for the training RDA engineers had received and for laying the ground work and also the critical part of seeing engineers who have been trained training other engineers. That will show the significant out-put of the training and enable RDA to achieve its objectives sustainability the project

Mr. Mfuno said the project was a good program that will help bridges in Zambia build up their lifespan especially those in critical condition and he also suggested that the Ministry of Finance is involved in the project and brought on board so that they understand what goes on so that resources can be allocated accordingly.

Mr. Mbula wanted to find out from RDA why one of the bridges they had visited in dudumezi was not one of the examples in the project. His concern was that the bridge visited was a low line bridge which invents a lot of debris and if there was a lot of water it overflows.

Eng. Mulusa responded to say that by nature the bridge was designed to take an overflow, it's a concert structure and what made worse were the debris and the guide post which were not in place and same times it gets difficult to judge how much water is overtopping the structure and there has been reports of people washed off due to flash floods. The reason why this kind of bridge was not included the routine maintenance was because it was not in the 200kilometers radius. When selecting other bridges and bridges of that kind for repair RDA will use the same approach for bridge inspection and bridge routine maintenance. He said regional staff can check and see the missing guidepost and unblock the vets and clean as a routine activity.

Eng. Tumelo wanted to comment on the management cycle of routine maintenance. He said a water cycle can be disturbed by cutting of trees equally the effectiveness of cycle depends on policies and structure of the RDA. He said there was a complaint at a technical working group meeting that RDA is disjointed. Working together with different units such as planning and Designs unit, the Maintenance unit and cost unity at construction has proven to be a challenge. This is what the

experts address when they say that RDA needed a dedicated organization within the agency to take control of the whole management system of the routine maintenance.

Eng. Mwape said RDA had a restructuring and a separation of units between planning and implementation. He suggested that bridge unit may be a unit of its own and maybe if a system can be put in place which can be recommended by a consultant will be highly appreciated

Mr. Noda concern was the delay in implementing the pilot project. He suggested to the Ministry and RDA to try and speed up the implementation process. He also urged RDA to consider the recommendation given by the Experts carefully for the benefit of the project. He also said that RDA and JICA experts should work very closely together for the remaining months of the project.

Mr. Nagao said the team was still conducting the field training and the issues that the project was facing was the procurement of materials. He recommended that RDA provides an opportunity for contractors or agents in Zambia to supply such materials through the Bridge Routine Maintenance in order to improve the Bridge Maintenance Capacity. He also mentioned that these materials are hard to find in Zambia but can be procured in South Africa. He mentioned that the team recommended contractors from class 3 and 4 for the Pilot Project and class 1 and 2 for the Bridge Routine Maintenance. He said that the challenges faced was to improve the capacity of the contractor during implementation of the Routine Maintenance especially that in 2018 RDA's plan is implement the Routine Maintenance nationwide

Mr. Nagao then explained the Bridge Maintenance Management Cycle, he said the cycle starts from Routine Maintenance, then Inspection, Report, Review of the report and after that see if the Bridge is not deteriorated then proceed in evaluating the data and analyzing if there is need for supplementary inspection and if so a detailed inspection should be done using the Non Distractive Testing (NDT) then RDA can Judge or replace or monitor or repair. The Budget has to be allocated and then implement the Repair or Replacement of the Bridge. A record of all data is required for future projects. He mentioned that this kind of cycle is also used in Japan. Depending on how well RDA takes the recommendation the cycle would run smoothly. He lastly suggested that Planning, construction, inspection should be in one originations.

9. **Approval of 3rd Work Plan & Monitoring Sheet**

The 3rd work plan and monitoring sheet for the JICA TCP was approved and an extension of the project for a period of six months, from the initial end date of February 2017 to August 2017, was granted. This approval was made by the Ministry of Housing and Infrastructure Development (MHID), the Road Development Agency (RDA), and the Japan International Corporation Agency (JICA).

10. Closing Remarks

In his closing remarks Eng. Dickson gave thanks to all JCC members for attending the meeting and making the deliberation of the meeting and approval of the work from February to August a success. He expressed his sincere gratitude and on behalf of the Road Development Agency for the technical support that RDA had been receiving and the experts who have been working with RDA engineers. He also gave gratitude for the training that RDA had received till date. He said JICA Project had come at the right time to fix some of RDA's capacity contrasts with respect to Bridge Maintenance and for that reason RDA was very thankful. He further said that the project as seen Engineers getting an understanding of the management cycle of the Bridge Maintenance also including skills in Bridge condition inspection, additional of knowledge in repair technology as well as giving further knowledge for contract management. One issue that has come out of this project is that RDA engineers now have been trained adequately to train other trainees which is a good thing for RDA's sustainability. He was pleased to report to the meeting that guide books that will be published was an active participation from RDA's staff that come in through the preparation of these documents.as highlighted a request for an extension for the project was made due to some delays in procurement of the pilot project on Bridge Routine Maintenance, RDA was going to take it as lesson learnt as the project goes forward. He said since the contract was on the ground RDA was going to make every necessary effort on its part to make sure that this project works out and get full benefit of the training received. In conclusion he indicated that the Bridge Maintenance capacity project fit very well with RDA's road maintenance strategy. As mentioned earlier RDA has opted and decided as an institution to make Road Maintenance as its first priority and has indicated that it dedicates a hug potion of its budget towards maintaining road infrastructure. He wanted to assure the experts that the training that had been received was not going to be put aside but to be put to use and take advantage of the RDA has received for the roll out programme that was intended to be done in 2018 and also the Bridge Routine for Pilot Project which was presented as 2019 will be brought back to 2018. Lastly he said that as an institution and the direct beneficiary of this training RDA intends to make good of it by pursuing activities that was going to grantee sustainable maintenance of the country's Bridge infrastructure.

Mr. Mbula's last remarks was to express gratitude on behalf of the Ministry for making the meeting possible and he believed that the deliberation had been successful and looking forward for the next meeting in August. On that note he declared the meeting closed.

The meeting ended at 12:00Hrs

Prepared by:



Holliness Manase

Secretary, JICA

Approved by:



HIDEO NAGAO

Team Leader, JICA

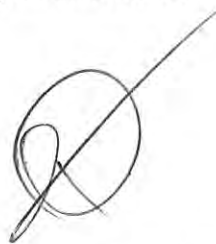
Noted by:



Eng. Stephen Sondashi

Senior Manager-Bridges

Project Coordinator



Eng. Dickson Ndhlovu

Acting Director-Planning & Design

Project Manager



JICA Technical Cooperation Project on “Bridge Maintenance Capacity Building in Zambia”



Project Office: Road Development Agency (RDA) Headquarters, P.O. Box 50003 Alick Nkhata Road
Lusaka, Zambia

Minutes of the 4th Joint Coordination Committee Meeting

Date: August 8 2017

Venue: RDA Conference Room

Time: 08:00-11:00hrs

ATTENDEES

1. Mr. Charles Mweshi – Representative of the Permanent Secretary MHID
2. Mr. Clive Khan- Director Planning and Monitoring Department MHID
3. Eng. Elias Mwape –Director & CEO-RDA
4. Eng. Dickson Ndhlovu- Acting Director- Planning & Design – RDA
5. Eng. William Mulusa- Director Maintenance- RDA
6. Mr. John Kapenda- Senior Manager Monitoring & Evaluation- RDA
7. Eng. Mubuyaeta Kapinda- Senior Manager –Maintenance-RDA
8. Eng. Habeene Habeenzu- Principal Engineer structural- RDA
9. Eng. Muyunda Maketo- Principal Engineer - RDA
10. Eng. Main Chama- Senior Engineer –RDA
11. Eng. Chapwe Tumelo-Principal Engineer- RDA
12. Eng. Musonda Mwale-Principal Engineer -RDA
13. Eng. Bornwell Siakanomba- Engineer – Bridges – RDA
14. Eng. Chabala Pandeki- Regional Manager Lusaka Region-RDA
15. Eng. Victor Miti – Planning & Design Lusaka Region –RDA
16. Eng. Sithabiso Fikoloma- Engineer RDA
17. Mr. Hanai Junichi – Chief Representative, JICA Zambia office
18. Mr. Hansaki Takashi – Assistant Resident Representative, JICA
19. Mr.Kanenawa Tomoki-Division Chief- JICA Head Office Tokyo
20. Ms. Kumazawa Yukie-Road Sector Program- JICA Head Office Tokyo
21. Mr. Hideo Nagao – Team Leader-JICA TCP
22. Mr. Noboyuki Sagawa- JICA Bridge Routine Maintenance Expert
23. Mr. Minagawa Yasunori-Monitoring and Evaluation Expert- JICA
24. Ms. Estudillo Cherri- Project Coordinator – JICA TCP
25. Ms. Kapumpa Mwape- JICA Zambia Staff
26. Ms. Holliness Manase- Secretary – JICA TCP

AGENDA

1. Introductions and Opening Remarks
2. Speech by Permanent Secretary
Housing and Infrastructure Development
3. Presentation of:
 - 3.1 Implementation of Pilot Project on Bridge Routine Maintenance
 - 3.2 Accomplishment of Project (Draft Report)
4. Final Evaluation of the Project
5. Outcome of the Project by RDA counterpart
6. Speech by JICA Chief Representative
7. Comments and Suggestions
8. Approval of Guidebooks and guidelines
9. Closing Remarks

APOLOGIES

Eng. Charles Mushota - Permanent Secretary- Ministry of Housing and Infrastructure Development

The meeting was called to order at 08:30 and the facilitator, Ms. Pamela Mwanza thanked and welcomed all present at the Forth Joint Coordination Committee (JCC) meeting.. The Agenda, as presented was adopted. The deliberations for the meeting commenced with an opening speech by the RDA Chief Executive Officer, Eng. Elias Mwape.

1. Eng. Mwape welcomed all present to the fourth Joint Coordination Committee Meeting and gave a brief history of the JICA Technical Cooperation Project (TCP). He acknowledged the successes and achievements of the Project. The main achievement being the development of guidebooks/guidelines for Bridge Inspection, Bridge Routine Maintenance and Bridge Repair as well as the Pilot Project on Bridge Routine Maintenance in Lusaka Province. The RDA CEO concluded his speech by commending the JICA Team of Experts for the technical support throughout the Project. Attached to these minutes as Appendix 1 is the RDA CEO's speech.

2. The Permanent Secretary, Ministry of Housing and Infrastructure Development Mr. Charles Mushota, in a speech read on his behalf by Mr. Charles Mweshi, gave a recap status of the roads and bridges in Zambia. He stated that the inadequate maintenance of bridges over a number of years prompted Government through RDA to embark on a Bridge Maintenance Capacity Building Project, with the support from JICA. He assured JICA that the knowledge transfer rendered to RDA, private consultants and contractors shall be put to sustainable use in order to improve the maintenance of bridges in Zambia. The Permanent Secretary concluded his speech by thanking all the players in the Project. Refer to Appendix 2 for his speech.

3. **3.1 Presentation of Implementation of Pilot Project on Bridge Routine Maintenance**
The JICA Technical Assistance, Bridge Routine Maintenance Expert, Mr. Sagawa presented the implementation of the Pilot Project on Bridge Routine Maintenance. He gave an overview of the guideline for Routine Maintenance which was developed during the technical assistance. The presentation is attached as Appendix 3.

3.2 Presentation of Accomplishment.

JICA TCP Team Leader, Mr. Nagao made a presentation outlining the Project accomplishments and achievements so far. The presentation included the overall Project Goal, the Project Purpose and the Project Outputs. See Appendix 4 for the details of the presentation.

4. Monitoring /Evaluation of Project and Monitoring Sheet

Projects monitoring and evaluation. Minagawa presented the final evaluation of the project. His presentation overall was the objective of terminal evaluation, evaluation methodology, achievements of the project and the implementation process. Attached as Appendix 5

5. Project Outcome

RDA, represented by Director Road Maintenance, Eng. William Mulusa presented the outcome of the Project.

He was greatfull for the financial and technical support that JICA had given to the Agency. Attached as Appendix 6

6. JICA's Chief Representative, Mr. Junichi Hanai, was pleased with the deliberation of the meeting. JICA was greatfull for the good working relationship currently obtaining with the Ministry of Housing and Infrastructure Development (MHID) and RDA as success of any project can be achieved with a good working relationship and respect for one another.

The main objective of the Technical Assistance was to provide Bridge Maintenance Technology including Guidelines/ Guidebooks to RDA aimed at enhancing the technical capabilities of RDA staff and other players within the sector, including local Consultants and Contractors The JICA Chief Representative expressed delight to hear that the technical capacity of RDA staff has been enhanced as stated by RDA Director Road Maintenance. He stated that the Project can also serve as a bridge for over developmental cooperation between Japan and Zambia. He said he was well aware that Zambia had almost 3500 bridges in the country and yet Japan has about 190,000 bridges across the country which meant that the long history of maintenance and rehabilitation of those bridges and technology has been accumulating for the last century. In his closing remarks, he emphasized the need to priorities bridge maintenance activities in the annual and allocate enough funds for such projects. He sincerely hoped that the Ministry released the outputs of the project and make necessary budget for the 480 bridges earmarked for the rolling out of the Pilot Project to other provinces, which has been scheduled for the year 2018.

7. Comments and suggestion

The Permanent Secretary's representative acknowledged the number of important points presented and assured the meeting of continued support from the Ministry. He informed the meeting that the process of making the 2018 GRZ Budget was currently ongoing and Infrastructure Development is a high priority. The Ministry

shall ensure that a budget is allocated to Bridge Maintenance activities through the Road Sector Annual Work Plan (RSAWP) as the budget is manageable.

Director Planning and Design acknowledged JICA's Technical support trainings that RDA engineers have had and inquired on phase 2 of the capacity building project. Bridge Repair and updated Guidebooks and Guidelines for bigger and longer span Bridges are some of the issues expected to tackle in this second Phase of the project.

Senior Manager Maintenance Eng. Kapinda noted that RDA outsources works and services from contractors and consultants in that regard he hoped that it can collaborate with the National Council for Contractors (NCC) to train contractors as phase two of the Capacity Building Project commences and have JICA expert continue assisting on Pilot Project for Bridge Repair.

JICA Tokyo's Representative Ms. Kumazawa Yukie was impressed with the project's success which gave an understanding of the management cycle for Bridge maintenance to RDA and contractors engaged in the Project. She noted that the pilot project had given RDA enough experience to roll out the Pilot project on Bridge Routine Maintenance in other provinces and it was crucial to enhance and improve the capacity of private contractors for the roll out plan. She stressed the point of avoiding delay of payments for contractors due to lack of budget from RDA. Phase two is going to consist of an update of the guidelines for maintenance management and guidebooks for Bridge Repair and she encouraged RDA to review the challenges faced in the 1st phase of the project in order to tackle them in phase two.

8. Approval of Guidebooks and Guidelines

The team had printed 40copies of the guidebooks and guidelines which were presented to the 2nd JCC. The copies were presented to JCC members and the guidebooks and guideline were approved and. The certificate of handover for the all donated items was signed.

9. Closing Remarks

Eng. Dickson acknowledged the support the good working relationship and successful reports RDA and JICA has had during the Bridge Capacity Building Project . RDA assured JICA and the Ministry of allocating a budget for 2018 for the Bridge Maintenance Project. RDA engineers and contractors have been trained and given necessary tools for greater success under phase two of the project. . In conclusion Eng. Ndhlovu appreciated JICA for the efforts and support and the Ministry for the activity participation that they had shown. And on that note the meeting ended at 11:00hrs.

Prepared by:



Holliness Manase

Secretary, JICA

Approved by:



HIDEO NAGAO

Team Leader, JICA

Noted by:



Eng. Habeene Habenzu

Principal Engineer-Bridges

Assistant Project Coordinator



Eng. Dickson Ndhlovu

Director-Planning & Design

Project Manager

ANNEX -5 Monitoring Sheet

Project Monitoring Sheet I (Revision of Project Design Matrix) & II (Revision of Plan of Operation)

- ① Version 0 (Mar 20, 2015)
- ② Version 1 (Mar 20, 2015)
- ③ Version 1 (July 30, 2015)
- ④ Version 1 (Dec 14, 2015)
- ⑤ Version 1 (Feb 18, 2016)
- ⑥ Version 1 (June 30, 2016)
- ⑦ Version 2 (Feb 1, 2017)
- ⑧ Version 2 (July 31, 2017)

Project Monitoring Sheet I (Revision of Project Design Matrix)

Project Title: The Bridge Maintenance Capacity Building Project in Zambia

Version 0

Implementing Agency: RDADated 20, Mar, 2015Target Group: RDA OfficersPeriod of Project: 2015 - 2016 (2.0 years)Project Site: All area under the jurisdiction of RDAModel Site: none

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
Overall Goal					
Bridge maintenance activities are regularly implemented to keep bridges in good condition.	1. The bridge maintenance is budgeted in Annual Work Plan 2. Bridge maintenance activities carried out	RDA reports			
Project Purpose					
The institutional capacity of RDA is strengthened for bridge maintenance planning and operational management, which includes improvement of outsourcing contract management.	1. The number of bridges that are routinely maintained according to the developed guidelines 2. The number of bridge repair conducted as planned 3. The prepared technical specifications are used to award outsourcing contracts	Project Final Report	-The importance of bridge maintenance remains high in the transport sector strategy		
Outputs					
1. RDA officers understand the operation cycle of routine maintenance and undertake supervision of routine maintenance activities.	1. Guidelines are produced 2. The level of understanding of the seminar participants 3. The level of understanding of participants in the on-the-job training of bridge routine maintenance	1. Produced guidelines 2. Level check test 3. Level check test	- Financial resources for bridge maintenance are secured - RDA fills the vacancies in the Bridge Unit.		
2. RDA officers utilize bridge condition inspection data for further investigation and planning of repair or replacement of bridges.	1. The bridge condition inspection data are reviewed 2. A guidebook is produced 3. The level of understanding of participants in on-the-job training of bridge inspection	1. Bridge Condition inspection data 2. Guidebook 3. Level check test			
3. RDA officers are able to prepare a bridge repair plan for selected bridges using the data from condition inspections and the Bridge Management System and gain enhanced knowledge on bridge repair.	1. Bridge repair plans are developed for selected bridges using the inspection data 2. A guidebook is produced 3. Accumulation of knowledge on types of repair technology	1. Bridge repair plan 2. Guidebook 3. Training report			
4. The capacity of RDA for contract management is improved in the field of bridge routine maintenance and repair.	1. Technical specifications samples are produced for outsourcing contracts 2. Outsourcing contracts are prepared with relevant technical specifications	1. Developed samples 2. Contracts with technical specifications			

Activities	Inputs		Important Assumption
	The Japanese Side	The Zambia Side	
1-1 Develop guidelines on routine maintenance for bridges	1. Dispatch of Mission -Bridge maintenance management -Bridge routine maintenance -Bridge inspection -Bridge repair -Bridge maintenance outsourcing	1.Assignment of counterpart officers to the project 2.Regional Offices staff for training/seminars	- The data in BMS will be made available for the project
1-2 Conduct seminars on conceptual framework of routine maintenance on bridge			
1-3 Conduct on-the-job training for routine maintenance on bridges			
2-1 Review bridge condition inspection data	2.Procurement of Equipment tools/materials for training	2.Office facilities -Workspace	
2-2 Develop a guidebook for bridge inspection	3.Overseas training courses: Two courses (Japan)	3.Budget - Salary and allowances of the RDA officers -Other necessary expenses	
2-3 Conduct on-the-job training for bridge condition inspection			
	4.Expenses for the dispatched experts ,transport,accommodation and other expenses		
3-1 Develop an implementation plan of repair and/or replacement for selected bridges based on the condition inspection and the data in the Bridge Management System			<Issues and countermeasures>
3-2 Develop a guidebook on bridge repair			
3-3 Provide opportunities for counterparts to get exposed to bridge repair works through actual projects			
4-1 Develop contract templates and technical specifications (ex. Particular specification) required for routine bridge maintenance outsourcing			
4-2 Prepare technical specifications of bridge repair contracts			

Project Monitoring Sheet II (Revision of Plan of Operation)

Version 0
Dated 20, Mar, 2015

Project Title: The Bridge Maintenance Capacity Building Project in Zambia

Inputs		Plan	2015				2016				Remarks	Monitoring		
			Actual	I	II	III	IV	I	II	III		IV	Issue	Solution
Expert														
Bridge maintenance management	Plan													
	Actual													
	Plan													
	Actual													
	Plan													
	Actual													
Equipment														
Equipment tools/materials for training	Plan													
	Actual													
	Plan													
	Actual													
	Plan													
	Actual													
	Plan													
	Actual													
	Plan													
	Actual													
Training in Japan														
Training for Counterpart Personnel	Plan													
	Actual													
In-country/Third country Training														
Plan														
Actual														
Activities		Plan	2015				2016				Responsible Organization		Achievements	Issue & Countermeasures
Sub-Activities			Actual	I	II	III	IV	I	II	III	IV	Japan		
Output 1: Enhancement of Routine Maintenance for Bridges														
1-1 Develop guidelines for routine maintenance		Plan												
		Actual												
1-2 Conduct seminars on conceptual framework on bridge routine maintenance		Plan												
		Actual												
1-3 Conduct on-the-job training for bridge routine maintenance		Plan												
		Actual												
Output 2: Improvement of Bridge Condition Inspection														
2-1 Review bridge condition inspection data		Plan												
		Actual												
2-2 Develop a guidebook for bridge inspectors		Plan												
		Actual												
2-3 Conduct on-the-job training for bridge inspection		Plan												
		Actual												
Output 3: Improvement of Planning and Enhancement of Knowledge on Bridge Repair Technology														
3-1 Develop an implementation plan of repair and/or replacement for selected bridges based on the condition inspection and the data in BMS		Plan												
		Actual												
3-2 Develop a bridge repair guidebook		Plan												
		Actual												
3-3 Study visit to actual projects to learn repair technology (Japan and Zambia)		Plan												
		Actual												
Output 4: Development of sample document for outsourcing contract														
4-1 Develop contract templates and guidelines of documents (particular specifications) for routine bridge maintenance		Plan												
		Actual												
4-2 Prepare technical specifications of bridge repair contracts		Plan												
		Actual												
Duration / Phasing		Plan												
		Actual												
Monitoring Plan		Plan	2015				2016				Remarks	Issue	Solution	
			Actual	I	II	III	IV	I	II	III				IV
Monitoring														
Joint Coordinating Committee		Plan												
		Actual												
Set-up the Detailed Plan of Operation		Plan												
		Actual												
Submission of Monitoring Sheet		Plan												
		Actual												
Monitoring Mission from Japan		Plan												
		Actual												
Joint Monitoring		Plan												
		Actual												
Post Monitoring (Joint Final Monitoring)		Plan												
		Actual												
Reports/Documents														
Project Inception Report		Plan												
		Actual												
Progress Report		Plan												
		Actual												
Project Completion Report		Plan												
		Actual												
Public Relations														
Plan														
Actual														
Plan														
Actual														

TO Representative of JICA Zambia OFFICE

PROJECT MONITORING SHEET

Project Title : The Bridge Maintenance Capacity Building Project in Zambia

Version of the Sheet: Ver. I (Term: Feb 16, 2015 - Mar 31, 2017)

Name: Hideo NAGAO

Title: Team Leader Hideo NAGAO

Submission Date: Mar 20, 2015

I. Summary

II. Project Monitoring Sheet Ver.0(I & II) *as Attached*

Project Monitoring Sheet Ver.1(I & II) *as Attached*

Project Monitoring Sheet I (Revision of Project Design Matrix)

Project Title: The Technical Cooperation Project for "The Bridge Maintenance Capacity Building Project in Zambia"

Implementing Agency: RDA

Target Group: Engineers in the Central Office and Regional Offices in RDA

Period of Project: Feb. 2015 - Jan. 2017 (2.0 years)


Project Site: All area under the jurisdiction of RDA

Model Site: None

Version 1

Dated 20, Mar, 2015

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
Overall Goal Bridge maintenance activities are regularly implemented by RDA.	1. The bridge maintenance is budgeted in Annual Work Plan. 2. Bridge maintenance activities are carried out.	Annual report in RDA.			
Project Purpose The institutional capacity of RDA is strengthened for bridge maintenance planning and operational management, which includes improvement of outsourcing contract management.	1. The number of bridges that are regularly maintained according to the developed guidelines etc. 2. The number of bridge repair conducted as planned 3. The prepared technical specifications are used to award outsourcing contract	Project Final Report	The importance of bridge maintenance remains high in The transport sector strategy		
Outputs 1. RDA engineers understand the management cycle of routine maintenance and undertake supervision of routine maintenance activities.. 2. RDA engineers utilize bridge condition inspection data for further investigation and planning of repair or replacement of bridges. 3. The knowledge on bridge repair technology of RDA engineers are enhanced and RDA engineers are able to prepare a bridge repair plan for pilot bridges using the data from condition inspection and Bridge Management System. 4. The capacity of RDA for contract management is improved in the field of routine maintenance and repair on bridges.	1-1. Guidelines on bridge routine maintenance are developed 1-2. The level of understanding of the seminar participants 1-3. The level of understanding of participants in the on-the-job training of bridge routine 2-1. The bridge condition inspection data are reviewed.The number of reviewing inspection data are about 45 bridges. 2-2. Guidebook on bridge inspection is developed 2-3. The level of understanding of participants in on-the-job training of bridge inspection. 3-1. Bridge repair plans are developed for selected pilot bridges using bridge condition inspection data. 3-2. Guidebook on bridge repair is developed. 3-3. Accumulation of knowledge on types of repair technology 4-1. Technical specifications samples are produced for outsourcing contracts. 4-2. Outsourcing contracts are prepared with relevant technical specifications on bridge repair.	1-1. Developed Guidelines 1-2. Hearing of understanding of training 1-3. Hearing of understanding of on-the-job training 2-1. Bridge Condition Inspection Data 2-2. Developed Guidebook 2-3. Hearing of understanding of on-the-job training 3-1. Bridge repair plan 3-2. Developed Guidebook 3-3. Training Report 4-1. Developed samples 4-2. Contracts with technical specifications	Financial resources for bridge maintenance shall be secured. RDA fills the vacancies in the bridge Unit		

Activities	Inputs		Important Assumption
	The Japanese Side	The Zambia Side	
1. Enhancement of Routine Maintenance for Bridges 1-1. Develop guidelines for routine maintenance on bridges 1-2. Conduct seminars on conceptual framework of routine maintenance on bridges 1-3. Conduct on-the-job training for routine maintenance on bridges	1. Dispatch of Experts - Team Leader/Bridge Maintenance Management - Bridge Inspection - Bridge Repair - Bridge Routine Maintenance - Bridge Maintenance Outsourcing - Coordinator/Assistance Bridge Inspection and Training	1. Assignment of counterpart engineers to the project - Project Director - Project Manager - Project Coordinator - Counterparts	The data in BMS will be utilized for the project
2. Improvement of Bridge Condition Inspection 2-1 Review Bridge Condition Inspection Data 2-2 Develop a Guidebook for bridge inspection 2-3 Conduct on-the-job training for bridge condition inspection	2. Procurement of equipment Tools/materials supply for trainings	2. Regional Offices staff for training/seminars	
3. Improvement of Planning and Enhancement of Knowledge on Bridge Repair Technology 3-1 Develop an implementation plan of repair and/or replacement for selected bridges based on the condition inspection data and the data in the Bridge Management System 3-2 Develop a guidebook for bridge repair 3-3 Provide opportunities for counterparts to get exposed to bridge repair works through actual	3. Overseas training courses Two courses (Japan)	3. Office Facilities - Workspace	 <Issues and countermeasures>
4.5. Improvement of the Capacity of RDA for Contract Management 4-1 Develop contract templates and technical specifications (ex. Particular specification) required for bridge routine maintenance outsourcing 4-2 Prepare technical specifications of bridge repair contracts	4. Expenses for the dispatched experts, transport, accommodation and other expenses	4. Budget - Salary and allowances of the RDA counterpart officers - Other necessary expenses	

TO Representative of JICA Zambia OFFICE

PROJECT MONITORING SHEET

Project Title : The Bridge Maintenance Capacity Building Project in Zambia

Version of the Sheet: Ver. I (Term: Feb 16, 2015 - Mar 31, 2017)

Name: Hideo NAGAO

Title: Team Leader

Submission Date: 30, July, 2015



I. Summary

1 Progress

1-1 Progress of Inputs

1-1-1 Japanese side

- Dispatch of JICA Experts

Team Leader (Feb16-Mar 31, July18-Aug16)

Bridge Inspection (May 1- June30)

Bridge Repair (July1-Aug31)

Bridge Routine Maintenance (Mar13-May31, July18-Aug16)

Bridge Maintenance Outsourcing (July18- Sep16)

Coordinator (Feb16-Mar31, July18-Aug16)

- Procurement of equipment

Projector, Copier machine, Desktop Computer, Laser Printer

Digital Camera, Laptop Computer, Video Recorder, Hard Hat, Safety Vest, Safety Belt, Global Positioning System (GPS), Binocular, Portable High Pressure Washer, Generator

1-1-2 Zambia side

- Assignment of counterpart

Project Director

Project Manager

Project Coordinator

Counterparts (4 engineers)

- Office facilities

Workspace

1-2 Progress of Activities

- Output 1.

Draft of guideline for routine maintenance was submitted to TWG member

1st bridge routine maintenance seminar will be held on August 11th.

- Output 2.
Bridge condition inspection was conducted by JICA Team from May to June.
- Output 3
Formulate Draft of Bridge Repair Guidebook.
- Output 4
Formulate Technical Specification samples.

1-3 Achievement of Output

- Approval of Work plan
- Conducted 1st Joint Coordinating Meeting
- Submitted Monitoring Sheet, Ver 1.
- Purchased Equipment (Lot 1 and Lot 2)
- Reviewed bridge condition inspection data
- Posted project news on JICA web site

1-4 Achievement of the Project Purpose

Ongoing

1-5 Changes of Risks and Actions for Mitigation

None

1-6 Progress of Actions undertaken by JICA

None

1-7 Progress of Actions undertaken by RDA

None

1-8 Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)

2 Problems (if any)

2-1. Develop guidelines for routine maintenance on bridge

2-1-1 Detail

JICA team is preparing draft guideline on Bridge Routine Maintenance. However, most of the bridge material for routine maintenance are not available in Zambia.

2-1-2. Cause

Routine maintenance was not yet realized in Zambia.

2-1-3. Action to be taken

Supplier was advised to provide maintenance material, so that RDA can start to outsource contractor for Bridge Routine Maintenance.

2-2. RDA Web site

2-2-1.Detail

JICA Team submitted draft the outline of TCP to RDA for Web site posting two month ago. However, posting was not acted upon.

2-2-2. Cause

RDA did not follow up until now.

2-2-3. Action to be taken

Counterpart will follow up to post JICA project on the Web site. Human Capital Department is in charge of posting Web site.

2-4 Roles of Responsible Persons/Organization (JICA, Gov. RDA)

None

3 Modification of the Project Implementation Plan

3-1 PO

None

3-2 Other modifications on detailed implementation plan

None

(Remarks: The amendment of R/D and PDM (title of the project, duration, project site(s), target group(s), implementation structure, overall goal, project purpose, outputs, activities, and input) should be authorized by JICA HDQs. If the project team deems it necessary to modify any part of R/D and PDM, the team may propose the draft.)

4 Preparation of RDA toward after completion of the Project

Utilization of knowledge transferred

II. Project Monitoring Sheet I & II as Attached

July 30.2015

Confirmed by:

RDA



Eng. William K Mulusa
(Project Manager)



Eng. Mubuyaeta Kapinda
(Project Coordinator)

JICA Team



Hideo NAGAO (Team Leader)

Project Monitoring Sheet I (Revision of Project Design Matrix)

Project Title: The Technical Cooperation Project for "The Bridge Maintenance Capacity Building Project in Zambia"

Implementing Agency: RDA

Target Group: Engineers in the Central Office and Regional Offices in RDA

Period of Project: Feb. 2015 - Jan. 2017 (2.0 years)


Project Site: All area under the jurisdiction of RDA

Model Site: None

Version 1

Dated 30, July, 2015

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
Overall Goal					
Bridge maintenance activities are regularly implemented by RDA.	1. The bridge maintenance is budgeted in Annual Work Plan. 2. Bridge maintenance activities are carried out.	Annual report in RDA.			
Project Purpose					
The institutional capacity of RDA is strengthened for bridge maintenance planning and operational management, which includes improvement of outsourcing contract management.	1. The number of bridges that are regularly maintained according to the developed guidelines etc. 2. The number of bridge repair conducted as planned 3. The prepared technical specifications are used to award outsourcing contract	Project Final Report	The importance of bridge maintenance remains high in The transport sector strategy		
Outputs					
1. RDA engineers understand the management cycle of routine maintenance and undertake supervision of routine maintenance activities..	1-1. Guidelines on bridge routine maintenance are developed 1-2. The level of understanding of the seminar participants 1-3. The level of understanding of participants in the on-the-job training of bridge routine maintenance	1-1. Developed Guidelines 1-2. Hearing of understanding of training 1-3. Hearing of understanding of on-the-job training	Financial resources for bridge maintenance shall be secured. RDA fills the vacancies in the bridge Unit		
2. RDA engineers utilize bridge condition inspection data for further investigation and planning of repair or replacement of bridges.	2-1. The bridge condition inspection data are reviewed.The number of reviewing inspection data are about 45 bridges.	2-1. Bridge Condition Inspection Data			
	2-2. Guidebook on bridge inspection is developed	2-2. Developed Guidebook			
	2-3. The level of understanding of participants in on-the-job training of bridge inspection.	2-3. Hearing of understanding of on-the-job training			
3. The knowledge on bridge repair technology of RDA engineers are enhanced and RDA engineers are able to prepare a bridge repair plan for pilot bridges using the data from condition inspection and Bridge Management System.	3-1. Bridge repair plans are developed for selected pilot bridges using bridge condition inspection data.	3-1. Bridge repair plan			
	3-2. Guidebook on bridge repair is developed.	3-2. Developed Guidebook			
	3-3. Accumulation of knowledge on types of repair technology	3-3. Training Report			
4. The capacity of RDA for contract management is improved in the field of routine maintenance and repair on bridges.	4-1. Technical specifications samples are produced for outsourcing contracts.	4-1. Developed samples			
	4-2. Outsourcing contracts are prepared with relevant technical specifications on bridge repair.	4-2.Contracts with technical specifications			

Activities	Inputs		Important Assumption
	The Japanese Side	The Zambia Side	
1. Enhancement of Routine Maintenance for Bridges 1-1. Develop guidelines for routine maintenance on bridges 1-2. Conduct seminars on conceptual framework of routine maintenance on bridges 1-3. Conduct on-the-job training for routine maintenance on bridges	1. Dispatch of Experts - Team Leader/Bridge Maintenance Management - Bridge Inspection - Bridge Repair - Bridge Routine Maintenance - Bridge Maintenance Outsourcing - Coordinator/Assistance Bridge Inspection and Training	1. Assignment of counterpart engineers to the project - Project Director - Project Manager - Project Coordinator - Counterparts	The data in BMS will be utilized for the project
2. Improvement of Bridge Condition Inspection 2-1 Review Bridge Condition Inspection Data 2-2 Develop a Guidebook for bridge inspection 2-3 Conduct on-the-job training for bridge condition inspection	2. Procurement of equipment Tools/materials supply for trainings	2. Regional Offices staff for training/seminars	
3. Improvement of Planning and Enhancement of Knowledge on Bridge Repair Technology 3-1 Develop an implementation plan of repair and/or replacement for selected bridges based on the condition inspection data and the data in the Bridge Management System 3-2 Develop a guidebook for bridge repair 3-3 Provide opportunities for counterparts to get exposed to bridge repair works through actual projects	3. Overseas training courses Two courses (Japan)	3. Office Facilities - Workspace	 <Issues and countermeasures>
4.5. Improvement of the Capacity of RDA for Contract Management 4-1 Develop contract templates and technical specifications (ex. Particular specification) required for bridge routine maintenance outsourcing 4-2 Prepare technical specifications of bridge repair contracts	4. Expenses for the dispatched experts, transport, accommodation and other expenses	4. Budget - Salary and allowances of the RDA counterpart officers - Other necessary expenses	

Project Title: The Bridge Maintenance Capacity Building Project in Zambia

Inputs		Plan	1st year				2nd year				Remarks	Monitoring		
			I	II	III	IV	I	II	III	IV		Issue	Solution	
Expert		Actual												
Team Leader/Bridge Maintenance Management		Plan												
		Actual												
Bridge Inspection		Plan												
		Actual												
Bridge Repair		Plan												
		Actual												
Bridge Routine Maintenance		Plan												
		Actual												
Bridge Maintenance Outsourcing		Plan												
		Actual												
Coordinator/Assistant of Bridge Inspection and Training		Plan												
		Actual												
Equipment		Plan												
Concrete rebound hammer		Actual												
Testing anvil for concrete rebound hammer		Plan												
		Actual												
Reinforced concrete detective radar(Radar type)		Plan												
		Actual												
Ultrasonic metal thickness gauge		Plan												
		Actual												
Portable Water Pressure washer		Plan												
		Actual												
Generator		Plan												
		Actual												
Training in Japan		Plan												
Training for Counterpart Personnel		Actual												
In-country/Third country Training		Plan												
		Actual												
Activities		Plan	2015				2016				Responsible Organization			
Sub-Activities		Actual	I	II	III	IV	I	II	III	IV	Japan	RDA	Achievements	Issue & Countermeasures
Output 1: Enhancement of Routine Maintenance for Bridges														
1.1 Develop guidelines for routine maintenance on bridge		Plan												
		Actual												
1.2 Conduct seminars on conceptual framework on bridge routine maintenance		Plan												
		Actual												
1.3 Conduct on-the-job training for bridge routine maintenance		Plan												
		Actual												
Output 2: Improvement of Bridge Condition Inspection														
2.1 Review bridge condition inspection data		Plan												
		Actual												
2.2 Develop a guidebook for bridge inspection		Plan												
		Actual												
2.3 Conduct on-the-job training for bridge inspection		Plan												
		Actual												
Output 3: Improvement of Planning and Enhancement of Knowledge on Bridge Repair Technology														
3.1 Develop an implementation plan of repair and/or replacement for selected bridges		Plan												
		Actual												
3.2 Develop a guidebook for bridge repair		Plan												
		Actual												
3.3 Provide opportunities for counterparts to get exposed to bridge repair works through actual projects		Plan												
		Actual												
Output 4: Improvement of the Capacity of RDA for Contract Management														
4.1 Develop Technical Specification samples		Plan												
		Actual												
4.2 Prepare technical specifications of bridge repair contracts		Plan												
		Actual												
Duration / Phasing		Plan												
		Actual												
Monitoring Plan		Plan	2015				2016				Remarks	Issue	Solution	
		Actual	I	II	III	IV	I	II	III	IV				
Monitoring														
Joint Coordinating Committee		Plan												
		Actual												
Set-up the Detailed Plan of Operation		Plan												
		Actual												
Submission of Monitoring Sheet		Plan												
		Actual												
Monitoring Mission from Japan		Plan												
		Actual												
Joint Monitoring		Plan												
		Actual												
Post Monitoring		Plan												
		Actual												
Reports/Documents														
Work Plan		Plan												
		Actual												
Project Progress Report		Plan												
		Actual												
Project Final Report		Plan												
		Actual												
Public Relations														
JICA Web Site		Plan												
		Actual												
RDA Web Site		Plan												
		Actual												

TO Representative of JICA Zambia OFFICE

PROJECT MONITORING SHEET

Project Title : The Bridge Maintenance Capacity Building Project in Zambia

Version of the Sheet: Ver. I (Term: Feb 16, 2015 - Mar 31, 2017)

Name: Hideo NAGAO

Title: Team Leader

Submission Date: Dec 14 , 2015



I. Summary

1 Progress

1-1 Progress of Inputs

1-1-1 Japanese side

- Dispatch of JICA Experts

Team Leader (Feb16-Mar 31, July18-Aug16, Nov11-Dec15)

Bridge Inspection (May 7- July 7, Sep 15- Oct 14)

Bridge Repair (July1-Aug31, Nov1-Dec15)

Bridge Routine Maintenance (Mar13-May31, July18-Aug16, Oct13-Dec14)

Bridge Maintenance Outsourcing (July18- Sep16, Nov2-Dec16)

Coordinator (Feb16-Mar31, July18-Aug16, Nov1-Dec15)

- Procurement of equipment

Projector, Copier machine, Desktop Computer, Laser Printer

Digital Camera, Laptop Computer, Video Recorder, Hard Hat, Safety Vest, Safety Belt, Global Positioning System (GPS), Binocular, Portable High Pressure Washer, Generator

Concrete Rebound Hammer, Testing Anvil, Reinforced Concrete Detective Radar, Distance Meter, Thickness Gauge

1-1-2 Zambia side

- Assignment of counterpart

Project Director

Project Manager

Project Coordinator

Counterparts (4 engineers)

- Office facilities

Workspace

1-2 Progress of Activities

- Output 1.

Develop Bridge Routine Maintenance Guideline

1st OJT on Bridge Routine Maintenance was held on Nov25-Nov26

2st OJT on Bridge Routine Maintenance was held on Dec2-Dec3

3st OJT on Bridge Routine Maintenance was held on Dec9-Dec10

- Output 2.

Bridge condition inspection was conducted by JICA Team from May to September

Review Bridge Condition Inspection Data

- Output 3

Develop Draft of Bridge Repair Guidebook.

- Output 4

Prepare sample of outsourcing contract for Bridge Routine Maintenance

1-3 Achievement of Output

- Approval of Work plan

- Conducted 1st Joint Coordinating Committee Meeting

- Submitted Monitoring Sheet, Ver 1,

- Purchased Equipment (Lot 1, Lot 2 and Lot3)

- Donated Equipment/Tools to RDA

- Conducted Bridge Condition Inspection for Reviewing of Bridge Inspection Data

- Submitted Report for Reviewing of Bridge Condition Inspection Data

- Submitted Draft of Bridge Repair Guidebook (1st and 2nd Draft)

- Outline of Project was published RDA web site

- Project news was updated JICA website

- Conducted OJT on Bridge Routine Maintenance (1st – 3rd)

- Conducted Market Survey for Bridge Repair Material in South Africa

- Prepared Outsourcing Contract for Pilot Project on Bridge Maintenance

Conducted Japan Training

- Gathered Information of Bridge Repair Technology in Japan.

1-4 Achievement of the Project Purpose

Ongoing

1-5 Changes of Risks and Actions for Mitigation

None

1-6 Progress of Actions undertaken by JICA

None

1-7 Progress of Actions undertaken by RDA

None

1-8 Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)

2 Problems (if any)

C/P can not support the project fully due to part time.

Budget release in RDA for OJT was delayed.

3 Modification of the Project Implementation Plan

3-1 PO

None

3-2 Other modifications on detailed implementation plan

None

(Remarks: The amendment of R/D and PDM (title of the project, duration, project site(s), target group(s), implementation structure, overall goal, project purpose, outputs, activities, and input) should be authorized by JICA HDQs. If the project team deems it necessary to modify any part of R/D and PDM, the team may propose the draft.)

4 Preparation of RDA toward after completion of the Project

Utilization of knowledge transferred

II. Project Monitoring Sheet I & II *as Attached*

Project Monitoring Sheet I (Revision of Project Design Matrix)

Project Title: The Technical Cooperation Project for "The Bridge Maintenance Capacity Building Project in Zambia"

Implementing Agency: RDA

Target Group: Engineers in the Central Office and Regional Offices in RDA

Period of Project: Feb. 2015 - Jan. 2017 (2.0 years)


Project Site: All area under the jurisdiction of RDA

Model Site: None

Version 1

Dated , Dec 14 , 2015

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
Overall Goal					
Bridge maintenance activities are regularly implemented by RDA.	1. The bridge maintenance is budgeted in Annual Work Plan. 2. Bridge maintenance activities are carried out.	Annual report in RDA.			
Project Purpose					
The institutional capacity of RDA is strengthened for bridge maintenance planning and operational management, which includes improvement of outsourcing contract management.	1. The number of bridges that are regularly maintained according to the developed guidelines etc. 2. The number of bridge repair conducted as planned 3. The prepared technical specifications are used to award outsourcing contract	Project Final Report	The importance of bridge maintenance remains high in The transport sector strategy		
Outputs					
1. RDA engineers understand the management cycle of routine maintenance and undertake supervision of routine maintenance activities..	1-1. Guidelines on bridge routine maintenance are developed 1-2. The level of understanding of the seminar participants 1-3. The level of understanding of participants in the on-the-job training of bridge routine maintenance	1-1. Developed Guidelines 1-2. Hearing of understanding of training 1-3. Hearing of understanding of on-the-job training	Financial resources for bridge maintenance shall be secured. RDA fills the vacancies in the bridge Unit	1st Seminar was held on Aug11,2015 1st,2nd,3rd OJT were conducted on Nov,Dec 2015	
2. RDA engineers utilize bridge condition inspection data for further investigation and planning of repair or replacement of bridges.	2-1. The bridge condition inspection data are reviewed.The number of reviewing inspection data are about 45 bridges. 2-2. Guidebook on bridge inspection is developed 2-3. The level of understanding of participants in on-the-job training of bridge inspection.	2-1. Bridge Condition Inspection Data 2-2. Developed Guidebook 2-3. Hearing of understanding of on-the-job training		Condition Inspection of 48 bridges were conducted by Expert. Bridge Inspection Report was submitted to RDA	
3. The knowledge on bridge repair technology of RDA engineers are enhanced and RDA engineers are able to prepare a bridge repair plan for pilot bridges using the data from condition inspection and Bridge Management System.	3-1. Bridge repair plans are developed for selected pilot bridges using bridge condition inspection data. 3-2. Guidebook on bridge repair is developed. 3-3. Accumulation of knowledge on types of repair technology	3-1. Bridge repair plan 3-2. Developed Guidebook 3-3. Training Report		1st batch of Japan Training for bridge repair technology was conducted in 2015. Five engineers attended	
4. The capacity of RDA for contract management is improved in the field of routine maintenance and repair on bridges.	4-1. Technical specifications samples are produced for outsourcing contracts. 4-2. Outsourcing contracts are prepared with relevant technical specifications on bridge repair.	4-1. Developed samples 4-2.Contracts with technical specifications		Outsourcing contract for Pilot project on bridge routine maintenance was produced by expert	

Activities	Inputs		Important Assumption
	The Japanese Side	The Zambia Side	
1. Enhancement of Routine Maintenance for Bridges 1-1. Develop guidelines for routine maintenance on bridges 1-2. Conduct seminars on conceptual framework of routine maintenance on bridges 1-3. Conduct on-the-job training for routine maintenance on bridges	1. Dispatch of Experts - Team Leader/Bridge Maintenance Management - Bridge Inspection - Bridge Repair - Bridge Routine Maintenance - Bridge Maintenance Outsourcing - Coordinator/Assistance Bridge Inspection and Training	1. Assignment of counterpart engineers to the project - Project Director - Project Manager - Project Coordinator - Counterparts	The data in BMS will be utilized for the project
2. Improvement of Bridge Condition Inspection 2-1 Review Bridge Condition Inspection Data 2-2 Develop a Guidebook for bridge inspection 2-3 Conduct on-the-job training for bridge condition inspection	2. Procurement of equipment Tools/materials supply for trainings	2. Regional Offices staff for training/seminars	
3. Improvement of Planning and Enhancement of Knowledge on Bridge Repair Technology 3-1 Develop an implementation plan of repair and/or replacement for selected bridges based on the condition inspection data and the data in the Bridge Management System 3-2 Develop a guidebook for bridge repair 3-3 Provide opportunities for counterparts to get exposed to bridge repair works through actual projects	3. Overseas training courses Two courses (Japan)	3. Office Facilities - Workspace	 <Issues and countermeasures>
4.5. Improvement of the Capacity of RDA for Contract Management 4-1 Develop contract templates and technical specifications (ex. Particular specification) required for bridge routine maintenance outsourcing 4-2 Prepare technical specifications of bridge repair contracts	4. Expenses for the dispatched experts, transport, accommodation and other expenses	4. Budget - Salary and allowances of the RDA counterpart officers - Other necessary expenses	

Project Title: The Bridge Maintenance Capacity Building Project in Zambia

Inputs		Plan	1st year (Feb 2015- Jan 2016)				2nd year (Feb 2016 - Jan 2017)				Remarks	Monitoring	
			Actual	I	II	III	IV	I	II	III		IV	Issue
Expert													
Team Leader/Bridge Maintenance Management		Plan											
		Actual	█		█		█						
Bridge Inspection		Plan											
		Actual	█	█	█	█	█	█	█	█			
Bridge Repair		Plan											
		Actual	█	█	█	█	█	█	█	█			
Bridge Routine Maintenance		Plan											
		Actual	█	█	█	█	█	█	█	█			
Bridge Maintenance Outsourcing		Plan											
		Actual	█	█	█	█	█	█	█	█			
Coordinator/Assistant of Bridge Inspection and Training		Plan											
		Actual	█	█	█	█	█	█	█	█			
Equipment													
Concrete rebound hammer		Plan											
		Actual		█	█	█							
Testing anvil for concrete rebound hammer		Plan											
		Actual		█	█	█							
Reinforced concrete detective radar(Radar type)		Plan											
		Actual		█	█	█							
Ultrasonic metal thickness gauge		Plan											
		Actual		█	█	█							
Distance Meter		Plan											
		Actual		█	█	█							
Portable Water Pressure washer		Plan											
		Actual	█										
Generator		Plan											
		Actual	█										
Training in Japan													
Training for Counterpart Personnel		Plan											
		Actual			█								
In-country/Third country Training		Plan											
		Actual											
Activities													
Sub-Activities													
Output 1: Enhancement of Routine Maintenance for Bridges													
1.1 Develop guidelines for routine maintenance on bridge		Plan											
		Actual	█	█	█	█							
1.2 Conduct seminars on conceptual framework on bridge routine maintenance		Plan											
		Actual		█	█								
1.3 Conduct on-the-job training for bridge routine maintenance		Plan											
		Actual			█	█							
Output 2: Improvement of Bridge Condition Inspection													
2.1 Review bridge condition inspection data		Plan											
		Actual		█	█	█							
2.2 Develop a guidebook for bridge inspection		Plan											
		Actual					█	█	█	█			
2.3 Conduct on-the-job training for bridge inspection		Plan											
		Actual					█	█					
Output 3: Improvement of Planning and Enhancement of Knowledge on Bridge Repair Technology													
3.1 Develop an implementation plan of repair and/or replacement for selected bridges		Plan											
		Actual		█	█	█							
3.2 Develop a guidebook for bridge repair		Plan											
		Actual		█	█	█							
3.3 Provide opportunities for counterparts to get exposed to bridge repair works through actual projects		Plan											
		Actual			█	█	█	█					
Output 4: Improvement of the Capacity of RDA for Contract Management													
4.1 Develop Technical Specification samples		Plan											
		Actual			█	█							
4.2 Prepare technical specifications of bridge repair contracts		Plan											
		Actual					█	█	█	█			
Duration / Phasing													
		Actual	█	█	█	█	█	█	█	█			
Monitoring Plan													
		Actual											
Monitoring													
Joint Coordinating Committee		Plan											
		Actual	█				█						
Set-up the Detailed Plan of Operation		Plan											
		Actual	█				█						
Submission of Monitoring Sheet		Plan											
		Actual	█				█						
Monitoring Mission from Japan		Plan											
		Actual											
Joint Monitoring		Plan											
		Actual											
Post Monitoring		Plan											
		Actual											
Reports/Documents													
Work Plan		Plan											
		Actual	█										
Project Progress Report		Plan											
		Actual					█						
Project Final Report		Plan											
		Actual											
Public Relations													
JICA Web Site		Plan											
		Actual	█	█	█	█	█	█	█	█			
RDA Web Site		Plan											
		Actual											

TO Representative of JICA Zambia OFFICE

PROJECT MONITORING SHEET

Project Title : The Bridge Maintenance Capacity Building Project in Zambia

Version of the Sheet: Ver. I (Term: Feb 16, 2015 - Mar 31, 2017)

Name: Hideo NAGAO

Title: Team Leader

Submission Date: Feb 18 , 2016

I. Summary

1 Progress

1-1 Progress of Inputs

1-1-1 Japanese side

- Dispatch of JICA Experts

Team Leader (Feb16-Mar 31, July18-Aug16, Nov11-Dec15, Jan24-Feb28)

Bridge Inspection (May 7- July 7, Sep 15- Oct 14, Jan24-Feb28)

Bridge Repair (July1-Aug31, Nov1-Dec15, Feb 2- Mar 31)

Bridge Routine Maintenance (Mar13-May31, July18-Aug16, Oct13-Dec14)

Bridge Maintenance Outsourcing (July18- Sep16, Nov2-Dec16, Jan22-Feb20)

Coordinator (Feb16-Mar31, July18-Aug16, Nov1-Dec15, Jan29-Feb28)

- Procurement of equipment

1-Projector, 1-Copier machine, 1-Desktop Computer, 1-Laser Printer

3-Digital Camera, 3-Laptop Computer, 1-Video Recorder, 30-Hard Hat, 30-Safety Vest, 30-Safety Belt, 4-Global Positioning System (GPS), 4-Binocular, 3-Portable High Pressure Washer, 3-Generator

1-Concrete Rebound Hammer, 1-Testing Anvil, 1-Reinforced Concrete Detective Radar, 4-Distance Meter, 1-Thickness Gauge

1-1-2 Zambia side

- Assignment of counterpart

Project Director

Project Manager

Project Coordinator

Counterparts (5engineers)

- Office facilities

Workspace

1-2 Progress of Activities

Output 1.

RDA engineers understand the management cycle of routine maintenance and undertake supervision of routine maintenance activities

Output2.

RDA engineers utilize bridge condition inspection data for further investigation and planning of repair or replacement of bridges.

Output 3.

The knowledge on bridge repair technology of RDA engineers are enhanced and RDA engineers are able to prepare a bridge repair plan for pilot bridges using the data from condition inspection and Bridge Management System.

Output 4.

The capacity of RDA for contract management is improved in the field of routine maintenance and repair on bridges

1-3 Achievement of Output

- **Approval of Work plan (Mar 20,2015)**
- **Conducted 1st Joint Coordinating Committee Meeting(Mar 20,2015)**
- **Submitted Monitoring Sheet, Ver 1,(Mar20,2015, July 30, 2015, Dec14, 2015, Feb18,2016)**
- **Purchased Equipment (Lot 1, Lot 2 and Lot3)(Sep15,2015)**
- **Donated Equipment/Tools to RDA (Nov30,2015)**
- **Conducted Bridge Condition Inspection for Reviewing of Bridge Inspection Data(May - June,2015)**
- **Submitted Report for Reviewing of Bridge Condition Inspection Data(Sep 23, 2015)**
- **Submitted Final Draft of Bridge Repair Guidebook (Feb 18, 2016)**
- **Conducted OJT on Bridge Routine Maintenance (1st – 3rd)**
 - 1st OJT on Bridge Routine Maintenance was held on Nov25-Nov26**
 - 2st OJT on Bridge Routine Maintenance was held on Dec2-Dec3**
 - 3st OJT on Bridge Routine Maintenance was held on Dec9-Dec10**
- **Conducted Market Survey for Bridge Repair Material in South Africa (Nov16-19,2015)**

- Prepared Outsourcing Contract for Pilot Project on Bridge Maintenance(Dec, 2015)
- Outline of Project was published RDA web site (May 2015)
- Project news was 4 times updated on JICA website(Mar – Dec, 2015)
- Conducted Japan Training (Sep26- Oct 9, 2015)
- Gathered Information of Bridge Repair Technology in Japan.(Oct, 2015)

1-4 Achievement of the Project Purpose

Ongoing

1-5 Changes of Risks and Actions for Mitigation

None

1-6 Progress of Actions undertaken by JICA

None

1-7 Progress of Actions undertaken by RDA

None

1-8 Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)

The election of president will be affected.

2. Problems (if any)

C/P can not support the project fully due to part time.

3. Modification of the Project Implementation Plan

3-1 PDM

Third Country Training (Philippines, South Africa)

3-2 PO

Assignment schedule of JICA Experts

On the Job Training on Bridge Inspection (2 times to 1 time)

Schedule of 3rd JCC (From December 2016 to January 2017)

3-3 Other modifications on detailed implementation plan

None

(Remarks: The amendment of R/D and PDM (title of the project, duration, project site(s), target group(s), implementation structure, overall goal, project purpose, outputs, activities, and input) should be authorized by JICA HDQs. If the project team deems it necessary to

modify any part of R/D and PDM, the team may propose the draft.)

4. Preparation of RDA toward after completion of the Project

Utilization of knowledge transferred

II. Project Monitoring Sheet I & II *as Attached*

Project Monitoring Sheet I (Revision of Project Design Matrix)

Project Title: The Technical Cooperation Project for "The Bridge Maintenance Capacity Building Project in Zambia"

Version 1

Implementing Agency: RDA

Dated , Feb 18 , 2016


Target Group: Engineers in the Central Office and Regional Offices in RDA

Period of Project: Feb. 2015 - Jan. 2017 (2.0 years)

Project Site: All area under the jurisdiction of RDA

Model Site: None

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
Overall Goal					
Bridge maintenance activities are regularly implemented by RDA.	1. The bridge maintenance is budgeted in Annual Work Plan. 2. Bridge maintenance activities are carried out.	Annual report in RDA.			
Project Purpose					
The institutional capacity of RDA is strengthened for bridge maintenance planning and operational management, which includes improvement of outsourcing contract management.	1. The number of bridges that are regularly maintained according to the developed guidelines etc. 2. The number of bridge repair conducted as planned 3. The prepared technical specifications are used to award outsourcing contract	Project Final Report	The importance of bridge maintenance remains high in The transport sector strategy		
Outputs					
1. RDA engineers understand the management cycle of routine maintenance and undertake supervision of routine maintenance activities..	1-1. Guidelines on bridge routine maintenance are developed 1-2. The level of understanding of the seminar participants 1-3. The level of understanding of participants in the on-the-job training of bridge routine maintenance	1-1. Developed Guidelines 1-2. Hearing of understanding of training 1-3. Hearing of understanding of on-the-job training	Financial resources for bridge maintenance shall be secured. RDA fills the vacancies in the bridge Unit	1st Seminar was held on Aug11,2015 1st,2nd,3rd OJT were conducted on Nov Dec 2015	
2. RDA engineers utilize bridge condition inspection data for further investigation and planning of repair or replacement of bridges.	2-1. The bridge condition inspection data are reviewed.The number of reviewing inspection data are about 53 bridges. 2-2. Guidebook on bridge inspection is developed 2-3. The level of understanding of participants in on-the-job training of bridge inspection.	2-1. Bridge Condition Inspection Data 2-2. Developed Guidebook 2-3. Hearing of understanding of on-the-job training		Condition Inspection of 53 bridges were conducted by Expert. Bridge Inspection Report was submitted to RDA	
3. The knowledge on bridge repair technology of RDA engineers are enhanced and RDA engineers are able to prepare a bridge repair plan for pilot bridges using the data from condition inspection and Bridge Management System.	3-1. Bridge repair plans are developed for selected pilot bridges using bridge condition inspection data. 3-2. Guidebook on bridge repair is developed. 3-3. Accumulation of knowledge on types of repair technology	3-1. Bridge repair plan 3-2. Developed Guidebook 3-3. Training Report		1st batch of Japan Training for bridge repair technology was conducted in 2015. Five engineers attended	
4. The capacity of RDA for contract management is improved in the field of routine maintenance and repair on bridges.	4-1. Technical specifications samples are produced for outsourcing contracts. 4-2. Outsourcing contracts are prepared with relevant technical specifications on bridge repair.	4-1. Developed samples 4-2.Contracts with technical specifications		Outsourcing contract for Pilot project on bridge routine maintenance was produced by expert	

Activities	Inputs		Important Assumption
	The Japanese Side	The Zambia Side	
1. Enhancement of Routine Maintenance for Bridges 1-1. Develop guidelines for routine maintenance on bridges 1-2. Conduct seminars on conceptual framework of routine maintenance on bridges 1-3. Conduct on-the-job training for routine maintenance on bridges	1. Dispatch of Experts - Team Leader/Bridge Maintenance Management - Bridge Inspection - Bridge Repair - Bridge Routine Maintenance - Bridge Maintenance Outsourcing - Coordinator/Assistance Bridge Inspection and Training	1. Assignment of counterpart engineers to the project - Project Director - Project Manager - Project Coordinator - Counterparts	The data in BMS will be utilized for the project
2. Improvement of Bridge Condition Inspection 2-1 Review Bridge Condition Inspection Data 2-2 Develop a Guidebook for bridge inspection 2-3 Conduct on-the-job training for bridge condition inspection	2. Procurement of equipment Tools/materials supply for trainings	2. Regional Offices staff for training/seminars	
3. Improvement of Planning and Enhancement of Knowledge on Bridge Repair Technology 3-1 Develop an implementation plan of repair and/or replacement for selected bridges based on the condition inspection data and the data in the Bridge Management System 3-2 Develop a guidebook for bridge repair 3-3 Provide opportunities for counterparts to get exposed to bridge repair works through actual projects	3. Overseas training courses Two courses (Japan) Third Country (Philippines, South Africa)	3. Office Facilities - Workspace	 <Issues and countermeasures>
4.5. Improvement of the Capacity of RDA for Contract Management 4-1 Develop contract templates and technical specifications (ex. Particular specification) required for bridge routine maintenance outsourcing 4-2 Prepare technical specifications of bridge repair contracts	4. Expenses for the dispatched experts, transport, accommodation and other expenses	4. Budget - Salary and allowances of the RDA counterpart officers - Other necessary expenses	

TO Representative of JICA Zambia OFFICE

PROJECT MONITORING SHEET

Project Title : The Bridge Maintenance Capacity Building Project in Zambia

Version of the Sheet: Ver. I (Term: Feb 16, 2015 - Mar 31, 2017)

Name: Hideo NAGAO

Title: Team Leader

Submission Date: June 30 , 2016



I. Summary

1 Progress

1-1 Progress of Inputs

1-1-1 Japanese side

- Dispatch of JICA Experts

Team Leader (Feb16-Mar 31, July18-Aug16, Nov11-Dec15, Jan24-Feb28,
June 1- July 31)

Bridge Inspection (May 7- July 7, Sep 15- Oct 14, Jan24-Feb28, June 22- July 31)

Bridge Repair (July1-Aug31, Nov1-Dec15, Feb 2- Mar 31, May 28- July 31)

Bridge Routine Maintenance (Mar13-May31, July18-Aug16, Oct13-Dec14,
May 10- July15)

Bridge Maintenance Outsourcing (July18- Sep16, Nov2-Dec16, Jan22-Feb20,
July 11- Aug 10)

Coordinator (Feb16-Mar31, July18-Aug16, Nov1-Dec15, Jan29-Feb28, June 1 –
June 30)

- Procurement of equipment

1-Projector, 1-Copier machine, 1-Desktop Computer, 1-Laser Printer

3-Digital Camera, 3-Laptop Computer, 1-Video Recorder, 30-Hard Hat, 30-Safety
Vest, 30-Safety Belt, 4-Global Positioning System (GPS), 4-Binocular,
3-Portable High Pressure Washer, 3-Generator

1-Concrete Rebound Hammer, 1-Testing Anvil, 1-Reinforced Concrete
Detective Radar, 4-Distance Meter, 1-Thickness Gauge

1-1-2 Zambia side

- Assignment of counterpart

Project Director

Project Manager

Project Coordinator

Counterparts (9 engineers)

- **Office facilities**
Workspace

1-2 Progress of Activities

Output 1.

RDA engineers understand the management cycle of routine maintenance and undertake supervision of routine maintenance activities.

On going

Output2.

RDA engineers utilize bridge condition inspection data for further investigation and planning of repair or replacement of bridges.

On going

Output 3.

The knowledge on bridge repair technology of RDA engineers are enhanced and RDA engineers are able to prepare a bridge repair plan for pilot bridges using the data from condition inspection and Bridge Management System.

On going

Output 4.

The capacity of RDA for contract management is improved in the field of routine maintenance and repair on bridges.

On going

1-3 Achievement of Output

- **Approval of Work plan (Mar 20,2015)**
- **Conducted 1st Joint Coordinating Committee Meeting(Mar 20,2015)**
- **Submitted Monitoring Sheet, Ver1,(Mar20.2015,July30.2015,Dec14.2015, Feb18.2016, June30.2016)**
- **Purchased Equipment (Lot 1,Lot 2 and Lot3)(Sep15,2015)**

- Donated Equipment/Tools to RDA (Nov30,2015)
- Conducted Bridge Condition Inspection for Reviewing of Bridge Inspection Data(May - June,2015)
- Submitted Report for Reviewing of Bridge Condition Inspection Data(Sep 23, 2015)
- Submitted Final Draft of Bridge Repair Guidebook (Feb 18, 2016)
- Conducted OJT on Bridge Routine Maintenance (1st – 3rd)
 - 1st OJT on Bridge Routine Maintenance was held on Nov25-Nov26
 - 2st OJT on Bridge Routine Maintenance was held on Dec2-Dec3
 - 3st OJT on Bridge Routine Maintenance was held on Dec9-Dec10
- Conducted Market Survey for Bridge Repair Material in South Africa (Nov16-19,2015)
- Prepared Outsourcing Contract for Pilot Project on Bridge Maintenance(Dec, 2015)
- Outline of Project was published RDA web site (May 2016)
- Project news was 5 times updated on JICA website(Mar 2015– June, 2016)
- Conducted Japan Training (1st Batch:Sep26- Oct 9, 2015. 2nd Batch: May16 - May 26)
- Gathered Information of Bridge Repair Technology in Japan.(Oct, 2015)
- Conduct Seminar on Bridge Routine Maintenance (1st:Aug1,2015. 2nd:June 14,2016)

1-4 Achievement of the Project Purpose

Ongoing

1-5 Changes of Risks and Actions for Mitigation

None

1-6 Progress of Actions undertaken by JICA

None

1-7 Progress of Actions undertaken by RDA

None

1-8 Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)

The election of president will be affected.

2. Problems (if any)

2.1 Part time participation by counterparts limited implementation of program as observed by non-achievement of following outcomes/objectives;

2.1.1 Budget preparation of travel allowance for RDA participants were delayed.

2.1.2 Pilot project procurement was delayed.

2.1.3 Some Counterparts in CO did not attend OJT on bridge routine maintenance.

2.1.4 BIV was not available on BIV operation practice/training.

2.1.5 First Dry run for OJT on Bridge Inspection was not successfully done.

2.1.6 Second Dry run for OJT on Bridge Inspection was delayed.

2.1.7 BIV was not maintained properly.

2.2 Pilot project on Bridge Routine Maintenance was not completed within the project.

2.3 Working space is small.

3. Modification of the Project Implementation Plan

3-1 PDM

Additional training - Third Country Training (Philippines, South Africa)

3-2 PO

Assignment schedule of JICA Experts.

Schedule of 3rd JCC (From December 2016 to January 2017)

3-3 Other modifications on detailed implementation plan

None

(Remarks: The amendment of R/D and PDM (title of the project, duration, project site(s), target group(s), implementation structure, overall goal, project purpose, outputs, activities, and input) should be authorized by JICA HDQs. If the project team deems it necessary to modify any part of R/D and PDM, the team may propose the draft.)

4. Preparation of RDA toward after completion of the Project

Utilization of knowledge transferred

5. Recommendation

Bridge Repair project should be implemented as much as possible by RDA for technical transfer of bridge repair technology.

II. Project Monitoring Sheet I & II *as Attached*

Project Monitoring Sheet I (Revision of Project Design Matrix)

Project Title: The Technical Cooperation Project for "The Bridge Maintenance Capacity Building Project in Zambia"

Version 1

Implementing Agency: RDA

Dated , June 30, 2016

Target Group: Engineers in the Central Office and Regional Offices in RDA

Period of Project: Feb. 2015 - Jan. 2017 (2.0 years)

Project Site: All area under the jurisdiction of RDA

Model Site: None

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
Overall Goal Bridge maintenance activities are regularly implemented by RDA.	1. The bridge maintenance is budgeted in Annual Work Plan. 2. Bridge maintenance activities are carried out.	Annual report in RDA.			
Project Purpose The institutional capacity of RDA is strengthened for bridge maintenance planning and operational management, which includes improvement of outsourcing contract management.	1. The number of bridges that are regularly maintained according to the developed guidelines etc. 2. The number of bridge repair conducted as planned 3. The prepared technical specifications are used to award outsourcing contract	Project Final Report	The importance of bridge maintenance remains high in The transport sector strategy		
Outputs 1. RDA engineers understand the management cycle of routine maintenance and undertake supervision of routine maintenance activities..	1-1. Guidelines on bridge routine maintenance are developed 1-2. The level of understanding of the seminar participants 1-3. The level of understanding of participants in the on-the-job training of bridge routine maintenance	1-1. Developed Guidelines 1-2. Hearing of understanding of training participants 1-3. Hearing of understanding of on-the-job training	Financial resources for bridge maintenance shall be secured. RDA fills the vacancies in the bridge Unit	1st Seminar was held on Aug11,2015. 2nd Seminar was held on June 14,2016. 1st,2nd,3rd OJT were conducted on Nov,Dec 2015.	
2. RDA engineers utilize bridge condition inspection data for further investigation and planning of repair or replacement of bridges.	2-1. The bridge condition inspection data are reviewed.The number of reviewing inspection data are about 53 bridges. 2-2. Guidebook on bridge inspection is developed 2-3. The level of understanding of participants in on-the-job training of bridge inspection.	2-1. Bridge Condition Inspection Data 2-2. Developed Guidebook 2-3. Hearing of understanding of on-the-job training		Condition Inspection of 53 bridges were conducted by Expert. Bridge Inspection Report was submitted to RDA	
3. The knowledge on bridge repair technology of RDA engineers are enhanced and RDA engineers are able to prepare a bridge repair plan for pilot bridges using the data from condition inspection and Bridge Management System.	3-1. Bridge repair plans are developed for selected pilot bridges using bridge condition inspection data. 3-2. Guidebook on bridge repair is developed. 3-3. Accumulation of knowledge on types of repair technology	3-1. Bridge repair plan 3-2. Developed Guidebook 3-3. Training Report		Final Draft guidebook was completed 1st batch,2nd batch of Japan Training for bridge repair technology were carried out in 2015,2016. Ten engineers attended	

4. The capacity of RDA for contract management is improved in the field of routine maintenance and repair on bridges.	4-1. Technical specifications samples are produced for outsourcing contracts.	4-1. Developed samples	Outsourcing contract for Pilot project on bridge routine maintenance was produced by expert
	4-2. Outsourcing contracts are prepared with relevant technical specifications on bridge repair.	4-2. Contracts with technical specifications	

Activities	Inputs		Important Assumption
	The Japanese Side	The Zambia Side	
1. Enhancement of Routine Maintenance for Bridges 1-1. Develop guidelines for routine maintenance on bridges 1-2. Conduct seminars on conceptual framework of routine maintenance on bridges 1-3. Conduct on-the-job training for routine maintenance on bridges	1. Dispatch of Experts - Team Leader/Bridge Maintenance Management - Bridge Inspection - Bridge Repair - Bridge Routine Maintenance - Bridge Maintenance Outsourcing - Coordinator/Assistance Bridge Inspection and Training	1. Assignment of counterpart engineers to the project - Project Director - Project Manager - Project Coordinator - Counterparts	The data in BMS will be utilized for the project
2. Improvement of Bridge Condition Inspection 2-1 Review Bridge Condition Inspection Data 2-2 Develop a Guidebook for bridge inspection 2-3 Conduct on-the-job training for bridge condition inspection	2. Procurement of equipment Tools/materials supply for trainings	2. Regional Offices staff for training/seminars	
3. Improvement of Planning and Enhancement of Knowledge on Bridge Repair Technology 3-1 Develop an implementation plan of repair and/or replacement for selected bridges based on the condition inspection data and the data in the Bridge Management System 3-2 Develop a guidebook for bridge repair 3-3 Provide opportunities for counterparts to get exposed to bridge repair works through actual projects	3. Overseas training courses Two courses (Japan) Third Country (Philippines, South Africa)	3. Office Facilities - Workspace	<Issues and countermeasures>
4.5. Improvement of the Capacity of RDA for Contract Management 4-1 Develop contract templates and technical specifications (ex. Particular specification) required for bridge routine maintenance outsourcing 4-2 Prepare technical specifications of bridge repair contracts	4. Expenses for the dispatched experts, transport, accommodation and other expenses	4. Budget - Salary and allowances of the RDA counterpart officers - Other necessary expenses	

Project Title: The Bridge Maintenance Capacity Building Project in Zambia

Inputs		Plan	1st year (Feb 2015- Jan 2016)												2nd year (Feb 2016 - Jan 2017)												Remarks	Monitoring	
			I		II		III		IV		I		II		III		IV		Issue	Solution									
		Actual	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan			
Expert																													
Team Leader/Bridge Maintenance Management		Plan																											
		Actual																											
Bridge Inspection		Plan																											
		Actual																											
Bridge Repair		Plan																											
		Actual																											
Bridge Routine Maintenance		Plan																											
		Actual																											
Bridge Maintenance Outsourcing		Plan																											
		Actual																											
Coordinator/Assistant of Bridge Inspection and Training		Plan																											
		Actual																											
Equipment																													
Concrete rebound hammer		Plan																											
		Actual																											
Testing anvil for concrete rebound hammer		Plan																											
		Actual																											
Reinforced concrete detective radar(Radar type)		Plan																											
		Actual																											
Ultrasonic metal thickness gauge		Plan																											
		Actual																											
Distance Meter		Plan																											
		Actual																											
Portable Water Pressure washer		Plan																											
		Actual																											
Generator		Plan																											
		Actual																											
Training in Japan																													
Training for Counterpart Personnel		Plan																											
		Actual																											
In-country/Third country Training																													
Third country Training in the Philippines/South Africa		Plan																											
		Actual																											
Activities																													
Sub-Activities		Plan																											
		Actual																											
Output 1: Enhancement of Routine Maintenance for Bridges																													
1.1 Develop guidelines for routine maintenance on bridge		Plan																											
		Actual																											
1.2 Conduct seminars on conceptual framework on bridge routine maintenance		Plan																											
		Actual																											
1.3 Conduct on-the-job training for bridge routine maintenance		Plan																											
		Actual																											
Output 2: Improvement of Bridge Condition Inspection																													
2.1 Review bridge condition inspection data		Plan																											
		Actual																											
2.2 Develop a guidebook for bridge inspection		Plan																											
		Actual																											
2.3 Conduct on-the-job training for bridge inspection		Plan																											
		Actual																											
Output 3: Improvement of Planning and Enhancement of Knowledge on Bridge Repair Technology																													
3.1 Develop an implementation plan of repair and/or replacement for selected bridges		Plan																											
		Actual																											
3.2 Develop a guidebook for bridge repair		Plan																											
		Actual																											
3.3 Provide opportunities for counterparts to get exposed to bridge repair works through actual projects		Plan																											
		Actual																											
Output 4: Improvement of the Capacity of RDA for Contract Management																													
4.1 Develop Technical Specification samples		Plan																											
		Actual																											
4.2 Prepare technical specifications of bridge repair contracts		Plan																											
		Actual																											
Duration / Phasing		Plan																											
		Actual																											
Monitoring Plan																													
		Plan																											
Monitoring		Actual																											
Joint Coordinating Committee		Plan																											
		Actual																											
Set-up the Detailed Plan of Operation		Plan																											
		Actual																											
Submission of Monitoring Sheet		Plan																											
		Actual																											
Monitoring Mission from Japan		Plan																											
		Actual																											
Joint Monitoring		Plan																											
		Actual																											
Post Monitoring		Plan																											
		Actual																											
Reports/Documents																													
Work Plan		Plan																											
		Actual																											
Project Progress Report		Plan																											
		Actual																											
Project Final Report																													

TO Representative of JICA Zambia OFFICE

PROJECT MONITORING SHEET

Project Title : The Bridge Maintenance Capacity Building Project in Zambia

Version of the Sheet: Ver.II (Term: Feb 16, 2015 – Aug 31, 2017)

Name: Hideo NAGAO

Title: Team Leader

Submission Date: February 1, 2017

I. Summary

1 Progress

1-1 Progress of Inputs

1-1-1 Japanese side

- Dispatch of JICA Experts

Team Leader (Feb16-Mar 31, July18-Aug16, Nov11-Dec15, Jan24-Feb28, June 1- July 31, Oct. 4-31, Jan 5-Feb 5, 2017)

Bridge Inspection (May 7- July 7, Sep 15- Oct 14, Jan24-Feb28, June 22- July 31, Sep 30 – Oct 31)

Bridge Repair (July1-Aug31, Nov1-Dec15, Feb 2- Mar 31, May 28- July 31, Aug 17- 25)

Bridge Routine Maintenance (Mar13-May31, July18-Aug16, Oct13-Dec14, May 10- July15, Aug 27-Sep 28, Oct 24-Nov 25)

Bridge Maintenance Outsourcing (July18- Sep16, Nov2-Dec16, Jan22-Feb20, July 12- Aug 10, Sep 24 – Oct 30, Jan 5 – Feb 4, 2017)

Coordinator (Feb16-Mar31, July18-Aug16, Nov1-Dec15, Jan29-Feb28, June 1 – June 30, Sep 30 – Oct 28, Jan 5 – Feb 5, 2017)

Bridge Routine Maintenance (Short-term expert) (June 5 – 17)

Monitoring/Evaluation (Jan 25 – Feb 5, 2017)

- Procurement of equipment

1-Projector, 1-Copier machine, 1-Desktop Computer, 1-Laser Printer

3-Digital Camera, 3-Laptop Computer, 1-Video Recorder, 30-Hard Hat, 30-Safety Vest, 30-Safety Belt, 4-Global Positioning System (GPS), 4-Binocular, 3-Portable High Pressure Washer, 3-Generator

1-Concrete Rebound Hammer, 1-Testing Anvil, 1-Reinforced Concrete Detective Radar, 4-Distance Meter, 1-Thickness Gauge

1-1-2 Zambia side

- **Assignment of counterpart**
 - Project Director**
 - Project Manager**
 - Project Coordinator**
 - Counterparts (9 engineers)**
- **Office facilities**
 - Workspace**

1-2 Progress of Activities

Output 1.

RDA engineers understand the management cycle of routine maintenance and undertake supervision of routine maintenance activities.

On going

Output2.

RDA engineers utilize bridge condition inspection data for further investigation and planning of repair or replacement of bridges.

Completed

Output 3.

The knowledge on bridge repair technology of RDA engineers are enhanced and RDA engineers are able to prepare a bridge repair plan for pilot bridges using the data from condition inspection and Bridge Management System.

Completed

Output 4.

The capacity of RDA for contract management is improved in the field of routine maintenance and repair on bridges.

Completed

1-3 Achievement of Output

- Approval of Work plan (Mar 20,2015)
- Conducted 1st Joint Coordinating Committee Meeting(Mar 20,2015)
- Submitted Monitoring Sheet, Ver1,(Mar20.2015,July30.2015,Dec14.2015, Feb18.2016, June30.2016, Feb 1. 2017)
- Purchased Equipment (Lot 1,Lot 2 and Lot3)(Sep15,2015)
- Donated Equipment/Tools to RDA (Nov30,2015)
- Conducted Bridge Condition Inspection for Reviewing of Bridge Inspection Data(May – June,2015)
- Submitted Report for Reviewing of Bridge Condition Inspection Data(Sep 23, 2015)
- Conducted OJT on Bridge Routine Maintenance (1st – 3rd) (Nov –Dec, 2015)
 - 1st OJT on Bridge Routine Maintenance was held on Nov25-Nov26
 - 2st OJT on Bridge Routine Maintenance was held on Dec2-Dec3
 - 3st OJT on Bridge Routine Maintenance was held on Dec9-Dec10
- Conducted Market Survey for Bridge Repair Material in South Africa (Nov16-19,2015)
- Prepared Outsourcing Contract for Pilot Project on Bridge Maintenance(Dec 2015)
- Approval of 2nd term Work plan (Feb 18,2016)
- Conducted 2nd Joint Coordinating Committee Meeting(Feb 18,2016)
- Submitted Final Draft of Bridge Repair Guidebook (Feb 18, 2016)
- Outline of Project was published RDA web site (May 2016)
- Project news was 7 times updated on JICA website(Mar 2015– January 2017)
- Conducted Japan Training (1st Batch: Sep26- Oct 9, 2015. 2nd Batch: May16 - May 26.)
- Gathered Information of Bridge Repair Technology in Japan.(Oct 2015)
- Conduct Seminar on Bridge Routine Maintenance (1st:Aug1,2015. 2nd:June 14,2016)
- Conducted OJT on Bridge Inspection (1st – 2nd) (July – Oct 2016)
 - 1st OJT on Bridge Inspection was held on July 26-July 28
 - 2st OJT on Bridge Inspection was held on Oct 11- Oct 13
- Conducted Training Courses in the 3rd country; South Africa in July 2016 and in the Philippines in Aug 2016.
- Submitted the Final Draft of a Guidebook on Bridge Inspection to the 4th TWG in Oct 28, 2016.

- Submitted Final Draft of the Guidelines for Bridge Routine Maintenance to the 4th TWG in Oct 28, 2016.
- Submitted the Final Draft of a Guidebook on Bridge Inspection to the 3rd JCC in Feb 1, 2017.
- Submitted Final Draft of the Guidelines for Bridge Routine Maintenance to the 3rd JCC in Feb 1, 2017.

1-4 Achievement of the Project Purpose

Ongoing

1-5 Changes of Risks and Actions for Mitigation

Due to the delay of the process in RDA for outsourcing a contract on pilot project on bridge routine maintenance funded by RDA, the project activities had delayed six months. In order to accommodate the rescheduled project activities, the project duration was extended for six months, until August 2017.

1-6 Progress of Actions undertaken by JICA

None

1-7 Progress of Actions undertaken by RDA

None

1-8 Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)

None

2. Problems (if any)

2.1 Procurement of Pilot project on bridge routine maintenance was delayed.

2.2 Advance payment of Pilot project is delayed.

2.3 Pilot project was not completed within the project.

2.4 Working space is small.

3. Modification of the Project Implementation Plan

3-1 PDM

- Additional training - Third Country Training (Philippines, South Africa)
- Extension of the duration of the Project; two (2) years and six (6) months, to accommodate the rescheduled project activities due to the delay of the Pilot Project on Bridge Routine Maintenance funded by RDA.

- Revision of Activity 1-3 to assist the implementation of pilot project for Bridge routine maintenance.
- An additional training course in Japan to be conducted in May 2017
- Addition of an expert on Monitoring/Evaluation

3-2 PO

Assignment schedule of JICA Experts.

Extension of the duration of the project and rescheduling the related project activities

3-3 Other modifications on detailed implementation plan

None

(Remarks: The amendment of R/D and PDM (title of the project, duration, project site(s), target group(s), implementation structure, overall goal, project purpose, outputs, activities, and input) should be authorized by JICA HDQs. If the project team deems it necessary to modify any part of R/D and PDM, the team may propose the draft.)

4. Preparation of RDA toward after completion of the Project

Utilization of knowledge transferred

5. Recommendation

- Bridge Repair project should be implemented as much as possible by RDA for technical transfer of bridge repair technology.
- Pilot Project should be implemented as planned by RDA for technology transfer of Routine Maintenance on Bridge for the extended period of the Project.

II. Project Monitoring Sheet I & II *as Attached*

III. Index Matrix **As attached**

Project Monitoring Sheet I (Revision of Project Design Matrix)

Project Title: The Technical Cooperation Project for "The Bridge Maintenance Capacity Building Project in Zambia"

Version 2

Implementing Agency: RDA

Dated February 1, 2017

Target Group: Engineers in the Headquarters Office and Regional Offices in RDA


Period of Project: Feb. 2015 - Aug. 2017 (2.6 years)

Project Site: All area under the jurisdiction of RDA

Model Site: None

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
Overall Goal					
Bridge maintenance activities are regularly implemented by RDA.	1. The bridge maintenance is budgeted in Annual Work Plan. 2. Bridge maintenance activities are carried out.	Annual report in RDA.			
Project Purpose					
The institutional capacity of RDA is strengthened for bridge maintenance planning and operational management, which includes improvement of outsourcing contract management.	1. The number of bridges that are regularly maintained according to the developed guidelines etc. 2. The number of bridge repair conducted as planned 3. The prepared technical specifications are used to award outsourcing contract	Project Final Report	The importance of bridge maintenance remains high in The transport sector strategy		
Outputs					
1. RDA engineers understand the management cycle of routine maintenance and undertake supervision of routine maintenance activities..	1-1. Guidelines on bridge routine maintenance are developed 1-2. The level of understanding of the seminar participants 1-3. The level of understanding of participants in the on-the-job training of bridge routine maintenance	1-1. Developed Guidelines 1-2. Hearing of understanding of training 1-3. Hearing of understanding of on-the-job training	Financial resources for bridge maintenance shall be secured. RDA fills the vacancies in the bridge Unit	Final Draft of guidelines on routine maintenance was submitted for approval of JCC on Feb 2016. 1st Seminar was held on August 11, 2015. 2nd Seminar was held on June 14, 2016. 1st, 2nd, 3rd OJT were conducted on Nov, Dec 2015.	
2. RDA engineers utilize bridge condition inspection data for further investigation and planning of repair or replacement of bridges.	2-1. The bridge condition inspection data are reviewed. The number of reviewing inspection data are about 53 bridges. 2-2. Guidebook on bridge inspection is developed 2-3. The level of understanding of participants in on-the-job training of bridge inspection.	2-1. Bridge Condition Inspection Data 2-2. Developed Guidebook 2-3. Hearing of understanding of on-the-job training		Condition Inspection of 53 bridges were conducted by Expert. Bridge Inspection Report was submitted to RDA Final Draft of Guidebook on Bridge inspection was submitted for approval of JCC on Feb 2016. 1st and 2nd OJT were conducted in July & Oct in 2016.	
3. The knowledge on bridge repair technology of RDA engineers are enhanced and RDA engineers are able to prepare a bridge repair plan for pilot bridges using the data from condition inspection and Bridge Management System.	3-1. Bridge repair plans are developed for selected pilot bridges using bridge condition inspection data. 3-2. Guidebook on bridge repair is developed. 3-3. Accumulation of knowledge on types of repair technology	3-1. Bridge repair plan 3-2. Developed Guidebook 3-3. Training Report		Bridge repair plan were prepared by expert. 4 bridges from 19 were selected for pilot project for repair. Final Draft guidebook on bridge repair was approved by 2nd JCC. 1st batch, 2nd batch of Japan Training for bridge repair technology were carried out in 2015, 2016. Ten (10) engineers attended. Third country training were carried out in the Philippines and in South Africa in July and August in 2016. Total of five (5) engineers attended.	

4. The capacity of RDA for contract management is improved in the field of routine maintenance and repair on bridges.	4-1. Technical specifications samples are produced for outsourcing contracts.	4-1. Developed samples		Outsourcing contract for Pilot project on bridge routine maintenance was produced by expert
	4-2. Outsourcing contracts are prepared with relevant technical specifications on bridge repair.	4-2. Contracts with technical specifications		Samples of contract with technical specification on bridge repair was produced by expert

Activities	Inputs		Important Assumption
	The Japanese Side	The Zambia Side	The data in BMS will be utilized for the project
1. Enhancement of Routine Maintenance for Bridges 1-1 Develop guidelines for routine maintenance on bridges Conduct seminars on conceptual framework of routine maintenance on bridges 1-2 Conduct on-the-job training and to assist implementation of pilot project for bridge routine maintenance	1. Dispatch of Experts - Team Leader/Bridge Maintenance Management - Bridge Inspection - Bridge Repair - Bridge Routine Maintenance - Bridge Maintenance Outsourcing - Coordinator/Assistance Bridge Inspection and Training - Monitoring/Evaluation	1. Assignment of counterpart engineers to the project - Project Director - Project Manager - Project Coordinator - Counterparts	 <Issues and countermeasures>
2. Improvement of Bridge Condition Inspection 2-1 Review Bridge Condition Inspection 2-2 Develop a Guidebook for bridge inspection 2-3 Conduct on-the-job training for bridge condition inspection	2. Procurement of equipment Tools/materials supply for trainings	2. Regional Offices staff for training/seminars	
3. Improvement of Planning and Enhancement of Knowledge on Bridge Repair Technology 3-1 Develop an implementation plan of repair and/or replacement for selected bridges based on the condition inspection data and the data in the Bridge Management System 3-2 Develop a guidebook for bridge repair 3-3 Provide opportunities for counterparts to get exposed to bridge repair works through actual projects	3. Overseas training courses Three courses (Japan) Third Country (the Philippines, South Africa)	3. Office Facilities - Workspace	
4. Improvement of the Capacity of RDA for Contract Management 4-1 Develop contract templates and technical specifications (ex. Particular specification) required for bridge routine maintenance outsourcing 4-2 Prepare technical specifications of bridge repair contracts	4. Expenses for the dispatched experts, transport, accommodation and other expenses	4. Budget - Salary and allowances of the RDA counterpart officers - Other necessary expenses	

TO Representative of JICA Zambia OFFICE

PROJECT MONITORING SHEET

Project Title : The Bridge Maintenance Capacity Building Project in ZambiaVersion of the Sheet: Ver.II (Term: Feb 16, 2015 – Aug 31, 2017)Name: Hideo NAGAOTitle: Team LeaderSubmission Date: July 31, 2017**I. Summary****1 Progress****1-1 Progress of Inputs****1-1-1 Japanese side****- Dispatch of JICA Experts**

Team Leader (Feb 16-Mar 31, July 18-Aug 16, Nov 11-Dec 15, 2015. Jan 24-Feb 28, June 1-July 31, Oct 4-31, 2016. Jan 5-Feb 5, Apr 5-Apr 30, June 8- June 30, July 23-Aug21, 2017)

Bridge Inspection (May 7-July 7, Sep 15-Oct 14, 2015. Jan 24-Feb 28, June 22-July 31, Sep 30-Oct 31, 2016)

Bridge Repair (July1-Aug31, Nov1-Dec15, 2015. Feb 2-Mar 31, May 28-July 31, Aug 17-25, 2016)

Bridge Routine Maintenance (Mar 13-May 31, July 18-Aug 16, Oct 13-Dec 14, 2015. May 10-July15, Aug 27-Sep 28, Oct 24-Nov 25, 2016. Feb 12-Mar 13, Apr 17-May 14, June 19-Aug 9, 2017)

Bridge Maintenance Outsourcing (July 18-Sep 16, Nov 2-Dec 16, 2015

Jan 22-Feb 20, July 12- Aug 10, Sep 24-Oct 30, 2016. Jan 5-Feb 4, 2017)

Coordinator (Feb 16-Mar 31, July 18-Aug 16, Nov 1-Dec 15, 2015. Jan 29-Feb 28, June 1-30, Sep 30-Oct 28, 2016. Jan 6- Feb 5, Apr 4-30, July 19- Aug 22, 2017)

Bridge Routine Maintenance (June 5-17, 2016)

Monitoring/Evaluation (Jan 25-Feb 5, Aug 1-10, 2017)

- Procurement of equipment

1-Projector, 1-Copier machine, 1-Desktop Computer, 1-Laser Printer

3-Digital Camera, 3-Laptop Computer, 1-Video Recorder, 30-Hard Hat, 30-Safety Vest, 30-Safety Belt, 4-Global Positioning System (GPS), 4-Binocular, 3-Portable High Pressure Washer, 3-Generator

1-Concrete Rebound Hammer, 1-Testing Anvil, 1-Reinforced Concrete Detective Radar, 4-Distance Meter, 1-Metal Thickness Gauge, 4-paint Thickness

Gauge

1-1-2 Zambia side

- **Assignment of counterpart**
 - Project Director**
 - Project Manager**
 - Project Coordinator**
 - Counterparts (14 engineers)**
- **Office facilities**
 - Workspace**

1-2 Progress of Activities

- **Approval of Work plan (Mar 20,2015)**
- **Conducted 1st Joint Coordinating Committee Meeting(Mar 20,2015)**
- **Submitted Monitoring Sheet, Ver1,(Mar20.2015,July30.2015,Dec14.2015, Feb18.2016, June30.2016, Feb 1. 2017)**
- **Purchased Equipment (Lot 1, Lot 2 and Lot3)(Sep15,2015)**
- **Donated Equipment/Tools to RDA (Nov30,2015)**
- **Conducted Bridge Condition Inspection for Reviewing of Bridge Inspection Data(May – June,2015)**
- **Submitted Report for Reviewing of Bridge Condition Inspection Data(Sep 23, 2015)**
- **Conducted OJT on Bridge Routine Maintenance (1st – 3rd) (Nov –Dec, 2015)**
 - 1st OJT on Bridge Routine Maintenance was held on Nov25-Nov26**
 - 2st OJT on Bridge Routine Maintenance was held on Dec2-Dec3**
 - 3st OJT on Bridge Routine Maintenance was held on Dec9-Dec10**
- **Conducted Market Survey for Bridge Repair Material in South Africa (Nov16-19,2015)**
- **Provided Outsourcing Contract for Pilot Project on Bridge Maintenance(Dec 2015)**
- **Approval of 2nd term Work plan (Feb 18,2016)**
- **Conducted 2nd Joint Coordinating Committee Meeting(Feb 18,2016)**
- **Submitted Final Draft of Bridge Repair Guidebook to the 2nd JCC (Feb 1, 2016)**
- **Outline of Project was published RDA web site (May 2016)**
- **Project news was 9 times updated on JICA website(Mar 2015-August 2017)**
- **Conducted Japan Training (1st Batch: Sep26- Oct 9, 2015. 2nd Batch: May16 -**

26. 2016, May 9- 20, 2017)

- Gathered Information of Bridge Repair Technology in Japan.(Oct 2015)
- Conducted Seminar on Bridge Routine Maintenance (1st:Aug1,2015. 2nd:June 14,2016)
- Conducted OJT on Bridge Inspection (1st – 2nd) (July – Oct 2016)
 - 1st OJT on Bridge Inspection was held on July 26-July 28
 - 2st OJT on Bridge Inspection was held on Oct 11- Oct 13
- Conducted Training Courses in the 3rd country; South Africa on July 2016 and in the Philippines on Aug 2016.
- Submitted the Final Draft of a Guidebook on Bridge Inspection to the 4th TWG (Oct 28, 2016.)
- Submitted Final Draft of the Guidelines for Bridge Routine Maintenance to the 4th TWG (Oct 28, 2016.)
- Submitted the Final Draft of a Guidebook on Bridge Inspection to the 3rd JCC (Feb 1, 2017.)
- Submitted Final Draft of the Guidelines for Bridge Routine Maintenance to the 3rd JCC (Feb 1, 2017.)
- Provided Outsourcing Contract for Pilot Project on Bridge Repair (Feb 1, 2017)
- Conducted 3rd Joint Coordinating Committee Meeting(Feb 1, 2017)
- Submitted Annual Progress Report (Feb 1, 2017)
- Approval of 3rd term Work plan (Feb 1, 2017)
- Conducted Field training on Bridge Routine maintenance (1st:Feb 22-23, 2nd:Apr 26-27, 3rd:July 6-7, 2017)
- Conducted 4th Joint Coordinating Committee Meeting(Aug 9, 2017)

Output 1.

RDA engineers understand the management cycle of routine maintenance and undertake supervision of routine maintenance activities.

Completed

Output2.

RDA engineers utilize bridge condition inspection data for further investigation and planning of repair or replacement of bridges.

Completed

Output 3.

The knowledge on bridge repair technology of RDA engineers are enhanced and RDA engineers are able to prepare a bridge repair plan for pilot bridges using the data from condition inspection and Bridge Management System.

Completed

Output 4.

The capacity of RDA for contract management is improved in the field of routine maintenance and repair on bridges.

Completed

1-4 Achievement of the Project Purpose

Project Purpose was achieved.

1-5 Changes of Risks and Actions for Mitigation

Due to the delay of the process in RDA for outsourcing a contract on pilot project on bridge routine maintenance funded by RDA, the project activities had delayed six months. In order to accommodate the rescheduled project activities, the project duration was extended for six months, until August 2017.

1-6 Progress of Actions undertaken by JICA

None

1-7 Progress of Actions undertaken by RDA

None

1-8 Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)

None

2. Problems (if any)

2.1 Procurement of Pilot project on bridge routine maintenance was delayed.

2.2 Advance payment and partial payment of Pilot project was delayed.

2.3 Pilot project was not completed within the project.

2.4 Working space is small.

3. Modification of the Project Implementation Plan

3-1 PDM

- Additional training - Third Country Training (Philippines, South Africa)
- Extension of the duration of the Project; two (2) years and six (6) months, to accommodate the rescheduled project activities due to the delay of the Pilot Project on Bridge Routine Maintenance funded by RDA.
- Revision of Activity 1-3 to assist the implementation of pilot project for Bridge routine maintenance.
- An additional training course in Japan to be conducted in May 2017
- Addition of an expert on Monitoring/Evaluation

3-2 PO

Assignment schedule of JICA Experts.

Extension of the duration of the project and rescheduling the related project activities

3-3 Other modifications on detailed implementation plan

None

(Remarks: The amendment of R/D and PDM (title of the project, duration, project site(s), target group(s), implementation structure, overall goal, project purpose, outputs, activities, and input) should be authorized by JICA HDQs. If the project team deems it necessary to modify any part of R/D and PDM, the team may propose the draft.)

4. Preparation of RDA toward after completion of the Project

Utilization of knowledge transferred

5. Recommendation

- Bridge Repair project should be implemented as much as possible by RDA for technical transfer of bridge repair technology.
- Bridge Routine Maintenance project should be implemented in all region as soon as possible.
- Bridge Engineers should be increased in RDA.
- Head office in RDA should be enhanced as much as possible.
- Payment of contract should be payed as scheduled.
- RDA should have initiative for prioritization of budget

II. Project Monitoring Sheet I & II *as Attached*

Project Monitoring Sheet I (Revision of Project Design Matrix)

Project Title: The Technical Cooperation Project for "The Bridge Maintenance Capacity Building Project in Zambia"

Implementing Agency: RDA

Target Group: Engineers in the Headquarters Office and Regional Offices in RDA

Period of Project: Feb. 2015 - Aug. 2017 (2.6 years)

Project Site: All area under the jurisdiction of RDA


Model Site: None

Version 2

Dated July 31, 2017

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
Overall Goal Bridge maintenance activities are regularly implemented by RDA.	1. The bridge maintenance is budgeted in Annual Work Plan. 2. Bridge maintenance activities are carried out.	Annual report in RDA.			
Project Purpose The institutional capacity of RDA is strengthened for bridge maintenance planning and operational management, which includes improvement of outsourcing contract management.	1. The number of bridges that are regularly maintained according to the developed guidelines etc. 2. The number of bridge repair conducted as planned 3. The prepared technical specifications are used to award outsourcing contract	Project Final Report	The importance of bridge maintenance remains high in The transport sector strategy		
Outputs					
1. RDA engineers understand the management cycle of routine maintenance and undertake supervision of routine maintenance activities..	1-1. Guidelines on bridge routine maintenance are developed 1-2. The level of understanding of the seminar participants 1-3. The level of understanding of participants in the on-the-job training of bridge routine maintenance	1-1. Developed Guidelines 1-2. Hearing of understanding of training 1-3. Hearing of understanding of on-the-job training	Financial resources for bridge maintenance shall be secured. RDA fills the vacancies in the bridge Unit	Final Draft of guidelines on routine maintenance was submitted for approval of JCC on Feb 2016. 1st Seminar was held on August 11, 2015. 2nd Seminar was held on June 14,2016. 1st,2nd,3rd OJT were conducted on Nov,Dec 2015.	
2. RDA engineers utilize bridge condition inspection data for further investigation and planning of repair or replacement of bridges.	2-1. The bridge condition inspection data are reviewed.The number of reviewing inspection data are about 53 bridges. 2-2. Guidebook on bridge inspection is developed 2-3. The level of understanding of participants in on-the-job training of bridge inspection.	2-1. Bridge Condition Inspection Data 2-2. Developed Guidebook 2-3. Hearing of understanding of on-the-job training		Condition Inspection of 53 bridges were conducted by Expert. Bridge Inspection Report was submitted to RDA Final Draft of Guidebook on Bridge inspection was submitted for approval of JCC on Feb 2016. 1st and 2nd OJT were conducted in July & Oct in 2016.	
3. The knowledge on bridge repair technology of RDA engineers are enhanced and RDA engineers are able to prepare a bridge repair plan for pilot bridges using the data from condition inspection and Bridge Management System.	3-1. Bridge repair plans are developed for selected pilot bridges using bridge condition inspection data. 3-2. Guidebook on bridge repair is developed. 3-3. Accumulation of knowledge on types of repair technology	3-1. Bridge repair plan 3-2. Developed Guidebook 3-3. Training Report		Bridge repair plan were prepared by expert. 4 bridges from 19 were selected for pilot project for repair. Final Draft guidebook on bridge repair was approved by 2nd JCC. 1st batch,2nd batch of Japan Training for bridge repair technology were carried out in 2015,2016. Ten (10) engineers attended. Third country training were carried out in the Philippines and in South Africa in July and August in 2016. Total of five (5) engineers attended.	

4. The capacity of RDA for contract management is improved in the field of routine maintenance and repair on bridges.	4-1. Technical specifications samples are produced for outsourcing contracts.	4-1. Developed samples		Outsourcing contract for Pilot project on bridge routine maintenance was produced by expert
	4-2. Outsourcing contracts are prepared with relevant technical specifications on bridge repair.	4-2. Contracts with technical specifications		Samples of contract with technical specification on bridge repair was produced by expert

Activities	Inputs		Important Assumption
	The Japanese Side	The Zambia Side	
1. Enhancement of Routine Maintenance for Bridges 1-1 Develop guidelines for routine maintenance on bridges Conduct seminars on conceptual framework of routine maintenance on bridges 1-2 1-3 Conduct on-the-job training and to assist implementation of pilot project for bridge routine maintenance	1. Dispatch of Experts - Team Leader/Bridge Maintenance Management - Bridge Inspection - Bridge Repair - Bridge Routine Maintenance - Bridge Maintenance Outsourcing - Coordinator/Assistance Bridge Inspection and Training - Monitoring/Evaluation	1. Assignment of counterpart engineers to the project - Project Director - Project Manager - Project Coordinator - Counterparts	The data in BMS will be utilized for the project <div style="text-align: center;">  <Issues and countermeasures> </div>
2. Improvement of Bridge Condition Inspection 2-1 Review Bridge Condition Inspection 2-2 Develop a Guidebook for bridge inspection 2-3 Conduct on-the-job training for bridge condition inspection	2. Procurement of equipment Tools/materials supply for trainings	2. Regional Offices staff for training/seminars	
3. Improvement of Planning and Enhancement of Knowledge on Bridge Repair Technology 3-1 Develop an implementation plan of repair and/or replacement for selected bridges based on the condition inspection data and the data in the Bridge Management System 3-2 Develop a guidebook for bridge repair 3-3 Provide opportunities for counterparts to get exposed to bridge repair works through actual projects	3. Overseas training courses Three courses (Japan) Third Country (the Philippines, South Africa)	3. Office Facilities - Workspace	
4. Improvement of the Capacity of RDA for Contract Management 4-1 Develop contract templates and technical specifications (ex. Particular specification) required for bridge routine maintenance outsourcing 4-2 Prepare technical specifications of bridge repair contracts	4. Expenses for the dispatched experts, transport, accommodation and other expenses	4. Budget - Salary and allowances of the RDA counterpart officers - Other necessary expenses	

