THE UNITED REPUBLIC OF TANZANIA
PRESIDENT'S OFFICE, REGIONAL ADMINISTRATION
AND LOCAL GOVERNMENT (PO-RALG)

RURAL ROAD MAINTENANCE SYSTEM DEVELOPMENT PROJECT

COMPLETION REPORT

MARCH 2016

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

EIGHT-JAPAN ENGINEERING CONSULTANTS INC.
INFRASTRUCTURE DEVELOPMENT INSTITUTE

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Acronyms and Abbreviations

ADRICS	Annual District Roads Inventory and Condition Survey
AMTC	Annual Monitoring and Training Cycle
AFCAP	Africa Community Access Programme
ATTI	Appropriate Technology Training Institute
BSD	Bidding Security Declaration
CRB	Contractors Registration Board
CTB	Council Tender Board
DC	District Council
DE	District Engineer
DED	District Executive Director
DROMAS	District Roads Management System
DRDP	District Road Development Programme
EBT	Equipment Based Technology
EC	Evaluation Committee
JICA	Japan International Cooperation Agency
LBT	Labour Based Technology
LGTP	Local Government Transport Programme
MC	Municipality Council
MD	Municipal Director
MP	Member of Parliament
PMO-RALG	Prime Minister's Office Regional Administration and Local Government
PO-RALG	President's Office, Regional Administration and Local Government
PMU	Procurement Management Unit
PPRA	Public Procurement Regulation Authority
RFB	Road Fund Board
RSE	Regional Secretariat Engineer
RSPS	Road Sector Programme Support
TANROADS	Tanzania National Roads Agency
TASAF	Tanzania Social Action Funds

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1. General Outline of the Project

1.1 Background of the Project

Tanzania's mid-term plan for national development, Tanzania Development Vision 2025 (enacted in 1999), states "Improvement of an appropriate amount of infrastructure will contribute to the development of all sectors." Roads" in particular, are important tools for regional development. Improvement of rural roads is emphasized as having a direct bearing on the promotion of agricultural development and the improvement of the lives of the poor, which are important issues in Tanzania's national development. Their improvement in terms of both quality and quantity is necessary.

In these circumstances, the Project for "Rural Road Maintenance System Development" was launched aimed at improving the administrative and practical capacity of rural road maintenance and management.

1.2 Framework of the Project

1.2.1 Term of the Project

From February 2012 to March 2014 for the first operational period

From May 2014 to March 2016 for the second operational period

1.2.2 Tanzanian Counterpart and Administrative Personnel

- Implementing agency: PMO-RALG, reformed as PO-RALG as of January 2016
- Supporting agency: MOW (ATTI as the LBT training institute)

- Project Director: Permanent Secretary, PMO-RALG
- Project Manager: Director of Infrastructure Development Unit (IDU), PMO-RALG
- Counterparts: IDU officials/ PMO-RALG
  Officials of Regional Roads Department/ MOW
  RS Engineers and District Engineers in the target area

1.2.3 Target area

- Target Regions: Dodoma Region, Iringa Region
- Model Districts: Chamwino District, Iringa District
- Disseminated Districts: Kondoa Districts, Mufindi District.

1.2.4 Super Goal

District roads in whole Tanzania are properly maintained through application of appropriate technology and methodology.

1.2.5 Overall Goal

The district road maintenance procedure and services of LGAs in Dodoma and Iringa regions are improved.

【Indicators】

1) Annual Rural Road Maintenance Plans prepared by the LGAs of the respective regions contain necessary items based on the checklist.
2) The percentage of the road maintenance works completed by contractors (including defect liability period) for all the maintenance works in the Plan is increased within the fiscal year in the respective regions.
3) The maintenance status (Good, Fair, and Poor) of rural roads is improved in the respective regions.

1.2.6 Project Purpose

Administrative services of rural road maintenance provided by LGAs are improved in the target areas, and its nationwide expansion approach is developed.

【Indicators】

1) The maintenance status (Good, Fair, and Poor) of rural roads is improved in the model and disseminated districts of the respective regions.
2) The satisfaction ratings of the contractors/community people in the model and disseminated districts of the respective regions exceed 75/75% (Chamwino and Iringa) on average with reference to rural road maintenance works or status.
3) The percentage of the rollover funds for rural road maintenance is decreased in the model and disseminated districts of the respective regions.

1.3 Outputs

(1) The capacity of PMO-RALG for coordinating and supporting LGAs in collaboration with MOW on district road maintenance is strengthened.
(2) The district road maintenance procedure of the LGAs is strengthened in the model districts.
(3) The practical skills and knowledge of responsible organizations (concerned departments of the LGAs, contractors, etc.) on district road maintenance are improved through the LBT application in the model districts.
(4) The dissemination mechanism for district road maintenance approach within the respective regions is established.

1.4 Target Groups

RS and District Engineers, District Technicians, contractors, and community people living around the pilot project sites

1.5 Project Design Matrixes (PDM)

The outline of the Project is summarized in the Project Design Matrix (PDM) as shown in Annex 1. The PDM is subject to modifications through further discussions with the project stakeholders in accordance with the progress and achievements of the Project.

1.6 Project Activities

(1) Activities for [Output 1]

1-1 Convene regular meetings on operational guidelines development for rural road maintenance with PMO-RALG and MOW.

1-2 Prepare and revise operational guidelines of rural road maintenance with PMO-RALG and MOW.

1-3 Share the contents of the guidelines and the lessons learned from LGAs in the model districts during the Annual Meeting between PMO-RALG and RS and District Engineers.

1-4 Assist RS engineers to monitor rural road maintenance in LGAs based on the guidelines.

(2) Activities for [Output 2]

2-1 Select model districts based on the criteria established.

2-2 Review the current activities done by technical staff in the model districts.

2-3 Provide training on rural road maintenance for the district engineers and technicians in the model districts.

2-4 Prepare and update the rural road inventories in the model districts.

2-5 Prepare and revise a mid- and long-term rural road maintenance plan.

2-6 Confirm the needs of rural road maintenance in the model districts and prioritize the needs.

2-7 Prepare the annual rural road maintenance plans, including procurement, construction method, etc., in consideration of gender aspects in the model districts.

(3) Activities for [Output 3]

3-1 Select pilot projects in the model districts from the annual rural road maintenance plan.

3-2 Formulate work plans of the pilot projects.

3-3 Assist district engineers and technicians in the model districts to procure contractors and supervise the pilot projects based on the work plans.

3-4 Provide consultations on the operation of the pilot projects for the district engineers and technicians, contractors, etc. through ATTI.

3-5 Promote PR activities on rural road maintenance through the pilot projects.

3-6 Document the process, experiences, outcomes, and lessons learned of the pilot projects.

(4) Activities for [Output 4]

4-1 Organize sensitization workshops on rural road maintenance for the other LGAs in the respective

regions in collaboration with the RS engineers.

4-2 Select a LGA to be disseminated in the respective regions.

4-3 Assist the LGAs selected in the respective regions to promote rural road maintenance based on the guidelines with the full commitments of RS engineers.

4-4 Monitor the rural road maintenance promoted by the LGAs in the respective regions.

4-5 Feedback the monitoring results into the guidelines.

1.7 RMSD Expert Assignment

The Expert Team members of the RMSD Project are listed below:

Table 1-1 RMSD Experts Team

Expertise	Name of Experts	Organization
Team Leader/Road Maintenance	Tatsumi TOKUNAGA Motoki OGAWA	EJEC
Sub Leader/Rural Road Planning	Motoki OGAWA Tatsumi TOKUNAGA	EJEC
LBT（Design/Structure）	Hirokazu MIYAMOTO	EJEC
LBT（Maintenance/Quality Control）	Noboru SHIMIZU Masahiko NISHIDA	EJEC
Road Design	Ikumasa KAWASAKI	EJEC
Construction/Contract Management	Kenko OKAMURA	IDI
Light Equipment Management	Masanori TAKEISHI	CDCI
Capacity Building	Kazunobu KAMIMURA	PACET
Monitoring	Takaaki HIRAKAWA	INTEM
Coordinating/Training Planning	Yumiko TAKEDA	CDCI
Coordinating/Public Relations	Go EBISU	EJEC

2. Progress and Achievement February 2012-February2016

In the second operational period of the Project's implementation, 22 activities out of the 23 identified in the PDM were realized by the middle of February 2016.

2.1 Results of Project Activities based on the APO

The progress and attainment of the Project's activities as of February 2016 are summarized as follows:

Table 2-1 Summary of the Results of the Project Activities

Project Activities	Progress Situation of Each Activity
Other Activities	
Joint Coordinating Committee (JCC)	The fourth JCC meeting was held on 20 August, 2015. Past achievements and results as well as the roadmap for nationwide expansion after termination of the Project were discussed and confirmed. Also, the fifth JCC meeting was held on 23 February, 2016. Final outcomes and continued operations after the end of the Project were reported and discussed during the final JCC meeting.
Mid-term Review and Terminal Evaluation	The Terminal Evaluation Study was conducted on 21 August 2015, and the evaluation results, recommendations, and lessons learned were extracted by the Study Team. As the Project terminates earlier before the end of financial year, the Team emphasizes that C/P shall aggregate the data extracted after the end of the financial year and confirm the changes in target values.
Documentation and submission of the Work Plan	N/A
Documentation of (Mid-term) Progress Report	The Final Progress Report was prepared and submitted as scheduled in March, 2016.
Procedure of provision of equipment	N/A
Output 1: The capacity of PMO-RALG for coordinating and supporting LGAs in collaboration with MOW on rural road maintenance is strengthened.	
1-1 Convene regular meetings on operational guidelines development for rural road maintenance with PMO-RALG and MOW.	Accordingly the recommendation from the mid-term review team, the Project incorporated the production of the LBT specification into the project activities 1-1. Regular meetings of the Operational Guidelines, and the meeting for LBT Specification were held as follows. ・ 7th Regular meeting (in July 2014) ・ 8th Regular meeting (in August 2015) ・ 9th Regular meeting (March 2015) ・ 10th Regular meeting (LBT Specification Meeting 1 convened in August 2015) ・ 11th Regular meeting (LBT Specification Meeting 2 convened in December 2015) ・ 12th Regular meeting (LBT Specification Meeting 3 convened in January 2016)
1-2 Prepare and revise operational guidelines of rural road maintenance with PMO-RALG and MOW.	Regarding the Operational Guidelines, it has been approved by MoW in December 2014. The Project had a ceremony for the launching the Operational Guidelines in March 2015. After the completion of the Operational Guidelines, the need of LBT technical specification was discussed. As the maintenance work methods are different between EBT and LBT, the quality of LBT works is not secured by referring to the current

	specification of EBT. Thus, the same member of the Operational Guidelines came to develop the Guidelines for LBT technical specification. The schedule is shown in the Activity 1-1.
1-3 Share the contents of the guidelines and the lessons learned from LGAs in the model districts during the Annual Meeting between PMO-RALG, RS Engineers and District Engineers.	The Annual Engineers Meeting was convened in Arusha from 24th to 28th August, and the presentation on the project outcomes was carried out by the model district (Iringa DC). The questionnaire survey for the utilization of the Operational Guidelines was conducted for RSEs and Council Engineers during the meeting, and the Engineers in other LGAs were encouraged to use the Operational Guidelines.
1-4 Assist RS engineers to monitor rural road maintenance in LGAs based on the guidelines.	The budget for rural road maintenance was reduced and delayed in this financial year, and only 50% of the original budget was approved. The delay of the disbursement of the budget caused the delay of series of road work procedure in LGAs. It is supposed the quarterly monitoring by RSEs was difficult in this year due to the late disbursement of the budget to the LGAs.
Output 2: The rural road maintenance procedure of the LGAs is strengthened in the model districts.	
2-1 Select model districts based on the criteria established.	N/A
2-2 Review the current activities done by technical staff in the model districts.	N/A
2-3 Provide training on rural road maintenance for the district engineers and technicians in the model districts.	In preparation for the termination of the Project in March 2016, the monitoring W/S was convened in Dodoma and Iringa Regions (26 January 2016 in Dodoma and 29th January in Iringa). Because the Project is terminated before the end of the financial year of Tanzania, C/P shall collect the data and information that will be extracted and fixed after the end of financial year. Thus, the Monitoring Expert provided the instructions on the overall picture of M/S, the method for data entry of each form, etc. for the C/P during the W/S. Also, the indicators and various forms necessary for the monitoring were summarized and confirmed. In this way, it is required for the C/P to carry out the monitoring activities on their own initiatives. GIS training was conducted twice in the disseminated districts in August 2015 and January 2016. The contents of training were the collaboration between the annual plan and road information management system, the update of the system before and after the road maintenance works, etc.
2-4 Prepare and update rural road inventories in the model districts.	Since the budget disbursement has delayed of FY 2015/16, the inventory survey in Iringa DC was partly completed for aiming the prioritization. By the end of January 2016, the inventory in Iringa DC has not been completed. The survey in Chamwino DC has already been completed.
2-5 Prepare and revise a mid- and long-term rural road maintenance plan.	Iringa District has revised the mid- and long-term rural road maintenance plans based on the inventory data partly done in November. Chamwino District is revising the mid-and–long term plan and expected to complete by the end of February 2016. Also, they provided the instructions of the mid- and long-term plan in AMTC for the disseminated districts.
2-6 Confirm the needs of rural road maintenance in the model districts and prioritize the needs.	In the mid- and long-term rural road maintenance plans, the priorities are defined from; (1) road class, (2) road network, (3) population, (4) economic condition, and (5) others. The needs of rural road maintenance are fairly and technically summarized, and the road maintenance works are prioritized. Regarding the prioritization in FY 2016/17, Chamwino DC has already completed whereas Iringa DC has been ongoing.
2-7 Prepare annual rural road maintenance plans, including procurement, construction method,	Model DCs plan to formulate the Annual Plan from March 2016 based on the mid- and long-term plan. The Annual Plans, which are required for budgeting formatted for DROMAS-2 have submitted to the Dodoma and

etc., in consideration of gender aspects in the model districts.	Iringa Regions respectively.
2-8 Monitor the rural road maintenance in the model districts.	Due to the delay of budget disbursement from RFB in October 2015, the bidding procedure, the contract, and the commencement of road works were delayed. The implementation of the pilot project in Chamwino DC has started in January. The implementation in Iringa DC will be after April 2016.
Output 3: The practical skills and knowledge of responsible organizations (concerned departments of the LGAs, contractors, etc.) on rural road maintenance are improved through the LBT application in the model districts.	
3-1 Select pilot projects in the model districts from the annual rural road maintenance plan.	N/A
3-2 Formulate the work plans of the pilot projects.	N/A
3-3 Assist district engineers and technicians in the model districts to procure contractors and supervise the pilot projects based on the work plans.	N/A
3-4 Provide consultations on the operation of the pilot projects for the district engineers and technicians, contractors, etc. through ATTI.	N/A
3-5 Promote PR activities on rural road maintenance through the pilot projects.	The PR video, "The Project for Improvement of District Road," on the pilot projects was broadcasted on Star TV on 21 and 22 July, 2015. Also, the DVD was distributed to engineers during the Engineers' Meeting at Arusha as material for sharing the lessons learned from the model districts.
3-6 Document the process, experiences, outcomes, and lessons learned of the pilot projects.	The Project summarized the results, impacts, lessons learned, etc., extracted from the experiences of pilot projects in the model districts. In terms of the project outcomes and experiences on the capacity development for rural road maintenance, furthermore, the W/S was convened on 12th August in Iringa DC, and the participants exchanged opinions.
Output 4: The dissemination mechanism for rural road maintenance approach within the respective regions is established.	
4-1 Organize sensitization workshops on rural road maintenance for the other LGAs in the respective regions in collaboration with the RS engineers.	The 1st AMTC in FY 2015/16 on the inventory course was convened in the disseminated districts under the initiatives of engineers and technicians in the model districts and RS engineers (on 1st and 9th September 2015 in Kondoa and Mufindi DCs respectively). The 2nd AMTC on the planning & budgeting course was convened with the instructions of mid- and long-term plan, annual plan, and budget preparation by the model districts (on 27th November and 4th December 2015 in Kondoa and Mufindi DCs respectively). The 3rd AMTC on the procurement course was convened with the instructions of bidding procedure and contract document by the model districts (on 18th and 15th January 2016 in Kondoa and Mufindi DCs respectively).
4-2 Select a LGA to be disseminated in the respective regions.	N/A
4-3 Assist the LGAs selected in the respective regions to promote rural road maintenance based on the guidelines with the full commitments of RS engineers.	<Inventories in the disseminated districts> Mufindi DC has already completed the inventory, while Kondoa DC has partly done for the budgeting. <Mid- and long-term plan in the disseminated districts> Although Kondoa and Mufindi DCs undertook the formulation of mid- and

	long-term plans after the 2nd AMTC on the planning course, both districts have on going to revise the mid-long term plans. <Prioritization in the disseminated districts> Regarding the prioritization of FY2016/17, both districts have completed by the end of January, 2016. The prioritization is aiming for the budgeting based on the inventory partly done.
4-4 Monitor the rural road maintenance promoted by the LGAs in the respective regions.	In the same way as the model districts, the implementation of the pilot projects in the disseminated districts will be delayed after April. The monitoring workshops were convened in Dodoma and Iringa Regions. In preparation for the end of FY2015/16, the Monitoring Expert instructed the C/P to summarize the information and data of rural road maintenance works for the financial year according to the forms of the Monitoring System (M/S).
4-5 Feedback the monitoring results into the guidelines.	Due to the delay of the road work procedure in LGAs caused by the late budget disbursement, it is difficult for RSEs to monitor the progress quarterly basis as usual. After the project completion, PMO-RALG is required to instruct to feedback the monitoring results to the Guidelines.

2.2 Progress and Achievement for Output-1

The capacity of PMO-RALG for coordinating and supporting LGAs in collaboration with MOW on rural road maintenance is strengthened.

【Activity 1-1】Convene regular meetings on operational guidelines development for rural road maintenance with PMO-RALG and MOW.

【Meeting for Operational Guidelines】

RMSD convened regular meetings to develop the Operational Guidelines. The contents of the Guidelines were discussed during the meetings.

Table2-2 Outline of Regular Meetings on Operational Guidelines（2012-2016 February）

Items	Date	Place	Agenda	Participants
1st	7/February/2013	PMO-RALG	・ Background for the Operational Guidelines ・ Contents ・ Discussion ・ Working Group ・ Schedule	27
2nd	21/May/2013	PMO-RALG	・ Draft of Guidelines ・ Schedule	12
3rd	3/June/2013	PMO-RALG	・ Report of Study Tour ・ Details of Contents ・ Schedule ・ Dissemination and Utilization of Guidelines	17
—	24/July/2013	Arusha	・ Sharing the draft of Guidelines in Engineers Meeting ・ Discussion and comments from Engineers in LGAs	600
4th	18-20/September/ 2013	Iringa DC	・ Modification of Guidelines reflected the comments raised in Engineers meeting ・ Contents of Annex ・ Lessons learnt from the Pilot Project	34

5th	20/November/ 2013	Iringa DC Pilot Site	・ Site Visit for the Pilot Project ・ Summarization of lessons learnt from Pilot Project	37
6th	13/February/2014	Dar es Salaam	・ Summarization of lessons learnt from Pilot Project ・ Utilization of GPS to ADRICS	33
7th	24/July/2014	PMO-RALG	・Progress of the Draft of Operational Guidelines ・ Discussion on the comments from MoW	32
8th	6/August/2014	PMO-RALG	・ Discussion on the comments from MoW	15
-	10/March/2015	PMO-RALG Dar es Salaam	・ Official Launch of Operational Guidelines ・ The merit of the utilization of Operational Guidelines ・ The future expectation for the Rural Road Management	19


Figure 2-1 Photos of the Regular Meeting for the Operational Guidelines

The need to produce LBT specification was recognized during the regular meeting. The JICA Mid-Term Evaluation Team recommended incorporating the activities focusing on LBT Specification within the Project period. PMO-RALG and the RMSD Team convened the meeting for LBT specification as follows.

Table 2-3 Outlines of Meetings for LBT Specification

Items	Date	Place	Agenda
-	11/March/2015	PMO-RALG Dar es Salaam	・ Presentation of the existing LBT Manuals ・ Discussions on the Contents of LBT Specifications ・ Discussion on the Procedure for Approval
1st	13/August/2015	Iringa	・ Needs of LGAs and RAS for Practical Specification of LBT ・ Purpose of Producing the Practical LBT Specifications ・ Review of the Existing LBT Manuals
2nd	26/August/2015	Arusha	・ Reviewing of current existing LBT Manuals / Documents ・ Assessing the items required to be upgraded, revised ・ Drafting the Table of Contents
3rd	7/December/2015	Iringa DC	・ Presentation by the Working Group for the LBT Specification, Draft of LBT Specification
4th	13-14/January/2016	Iringa DC	・ Compiling the Draft, Checking the procedure of the approval from MoW

【Activity1-2】Prepare and revise operational guidelines of rural road maintenance with PMO-RALG and MOW

The working groups produced the draft of the Operational Guidelines by the end of August 2014. The lessons learned from the pilot projects in Chamwino and Iringa DC, new knowledge from the Study Tour to Uganda and Kenya, and training in Japan were all reflected in the draft. PMO-RALG submitted the draft to MoW and it was approved by MoW in December 2014. In March 2015, PMO-RALG and the Project conducted the official launching for the Operational Guidelines in Dar es Salaam. Mr. Jumanne Sagini, Permanent Secretary of PMO-RALG, expressed appreciation for the continuous support from JICA, and committed to practical utilization of the Guidelines in all the LGAs. The Guidelines shall be revised annually, with the feedback from the pilot projects in the model districts and disseminated districts.

Table 2-4 Working groups and contents of the guidelines

Working group	Contents	Responsible organization
Policy, abstract and outline of the Guidelines	Policy for making the guidelines will also be part of the item	PMO-RALG
Planning	Road condition survey	Chamwino DC, Chaired by Eng. Mpinzile
	Medium-long term planning	
	Annual planning	
Implementation and Procurement	Tender/contract document	Iringa DC, Chaired by Eng. Runji
	Contract management and administration	
	Evaluation of contractor	
Monitoring & Post Evaluation	Monitoring and Evaluation of maintenance works	RSE of Dodoma and Iringa Eng. Mkwata & Eng. Mwakalalile

Figure2-2 Operational Guidelines, Members of Launching Ceremony

【Activity1-3】Share the contents of the guidelines and the lessons learned from LGAs in the model districts during the Annual Meeting between PMO-RALG and RS and District Engineers.

The contents of the Operational Guidelines and the lessons learned from the model districts were shared in the Engineers Meeting on behalf of PMO-RALG, RFB & Stakeholders Meeting. The

meeting was convened in Arusha from 24 to 28 August 2015. Eng. Mpinzile, District Engineer in Chamwino DC presented the contents of the Guidelines, and the lessons learned from the application of the Guidelines. Eng. Runji, District Engineer in Iringa DC also had an opportunity to talk about his experience in the Iringa district.

Figure2-3 Photos of Stakeholders' Meeting 2015

【Activity1-4】Assist RS engineers to monitor rural road maintenance in LGAs based on the guidelines.

Monitoring is one of the key factors in sustaining the project activity even after project completion. The project supported to the creation of the monitoring system and monitoring manuals for the RSEs and the District Engineers. Seven (7) types of new monitoring forms were introduced in the monitoring system. The monitoring system gives engineers the capability to monitor the activities of the road works, the progress and the issues, and the achievement. As a result of using the monitoring forms, the maintenance works in FY2014/2015 were properly monitored by RSEs.

The issues of monitoring are caused by the insufficient personnel of RSEs, rather than the quality of monitoring. In each of the model regions of the Project, Dodoma and Iringa, the role of RSE is assigned to only one engineer. The numbers of councils in the regions covered by each RSE are; 8 councils in Dodoma region (Dodoma MC, Chamwino DC, Bahi DC, Mpwapwa DC, Chemba DC, Kongwa DC, Kondoa DC and Kondoa TC) and 5 in Iringa regions (Iringa MC, Iringa DC, Mufindi DC, Mufindi TC, Kilolo DC). Along with the increase in number of councils due to decentralization, the volume of monitoring work increased for the RSEs.

Regarding the results of monitoring, around 86% of the FY2014/2015 budget including rollover has been disbursed. In FY2015/2016, however, the delay of budget disbursement caused the delay of the procedure for the road works in the LGAs. It affected monitoring works by RSEs.

2.3 Progress and Achievement for Output-2

The rural road maintenance procedure of the LGAs is strengthened in the model districts.

【Activity2-1】The establishment of criteria and selection of the model districts

The Model Councils were selected as follows.

-Chamwino District (Dodoma Region)

-Iringa District (Iringa Region)

PMO-RALG and the Project established the criteria for the selection. The candidate councils were examined by the criteria. Then, the comparative evaluation has been done during the selection.

(1) Basic Concept of the Criteria for Selection of Model Councils

The Project set two indicators to assess the candidate councils.

1) The Preconditions and criteria were to confirm the effectiveness and efficiency.
2) The Comparative Evaluation was done by the criteria.

(2) Precondition Assessments

Precondition was assessed by the following four (4) factors.

- Elimination of the Municipality Councils (MC)
- Location near to the Regional Capital Cities/Municipalities
- Relationship with JICA financial assistance for Road Construction Projects
- Requirement of LBT Training at ATTI

(3) The Comparative Evaluation

Through the comparative evaluation, the Model Councils were selected with the mutual consensus of PMO-RALG, RS Engineers and the JICA Experts. The availability of the technical support from the Development Partners were also factored into the consideration.

【Activity2-2】Review the current activities done by technical staff in the model districts.

The Project reviewed the current activities in the model districts. The findings from the review are as follows.

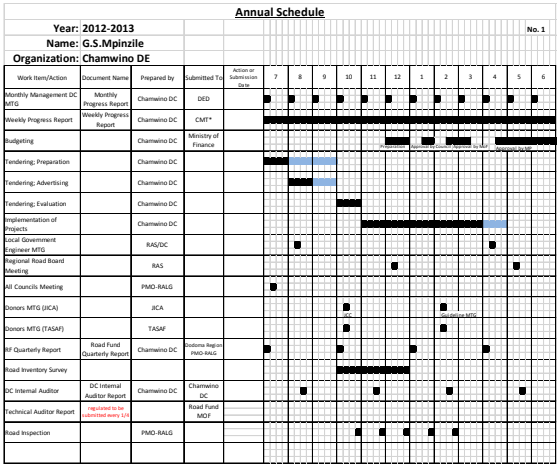
(1) Regional Engineers (RSE)

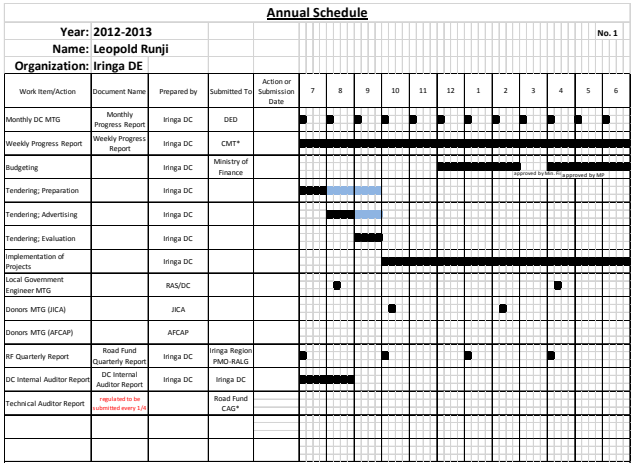
The regional engineers conduct three major activities; technical inspection at the site, administrative inspection at the office, and monitoring the budget disbursement in LGAs. For every quarter, RSEs produce quarterly reports based on their monitoring results. The format for the quarterly reports is not standardized. The requirement from PMO-RALG is only to attach the budget disbursement data. This causes gaps in the contents of the reports between regions. Regarding the number of RSEs assigned, only one engineer is assigned in most regions. The assignment of sufficient numbers of qualified personnel is required.

(2) Districts Engineer (DE)

The District Engineers commit all the road work stages. As shown in the table below, DEs supervise and instruct the engineers and technicians throughout the year in the districts.

Table2-5 Annual Schedule of DE in the Model District





【Activity2-3】Provide training on rural road maintenance for the district Engineers and Technicians in the model districts

The Project provided technical training as listed below. More than 180 engineers and technicians participated in the training. The technical training contributed to enhancing their capacity for supervising, monitoring, and meeting the requirement of the technical audit.

Table2-6 RMSD Technical Training Courses

Date	Topic	Place	Participants
18-Sep-12	Workshop Training on Road Maintenance for District Engineers and Technicians	Iringa DC	10
26-Sep-12	Workshop Training on Road Maintenance for District Engineers and Technicians	PMO-RALG	7
1-Mar-13	Planning and design for the Structure	Iringa DC	10
26-Mar-13	Planning and design for the Structure	PMO-RALG	10
18-June-13 27-June-13	Operation and Management of LBT Equipment (OJT)	Chamwino DC	8
20-June-13 24-June-13	Operation and Management of LBT Equipment (OJT)	Iringa DC	5
4-Nov-13 15-Nov-13	Operation and Management of LBT Equipment (OJT)	Chamwino DC Iringa DC	3
19-Sep-13	Workshop-1: Training on Data Processing in ADRICS Workshop-2: Training on Quarterly Management	Iringa DC	13
18-Nov-13 29-Nov-13	Mid-Long term Plan	Iringa DC Chamwino DC	4
3-Feb-14 20-Feb-14	Mid-Long Term Plan	Iringa DC Chamwino DC	2
5-Feb-14	Carrying out the Inventory Survey	Chamwino DC	9
24-June-14 17-July-14	GPS/GIS Training -OJT for Digital Map Creation and Utilization	Chamwino DC	8

22-July-14	GPS/GIS Training -OJT for GIS, GIS Basic Skills and Digital Map Utilization	Iringa DC	15
9-July-14 11-July-14 1-Aug-14	River Survey on Site	Iringa DC	16
25-July-14	River Survey on Site	Chamwino DC	4
18-July-14 19-July-14 2-Aug-14	Structure Planning -River Flow Forecasting and Structure Planning -River Flow Analysis Software -River Flow Calculation and Bridge Planning	Iringa DC	24
22-July-14 7-Aug-14 8-Aug-14	Structure Planning -River Flow Forecasting and Structure Planning -River Flow Analysis Software -Box Culvert Planning	Chamwino DC	12
1-Sep-15	GIS Training	Chamwino DC Kondoa DC	
9-Sep-15	GIS Training	Iringa DC Mufindi DC	
15-Jan-16	GIS Training	Iringa DC Mufindi DC	10
18-Jan-16	GIA Training	Chamwino DC Kondoa DC	13

2.3.1. Structure Design Training

【Overview】

The structure of local roads is planned on the basis of the common national standard structural diagram compilation. If the structure is planned based on local circumstances or site conditions, it is clear that it is a practical and more economical development. With a plan to suit local conditions, it is possible to reduce the cost of maintenance. Structures in the model district are those relating to the river. Therefore, the training focused on the training plan outline and RC design calculation method. Training was carried out while using a slide and specific calculation example.

The figure below is an example how the Iringa DE repaired a bridge with his own design based on the structure training in the first phase. The example shows that the DE fully understands the training and applies the skills.

Before	After
	
Subsidence of the piers and girders	The bridge girders were heightened.

	
RC digit is narrow. Rebar placement and concrete filling are difficult.	By reducing the number of bridge girders, workability was improved

Figure 2-4 Iringa District Bridges

Rebar placement and concrete filling are difficult. By reducing the number of bridge girders, workability was improved. The next figure shows box culverts in Chamwino that were damaged by flooding in 2014. As the flooding occurred before the completion of construction, the mounting part was scoured. Therefore, the wings were extended and the mounting part was strengthened after the flooding. It is hard to predict river channel changes during a flood because the lands around Chamwino is flat. This point is important to the design and maintenance of structures. In Chamwino district, Causeway (=Drift) and Vented Causeway structures have been used. However, since the Vented Causeway structure is often clogged by driftwood, box culverts are constructed to avoid clogging. It would appear that cutting trees causes clogging to occur.

	
The wings are extended to strengthen the mounting part.	Vented Causeway. The structure does not work well due to clogging.

Figure 2-5 Chamwino District Box Culverts

(1) Survey on Site

Student interns also attended the training. District technicians know how to survey well and learn about survey planning, and survey instruments, and how to use them for three days.

	
Training on Site in Iringa DC	Intern students also attended the training
	
Training on Site in Chamwino DC	The river direction and the box culvert direction are not the same. The expert suggests they change road alignments or slant the box culvert.

Figure 2-6 Photos of training on site

(2) Indoor training

Trainees learned how to estimate river flow and how to calculate river level change. Exclusive analysis software is necessary for calculating the river level for bridge construction. Free software (HEC-RAS) was used for the training. Table shows river level changes according to bridge lengths; trainees understood the importance of appropriate river cross-section securement. An engineer and a technician in charge of bridge design also learned how to use the software at a later date.

Figure 2-7 Photos of Indoor training in Iringa DC

(3) Summary of the Training

The training covered river side view creation, river flow calculation, and water level change.

The districts usually designed bridge or culvert based on experience, without any calculation, due to personnel and budget limitations. The training taught them the need for hydrological surveys or

planning. The trainees intend to use their knowledge. In Iringa district, a bridge being planned is being reviewed based on the training results.

However, it is difficult to estimate precise river flow in a river situation with a large river basin area. Therefore, the training emphasized the following:

- Estimate OFL (Ordinary Flood Level) and HFL (Highest Flood Level) by river erosion condition.
- Set DFL (Design Flood Level) considering water level and structure level.
- Strengthen mounting parts for more severe flooding than planned.

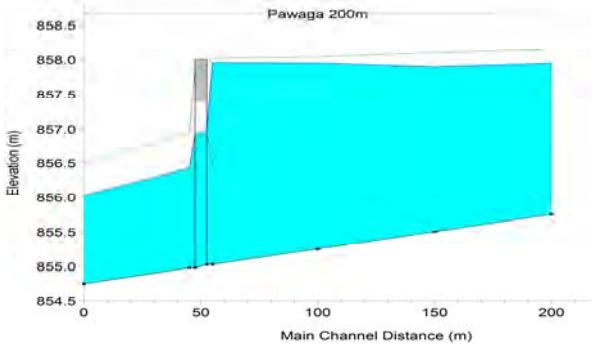
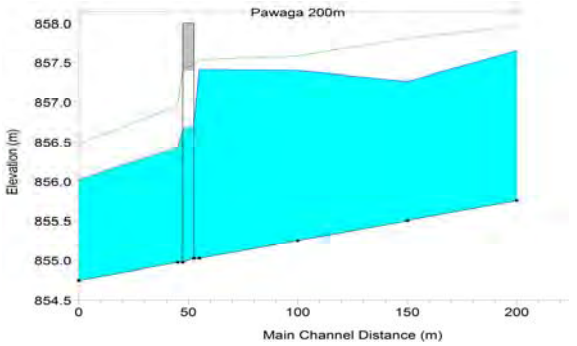
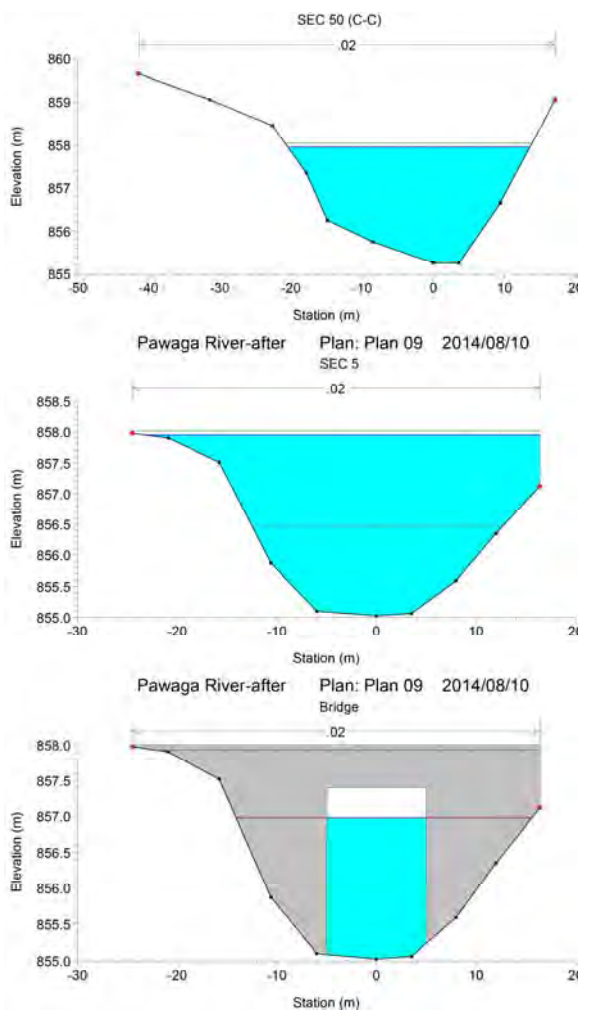
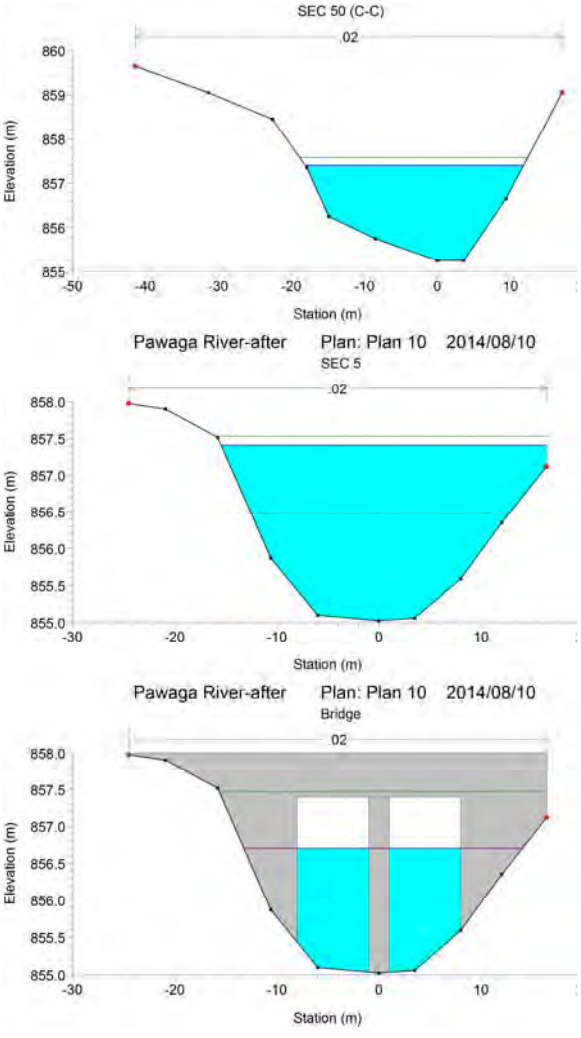
For the future training plan, the following issues shall be considered.

a. Necessary training
   Precise understanding of river levels, riverbank reinforcement and scouring measures, and maintenance plans are necessary.

b. Utilization on site
   In addition to training handouts, the expert prepared the following calculation examples. With the examples, structure planning and design will be carried out for further understanding.
   - RC girder design (bridge span=8m,10m,12.5m,15m）
   - Box culverts design loading condition, analysis model figure
   - Actual design calculations are usually conducted by consultants. The calculations are simple with Excel.
   - Data input and analysis calculation for hydraulic analysis software

c. Dissemination to other districts
   Engineers in the model districts are mainly in charge of dissemination activities in the dissemination districts. With the dissemination activities, a nationwide dissemination method will be reviewed.

Table 2-7 River level change according to bridge lengths

Single-span bridge (10m span) Original form	Two-span bridge (10m span) Change example
(River side view)  Over flow at the upper side	(River side view) 
(River side view)  	(River side view) 
Bridge plan water level: OFL Simulating the water level for annual flooding	

2.3.2. GIS Training

(1) Issues of GIS/GPS utilization in Tanzania

The government of Tanzania has initiated DROMAS-2 which accumulates the entire data of the rural road in LGAs. The pilot trial launched in Dodoma and Morogoro region. The GIS software that links to DROMAS-2 is free-soft, namely "QGIS". The Project conducted interviews the utilization of GIS/GPS. The findings from the interviews are as follows.

Table2-8 Utilization of GIS/GPS and Issues

DC	Utilization and Issues
Chamwino DC	<Utilization> ・ All the districts roads have been tracked ・ Software: QGIS ・ Training on GIS has been delivered by PMO-RALG ・ The GPS data have been saved in QGIS ・ Staffs members are assigned for QGIS, DROMAS-2, and on site <Issues> ・ QGIS only shows the route and no additional information ・ DROMAS-2 depends on internet accessibility ・ Lack of user-friendliness in rural road management ・ Difficult to identify the road class (coloring by road class depends on the staffs) ・ GIS data have been plotted, but have had no practical usage
Iringa DC	<Utilization> ・ No training for GIS delivered by PMO-RALG ・ All the districts roads have been tracked ・ The GPS data have been transferred to Excel. Additional information such as Bridge or Culvert is commented on in Excel <Issues> ・ No idea for the basic information and usage of QGIS ・ Never seen DROMAS-2
Kondoa DC	・ All the districts roads have been tracked ・ Difficult to use GIS due to unstable electricity
Mufindi DC	・ Partly utilized GPS ・ No utilization of GIS

(2) GIS Training

Table 2-9 Training Topics

i. About DROMAS
ii. DROMAS and QGIS
iii. What's QGIS
iv. Digital Map (Open Street Map)（referred to "OSMN"）
v. What's a Shape File (SHP File) ?
vi. How to make the Base-Map?

【Open the Shape File】

- Open the QGIS and Shape file
- Check the Layer
- Confirm the Attribute Table (Source of the OSM)
- Confirm the property
- Style
- Display the OSM Data-Base

【Integration of the OSM and the GPS Data】

- Add GPS Data
- Zoom the GPS Data
- Save as the SHP File
- Revise the attribute table
- Display the GPS Data
- Set the print view

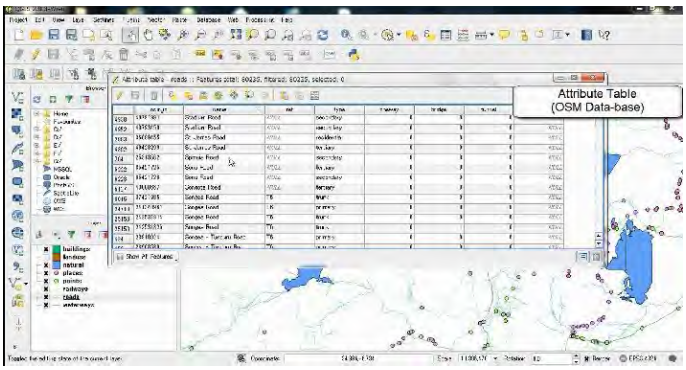


Figure2-8 Confirmation of the Attribute Table

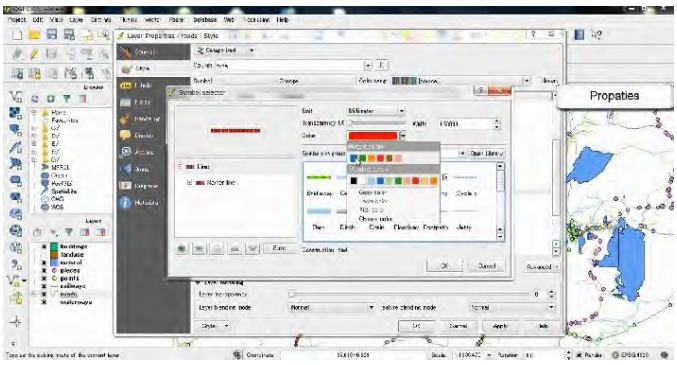


Figure2-9 Confirmation of the property

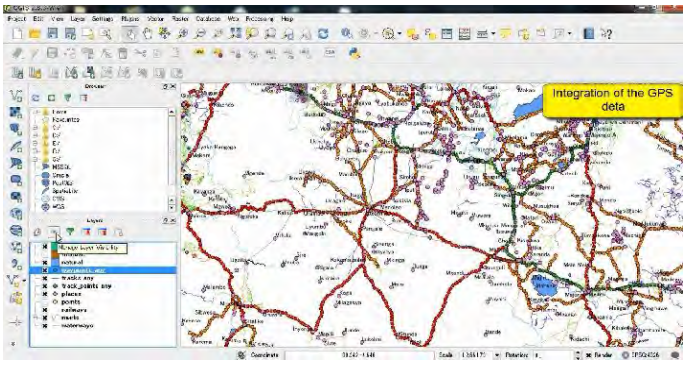


Figure2-10 Integration of the OSM and the GPS data

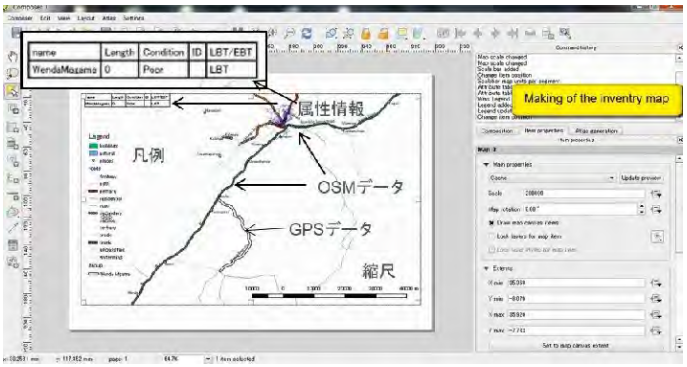


Figure2-11 Setting the Print View

- Chamwino DC

The district technician in Chamwino DC instructed on-site the training in Kondoa DC. Tracked the sample data at the Kondoa site, and then presented the manipulation.

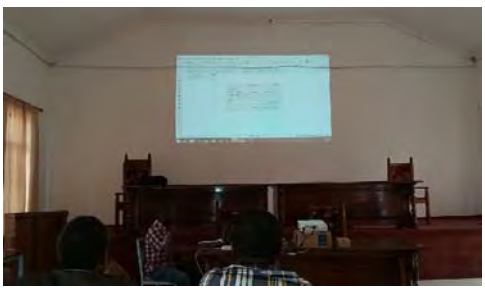


Figure2-12 GIS Training onsite in Kondoa DC

- Iringa DC

The district engineer and technician in Iringa DC instructed the training.

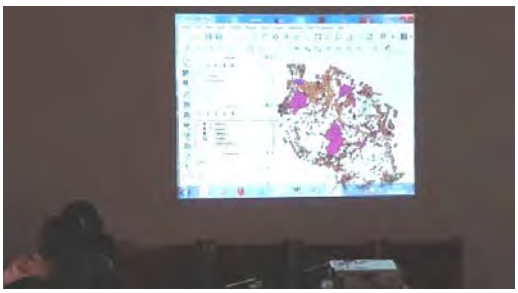



Figure2-13 GIS Training in Mufindi DC

(3) Summary of GIS Training

The GIS training contributed to developing the capacities of engineers and technicians as follows.

- Data Management

The significant gain from the training is in data management. At the beginning of the Project, the engineers managed the rural road data manually on paper. Currently, after the end of Project, the road data are managed digitally using PCs, by utilizing the GPS. The training introduced new technical tools, such as a drive recorder, which attracted the engineers.

- Utilization of GIS software

The engineers and technicians mastered the utilization of GIS software through the technical training. Although the GIS software shall be updated in the future, the procedure of the road works and the manipulation of GPS shall remain the same. The ability to use GIS/GPS promotes efficiency. Due to the limited numbers of engineers and technicians covering the whole network in the districts, the difficulty of full usage of GIS is of concern. To accelerate the utilization of GIS, continuous training is required.

- Capacity Development as a GIS Specialist in the Model District

The training contributed to the enhanced technical capacities of the engineers and technicians in the model and disseminated districts. In particular, the engineers and technicians in the model districts acquired proficiency in using GIS software. After the Project's completion, the engineers and technicians in the model districts are expected to transfer their technical skills to others.

- Transferring Technical Skills to the Disseminated Districts

Regarding the engineers and technicians in the disseminated districts, the provision of additional training opportunity is required. The engineers and technicians in the disseminated districts have acquired the ability to use GIS, but the continuous training is required for GIS manipulation. Technical transfer from the engineers and technicians in the model districts to the disseminated districts contributes to enhanced the technical capacity.

【Activity2-4】Prepare and update the rural road inventories in the model districts.

The inventory survey is usually conducted from October to December. The survey conducted of collecting actual data for road length by using GPS, and road conditions by visual inspection. Up to FY2013/2014, the inventory survey had been done by vehicle calibration odometer. The introduction of GPS for the inventory survey accelerated the accumulation of inventory data. The Project contributed to improving the efficiency of the inventory survey for data collection and accumulation through the technical trainings.

Figure2-14 Training for Vehicle Calibration Odometer in Chamwino DC

【Activity2-5】Prepare and revise a medium and long-term rural road maintenance plan.

The Project encouraged the preparation of medium and long term plan in the model districts. The aim is to improve the planning capacity of the model districts with the limited resources. The medium and long term plan contributes to enabling (1) prioritization of maintenance needs, (2) production of multi-year budgetary plans, and (3) full utilization of budget.

Table2-10　Mid-and Long Term Plan FY 2015/2016 Chamwino DC (Proposed)

S/N	Road No./ Name	Length (km)	Value Index					Value	priority	Evaluation/ Comments	Condition/ Deterioration/ Inventory	Prioritization											
			15%	20%	20%	30%	15%					2015/16				2016/17				2017/18			
			Road Class	Network	Population	Economy Activity	Others					R	S	P	B/C	R	S	P	B/C	R	S	P	B/C
1	Nagulo Mwitikira-Huzi-Manda-Itangali	63.5	5.0	5.0	4.5	5.0	4.0	4.8	1	District road, conect to trunk road,and three district Bahi,Manyoni and Dodoma municidal	Fair	20.0	7.0	0.0	0.0	40.0	0.0	0.0	1	0.0	12.0	0.0	0
2	Chalinze-Chinangali I-Chilonwa	15.0	5.0	4.0	3.0	3.0	0.0	3.1	11	Conect to trunk road and Region road	Good	15.0	0.0	0.0	0.0	0.0	10.0	0.0	0	5.0	5.0	0.0	1
4	Huzi-Mpwayunga-khambaku-Ndogoe-Mazo	61.7	3.0	4.0	4.5	5.0	0.0	3.7	8	conect to Mtera dam	Fair	0.0	0.0	6.4	1.0	50.0	0.0	0.0	0	0.0	10.0	5.0	0
5	Nagulo – Mwitikira – Mpwayungu - Chinugulu	57.0	3.0	4.0	5.0	5.0	3.0	4.2	4	conect three villages mpwayungu, chinugulu & farm area	Fair	20.0	0.0	0.0	0.0	57.0	0.0	0.0	0	25.0	5.0	0.0	0
6	Haneti – Humekwa	18	3.0	2.0	3.0	3.0	2.0	2.7	16	Connecting trunk road two district chamwino & Kondoa	Poor	18.0	0.0	0.0	0.0	0.0	12.0	0.0	0	15.0	0.0	0.0	1
7	Haneti – Kwahemu – Gwandi - Zajilwa – Umoja - Izava	67.3	3.0	5.0	4.5	5.0	3.0	4.3	3	conecting Farm area & regional roads	Fair	0.0	20.0	0.0	0.0	0.0	10.0	10.0	1	50.0	0.0	0.0	0
8	Dabalo – Manyemba - Malecela	30.0	3.0	4.0	3.0	4.0	2.0	3.4	10	Feeder coneting wards and farm area	Fair	20.0	0.0	0.0	0.0	0.0	10.0	0.0	0	20.0	5.0	0.0	1
9	Dabalo – Igamba - Chiwondo	20.0	3.0	4.5	3.0	2.0	3.0	3.0	12	Feeder coneting wards and farm area	Good	15.0	0.0	0.0	0.0	10.0	0.0	4.0	0	20.0	0.0	0.0	0
10	Chalinze - Majeleko	8.0	3.0	3.0	2.0	2.0	0.0	2.1	18	Feeder coneting wards and farm area	Poor	6.0	0.0	0.0	0.0	0.0	0.0	8.0	0	6.0	0.0	0.0	0.0

【Activity2-6】

Confirm the needs of rural road maintenance in the model districts and prioritize the needs.

The Project proposed to address the prioritization in the mid and long term plan. The indicators to measure the prioritization are; (1) road class, (2) population, (3) road network, (4) economic activities, and (5) others. The indicators shall be value added depends on DE's experience or local situation. Through the training in the Project, the model districts and disseminate districts have capacitated to develop the mid-long term plan with the prioritization.

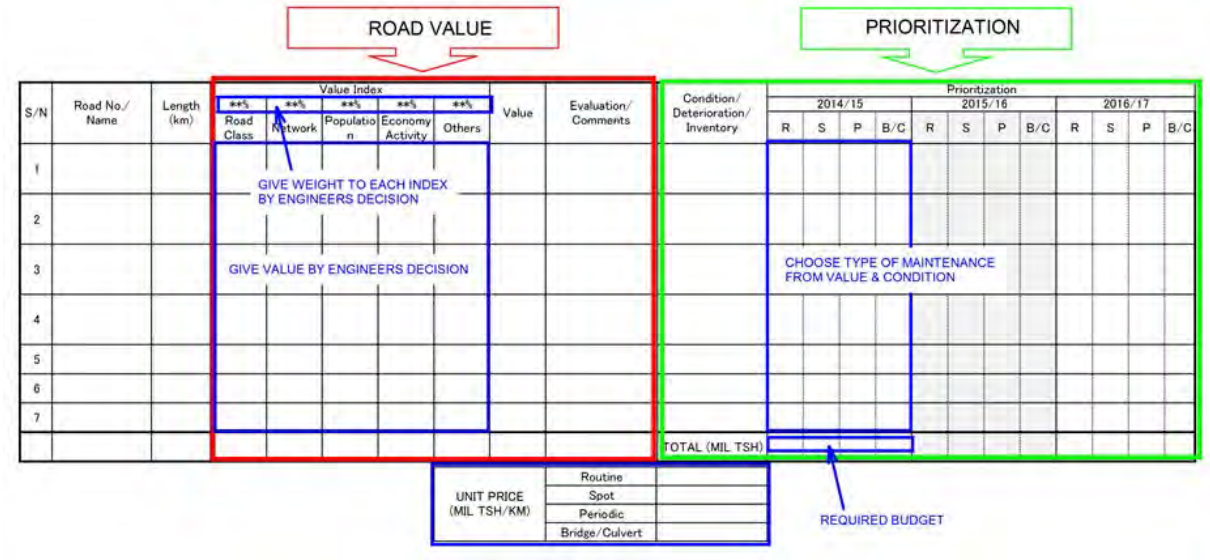


Figure 2-15 Proposed Value added prioritization

【Activity2-7】Prepare the annual rural road maintenance plans, including procurement, construction method, etc., in consideration of gender aspects in the model districts.

The Project trialed to produce the annual plan with covering 23 items listed below. With the experience of trials in the model districts, the Project proposes the contents of the annual plan shall to be compatible to DROMAS-2.

Table 2-11 Items proposed for the Annual Rural Road Maintenance Plan

(1) Mid- and long-term objectives (Vision)	(8) Coverage of road network	(15) Surface type
(2) Annual objectives	(9) Preliminary schedule	(16) Distance (km)
(3) Strategies and specific activities for the annual objectives	(10) Procurement procedures	(17) Time frame of rural road maintenance works
(4) Information of classified roads	(11) Work type	(18) Supervision expenses
(5) Information of rural road inventories	(12) Type of structures	(19) Establishment of unit costs for road maintenance works
(6) Needs and priority ranking	(13) Road name	(20) Total cost (TSH)
(7) Selection of rural road maintenance works	(14) Application of LBT and/or EBT	(21) Environment aspect
(22) Gender aspect	(23) HIV/AIDS aspect	

Source: Form 4, MS

Figure2-16 Annual Plan of the Model Districts

Through discussion with PMO-RALG, the annual plan that the Project trialed still seems difficult to be standardized in LGAs. That is because RF only requires data on the type of road works, the road name, the road length and the budget as the "Annual Plan" to be accumulated into DROMAS-2. The Project proposed to PMO-RALG to verify the compatibility between the annual plan for DROMAS-2 and the one the Project trialed.

【Activity2-8】Monitor the rural road maintenance in the model districts.

The Project monitored the progress and the procedure of the rural road maintenance work in the model districts according to the Operational Guidelines. The progress of the road works in the model districts is summarized as follows.

Table 2-12 The Procedure of the Road Works in the Model Districts

	2014		2015				2016		
	7-9	10-12	1-3	4-6	7-9	10-12	1-3	4-6	7-9
Chamwino	ADRICS2014			GPN	Rev.		AG	C	
					50% Cut Order				
					ADRICS2015				GPN
Iringa	ADRICS2014					GPN	AG	C	
					50% Cut Order				
					ADRICS2015				GPN

GPN: General Procurement Notice (Tender Advertisement)
Rev: Review
AG: Attorney General
C: Contract

- Chamwino DC

In FY2015/2016, 8 contracts were selected. After a budget review, this was decreased to 6 contracts, including 2 contracts for LBT works. Since each of the contract amounts for the LBT works is less than 50,000,000 Tsh, the district can start implementation without AG approval. The LBT works had

been contracted by the end of January 2016; implementation has started one site, while the other is in preparation due to rain fall. 4 contracts for EBT works are still in waiting for AG approval.

- Iringa DC

In December 2015, Iringa DC conducted tendering. At the end of January 2016, evaluation was carried out. Iringa DC also decreased the numbers of selected works after budget review. Currently, all the selected work is for EBT. LBT works will take place in the second phase of the procurement. LBT pilot projects in the second phase will be estimated at 150,000,000 Tsh, which is required to get AG approval. The implementation of LBT works in Iringa will start by May 2016.

	
Starting point for LBT in Iringa DC	2 Pipe culverts are planned to set
	
Road surface flushed away due to lack of ditch	Road condition is good where a ditch is designed
	
LBT works will be started after the cultivation	Tender advertizament of Iringa DC

Figure2-17 Kitayawa-Wangama Road (Iringa DC, LBT pilot site)

2.4 Progress and Achievement for Output-3

The practical skills and knowledge of responsible organizations on rural road maintenance are improved through the LBT application in the model districts.

【Activity3-1】Select pilot projects in the model districts from the annual rural road maintenance plan.

The Pilot Projects (hereafter referred to as PP) were selected after the inventory survey conducted in FY 2013/2014 and 2014/2015. The criteria for the selection are as follows:

- Criteria for the selection of PP

(1) Maintenance works by LBT.
(2) Periodic maintenance works is preferable, rather than routine maintenance works or spot improvement works.
(3) Approved maintenance work projects by budget of Road Fund Board.
(4) Road section within needs of variety of maintenance activities including road formation, drainage and concrete works.

- Selection of Pilot Site FY2013/2014

(1) Chamwino DC:

Based on the above criteria, pilot site was selected at the eastern side of Chamwino district in Dodoma Region along Handali – Chanhumba – Igandu Road with a total length of 26.8 km. The maintained stretch was 7km in length.

(2) Iringa DC:

Based on the selection criteria, the location of a pilot site was selected at the south-west side of Iringa district in Iringa Region along Wenda-Mgama Road with a total length of 20 km. 9km by LBT and the remainder by EBT.

Figure2-18 Location of the Pilot Project in FY 2013/2014 (Right: Chamwino DC, Left: Iringa DC)

- Selection of Pilot Site FY2014/2015

(1) Chamwino DC:

Project-1 : Nkwenda – Nhinhi – Wiliko – Mlowa bwawani – Mlodaa 34km

Maintained length 2.5km by LBT

Project-2 : Haneti – Humekwa 18.2 Km

Maintained length 2.5km by LBT

Figure2-19 Location of the Pilot Project in Chamwino DC FY2014/2015

(2) Iringa DC:

Makombe-Magunga LBT 10km, LOT-II, LOT-III, LOT-IV, LOT-V 2.5km each Rehabilitation

Figure2-20 Location of the Pilot Project in Iringa DC FY2014/2015

【Activity3-2】Formulate work plans of the pilot projects.

The Project assisted the engineers and technicians in the model districts during in the Pilot Projects accordingly to the Operational Guidelines. The outlines of the selected Pilot Projects are shown below.

Table 2-13 Outline of the work plan of the Pilot Projects

	Chamwino DC			Iringa DC	
	FY 2013/2014	FY 2014/2015	FY2015/2016	FY 2013/2014	FY 2014/2015
Name of roads	Handali-Chanhumba -Igandu-Ngahelezi	Nhihi-Nkwenda Haneti- Humekwa	Nagulomwitika-Hazi-Manda-Ilangali Chinangali II-Mlebe-Mnase-Mgunga	Wenda-Mgama	Magunga - Makombe
Road Class	Feeder Road	Feeder Road	District Road Feeder Road	District Road	District Road
Maintenance type	Routine	Routine	Routine/Spot	Periodic	Rehabilitation
Length EBT/LBT	7km	2.5km LBT 2.5km LBT	2km LBT 1.5km LBT	Lot-1: 10km EBT Lot-2: 3km LBT Lot-3: 3km LBT Lot-4: 3km LBT	Lot-1: 9.2km EBT Lot-2: 2.5km LBT Lot-3: 2.5km LBT Lot-4: 2.5km LBT Lot-5: 2.5km LBT
Cost	167,280,000 Tsh	42,545,000 Tsh	39,368,260 Tsh 41,093,500 Tsh	LOT-2 : 44,937,500Tsh LOT-3 : 45,059,000Tsh LOT-4: 42,377,000Tsh	Lot-2: 49,600,000Tsh Lot-3: 50,012,500Tsh Lot-4: 50,200,000Tsh Lot-5: 53,506,500Tsh

【Activity3-3】Assist district engineers and technicians in the model districts to procure contractors and supervise the pilot projects based on the work plans.

RMSD provided technical assistance on site. The Expert supported the soil test and the structural design for the rehabilitation of the bridge which was damaged by the flood in Iringa DC. It was planned to strengthen the river-bed to prevent flushing away, and the repair of the pier and superstructure were implemented. The district engineer contributed his efforts to the rehabilitation, and the DE himself conducted the designing of the superstructure, the soil test and the stability of the sub-structure of the bridge. The rehabilitation work was started in July 2013 and completed in December 2013.

Figure2-21 Before and After the rehabilitation of bridge in Iringa DC

The findings from the pilot project are as follows.

(1) LBT project costs were deliberately high for the pilot project in Chamwino while the cost of road construction by LBT in Iringa DC was less compared with EBT. LGAs are recommended to select the appropriate method to deploy.
(2) Some emergency works was necessary for the pilot project after the rain season.
(3) More culverts are still required for the pilot project.
(4) Needs to capacitate the engineers and technicians for the drawing and design of the structure.
(5) Needs to develop contract documents specified for the LBT works.
(6) Needs to shift the financial year for the Road Fund
(7) Needs to implement LBT works in the appropriate time. LBT road works should be implemented soon after the rain season.
(8) LBT works contribute to increased employment in the community. LBT works also generate ownership in the community.
(9) The quality of LBT works should be equal to that of EBT works, if the monitoring and supervision are appropriate.
(10) LBT works are more environmentally friendly than EBT works.
(11) LBT works should be used in areas with lack of heavy equipment.
(12) LBT works are less dependent on fuel fluctuation.
(13) The use of LBT works in the periodic maintenance should be considered.

	
EBT-Site 1: Before	EBT-Site 1: After
	
EBT Site-2: Before	EBT Site-2: After

	
LBT Site-1: Before	LBT Site-1: After

Figure 2-22 Before and After of the PP in Iringa DC

【Activity3-4】Provide consultations on the operation of the pilot projects for the district engineers and technicians, contractors, etc. through ATTI.

ATTI acquires full of experience in LBT works as a training institution. The Project proposed to PMO-RALG to utilize the techniques of ATTI in practice in the model districts. ATTI provided the technical supervision in the Pilot Projects in Chamwino DC from November 2014 to January 2015, and in Iringa DC in March 2015. As a result, it was difficult to realize the technical inputs from ATTI for the model districts. That is because; 1) the assignment period has been too short, and 2) local contractors depended on their own experience rather than the consultation by ATTI.

【Activity3-5】Promote PR activities on rural road maintenance through the pilot projects.

【PR Brochure】

A PR brochure on the pilot project was developed and distributed occasionally such as at the JCC-3, stakeholder meeting in Arusha.

【LBT PR Video】

A documentary video of the pilot project in Chamwino DC was produced in 2015. The video lasting 15 minutes, consisted an interview with the district engineer in Chamwino DC and the community, the implementation, the supervision etc. The video was aired on TV nationally and also provided at the stakeholders' meeting in Arusha in August 2015.

LBT PR Video Airing on TV

- Title: The Project for Improvement of District Road
- Air Time: 21-July-2015 from 19:00 pm to 19:15 pm
  22-July-2015 from 9:00 am to 9:15 am
- Broadcast Media: Star TV

【PR at the Regional Road Board Meeting】

The Project had an opportunity to promote PR activities in the regional Road Board Meeting in Dodoma. The Project presented the activities of AMTC to all the districts directors, engineers, councilors, and the Regional Administrative Secretaries, engineers and MPs within the Dodoma Region on 17 February 2015.

【Activity3-6】Document the process, experiences, outcomes, and lessons learned of the pilot projects.

The Project summarized the feedback from the pilot projects in the model districts in August 2015. DEs in the model districts presented the good practice and challenges, while RSEs presented the lessons learned from the monitoring activities. The findings on using the Operational Guidelines are summarized as "Before and After, Challenges".

Table 2-14 Before and After, Challenges of the Operational Guidelines in practice

Wok Stage	In Charge	Before	After	Challenge
PLANNING				
1. Annual District Inventory and Condition Survey (ADRICS)	LGAs	Data was Processed Manually Vehicle Odometer Calibration was not applied	Start utilizing GPS for the actual Distance Data was processed in Excel Format Vehicle Odometer Calibration was applied	A cost effective way of assessing traffic volume with limited resources. Category of Low Volume Traffic Date per Day shall be reconsidered A road network map or diagram shall be available in all the districts.
	RSE	No guidelines to assist monitoring	Standardized Guidelines for Monitoring	
	PMO-RALG	Lack of reflection to Mapping, appropriate Network		
2. Processing inventory data	LGAs	Data was Processed Manually	Data was processed in Excel Format, attached in Annex	A system of transferring data from the inventory data to DROMAS.
3. Annual Plan	LGAs	Annual Plan was not accurate due to possible errors in ADRICS and budgeting forms.	Compile annual data to Annual Plan Efficiency has been improved for the preparation	More simplified format.
4. Mid-Long Term Plan	LGAs	There was no mid-long Term Plan in LGAs	Detailed category evaluation data are included in the mid-to-long term plan.	Implementation of the mid-to-long term plan. Technical difficulties of planning because the types of surface.
5. Prioritization of maintenance works	LGAs	There was a Prioritization Concept in DROMAS; however it did not function well.	Prioritization became more rational with the mid-to long term plan	Convincing politician on prioritization. Consensus building mechanism

6. Specific Policy Issues	LGAs	Issue of Gender, HIV/AIDS, Environment were not Addressed Enough	Specific Policy Issues are emphasized in the Guidelines	Need More Commitment for the Specific Policy
PROCUREMENT				
1. Procurement plan/procedure	RFB	Procedures were available in the Public Procurement Act and its amendment and its regulations. Not complied to the Act.	The OG emphasizes compliance with the Act and regulations.	Contract vetting to attorney general delays the procurement cycle. The process requires more resources. Registration of power of attorney.
2. Specifications	MoW	The specifications cannot be attached to the contract. Technical manuals are available.		No LBT specifications. EBT spec cannot be transformed o LBT. Preparation of simplified specifications that can be attached to the contract and tender documents.
3. Tender Document	PMU/DE Office		no change	No LBT specifications. EBT spec cannot be transformed o LBT. Preparation of simplified specifications that can be attached to the contract and tender documents.
4. Contract Document	PMU/DE Office	PPRA	PPRA document was specified.	No LBT specifications. EBT spec cannot be transformed o LBT. Preparation of simplified specifications that can be attached to the contract and tender documents.
IMPLEMENTATION				
1. Quality Assurance	LGAs	Not standardized.	Form 17 is included.	There may some more forms to be prepared. Use of the forms need to be explained.
2. Supervising the Work Progress	LGAs	Not standardized.	Form 16 is included.	A contractor management system or procedure needs to be developed.
3 Monitoring	LGAs	No form.	No form.	Monitoring Form 7 needs to shall be included.
MONITORING				
Monitoring and Evaluation	RSE	Not systematic, ad hoc No guideline; no procedure. No training in the process of monitoring.	A monitoring plan is developed. A guideline and procedure were developed. Training is included in the process of monitoring.	Evaluation shall be conducted at the end of the financial year separately.

2.5 Progress and Achievement for Output-4

The dissemination mechanism for rural road maintenance approach within the respective regions is established.

【Activity4-1】Organize sensitization workshops on rural road maintenance for the other LGAs in the respective regions in collaboration with the RS engineers.

The Project convened the workshops to select dissemination districts in 2014. The dissemination districts are selected with the criteria mentioned in Activity 4-2 as Kondoa DC in Dodoma region, and Mufindi DC in Iringa region. In the workshops, RSEs and DEs in the model districts explained the project outlines and the mechanism of the dissemination. By November 2014, Annual Monitoring and Training Cycle (referred to as "AMTC") were developed as the technical transfer tools to disseminate the project outputs.

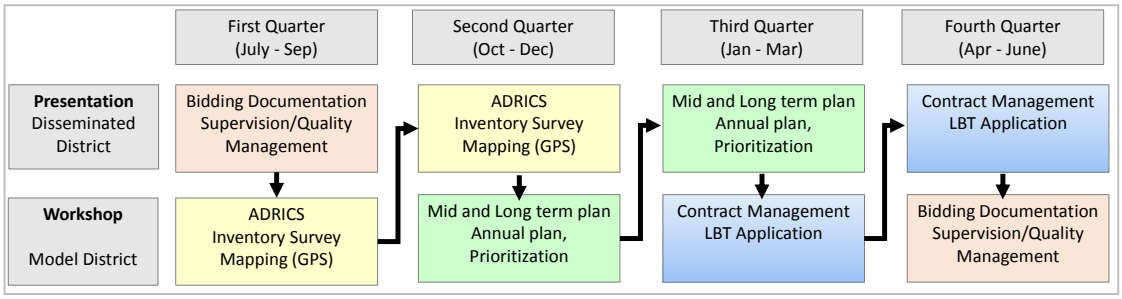


Figure 2-23 Topic and cycle of AMTC

Table 2-15 AMTC Operation in the Project

Date	Topic	Person in Charge	Place
AMTC in Dodoma Region			
14-Nov-2014	AMTC as dissemination system Mid-Long Term Plan	Dodoma RSE/RMSD Chamwino DE	Kondoa DC
4-Feb-2015	Budgeting/Annual Plan Quarterly Progress report Operational Guidelines Chapter 1&2	Chamwino engineer/technician Dodoma RSE/Chamwino technician Dodoma RSE	Kondoa DC
1-Sep-2015	Procurement, Bidding & Contract document Guidelines; Planning & Implementation Implementation Inventory, Practical use of GPS for inventory, Processing GPS data, Mapping	Kondoa DE Dodoma RSE Chamwino DE Chamwino engineer/technician Chamwio engineer/technician	Kondoa DC
27-Nov-2015	Inventory, GPS use for Inventory, Data Processing, Mapping Guidelines; Planning Planning and Budgeting Annual, mid--Long Term Plan, Prioritization	Kondoa DE Kondoa DE Dodoma RSE assistant Chamwino DE Chamwino engineer/technician	Kondoa DC
18-Jan-2016	Planning and Budgeting Annual, mid--Long Term Plan, Prioritization Guidelines; Procurement Procurement, Tendering, Contract Document	Kondoa DE Kondoa DE Dodoma RSE assistant Chamwino DE	Kondoa DC

AMTC in Iringa Region			
4-Dec-2014	AMTC as dissemination system Mid-Long Term Plan	Iringa RSE/RMSD Iringa DE	Mufindi DC
4-Mar-2015	Budgeting/Annual Plan Quarterly Progress report Guidelines Chapter 1&2	Iringa engineer/technician Iringa RSE/Iringa engineer Iringa RSE	Mufindi DC
9-Sep-2015	Procurement, Bidding & Contract document Guidelines; Planning & Implementation Implementation Inventory, Practical use of GPS for inventory, Processing the GPS data, Mapping	Mufindi DE Iringa RSE Iringa DE Iringa engineer/technician Iringa engineer/technician	Mufindi DC
4-Dec-2015	Inventory, GPS use for Inventory, Data Processing, Mapping Guidelines; Planning Planning and Budgeting Annual, mid--Long Term Plan, Prioritization	Mufindi DE Mufindi DE Iringa RSE assistant Iringa DE Iringa engineer/technician	Mufindi DC
15-Jan-2016	Planning and Budgeting Annual, Mid--Long Term Plan, Prioritization Guidelines; Procurement Procurement, Tendering, Contract Document	Mufindi DE Mufindi DE Iringa RSE assistant Iringa engineer	Mufindi DC


Figure2-24 Photos of AMTC in Mufindi DC and Kondoa DC

- Lessons Learned from the AMTC

The lessons learned from the operation of AMTC are as follows.

1) Need to strengthen the organizational structure of RSEs

AMTC is designed to operate within the scope of the RSEs monitoring cycle, i.e. quarterly basis. It is because a commitment from the RSEs is essential to the AMTC. However, most of the RSEs are too busy as they cover the whole area of rural road activities in the regions. They are normally overworked due to insufficient number of personnel. In order to operate AMTC in a sustainable way, strengthening of the organizational structure of RSEs is required.

2) Need to ensure the appropriate time for the operation

AMTC aims to monitor and confirm the current work procedure, and to prepare for the coming work stage in the districts. In the project trial, RSEs could not arrange their time for AMTC on some occasion. It is required to operate AMTC at the appropriate time to adjust the practical work procedure in the LGAs.

3) Need to secure sufficient budget for the model districts

Within the project period, the Project had a responsibility for the operation of AMTC, i.e. allowance and transport costs for the model districts. For the continuous operation of AMTC, PMO-RALG is required to secure sufficient budget for the model districts.

4) Need to produce the practical materials for AMTC

The materials used for AMTC is the Operational Guidelines. The experts of the Project also produced the technical manuals for the model districts that are used in the instruction. The model districts are expected to transfer their lessons learned to the disseminated districts. PMO-RALG is required to encourage the model districts to produce the practical materials based on their experience for AMTC.

【Activity4-2】Select a LGA to be disseminated in the respective regions.

The Project defined indicators to select the disseminated districts as follows.

a. Availability of local-based Contractors, sufficient number of qualified staff with LBT training
b. Lack of heavy equipment, difficulty to hire or lease
c. Lack of support from the Development Partners
d. Willingness to work in the Project, experience of rural participatory approach
e. Relationship with JICA (Japan Overseas Cooperation Volunteers)

- **Dodoma region**

Dodoma region has 7 Councils (as of May 2014); Dodoma MC, Chamwino DC, Kondoa DC, Mpwapwa DC, Kongwa DC, Chemba DC and Bahi DC. According to the criteria for the disseminated district, Kondoa DC is selected.

- **Iringa region**

Iringa region has 4 Councils (as of May 2014); Iringa MC, Iringa DC, Kilolo DC and Mufindi DC. Mufindi DC is selected for the disseminated district, according to the criteria.

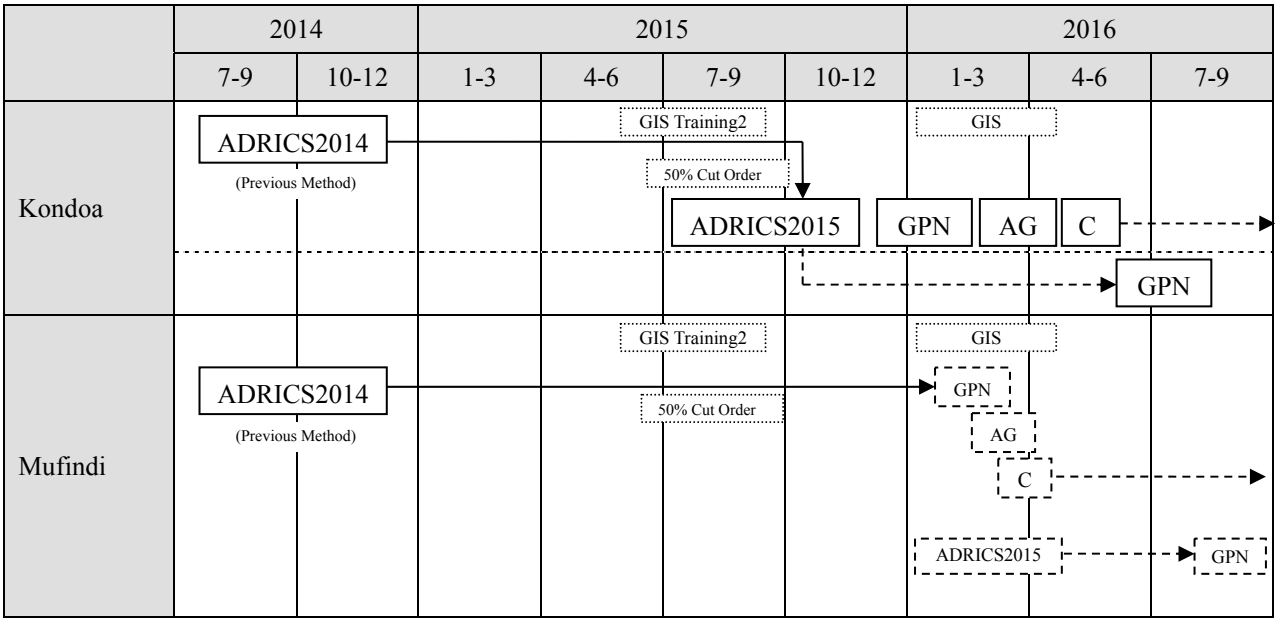
【Activity4-3】Assist the LGAs selected in the respective regions to promote rural road maintenance based on the guidelines with the full commitments of RS engineers

The Project supports operation of AMTC as mentioned in Activity4-1.

【Activity4-4】Monitor the rural road maintenance promoted by the LGAs in the respective regions.

The Project monitored the progress of the road works in the disseminated districts as follows.

Table 2-16 The Procedure of the Road Works in the Disseminated Districts



GPN: General Procurement Notice (Tender Advertisement)
Rev: Review, AG: Attorney General, C: Contract

- **Kondoa DC**

ADRICS-2014 was conducted from September to December 2014. In 2015, the Project provided technical training for GPS/GIS utilization for the inventory survey. It contributed to Kondoa DC 's execution of ADRICS-2015 by utilizing GIS.

Starting point for LBT in Kondoa DC

Intervew by the expert

The first river with drift structire

Second river, inpassable in rainy season

Figure2-25 Unkuku-Loo-Kalamba Road, Pilot Site in Kondoa DC

- **Mufindi DC**

Mufindi DC has been divided into Mufindi Town Council (TC) and Mufindi District in 2016. The disseminated district remains as Mufindi DC. The engineers and technicians were also divided into two. Both Mufindi TC and Mufindi DC have insufficient numbers of engineers. This caused further delay in the submission of the district budget request to PMO-RALG. If at the end of January 2016, the district budget is not yet approved by PMO-RALG, then the tendering procedure will be delayed to July 2016.

【Activity4-5】Feedback the monitoring results into the guidelines.

The late disbursement of the budget caused the delay of the road work procedure in the disseminated districts. RSEs continuously monitor the progress of road works in the disseminated districts, but it shall be impossible to reflect lessons learned from the pilot site in the disseminated districts by the completion of the Project. PMO-RALG is required to reflect the feedback to the Operational Guidelines after the project period.

2.6 LBT Equipment Management

【LBT Equipment Leasing System】

2.6.1. Outline of Equipment Leasing Plan

(1) Leasing Estimation (Outline of Annual Leasing Budget Plan)

The equipment leasing system, which is in its second year, is reviewed in terms of its achievement against its plan, as there are some differences between the original plan and the results. The outline of the original leasing plan (made in 2012/13) is as follows.

Table2-17 Chamwino DC Annual Leasing Budget Plan

			Tractor + Tow Grader	Water Bowser+Pump	Pedistrian Roller	Plate Compactor	Water Pump	Total
Hiring Rate	a	Tsh.	200,000	170,000	100,000	25,000	20,000	
Yealy Hir. Days	b	days	30	40	40	40	40	190
Yealy Income	c	a*b	6,000,000	6,800,000	4,000,000	1,000,000	800,000	18,600,000
Average Mait. Ratio		%	2.7	*	2.7	1.7	1.7	
Maintenance Cost	d	Tsh.	3,344,760	4,500,000	832,278	214,508	15,811	8,907,357
Fiscal Income	e	c-d	2,655,240	2,300,000	3,167,722	785,492	784,189	9,692,643

Table2-18 Iringa DC Annual Leasing Budget Plan

			Tractor + Tow Grader	Tractor +Water Bowser+Pump	Pedistrian Roller	Plate Compactor	Water Pump	Total
Hiring Rate	a	Tsh.	300,000	250,000	150,000	50,000	30,000	
Yealy Hir. Days	b	days	30	30	50	40	30	180
Yealy Income	c	a*b	9,000,000	7,500,000	7,500,000	2,000,000	900,000	26,900,000
Average Mait. Ratio		%	2.7	2.7+1.7	2.8	1.7	1.7	
Maintenance Cost	d	Tsh.	1,672,380	1,771,810	832,278	214,508	15,811	4,506,787
Fiscal Income	e	c-d	7,327,620	5,728,190	6,667,722	1,785,492	884,189	22,393,213

The yearly leasing days was estimated based on the premises that the construction estimates (BOQ),

the equipment cost (about 20 to 30% in the LBT annual budget) regarding construction budget, and the hiring from private finance are zero.

The equipment leasing price was determined using the prices of private leasing companies and experiences of LBT construction contractors(the estimated prices in Iringa district were high because the quotation of private leasing companies were higher than in Chamwino district due to equipment shortage in Iringa district).

The estimated revenue was calculated based on the equipment leasing cost in consideration of the maintenance and administration cost.

For the water tank cars in Chamwino district, the maintenance and administration cost was estimated to be higher as existing equipment was used. For the equipment maintenance, a guideline (details of equipment, own spare parts, management form, routine inspection form, contract, etc.) was prepared for the administration (see details of the report of 2012/13)

(2) Leasing Prices

The leasing price transition was as follows. The prices in each district have been changed and amended as appropriate by considering the prices of private leasing companies and the current situation (difficulty of procurement, transportation cost, etc.) of construction contractors. For Iringa district, whose prices have been pointed out to be higher than those of private companies, the prices were amended as of 07/2015.

Table 2-19 Leasing Price Transition (Chamwino DC)

	Planned		14/7～		15/7～	
	LBT	Private	LBT	Private	LBT	Private
Tractor	150,000	17,000	120,000	120,000	Same as 14	
Pedestrian Roller	150,000	17,000	100,000	120,000		
Water Tank	110,000	150,000	150,000	170,000		
Towed Grader	60,000		100,000			
Plate Compactor	25,000	30,000	25,000	30,000		
Water Pump	20,000	25,000	20,000	25,000		

Table 2-20 Leasing Price Transition (Iringa DC)

	Planned		14/7～		15/7～	
	LBT	Private	LBT	Private	LBT	Private
Tractor	150,000	17,000	120,000	120,000	120,000	120,000
Pedestrian Roller	150,000	17,000	100,000	120,000	100,000	120,000
Water Tank	110,000	150,000	150,000	170,000	130,000	150,000
Towed Grader	60,000		100,000		60,000	
Plate Compactor	25,000	30,000	25,000	30,000	30,000	50,000
Water Pump	20,000	25,000	20,000	25,000	30,000	40,000

2.6.2. Comparison of Achievement with Plan in 2013/14, 14/15

(1) Leasing Achievement (Degree of Attainment in Leasing Revenues)

The leasing revenues were largely lower than the estimates in each district due to the delay of equipment delivery and inexperience in LBT construction management (Chamwino district 25.7%, Iringa district 38.5%). However, the leasing revenues dramatically increased in each district because in the second year the use of equipment in construction was more strictly required, the equipment leasing service had become more popular among the construction contractors, and leasing by Equipment-based Technology (EBT) contractors has started (Chamwino district 126.6% compared with estimation. 492.8% compared with previous year, Iringa district 46% and 124.7%, respectively).

Table 2-21 Result &Target Comparison in Chamwino DC

(Tsh.)

	2013/14	2014/15(May)	Total
Tractor/Towed Grader	0	0	0
Pedestrian Roller	1,080,000	3,290,000	4,370,000
Water Bowser	1,020,000	8,840,000	9,860,000
Plate Compactor	330,000	0	330,000
Water Pump	60,000	140,000	200,000
Total	2,490,000	12,270,000	14,760,000
CPY(%)		492.8	
CT(%)	25.7	126.6	

Table2-22 Result &Target Comparison in Chamwino DC.

(Tsh.)

	2013/14	2014/15(May)	計
Tractor/Towed Grader	300,000	0	300,000
Pedestrian Roller	5,520,000	2,700,000	8,220,000
Tractor/water Bowser	2,250,000	8,000,000	10,250,000
Plate Compactor	550,000	50,000	600,000
Water Pump			
Total	8,620,000	10,750,000	19,370,000
CPY(%)		124.7	
CT(%)	38.5	48.0	

The total achievements in the two years, with the maintenance and administration cost deducted, was 68% in Chamwino district and 43% in Iringa district compared with the estimated amount in the plan, because there was not much use of tow graders for levelling off the final road surface, which affects the finishing of constructions, and the use frequency of the equipment was low in terms of construction scales.

Table 2-23 2 Years Income Comparison (Chamwino DC)

(Tsh.)

	Target(2yer.)	*Hire Amount(excl. maintenance cost)*	*Acmp.(%)*
Tractor/ Towed Grader	5,310,480	0	*0.0*
Ped. Roller	6,335,444	4,370,000	*69.0*
W/Tank ・Pump	6,168,378	8,972,000	*145.5*
Plate Compactor	1,570,858	330,000	*21.0*
Others	0	-480,000	
Total	19,385,160	13,192,000	*68.1*

Table2-24 2 Years Comparison (Iringa DC)

(Tsh.)

	Target(2yer.)	*Hire Amount(excl. maintenance cost)*	*Acmp.(%)*
Tractor/ Towed Grader	14,655,240	300,000	*2.0*
Ped. Roller	11,456,380	7,630,200	*66.6*
W・Tank /Pump/Tractor	13,335,444	9,974,000	*74.8*
Plate Compactor	3,570,984	600,000	*16.8*
Total	43,018,048	18,504,200	*43.0*

For future improvement, the on-site management by the district technical staff and the equipment use instruction of BOQ should be reinforced. The degrees of attainment for vibrating rollers and water tank cars, which are equipment necessary for the road bed construction that accounts for the main part of the constructions, are 70% or higher.

(2) Degree of Attainment in Leasing Period (Days)

The achievements in both districts were 38% against target leasing periods. At first, the estimation was worked out on the premise that the equipment would be leased to individual contractors. However, the contract was such that a plurality of contractors was assigned to the construction of the same road. Therefore, the equipment could be shared among the plurality of contractors. Due to mishandling by BOQ (the usage of the necessary equipment, especially tow graders, was not limited), the achievement was greatly smaller than the plan, but the achievement as to the water tank cars was slightly less than 70% or more in both districts due to the large capacities of the cars and low prices compared with market prices, while about 40% of the achievement in Chamwino district were those by EBT (Equipment based technology) contractors.

Table2-25 Leasing Period/Days (Chamwino DC)

Equipment / Year	Tractor/ Towed Grader	Ped. Roller	W・Tank /(Pump)	Plate Compactor	Total
Targeted Days(2yr.)	60	80	80	80	300
2013/14	0	9	9	11	29
2014/15 (～May)	0	26	59	0	85
Total	0	35	68	11	114
Accomp.(%)	0.0	43.8	85.0	13.8	38.0

Table2-26 Leasing Period/Days (Iringa DC)

Equipment / Year	Tractor/ Towed Grader	Ped. Roller	W・Tank /Pump/Tractor	Plate Compactor	Total
Targeted Days(2yr.)	60	100	60	80	300
2013/14	2	42	9	11	64
2014/15 (～May)	0	18	32	1	51
Total	2	60	41	12	115
Accomp.(8%)	3.3	60.0	68.3	15.0	38.3

(3) Achievements in Equipment Maintenance

The increase in expense in Chamwino district was the result of non-use of the tow graders (causing no maintenance and administration cost), the use of existing water bowser, while, for the other equipment, the initial spare parts was utilized and the periods they were used were short. For the achievement in Iringa district, it is deduced that, as described above, the use frequencies for tractors (for towing water bowser) and vibrating rollers were high.

Table2-27 Maintenance Cost (Chamwino DC)

(Tsh.)

	Tractor	Towed Grader	Water Bowser/Pump	Ped. Roller	Plate Compactor	Others	Total
2013/14	0	0	450,000	0	0	200,000	650,000
2014/15	0	0	638,000	0	0	280,000	918,000
Total	0	0	1,088,000	0	0	480,000	1,568,000

Table2-28 Maintenance Cost (Iringa DC)

(Tsh.)

	W・Tank /Pump/Tractor	Towed Grader	Ped. Roller	Plate Compactor	Total
2013/14	12,000	0	120,000	0	132,000
2014/15	264,000	0	469,800	0	743,800
Total	276,000	0	589,800	0	865,800

(4) Expense for Depreciation

The depreciation rate for the purchase values in Chamwino district was 7.4% including the initial expenses (spare parts, transportation, training cost etc.), and 8.2 % excluding the initial expenses. The depreciation period is 13 to 14 years if it is simply based on the depreciation rate. This is substantially reasonable compared with the statutory depreciation period of 12 year for machinery. For Iringa district, the depreciation rates are 8.6% and 9.4%, respectively, which are similar to the statutory depreciation period as well (11 to 12 years). Note that these figures are simple comparisons of the figures in last 2 years and the later mid/long-term prediction shows different results.

Table2-29 Expense for depreciation including initial cost (Chamwino DC)

	Equipmet Cost	Equipmet Cost ①	Residual Value②	Depreciation Value3 (① - ②)	Income④	Maintenance & Other Cost⑤	Net Income⑥ (④ - ⑤)	Depreciation Ratio (⑥/ ③)
Unit	US $	Tsh	Tsh	Tsh	Tsh	Tsh	Tsh	%
Tractor	76,000	138,320,000	13,832,000	124,488,000	0	0	0	*
Towed Grader	0	0	0	0				
Pedestrain Roller	18,500	33,670,000	3,367,000	30,303,000	4,370,000	0	4,370,000	14.4
Water Bowser	0	0	0	0	10,060,000	1,088,000	8,972,000	7.2
Water Pump	500	910,000	91,000	819,000				
Plate Compactor	6,900	12,558,000	1,255,800	11,302,200	330,000	0	330,000	2.9
Others(Initial parts, transit cost	10,800	19,656,000	1,965,600	17,690,400		480,000		
Total	112,700	205,114,000	20,511,400	184,602,600	14,760,000	1,568,000	13,672,000	7.4

Table2-30 Expense for depreciation excluding initial cost (Chamwino DC)

	Equipment Cost	Equipment Cost①	Residual value②	Depreciation Value③(①-②)	Income④	Maintenance & Other cost ⑤	Net Income⑥ (④-⑤)	Depreciation Ratio (⑥/③)
Unit	US$	Tsh.*2	Tsh.	Tsh.	Tsh.	Tsh.	Tsh.	%
Tractor	76,000	138,320,000	13,832,000	124,488,000	0	0	0	*
Towed Grader	0*1	0	0	0				
Pedestrian Roller	18,500	33,670,000	3,367,000	30,303,000	4,370,000	0	4,370,000	14.4
Water Bowser		0	0	0	10,060,000	1,088,000	8,972,000	7.2
Water Pump	500	910,000	91,000	819,000				
Plate Compactor	6,900	12,558,000	1,255,800	11,302,200	330,000	0	330,000	2.9
Othehs(Intial part ,trans	10,800			0		480,000		
Total	112,700	185,458,000	18,545,800	166,912,200	14,760,000	1,568,000	13,672,000	8.2

Table2-31 Expense for depreciation including initial cost (Iringa DC)

	Equipment Cost	Equipment Cost	Residual value	Depreciation Value	Income	Maintenance & Other cost	Net Income	Depreciation Ratio
Unit	US$	Tsh.*2	Tsh.	Tsh.	Tsh.	Tsh.	Tsh.	%
Tractor	76,000	138,320,000	13,832,000	124,488,000	300,000	0	300,000	*
Towed Grader	0*1	0	0	0				
Pedestrian Roller	18,500	33,670,000	3,367,000	30,303,000	8,220,000	589,800	7,630,200	25.2
Water Bowser	18,000	32,760,000	3,276,000	29,484,000	10,250,000	276,000	9,974,000	6.6
Water Pump	500	910,000	91,000	819,000				
Plate Compactor	6,900	12,558,000	1,255,800	11,302,200	600,000	0	600,000	5.3
Othehs(Intial part ,trans	10,800	19,656,000	1,965,600	17,690,400				
Total	130,700	237,874,000	23,787,400	214,086,600	19,370,000	865,800	18,504,200	8.6

Table2-32 Expense for depreciation excluding initial cost (Iringa DC)

	Equipment Cost	Equipment Cost	Residual value	Depreciation Value	Income	Maintenance & Other cost	Net Income	Depreciation Ratio
Unit	US$	Tsh.*2	Tsh.	Tsh.	Tsh.	Tsh.	Tsh.	%
Tractor	76,000	138,320,000	13,832,000	124,488,000	300,000	0	300,000	*
Towed Grader	0*1	0	0	0				
Pedestrian Roller	18,500	33,670,000	3,367,000	30,303,000	8,220,000	589,800	7,630,200	25.2
Water Bowser	18,000	32,760,000	3,276,000	29,484,000	10,250,000	276,000	9,974,000	6.6
Water Pump	500	910,000	91,000	819,000				
Plate Compactor	6,900	12,558,000	1,255,800	11,302,200	600,000	0	600,000	5.3
Othehs(Intial part ,trans	10,800	19,656,000	1,965,600	0				
Total	130,700	237,874,000	23,787,400	196,396,200	19,370,000	865,800	18,504,200	9.4

It was instructed to prepare mid/long-term plans without considering the initial expenses, in order to give priority to the depreciation cost (rate) in these government-funded organizations in which the concepts of project leasing equipment and depreciation etc. are not highly regarded.

(5) Revenue prediction for next 3 years (average)

The annual leasing period was amended based on the achievements and the experiences of the past projects (constructions), amending the annual target amounts for the next 3 years. The figures below are targets for each district, in which the leasing amount for Chamwino district is increased by 31% from the initial target amount, and the leasing amount for Iringa district is decreased by 44% from the initial target amount, because the use of tractors is expected in Chamwino district while the LBT constructions have progressed substantially according to the plan in Iringa district, expecting an increase in the maintenance and administration cost surpassing the expected increases in leasing prices

etc. Note that these figures are expected values (averages) on a single-year basis, thereby having a margin of error from the mid/long-term prediction.

Table2-33 Revenue prediction for next 3 years (average, Chamwino DC)

			Tractor + Tow Grader	Water Bowser	Pedistrian Roller	Plate Compactor	Water Pump	Total
Hiring Rate	a	Tsh.	220,000	150,000-170,000	100,000-120,000	25,000-30,000	20,000-25,000	
Yealy Hir. Days	b	Days	15	50	40	10	20	135
Yealy Income(AV)	c	a*b	3,300,000	8,000,000	4,400,000	275,000	450,000	16,425,000
Average Mait. Ratio		%	1.0	*	2.0	1.7	1.7	
Maintenance Cost	d	Tsh.	1,244,880	1,500,000	818,181	192,137	9,828	3,765,026
Fiscal Income	e	c-d	2,055,120	6,500,000	3,581,819	82,863	440,172	12,659,974

Table2-34 Revenue prediction for next 3 years (average, Iringa DC)

			Tractor + Tow Grader	Tractor +Water Bowser+Pump	Pedistrian Roller	Plate Compactor	Water Pump	Total
Hiring Rate	a	Tsh.	180,000	250,000	100,000	30,000	30,000	
Yealy Hir. Days	b	Days	20	30	50	20	10	130
Yealy Income	c	a*b	3,600,000	7,500,000	5,000,000	600,000	300,000	17,000,000
Average Mait. Ratio		%	2.7	2.7+1.7	2.7	1.7	1.7	
Maintenance Cost	d	Tsh.	1,680,588	1,798,524	818,181	192,137	9,828	4,499,258
Fiscal Income	e	c-d	1,919,412	5,701,476	4,181,819	407,863	290,172	12,500,742

2.6.3. Mid/Long-Term Prediction

Prediction is carried out based on the current equipment for a period of 12 years, which is the useful life of the equipment. The prediction shows that the maintenance and administration cost rate will sharply increase compared with the leasing revenue increase rate after 7 years from installation, so that no dramatic increase in revenue can be expected from then. Moreover, the depreciation rate will be 98.1%, which is slightly closer to the amortized value. The prediction shows that the depreciation rate in Iringa district after 12 years is similarly 77%, which is far different from amortization, due to similar reasons as for Chamwino district and the high initial depreciation price (about 30 million schilling in comparison with Chamino district, for purchase of water bowser).

Table2-35 Mid/Long-Term Prediction without equipment renewal (Chamwino DC)

	1 (2013/14)	2 (2014/15)	3 (2015/16)	4 (2016/17)	5 (2017/18)	6 (2018/19)	7 (2019/20)	8(2020/21)	9 (2021/22)	10 (2022/23)	11 (2023/24)	12 (2024/25)
Total Depreciation cost(Tsh.)	166,912,200	166,912,200	166,912,200	166,912,200	166,912,200	166,912,200	166,912,200	166,912,200	166,912,200	166,912,200	166,912,200	166,912,200
Lease Income(Tsh.)	2,490,000	12,270,000	14,724,000	18,405,000	22,086,000	25,398,900	27,938,790	29,894,505	31,389,231	32,958,692	33,947,453	34,965,876
Lease Income Increasing Ratio(%, comparison to previous year)		492.8	20.0	25.0	20.0	15.0	10.0	7.0	5.0	5.0	3.0	3.0
Yearly Maintenance Cost(Tsh.)	650,000	918,000	2,503,683	5,007,366	8,345,610	11,683,854	11,683,854	13,352,976	16,691,220	16,691,220	16,691,220	20,029,464
Maintenance Cost ratio to Depreciation cost(%)	0.4	0.5	1.5	3.0	5.0	7.0	7.0	8.0	10.0	10.0	10.0	12.0
Balance(Tsh. Income - Maintenance cost)	2,490,000	12,270,000	12,220,317	13,397,634	13,740,390	13,715,046	16,254,936	16,541,529	14,698,011	16,267,472	17,256,233	14,936,412
Income Accumulation(Tsh.)		14,760,000	26,980,317	40,377,951	54,118,341	67,833,387	84,088,323	100,629,852	115,327,863	131,595,335	148,851,568	163,787,980
Yearly Depreciation Cost (Tsh.12 year equal depreciation)	13,909,350	13,909,350	13,909,350	13,909,350	13,909,350	13,909,350	13,909,350	13,909,350	13,909,350	13,909,350	13,909,350	13,909,350
Total depreciation cost(Tsh.)	13,909,350	27,818,700	41,728,050	55,637,400	69,546,750	83,456,100	97,365,450	111,274,800	125,184,150	139,093,500	153,002,850	166,912,200
Total balance(Tsh.)	-11,419,350	-13,058,700	-14,747,733	-15,259,449	-15,428,409	-15,622,713	-13,277,127	-10,644,948	-9,856,287	-7,498,165	-4,151,282	-3,124,220
Yearly depreciation ratio(%)	1.5	7.4	7.3	8.0	8.2	8.2	9.7	9.9	8.8	9.7	10.3	8.9
Total Depreciation ratio(%)		8.8	16.2	24.2	32.4	40.6	50.4	60.3	69.1	78.8	89.2	98.1

Table2-36 Mid/Long-Term Prediction without equipment renewal (Iringa DC)

	1 (2013/14)	2 (2014/15)	3 (2015/16)	4 (2016/17)	5 (2017/18)	6 (2018/19)	7 (2019/20)	8(2020/21)	9 (2021/22)	10 (2022/23)	11 (2023/24)	12 (2024/25)
Total Depreciation cost(Tsh.)	196,396,200	196,396,200	196,396,200	196,396,200	196,396,200	196,396,200	196,396,200	196,396,200	196,396,200	196,396,200	196,396,200	196,396,200
Lease Income(Tsh.)	8,620,000	10,750,000	12,900,000	16,125,000	19,350,000	22,252,500	24,477,750	26,191,193	27,500,752	28,875,790	29,742,063	30,634,325
Lease Income Increasing Ratio(%, comparison to previous year)		24.7	20.0	25.0	20.0	15.0	10.0	7.0	5.0	5.0	3.0	3.0
Yearly Maintenance Cost(Tsh.)	132,000	743,800	1,963,962	2,945,943	3,927,924	4,909,905	5,891,886	9,819,810	13,747,734	17,675,658	19,639,620	23,567,544
Maintenance Cost ratio to Depreciation cost(%)	0.1	0.4	1.0	1.5	2.0	2.5	3.0	5.0	7.0	9.0	10.0	12.0
Balance(Income - Maintenance cost,Tsh.)	8,488,000	10,006,200	10,936,038	13,179,057	15,422,076	17,342,595	18,585,864	16,371,383	13,753,018	11,200,132	10,102,443	7,066,781
Income Accumulation		18,494,200	29,430,238	42,609,295	58,031,371	75,373,966	93,959,830	110,331,213	124,084,231	135,284,362	145,386,806	152,453,587
Yearly Depreciation Cost (Tsh.12 year equal depreciation)	16,366,350	16,366,350	16,366,350	16,366,350	16,366,350	16,366,350	16,366,350	16,366,350	16,366,350	16,366,350	16,366,350	16,366,350
Total depreciation cost(Tsh.)	16,366,350	32,732,700	49,099,050	65,465,400	81,831,750	98,198,100	114,564,450	130,930,800	147,297,150	163,663,500	180,029,850	196,396,200
Total balance(Tsh.)	-7,878,350	-14,238,500	-19,668,812	-22,856,105	-23,800,379	-22,824,134	-20,604,620	-20,599,588	-23,212,919	-28,379,138	-34,643,044	-43,942,613
Yearly depreciation ratio(%)	4.3	5.1	5.6	6.7	7.9	8.8	9.5	8.3	7.0	5.7	5.1	3.6
Total Depreciation ratio(%)		9.4	15.0	21.7	29.5	38.4	47.8	56.2	63.2	68.9	74.0	77.6

In the case that the renewal of equipment is carried out while the depreciation is in effect, it is predicted that both the districts will be able to purchase, in the 5th year and the 8th year, respectively, small-size vibration rollers that are expected to be high in demand. In this case, the increase in the leasing revenue after the purchase will make it possible to sell the equipment to LBT small contractors, which is what is tried in this system and leads to the goal of stabilization of business. Similarly, the district office will become able to reduce the maintenance and administration cost and to stabilize the supply by equipment renewal. Moreover, the completion of the depreciation of the purchased equipment (including renewal equipment) in 12 years is a large benefit obtained as result of the renewal.

Table2-37 Mid/Long-Term Prediction with equipment renewal (Chamwino DC)

	1 (2013/14)	2 (2014/15)	3 (2015/16)	4 (2016/17)	5 (2017/18)	6 (2018/19)	7 (2019/20)	8(2020/21)	9 (2021/22)	10 (2022/23)	11 (2023/24)	12 (2024/25)
Total Depreciation cost(Tsh.)	196,396,200	196,396,200	196,396,200	196,396,200	196,396,200	193,029,200	193,029,200	193,029,200	193,029,200	193,029,200	193,029,200	193,029,200
Depreciation Cost for own procured equipment (Tsh. Vibrating Roller 1)					42,180,910	42,180,910	42,180,910	42,180,910	42,180,910	42,180,910		
Depreciation Cost for own procured equipment (Tsh. Vibrating Roller 2)								49,078,247	49,078,247	49,078,247	49,078,247	49,078,247
Total Depreciation cost(Tsh.)	196,396,200	196,396,200	196,396,200	196,396,200	238,577,110	235,210,110	235,210,110	284,288,357	284,288,357	284,288,357	242,107,447	242,107,447
Diposed equipment Income(tsh. Vibrating Roller, remaining value)						3,367,000				5,453,139		
Lease Income(Tsh.)	2,490,000	12,270,000	14,724,000	18,405,000	23,006,250	27,607,500	31,748,625	39,685,781	47,622,938	54,766,378	60,243,016	64,460,027
Lease Income Increasing Ratio(%, comparison to previous year)		492.8	20.0	25.0	25.0	20.0	15.0	25.0	20.0	15.0	10.0	7.0
Maintenance Cost (tsh. Initial Equipment)	132,000	743,800	2,945,943	5,891,886	9,819,810	13,512,044	13,512,044	15,442,336	19,302,920	19,302,920	19,302,920	23,163,504
Maintenance Cost ratio to Depreciation cost(%)	0.1	0.4	1.5	3.0	5.0	7.0	7.0	8.0	10.0	10.0	10.0	12.0
Maintenance Cost for own procured equipment 1(Tsh.)					210,905	421,809	632,714	1,265,427	1,265,427	2,109,046		
Maintenance Cost ratio to Depreciation					0.5	1.0	1.5	3.0	3.0	5.0		
Maintenance Cost for own procured equipment 1(Tsh.)								245,391	490,782	736,174	1,472,347	2,453,912
Maintenance Cost ratio to Depreciation								0.5	1.0	1.5	3.0	5.0
Total Maintenance Cost(Tsh.)	132,000	743,800	2,945,943	5,891,886	10,030,715	13,933,853	14,144,758	16,953,155	21,059,130	22,148,139	20,775,267	25,617,416
Maintenance Cost ratio to Income(%)	5.3	6.1	20.0	32.0	43.6	50.5	44.6	42.7	44.2	40.4	34.5	39.7
Balance(Tsh. Lease income + disposed income - Maintenance cost)	2,358,000	11,526,200	11,778,057	12,513,114	12,975,535	17,040,647	17,603,867	22,732,627	26,563,808	38,071,378	39,467,749	38,842,611
Income Accumulation(Tsh.)		13,884,200	25,662,257	38,175,371	51,150,906	71,558,553	89,162,421	111,895,047	138,458,855	176,530,233	215,997,982	254,840,592
Yearly Depreciation Cost (Tsh.12 year equal depreciation)	16,366,350	16,366,350	16,366,350	16,366,350	16,366,350	16,085,767	16,085,767	16,085,767	16,085,767	16,085,767	16,085,767	16,085,767
Depreciation Cost for own procured equipment 1(Tsh.)					3,515,076	3,515,076	3,515,076	3,515,076	3,515,076	3,515,076	0	0
Depreciation Cost for own procured equipment 2(Tsh.)								4,089,854	4,089,854	4,089,854	4,089,854	4,089,854
Total depreciation cost(Tsh.)	16,366,350	16,366,350	16,366,350	16,366,350	19,881,426	19,600,843	19,600,843	23,690,696	23,690,696	23,690,696	20,175,621	20,175,621
Accumulation of Depreciation cost(Tsh.)	16,366,350	32,732,700	49,099,050	65,465,400	85,346,826	104,947,668	124,548,511	144,149,353	163,750,196	183,351,038	199,436,805	215,522,572
Balance after depreciation (Tsh.)	-14,008,350	-18,848,500	-23,436,793	-27,290,029	-81,063,597	-80,256,793	-82,253,768	-79,121,984	-72,159,019	-53,688,483	-30,306,501	-7,549,657
Yearly Depreciation ratio(%)	1.2	5.9	6.0	6.4	5.4	7.2	7.5	8.0	9.3	13.4	16.3	16.0
Total Depreciation Ratio(%)		7.1	13.1	19.4	24.9	32.1	39.6	47.6	56.9	70.3	86.6	102.7
Prediction of Exchange Rate(Tsh./US$)	1,580	1,990	2,150	2,215	2,303	2,372	2,467	2,541	2,643	2,722	2,831	2,916
Currency Changing ratio(%)		25.9	4.0	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	3.0
Prediction of Equipment Price changing Ratio(%)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

Table2-38 Mid/Long-Term Prediction with equipment renewal (Iringa DC)

	1 (2013/14)	2 (2014/15)	3 (2015/16)	4 (2016/17)	5 (2017/18)	6 (2018/19)	7 (2019/20)	8(2020/21)	9 (2021/22)	10 (2022/23)	11 (2023/24)	12 (2024/25)
Total Depreciation cost(Tsh.)	196,396,200	196,396,200	196,396,200	196,396,200	196,396,200	166,093,200	166,093,200	166,093,200	166,093,200	166,093,200	166,093,200	166,093,200
Depreciation Cost for own procured equipment (Tsh. Vibrating Roller 1)					42,180,910	42,180,910	42,180,910	42,180,910	42,180,910	42,180,910		
Depreciation Cost for own procured equipment (Tsh. Vibrating Roller 2)								49,078,247	49,078,247	49,078,247	49,078,247	49,078,247
Total Depreciation cost(Tsh.)	196,396,200	196,396,200	196,396,200	196,396,200	238,577,110	208,274,110	208,274,110	257,352,357	257,352,357	257,352,357	215,171,447	215,171,447
Diposed equipment Income(tsh. Vibrating Roller, remaining value)						3,367,100					5,453,139	
Lease Income(Tsh.)	8,620,000	10,750,000	12,900,000	16,125,000	19,350,000	23,220,000	26,703,000	32,043,600	36,850,140	40,535,154	44,588,669	47,709,876
Lease Income Increasing Ratio(%, comparison to previous year)		24.7	20.0	25.0	20.0	20.0	15.0	20.0	15.0	10.0	10.0	7.0
Maintenance Cost (tsh. Initial Equipment)	132,000	743,800	1,963,962	2,945,943	3,927,924	4,152,330	4,982,796	8,304,660	11,626,524	14,948,388	16,609,320	19,931,184
Maintenance Cost ratio to Depreciation cost(%)	0.1	0.4	1.0	1.5	2.0	2.5	3.0	5.0	7.0	9.0	10.0	12.0
Maintenance Cost for own procured equipment 1(Tsh.)					210,905	421,809	632,714	1,265,427	1,265,427	2,109,046		
Maintenance Cost ratio to Depreciation cost(%)					0.5	1.0	1.5	3.0	3.0	5.0		
Maintenance Cost for own procured equipment 1(Tsh.)								245,391	490,782	736,174	1,472,347	2,453,912
Maintenance Cost ratio to Depreciation cost(%)								0.5	1.0	1.5	3.0	5.0
Total Maintenance Cost(Tsh.)	132,000	743,800	1,963,962	2,945,943	4,138,829	4,574,139	5,615,510	9,815,479	13,382,734	17,793,607	18,081,667	22,385,096
Maintenance Cost ratio to Income(%)	1.5	6.9	15.2	18.3	21.4	19.7	21.0	30.6	36.3	43.9	40.6	46.9
Balance(Tsh. Lease income + disposed income - Maintenance cost)	8,488,000	10,006,200	10,936,038	13,179,057	15,211,171	22,012,961	21,087,490	22,228,121	23,467,406	22,741,547	31,960,141	25,324,780
Income Accumulation(Tsh.)		18,494,200	29,430,238	42,609,295	57,820,466	79,833,427	100,920,918	123,149,039	146,616,445	169,357,992	201,318,133	226,642,913
Yearly Depreciation Cost (Tsh.12 year equal depreciation)	16,366,350	16,366,350	16,366,350	16,366,350	16,366,350	13,841,100	13,841,100	13,841,100	13,841,100	13,841,100	13,841,100	13,841,100
Depreciation Cost for own procured equipment 1(Tsh.)					3,515,076	3,515,076	3,515,076	3,515,076	3,515,076	3,515,076	0	0
Depreciation Cost for own procured equipment 2(Tsh.)								4,089,854	4,089,854	4,089,854	4,089,854	4,089,854
Total depreciation cost(Tsh.)	16,366,350	16,366,350	16,366,350	16,366,350	19,881,426	17,356,176	17,356,176	21,446,030	21,446,030	21,446,030	17,930,954	17,930,954
Accumulation of Depreciation cost(Tsh.)	16,366,350	32,732,700	49,099,050	65,465,400	85,346,826	102,703,002	120,059,178	137,415,353	154,771,529	172,127,705	185,968,805	199,809,905
Balance after depreciation (Tsh.)	-7,878,350	-14,238,500	-19,668,812	-22,856,105	-27,526,359	-22,869,574	-19,138,260	-14,266,314	-8,155,084	-2,769,713	15,349,328	26,833,008
Yearly Depreciation ratio(%)	4.3	5.1	5.6	6.7	6.4	10.6	10.1	8.6	9.1	8.8	14.9	11.8
Total Depreciation Ratio(%)		9.4	15.0	21.7	28.1	38.6	48.8	57.4	66.5	75.4	90.2	102.0
Prediction of Exchange Rate(Tsh./US$)	1,580	1,990	2,150	2,215	2,303	2,372	2,467	2,541	2,643	2,722	2,831	2,916
Currency Changing ratio(%)		25.9	4.0	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	3.0
Prediction of Equipment Price changing Ratio(%)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

2.6.4. Current Situations of Contractor Equipment and Problems

(1) Model Site Contractors

The interviewing of LBT contractors has been carried out sequentially on the current situation since the start of the project. The results of the investigation are as follows, showing that satisfaction has been increasing and the project has been contributing to the stabilization of business. In order to further improve these points, the following should be kept in mind as much as possible (even though there would be difficulties such as the district budget and personnel distribution based thereon).

Table2-39 Satisfaction of Contractors on their own service and district services.

	2012/13	2013/14	2014/15	2015/16	
Equipment Status	・Almost all the LBT contractors own no equipment but operational tools.	No change in current situations.	No change in current situations.		
Bussiness Management	・Possession of small-size construction equipment by private companies for LBT is limited, so the cases the equipment is procured from distant locations are frequent and it is disadvantageous in terms of cost.	・No obvious changes have been observed but they are interested in the possession of equipment by the prefectural governments, willing to utilize it in the future.	・For LBT contractors with low initial capitals, the leasing service by the prefectural governments is convenient because of future payment (payment by results). ・The LBT constructions, which are publically noticed every year, facilitate the possibility of stabilizing businesses.		Eval.
Satisfaction(five-grade eval.)	1	2	4		2.3
District owned Equpment	・It is hoped that the equipment is possessed preferentially by the district to lease the equipment to small-size contractors such as LBT. ・The prices are interested.	・It is convenient but it is sometimes difficult to obtain the equipment at the right time along the progress of construction as the number of the equipment is not large. ・As to vibrating rollers, ones with little bit larger capacity (weight) would be better in cost-effectiveness.	・Small-size vibrating rollers: the price is higher compared with the others (district 150,000Tsh., private companies 120,000Tsh.) with the difficulty in accessing to the equipment from private companies. The quantity of this equipment is too small compared with the need. The cost-effectiveness is satisfactory (the price is adequate) but the quantity is in short. ・Water tank cars: similarly to the cases of rollers, the price is higher than the private leasing but the large capacity (10000lt compared with 6-8,000lt for private leasing) is satisfactory.There is no problem but the quantity is not enough. ・Tow graders: Used as necessary, but the equipment available from private leasing companies are hydraulic and cheaper.What was possessed by the district services was not known, so a large-size equipment was leased from a private leasing company. ・Plate compactors: There is a possibility to use this equipment for building constructions but this work is carried out manually with satisfaction. Therefore, frequency of using this equipment is not high.		Eval.
Satisfaction(five-grade eval.)		4	4		4.0

- Reviewing of leasing price.

For small-size contractors such as LBTs, the equipment cost accounts for a large portion (30 to 40%) of the contract amount when they get a road work construction contract.

For this problem, the equipment owners (district office) should provide the equipment at prices as low as possible with due consideration of the maintenance and administration cost and equipment replacement cost.

For the Iringa district equipment price, it will be set lower than the prices of private leasing companies by 5 to 10% from the next fiscal year (15/16) because it is high in demand in Iringa district and the leasing prices for small-size vibrating roller of private leasing companies are cheaper than those of the district equipment by about 15%. For Chamwino district, the price, which has been set to be relatively cheaper, will not be changed.

- Stable Constructions Tender

It has been announced as a policy that 20% of the current roadwork budget is allocated to LBT construction orders. It is necessary to keep this policy to encourage the contractors.

- Ordering with appropriate quotation (BOQ) by Districts.

The quotation and ordering should be carried out with consideration of the current economic situation as much as possible, in order to reduce effects on labor cost (employment of cheap labors to save labor cost) and on finish quality (the quality varies among contractors because equipment is not used).

(2) Pilot Site Contractors

Kondoa District - The contractors in the last fiscal year possess minimally required equipment (vibrating rollers, dump trucks) and water tank cars are also leasable near the construction sites. As their own equipment is too old, they wish to use equipment of good condition, if available. The problems they are facing are how to secure good earth filling and water. They said they have no problem in terms of equipment.

Mufindi District - For the technical transfer effect in Iringa district, the constructions were carried out in such a manner that a plurality of contractors was allocated to a single construction site for the sake of easy management. Because 3 areas out of the 4 areas were dealt with by the LBT construction contractors of Iringa district in the last fiscal year, the situation of equipment was difficult, and the equipment owned by Iringa district was also used.

The above reports show that access to good equipment is difficult in both the districts, which makes it important to possess equipment in the model district (neighboring district).

2.6.5. District Equipment Operation Management Situation

The equipment management and maintenance have been instructed according to an initially prepared guideline, but now have some problems as listed below.

(1) Equipment Utilization Situation

- Chamwino District - All the equipment is available for leasing and in good conditions. For tractors that are not frequently used, it will attempt to increase their utilization rate by an effort such that the use of graders will be obligated via BOQ, etc. Leasing to agricultural operations would be possible during the slack period for construction work if appropriate consideration is given to the leasing period. Negotiation with the agricultural sections of the district office was considered.
- Iringa District - A vibrating roller is being repaired to address trouble in its hydraulic system (It is still usable for light-load work). As the vibrating roller's usage is expected to increase from the next fiscal year, it will contact the supplier for servicing. The other equipment is in good conditions.

(2) Contract (Leasing Application)

The format prepared according to the guideline is too complicated. Therefore, the leasing is basically done under such contract management that a reply is issued to an application from a contractor.

JUWA COMPANY LIMITED,
P.O.BOX3492 DODOMA.

Figure2-26 Contract Form Contractor to District

CHAMWINO DISTRICT COUNCIL

DISTRICT ENGINEER
CHAMWINO

Figure2-27 Contract Form District to Contractor

(3) Account Management

The account management in Iringa district is carried out through an account of the civil engineering department in general accounts, and that in Chamwino district is managed through an account of the civil engineering department. The account management is carried out relatively according to the plan and the maintenance and administration cost is paid through the accounts. In Chamwino district, a part of leasing fees is remitted to another account of the district account. They said the amount of money can be transferred to the right account.

(4) Management Form for Maintenance and Administration

The importance of maintenance and administration for the equipment was not well regarded, maybe because the equipment is small-sized. About 60% of the book-keeping of the management form on maintenance and repair is done. This figure is considered as relatively good. The spending on administration is all kept in record, which makes it possible to trace the administration history. The reason why the recording rate of the recording book is so low is that the civil engineers in the department are also assigned to the administration of the equipment, and they do not have enough time to maintain the recording and have no enough expertise (knowledge regarding the equipment).

(5) Operation Staff Administration

Basically the operation staff administration is carried out based on contract, calculating their working hours by multiplying the number of wording days on the contracts by 8 hours per day.

(6) Material (parts) Management

The materials have been consumed as per the regular (fast-moving parts) plan, and appropriately managed in the material management stock house (revenue management record).

As a whole, the management, which has some minor differences from the plan, is carried out

appropriately through simplified and flexible management by the locals. As it was confirmed that the fund has been accumulated and the operation rates have been stabilized, Project and the locals agreed that the management should be carried on in the same manner. In terms of tractors, it was noted in both the district that, in order to earn from the investment, tractors will be flexibly utilized in agriculture, for which tractors are also usable and needed seasonally (needed only in the rainy season while LBT constructions are concentrated in the dry season), with due consideration to the maintenance and administration and the effects on constructions.

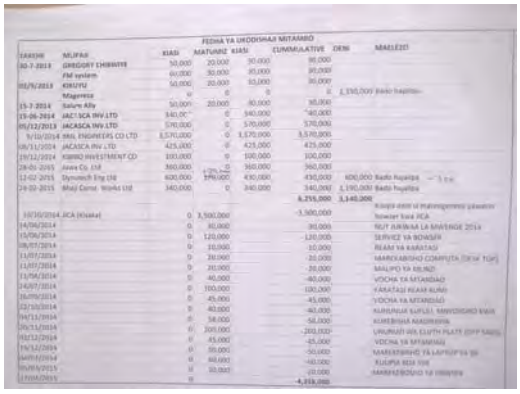


Figure2-28 Income Management Form

Figure2-29 Maintenance management Form

2.6.6. Proposals

(1) Facilitation of equipment renewal

In view of the maintenance and administration cost in the next fiscal year, equipment renewal may be considered if the renewal cost + the expected maintenance and administration cost in the next fiscal year (+110 – 120 %) is secured, so as to sell the existing equipment within 1 to 2 years at the depreciation prices to private contractors who have participated in constructions so far.

(2) Perfection of regular maintenance and administration

In order to prolong the lives of equipment, regular maintenance (oil change and various lubrications) is important and should be carried out as appropriate. Moreover, cooperation with the suppliers is necessary for general repairs, especially, hydraulic-related services.

(3) Stricter fund management

At the moment, fund management is appropriately carried out according to the objectives. However there is a concern that if there are excess funds, the excess would be used for other purposes as a result of budgeting. It is necessary to make appropriate explanations to the district office in order to secure the funds.

(4) Clear notification of equipment use and availability in tender documents

A contractor proposed to clearly notify in tender documents about the equipment possessed by the district office. If possible, tender documents may be amended to have such notification.

(5) Appropriate Ordering of LBT constructions.

As mentioned in Item 4, it is important to surely allocate about 20% of the annual roadwork maintenance budge to LBT constructions for specialized contractors (Class 7 LBT specialist 3). It is also important to carry out the LBT constructions under suitable conditions, or the equipment would be exposed to excess load under poor working conditions, thereby shortening their lives. It is necessary to select appropriate construction sites according to the construction guideline prepared in the project.

2.6.7. Review on LBT equipment leasing (written in the progress report of the 2nd contracted year)

For further development of equipment leasing, the district-based leasing, which is currently in progress, requires at least 5 years to renew the equipment as predicted in the mid/long-term prediction. It is reasonably probable that some equipment is lost due to accident or breakdown by chance in such a period. Thus, it is the best scenario that the equipment is ideally renewed in about 3 years.

To achieve this, the following premises are necessary: (1) there are at least two sets of each type of equipment, (2) the fund management is unified, (3) fund management is run by regional offices (to facilitate the accumulation of funds), and actual operation is carried out by the district office. The following is a revised version of the outline view and report prepared in the last fiscal year:

(Revised Report of the last fiscal year)

One problem associated with the LBT contractors is the difficulty in accessing the necessary equipment. Therefore, equipment leasing under this project is highly expected. However, there is not enough equipment (only one set), and it is difficult to supply the equipment to all contractors when they need it. Moreover, under the district-based operation, it takes five to six years to renew the equipment and an increase in the number of equipment cannot be expected in a short time. However, the sum of the contracts (revenues) in both the districts in these two years reached about 31 million. Therefore, it is expected that in the next year (the fourth year of the project) the revenues will increase to a level at which small-size vibrating rollers can be pursed, even if the maintenance and administration cost in the next fiscal year is taken into consideration. Unified revenues (leasing fees) management by the regional office will be a solution of this problem. The following is an outline view of the management (draft). As shown in the above view, the equipment leasing and administration will be carried out by the district offices, and only the leasing fees will be paid to an account of a regional office. The regional office will purchase new equipment and allocate it to each district, taking into consideration the equipment maintenance and administration cost and the operation cost in the next fiscal year. This will speed up the renewal of the equipment. Moreover, selling of the equipment of about five years old to LBT contractors will be considered as per the initial plan. This will solve the difficulty for small-size contractors in procuring equipment, survival of businesses, and facilitation of motivation for starting business. And for the regional office, this will improve their ability of operation and administration by building up their management ability.

However, to achieve these, the following are necessary:

An account that the regional office can carry over (and to which the funds accumulated in the district accounts can be transferred) is opened

Special staff for administration (about one person) can be allocated in the regional office.

The regional office is able to pay the maintenance and administration cost and the operation cost to the district office in a timely manner.

Each district has LBT constructions on a constant basis.

The BOQ at bidding in the district is written to show that the equipment should be used appropriately.

In each district, construction sites (location, distance, and environment) should be selected taking into consideration the operation of equipment.

The equipment maintenance and administration is allowed to be carried out by private companies

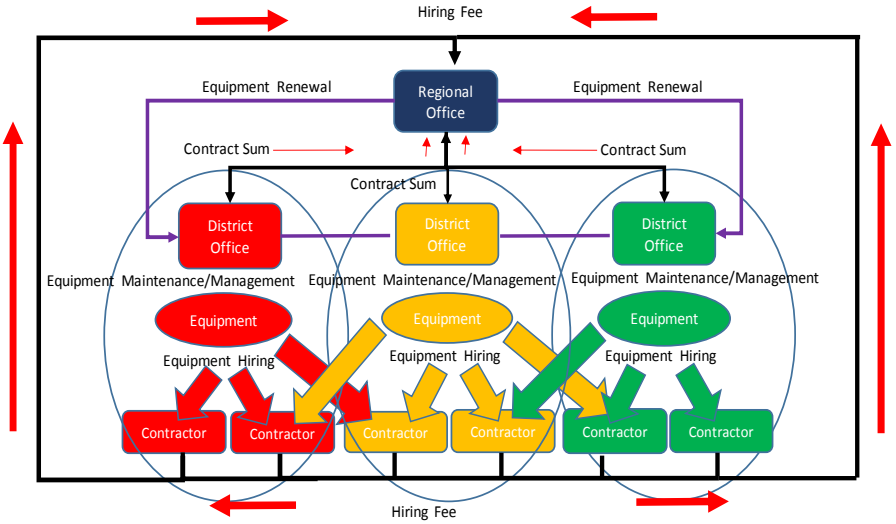


Figure2-30 Proposed New Hiring System

As to the variety of equipment, the equipment expected to be necessary would be as follows after the confirmation of the result of the pilot project.

- Tractors (70 – 80 HP): spec downgrading by about 20% from the equipment procured for this project.
- Water Tank Cars (6000-8000 Lit.): spec downgrading by about 20% from the equipment procured for this project.
- Small-Size Vibrating Rollers (1 ton): need to be 1 ton or greater.
- (Plate Compactors)
- Water Pumps
- Tow Graders

Where 1 set of equipment includes one of each of these types of equipment, the number of sets of equipment to be stationed in a state is determined to be the half of the number of districts in state (in case of a state consisting of 4 to 5 districts, 2 sets will be provided). The investment amount is expected to be about 100,000 to 130,000 dollars (including transportation, spare parts, and training cost). The initial investment should be supported by fully grant assistance or the like, considering the

financial capacity etc. of the area.

The tow grader, whose use frequency is low, may be provided in such a way that only one tow grader is provided in the project-participating state, or no tow grader is provided in the project-participating state where the situation (the use frequency of tow graders and the number of existing tow graders that should have been checked) allows. If a tow grader is to be procured, a hydraulic tow grader is preferable (the existing tow graders are mechanical).

Plate compactors are low in use frequency, suggesting that most of the constructions were built with manual compaction. We would like to leave it to the local staff's judgement whether they still need this equipment.

A pilot program may be carried out initially in 2 to 3 states, considering the introduction of a nation-wide program through financial planning in the future. The states for the program may be selected by considering the following.

- The region has good experiences of LBT constructions.
- The environment is suitable for LTB constructions in terms of soil quality, community participation, weather, etc.
- The traveling distance (range) for the equipment from its station to the site is in the range of 50 to 80 km (maximum of 120 km).

3. Project Monitoring and Achievement of Outputs

3.1. Monitoring of Project Activities

Monitoring is routine work that is project-internal. After the commencement of the Project, monitoring activities were conducted to check whether project activities were implemented and project outputs were produced as planned. If necessary, modification of the Project was considered and carried out. Monitoring is a pillar of project management because the Project manages the objectives initially established in the Project Design Matrix (PDM) based on the indicators and revises the Project Activities and Outputs in response to the various changes during the implementation period.

Monitoring activities shall be conducted mainly by the counterparts (C/P) in consideration of project sustainability after the termination of the Project. In these circumstances, the Monitoring System (MS) was consensually established in collaboration with C/P and Japanese experts.

3.1.1. Monitoring System (MS)

In order to confirm the progress of the Outputs and Project Purpose achieved by the project activities, C/P and Japanese experts monitor their progress based on the Monitoring System (MS). The specific contents of the MS are as follows:

(1) Components of PDM (narrative summary, indicators, means of verification);
(2) Monitoring Plan (persons/organizations in charge, frequency, remarks); and
(3) Baseline Value and Final Target Value (baseline value, final target value).

The project activities were monitored according to the above factors, and the achievements/target values were filled out in the MS on the basis of their progress. Also, individual forms (questionnaire, data entry sheet, etc.) necessary for data collection were designed and prepared, and the forms (Form 1 to 7) were organized and attached to the MS (refer to Annex 4-1). Also, the procedure of specific monitoring activities was summarized in the “Instruction Manual for the Monitoring System (Version 2-2)” (refer to Annex 4-2).

The MS, including each form, was modified accordingly if difficulties were found in the forms during the data collection along the MS. Ultimately, the Project contributed to the sustainability of monitoring activities performed by C/P through the establishment of user-friendly and simplified MS and forms.

3.1.2. Monitoring of the Important Assumptions

It is crucial for the project stakeholders to have consciousness of the Important Assumptions so as to react to them promptly, as needed, by checking the current conditions annually. Further, persons in charge were assigned to each of the assumptions. The following points were confirmed in each assumption (refer to Annex 4-1):

(1) With or without the occurrence of the assumptions;

(2) Causes (if they occur);
(3) Influences on the Project; and
(4) Measures and undertakings by the Project.

3.1.3. Progress of the Plan of Operations (PO)

The Annual Plan of Operations (APO: (i) March 2012 – June 2013, (ii) July 2013 – June 2014, (iii) July 2014 – June 2015, (iv) July 2015 – February 2016) extracted from the PO of the entire cooperation period was produced over the financial year in Tanzania, and progress management was conducted according to the APO. The progress of the project activities is summarized in Table 2-1 based on the APO.

Also, an enlarged depiction of the APO was posted on the wall at the project office and C/P offices, and the monthly progress was confirmed. The Japanese expert team and C/P were able to confirm the progress and comprehend the entire flow because the APO posted on the wall was visualized. Moreover, the progress was confirmed in the weekly meetings of the expert team.

3.2. Achievements based on Indicators

Through the monitoring activities, the following indicators were confirmed: (1) the maintenance status of rural roads (Form 1); (2) the satisfaction ratings of contractors and community people (Forms 2-1 & 2-2); (3) the percentage of rollover funds (Form RALG-1 of PMO-RALG); (4) the authorization of the Operational Guidelines by MOW; (5) the percentage of RS/council engineers utilizing the Operational Guidelines (Form 3); (6) the progress of Annual Rural Road Maintenance Plan (Form 4); (7) the percentage of the road maintenance works completed by contractors (Form 5); (8) the ratings of district engineers and technicians of their practical skills and knowledge (Forms 6-1 & 6-2); (9) the consultations on rural road maintenance between contractors and district engineers/technicians (Form 7); and (10) the ratio of LBT works to all maintenance works (Form 5). The details are as follows:

3.2.1. Achievements of the Project Purpose

(1) Indicator 1: Maintenance status of rural roads

The maintenance status of rural roads (in combination with “Good” and “Fair”) in Chamwino DC (target value 80%) and Kondoa DC (target value 70%) in Dodoma Region as well as in Iringa DC (target value 70%) and Mufindi DC (target value 70%) are described in Table 3-1. However, the road network in Chamwino DC was extended around 1.6 times in FY 2014/15. Although the indicator did not attain the target value (80%) in the financial year, the percentage of road status exceeds 90% if calculated with the previous road network. Moreover, as Mufindi DC did not attain the target value, it is anticipated that the indicator shall be accomplished in FY 2015/16.

With reference to the road maintenance status in other district councils, including municipal councils, in the Dodoma and Iringa regions, the achievements are listed in the table below:

Table 3-1 The maintenance status of rural roads in model and disseminated districts (FY2011/12 – 2014/15)

		FY 2011/12	FY 2012/13	FY 2013/14	FY 2014/15
Model Districts	Chamwino District	**74.71%** (Good：40.67%、Fair：34.04%)	**79.04%** (Good：42.41%、Fair：36.63%)	**81.50%** (Good：47.30%、Fair：34.20%)	**73.70%**[1] (Good：50.31%、Fair：23.39%)
	Iringa District	**60.16%** (Good：44.52%、Fair：15.64%)	**66.36%** (Good：51.96%、Fair：14.40%)	**71.29%** (Good：58.40%、Fair：12.89%)	**92.49%** (Good：72.86%、Fair：19.63%)
Disseminated Districts	Kondoa District	—	—	**63.34%** (Good：43.40%、Fair：19.94%)	**77.35%** (Good：61.87%、Fair：15.48%)
	Mufindi District	—	—	**63.09%** (Good：34.77%、Fair：28.32%)	**57.08%** (Good：18.13%、Fair：38.95%)
Dodoma Region	Kongwa District	—	—	**49.77%** (Good：13.89%、Fair：35.88%)	**52.35%** (Good：17.87%、Fair：34.48%)
	Chemba District	—	—	**46.51%** (Good：43.08%、Fair：3.43%)	**69.28%** (Good：41.62%、Fair：27.66%)
	Mpwapwa District	—	—	**45.54%** (Good：30.62%、Fair：14.91%)	**45.53%** (Good：28.69%、Fair：16.84%)
	Bahi District	—	—	**67.81%** (Good：43.60%、Fair：24.21%)	**68.80%** (Good：45.73%、Fair：23.08%)
	Dodoma Municipality	—	—	**56.48%** (Good：38.97%、Fair：17.51%)	**56.56%** (Good：39.16%、Fair：17.40%)
Iringa Region	Kilolo District	—	—	**60.75%** (Good：12.18%、Fair：48.57%)	**59.87%** (Good：11.81%、Fair：48.06%)
	Iringa Municipality	—	—	**46.51%** (Good：8.54%、Fair：37.98%)	**48.55%** (Good：10.76%、Fair：37.79%)

Source: Form 1 of Monitoring System

(2) Indicator 2: Satisfaction ratings of contractors and community people

The Project aims at achieving over 75% in the satisfaction ratings on average with reference to rural road maintenance works or status for contractors (refer to Table 3-2) and community people (refer to

[1] It seems that the road status has gradually been improved from the perspective of consecutive years in the past from FY 2011/12 to FY 2013/14. However, the road network in Chamwino DC was extended around 1.6 times (total road length = 1,040 km) in FY 2014/15. Importantly, the percentage of road status exceeds 90% if calculated with the previous road network (approximately 600 km).

Table 3-3), respectively, in the model and disseminated districts. Questionnaire surveys were conducted twice in the model districts, and the results are shown below. In the disseminated districts, the questionnaire survey will be carried out following the completion of pilot projects after the end of June 2016.

Table 3-2 Satisfaction ratings of contractors who executed the pilot projects in Chamwino and Iringa DC

	1st Questionnaire Survey (February 2014)		2nd Questionnaire Survey (June 2015)	
	Chamwino DC (5 respondents)	Iringa DC (14 respondents)	Chamwino DC (11 respondents)	Iringa DC (11 respondents)
Q1. Payment of construction costs from the district council in a timely manner	56.00% (2.80)	90.00% (4.50)	72.73% (3.64)	52.73% (2.64)
Q2. Scale or size of road maintenance works	76.00% (3.80)	92.86% (4.64)	80.00% (4.00)	67.27% (3.36)
Q3. Number of road maintenance works	76.00% (3.80)	90.00% (4.50)	76.36% (3.82)	65.45% (3.27)
Q4. Instructions and directions on road maintenance works by district engineer and technicians	80.00% (4.00)	95.71% (4.79)	74.55% (3.73)	83.64% (4.18)
Q5. Prompt and concrete responses to the inquiries about road maintenance works	80.00% (4.00)	84.29% (4.21)	78.18% (3.91)	69.09% (3.45)
Q6. Contents of bill of quantities (BOQ) for road maintenance works	76.00% (3.80)	90.00% (4.50)	69.09% (3.45)	78.18% (3.91)
Q7. Public notices of road maintenance works in a timely manner	68.00% (3.40)	84.29% (4.21)	72.73% (3.64)	80.00% (4.00)
Q8. Process from the tender award to the signing of a contract according to official schedule	84.00% (4.20)	85.71% (4.29)	72.73% (3.64)	83.64% (4.18)
Q9. Lend-lease condition of light equipment for LBT works	76.00% (3.80)	65.71% (3.29)	60.00% (3.00)	65.45% (3.27)
Q10. Inspection tasks executed by the district engineer and technician	88.00% (4.40)	94.29% (4.71)	72.73% (3.64)	78.18% (3.91)
Total Rating on Average (Q1 – Q10)	**76.0% (3.80)**	**87.3% (4.36)**	**72.9% (3.65)**	**72.4% (3.62)**
Q11. Overall satisfaction rating of the rural road maintenance works	80.00% (4.00)	97.14% (4.86)	80.00% (4.00)	90.91% (4.55)

Source: Questionnaire survey through Form 2-1 of Monitoring System

In Chamwino DC, the pilot projects were favorably completed in the first half of FY 2014/15. The target value of the indicator was over 75% of average rating point, and it was almost achieved. The item that was 10% or more from the target value was the "lend-lease condition of light equipment for LBT works (Q9)." As one of contractors executing pilot projects did not know that LBT equipment

could be rented in Chamwino DC, such as a vibration roller (provided by JICA), tow grader (from VETA), and water bowser (from the district water department), the contractor used EBT equipment with payment of higher cost. It might have affected the assessment result.

In Iringa DC, the target value of the indicator was almost achieved. In particular in Iringa DC, the delay of budget disbursement severely affected the maintenance works, and the contractors criticized it during the interviews. The delay continued for several months, so that the payment to the community people participating in the LBT works fell into arrears. Also, they commented that the supervision by district engineers and technicians was not enough in the financial year. As they did not show up at the sites for a month, contractors must have redone the road maintenance with the advice of district engineers/technicians during their site visit after a month. This is also considered as the result of a lack of governmental budget. District engineers and technicians were not able to supervise the road works properly because the transportation costs for site visits were not secured.

Also, the issue for LBT is to assemble community people living around project sites to provide labor for road maintenance works. Furthermore, as the soil is quite hard in Chamwino DC, the LBT works may not be appropriate in the dry season. On the other hand, although the soil is soft during the rainy season, this is the farming season. Thus, it might be appropriate to execute LBT works at the end of the rainy season, i.e., in April.

Previously, as Chamwino DC defined the qualification for LBT works as "Class 7," the contractors classified as "LBT Specialist" could not participate in the bidding (in September 2012). However, these small-scale contractors classified as "LBT Specialist" presently came to be able to participate in the bidding for LBT works.

Table 3-3 Satisfaction ratings of community people working for the pilot projects in Chamwino and Iringa DCs

	1st Questionnaire Survey (February 2014)		2nd Questionnaire Survey (June 2015)	
	Chamwino DC (36 respondents)	Iringa DC (43 respondents)	Chamwino DC (103 respondents)	Iringa DC (80 respondents)
Q1. Traffic time for passing through the road	35.56% (1.78)	75.81% (3.79)	73.73% (3.69)	84.75% (4.24)
Q2. Convenience of the transportation	35.56% (1.78)	76.74% (3.84)	68.82% (3.44)	83.00% (4.15)
Q3. Passable throughout the year	33.33% (1.67)	71.16% (3.56)	72.82% (3.64)	86.08% (4.30)
Q4. Drained conditions of the road	36.11% (1.81)	74.88% (3.74)	54.56% (2.73)	85.57% (4.28)
Q5. Road dust	47.78% (2.39)	78.14% (3.91)	60.39% (3.02)	71.90% (3.59)
Q6. Accidents on the road	60.00% (3.00)	80.47% (4.02)	72.35% (3.62)	84.00% (4.20)

Q7. To carry agricultural crops to the market	46.11% (2.31)	82.33% (4.12)	77.28% (3.86)	93.25% (4.66)
Q8. Number of customers of local shops around the road	57.78% (2.89)	74.88% (3.74)	69.71% (3.49)	63.26% (3.16)
Q9. Change in incomes	62.22% (3.11)	74.42% (3.72)	61.37% (3.07)	80.00% (4.00)
Q10. Continuous participation in LBT works	86.11% (4.31)	88.37% (4.42)	82.35% (4.12)	90.00% (4.50)
Total Rating on Average (Q1 – Q10)	**50.1% (2.50)**	**77.7% (3.89)**	**69.3%[2] (3.47)**	**83.3%[3] (4.16)**
Q11. Overall satisfaction rating of the status of rural roads	51.11% (2.56)	74.42% (3.72)	64.47% (3.22)	85.25% (4.26)

Source: Questionnaire survey through Form 2-2 of Monitoring System

In the model districts, it was confirmed that the ratings of Chamwino and Iringa DC had increased more than 19% (50.1% ⇒ 69.3%) and 5% (77.7% ⇒ 83.3%), respectively, between the 1st and 2nd questionnaire surveys (February 2014 and June 2015). In particular, although the rating of Chamwino DC did not attain the target value, it had been improved dramatically.

Regarding the questionnaire survey of community people in Iringa DC, the average satisfaction rating exceeded the target value of 75%, and good result was generally extracted. In Chamwino DC, whose rating did not reach the target value, on the other hand, three (3) items were more than 10% below the target value, i.e., "drained conditions of the road (Q4)," "road dust (Q5)", and "change in incomes (Q9)." Regarding the drainage conditions, as functional drainage ditches were not laid down at the appropriate places, the ditches were stopped up in the rainy season so that rainwater overflowed onto roads and the peripheries. Also, since the rainwater flowed into housing areas through the miter drain, the miter drain was blocked up by the community people as a measure for flood prevention. Water accumulated on roads, and the roads were seriously damaged. Thus, it is crucial to explain the installation sites of drainage ditches to the community people so as to avoid such situations. Moreover, the causes of the road damage may be considered as a problem of drainage design by district engineers/technicians, lack of contractors' capacity and working skill of community people, lack of explanation to community people by district engineers/technicians and contractors, etc. For the future, therefore, it is necessary to scrutinize the installation sites of drainage ditches properly.

With reference to road dust after passing the roads, as the grounds of Chamwino DC are dry and harder than the ones of Iringa DC, it seems that the road dust was easily dispersed.

In terms of the income changes, the community people talked about the low wages (around 5,000 TSH per day). They emphasized minimum wages from 8,000 to 10,000 TSH per day. Because labor costs

[2] The total rating for the pilot projects executed in FY 2013/14 was 62.2% in Chamwino and 81.9% in Iringa on average through questionnaire surveys conducted once again at the same sites. It is apparent that the percentages were increased by around 12% in Chamwino and 4% in Iringa compared with the previous year.
[3] Refer to the above description.

are decided by the contractors, it is considered that the minimum wage should be described in the tender documents prepared by the LGAs.

As positive effects of LBT works, the following comments were made by the community people:

- While it took three days to go to Iringa City from Makombe Village before the completion of the road maintenance works between Magunga and Makombe, it now takes only one day to go to the City. Furthermore, the transportation cost from Makombe Village to Ifunda located along a trunk road dropped to 18,000 – 20,000 TSH from 30,000 TSH after the road maintenance works.
- Community people became able to sell agricultural products at higher prices than before. This is because the transportation condition has been improved to send the products to a market. For instance, whereas the selling price of maize (20 kg) in the village was 3,000 TSH, the market price in Iringa City was 8,000 – 10,000 TSH. Thus, they could increase their profits.
- As mentioned by the contractors in Iringa DC, it is possible to execute road maintenance works with appropriate quality through LBT, even compared with EBT, if engineers or technicians supervise the works on a regular basis.
- Community people were able to acquire the knowledge and skills of excavation of drainage ditches, installation of drainpipes, gravelling method, etc., for LBT works.

(3) Indicator 3: The percentage of rollover funds for rural road maintenance

The Project aims to retain the percentage of rollover funds (RF) below 15%[4] for rural road maintenance in the model districts. The percentages of RF in the past four years, i.e., from FY 2011/12 to FY 2014/15, are shown in Table 3-4.

Chamwino DC stably retained the percentage of RF below 15% after FY 2011/12. Iringa DC has also retained the percentage of RF at almost 15% in the past four years. Thus, it could be said that the target values were achieved.

In the disseminated districts, moreover, the percentage of RF greatly fell below 15% in FY 2014/15 although the percentage exceeded more than 15% in FY 2013/14. However, because around 30% of approved budget were only disbursed in FY2014/15, it seems that they could spend almost all the budget. Therefore, it could be said that the percentages in FY2013/14 are more realistic.

Table 3-4 Percentage of rollover funds (RF) for rural road maintenance in the model districts (FY 2011/12 – 2014/15)

		FY 2011/12	FY 2012/13	FY 2013/14	FY 2014/15
el Distri	Chamwino District	60.59%	1.23%	10.03%	1.23%

[4] This target value was determined by reference to the target of Annual Performance Agreement concluded between PO-RALG and each LGA.

	Iringa District	12.03%	15.10%	4.60%	0.00%[5]
Disseminated Districts	Kondoa District	—	—	21.48%	3.64%[6]
	Mufindi District	—	—	32.13%	0.51%[7]

Source: Form RALG-1 "Summary of Committed and Uncommitted Action Plan" by PMO-RALG

3.2.2. Achievements of Output 1

(1) Indicator 1: Operational Guidelines authorized by MOW

The Rural Road Maintenance Operational Guidelines was finally authorized by MOW on 10th December, 2014, with the requirement of several modifications pointed out by MOW.

(2) Indicator 2: Percentage of RS/council engineers utilizing the Operational Guidelines

In this indicator, the Project aims at achieving over 80% of RS/council engineers across the country utilizing the Operational Guidelines distributed by PMO-RALG and MOW. During the annual engineers' meeting held at Arusha in August 2014, a questionnaire survey on the Draft Operational Guidelines was conducted. Although the usage rate was 68.2% (44 respondents), the sample number was not enough from the aspect of nationwide level (25 regions and 181 LGAs). Afterwards, the Operational Guidelines with final approval was bound in and distributed with an official letter from the Director of IDD (19th June, 2015). In the annual engineers' meeting at Arusha in August 2015, the 2nd questionnaire survey on the Guidelines was conducted, and the usage rate was 65.2% (192 respondents). Although the result was a decrease from the previous year, more than 60% of RS and Council Engineers across the country came to use the Guidelines in just a month (if it took several weeks to deliver the Guidelines to their offices). It could be said that the significant result was achieved within the framework of the Project, which only targeted four district councils in two regions, and the Guidelines developed in the target areas was utilized on a nationwide level. If the 3rd questionnaire survey is carried out at the annual meeting in August 2016, the usage rate would exceed the 80% set as the target value.

Moreover, the Project confirmed the status of guidelines usage according to the following items through the questionnaire survey. The aggregated results are as follows:

[5] Although Iringa DC received 60.6% (1.1 billion TSH) of the total approved budget, actual spending for road maintenance works was approximately 1.3 billion TSH. Thus, the amount of difference was covered by the project budget (1.47 billion TSH in total) for Removal of Bottleneck supported by DFID with approximately 0.2 billion TSH.

[6] Due to the delay of the budget disbursement, Kondoa DC received only 33.5% of the total approved budget by the end of FY 2014/15. In other words, the DC might have spent almost all the budget because it received only 30% of the approved budget. There is a prospect that the percentage of RF will be much higher if the DC received the entire approved budget

[7] This is also the same as above. Mufindi DC received only 34.0% of the total approved budget by the end of FY 2014/15.

Table 3-5 Percentages of RS/Council Engineers using the Operational Guidelines and their satisfaction ratings

	1st Questionnaire August 2014 44 respondents	2nd Questionnaire August 2015 192 respondents
Q0. Utilization (% answering "Yes")	68.18%	65.24%
I. GENERAL INFORMATION		
Q1. Frequency of usage	More than several times per month：90% Less than once per month：10%	More than several times per month：65% Less than once per month：35%
Q2. Ease of understanding[8]	78.67%	80.33%
Q3. User-friendliness	77.33%	80.49%
Q4. Applicability to various types of rural road maintenance works	76.00%	79.67%
Q5. Reference to the Operational Guidelines when encountering issues/problems	74.67%	74.10%
II. TARGETS AND POLICY DIRECTIVES OF THE OPERATIONAL GUIDELINES		
Q6. Satisfaction with the Targets and Policy Directives	74.67%	76.39%
Q7. Ease of understanding of the Targets and Policy Directives	78.00%	78.03%
III. PLANNING SECTION OF THE OPERATIONAL GUIDELINES		
Q8. Satisfaction with the Planning Section	72.00%	77.38%
Q9. Improvement in the Annual Rural Road Maintenance Plan	64.67%	69.09%
Q10. Improvement in the prioritization procedure for rural road maintenance works based on the Medium- and Long-term Rural Road Maintenance Plan	62.67%	64.17%
IV. PROCUREMENT AND IMPLEMENTATION SECTIONS OF THE OPERATIONAL GUIDELINES		
Q11. Satisfaction with the Procurement and Implementation Sections	74.00%	74.67%
Q12. Improvement in the procurement and implementation of rural road maintenance works	68.67%	69.50%
V. Monitoring and Evaluation (M&E) Section of the Operational Guidelines		
Q13. Satisfaction with the M&E Section	73.33%	75.97%
Q14. Improvement in the M&E activities	66.67%	68.07%

[8] Regarding the questions from Q2 to Q16, the respondents marked the grading points on a scale from "1" to "5" – with "5" representing the highest possible rating – and the grading points were converted to percentages (%) with averaged values.

VI. ANNEXES OF THE OPERATIONAL GUIDELINES		
Q15. Satisfaction with the Annexes	72.67%	77.31%
Q16. Operational improvement in rural road maintenance works by reference to the Annexes	66.00%	70.76%
VII. OVERALL EVALUATION OF THE OPERATIONAL GUIDELINES AND ANNEXES		
Q17. Overall evaluation of the Operational Guidelines	66.00%	71.97%
Q18. Overall evaluation of the Annexes	66.00%	70.82%

Source: Questionnaire survey through Form 3 of Monitoring System

Figure 3-1 graphically presents the results of the 2nd questionnaire survey conducted in August 2015. As the satisfaction ratings exceeded 75% for each chapter except for the chapter of "Procurement and Implementation" (the chapter almost attained 75%, though), it seems that the RS and Council Engineers are generally satisfied with the contents. While the chapter of "Planning" was assessed with the highest rating, the chapter of "Procurement and Implementation" was assessed with the lowest rating. Thus, it would be desirable to improve the latter chapter.

On the other hand, there are large gaps between the ratings for satisfaction ("Satisfaction") and for improvements with the guidelines usage ("Improvement"). In particular, as the gap between "Satisfaction" and "Improvement" in the chapter of "Planning[9]" had widened by around 11%, it is necessary to scrutinize the measures for increasing the actual "Improvement" in the chapter and to feed them back into the Guidelines as a future challenge. For instance, it is considered that the chapter should include specific explanations of the planning as well as pictures and graphic illustrations as one of the suggestions.

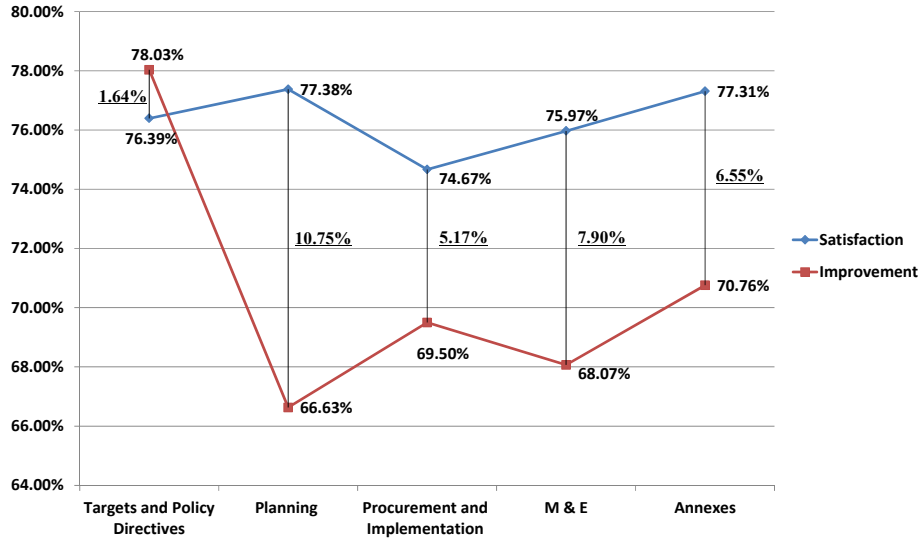


Figure 3-1 Comparison between "Satisfaction" and "Improvement" in each Chapter

[9] Because there are two questions (Q9 and Q10) on the improvements of "Planning," they are calculated as an averaged value.

3.2.3 Achievements of Output 2

(1) Indicator 1: Preparation of Annual Rural Road Maintenance Plan based on the checklist (including Indicator 1 of Output 4)

Annual Rural Road Maintenance Plans were prepared on the basis of the medium- and long-term rural road maintenance plan, the prioritization of rural road maintenance, etc. Also, the Annual Plan contains necessary items[10] based on the checklist (Form 4) as required in indicator 2-1 of the PDM. The specific items are shown below:

Table 3-6 Items necessary for the Annual Rural Road Maintenance Plan

(1) Medium- and long-term objectives (Vision)	(8) Coverage of road network	(15) Surface type
(2) Annual objectives	(9) Preliminary schedule	(16) Distance (km)
(3) Strategies and specific activities for the annual objectives	(10) Procurement procedures	(17) Time frame of rural road maintenance works
(4) Information of classified roads	(11) Work type	(18) Supervision expenses
(5) Information of rural road inventories	(12) Type of structures	(19) Establishment of unit costs for road maintenance works
(6) Needs and priority ranking	(13) Road name	(20) Total cost (TSH)
(7) Selection of rural road maintenance works	(14) Application of LBT and/or EBT	(21) Environment aspect
(22) Gender aspect	(23) HIV/AIDS aspect	

Source: Form 4 of Monitoring System

Indicators 2-1 and 4-1 have been achieved in the model and disseminated districts because the Annual Plans were formulated with all the necessary items mentioned above (refer to Figures 3-2 and 3-3).

[10] The items necessary for the Annual Plan were decided during the Monitoring W/S held in September 2013.

Form 4: Checklist for the Annual Rural Road Maintenance Plan of District Council

No.	Items	Confirmation of Presence or Absence by District Engineers (Yes/No)	Assessment by RS Engineer ("Good"/"Fair"/"Poor")
1	Vision (Mid- and long-term objectives) of the LGA for rural road maintenance	YES	Good
2	Annual objectives of the LGA for rural road maintenance in the fiscal year	YES	Good
3	Strategies and specific activities for the achievement of the annual objectives	YES	fair
4	Information of classified roads	YES	Good
5	Information of rural road inventories	YES	Good
6	Needs of rural road maintenance works with priority ranking in the fiscal year	YES	Good
7	Selection of the rural road maintenance works	YES	Good
8	Coverage of road networks through the road maintenance works in the fiscal year	YES	Good
9	Preliminary schedule of road maintenance works	YES	Good
10	Procurement procedures	YES	fair
11	Work type (Routine/Spot/Periodic/ Emergence/Rehabilitation)	YES	Good
12	Type of structures (Culverts, Drifts, Bridges, etc.)	YES	Good
13	Road name	YES	Good
14	Application of LBT and/or EBT	YES	Good
15	Surface type (Gravel, Earth, etc.)	YES	Good
16	Distance (km)	YES	Good
17	Time frame of rural road maintenance works	YES	Good
18	Supervision expenses for rural road maintenance works	YES	Good
19	Establishment of unit costs (per km) for road maintenance works (routine maintenance, spot improvement, periodic maintenance, etc.)	YES	Good
20	Total cost (TSH)	YES	Good
21	Environmental issues	YES	Good
22	Gender issues	YES	Good
23	HIV/AIDS issues	YES	Good

Checklist of Chamwino DC (Form 4)

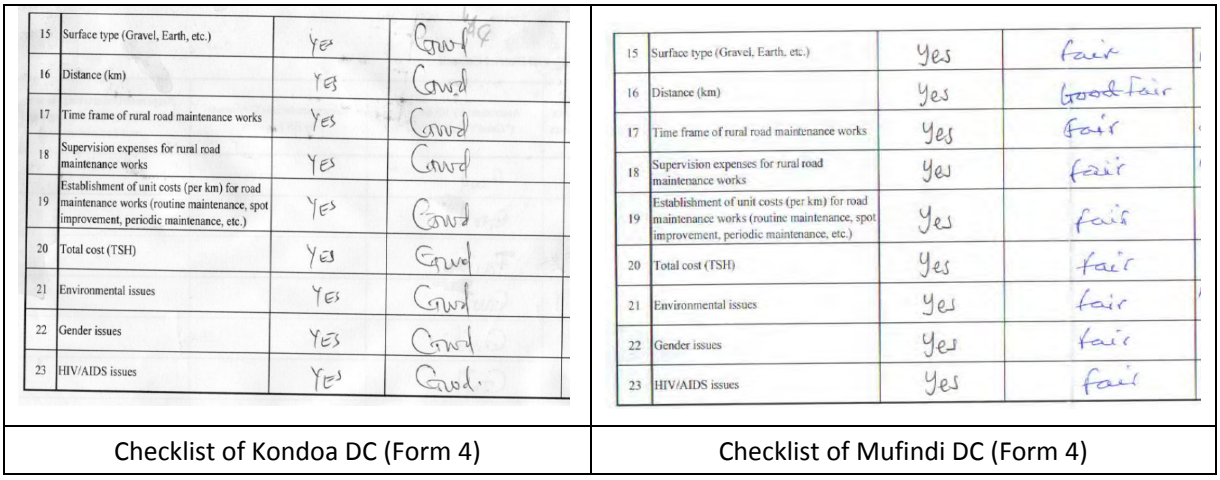
No.	Items	Confirmation of Presence or Absence by District Engineers (Yes/No)	Assessment by RS Engineer ("Good"/"Fair"/"Poor")
1	Vision (Mid- and long-term objectives) of the LGA for rural road maintenance	YES	Good
2	Annual objectives of the LGA for rural road maintenance in the fiscal year	YES	Good
3	Strategies and specific activities for the achievement of the annual objectives	YES	Good
4	Information of classified roads	YES	Good
5	Information of rural road inventories	YES	Fair
6	Needs of rural road maintenance works with priority ranking in the fiscal year	YES	Good
7	Selection of the rural road maintenance works	YES	Good
8	Coverage of road networks through the road maintenance works in the fiscal year	YES	Fair
9	Preliminary schedule of road maintenance works	YES	Good
10	Procurement procedures	YES	Good
11	Work type (Routine/Spot/Periodic/ Emergence/Rehabilitation)	YES	Good
12	Type of structures (Culverts, Drifts, Bridges, etc.)	YES	Good
13	Road name	YES	Good
14	Application of LBT and/or EBT	YES	Good
15	Surface type (Gravel, Earth, etc.)	YES	Fair
16	Distance (km)	YES	Fair
17	Time frame of rural road maintenance works	YES	Fair
18	Supervision by qualified person(s)	YES	Good
19	Establishment of unit costs (per km) for road maintenance works (routine maintenance, spot improvement, periodic maintenance, etc.)	YES	Fair
20	Total cost (TSH)	YES	Fair
21	Environmental issues	YES	Fair
22	Gender issues	YES	Fair
22	HIV/AIDS issues	YES	Fair

Checklist of Iringa DC (Form 4)

Figure 3-2: Results of Checklist in Model Districts (Form 4 in Monitoring System)

No.	Items	Confirmation of Presence or Absence by District Engineers (Yes/No)	Assessment by RS Engineer ("Good"/"Fair"/"Poor")
1	Vision (Mid- and long-term objectives) of the LGA for rural road maintenance	YES	Good
2	Annual objectives of the LGA for rural road maintenance in the fiscal year	YES	Good
3	Strategies and specific activities for the achievement of the annual objectives	YES	fair
4	Information of classified roads	YES	Good
5	Information of rural road inventories	YES	Good
6	Needs of rural road maintenance works with priority ranking in the fiscal year	YES	Good
7	Selection of the rural road maintenance works	YES	Good
8	Coverage of road networks through the road maintenance works in the fiscal year	YES	Good
9	Preliminary schedule of road maintenance works	YES	Good
10	Procurement procedures	YES	Fair
11	Work type (Routine/Spot/Periodic/ Emergence/Rehabilitation)	YES	Good
12	Type of structures (Culverts, Drifts, Bridges, etc.)	YES	Good
13	Road name	YES	Good
14	Application of LBT and/or EBT	YES	Good

No.	Items	Confirmation of Presence or Absence by District Engineers (Yes/No)	Assessment by RS Engineer ("Good"/"Fair"/"Poor")
1	Vision (Mid- and long-term objectives) of the LGA for rural road maintenance	Yes	Good
2	Annual objectives of the LGA for rural road maintenance in the fiscal year	Yes	Good
3	Strategies and specific activities for the achievement of the annual objectives	Yes	Good
4	Information of classified roads	Yes	Good
5	Information of rural road inventories	Yes	Fair
6	Needs of rural road maintenance works with priority ranking in the fiscal year	Yes	Fair
7	Selection of the rural road maintenance works	Yes	Good
8	Coverage of road networks through the road maintenance works in the fiscal year	Yes	Good/Fair
9	Preliminary schedule of road maintenance works	Yes	Fair
10	Procurement procedures	Yes	Fair
11	Work type (Routine/Spot/Periodic/ Emergence/Rehabilitation)	Yes	Good
12	Type of structures (Culverts, Drifts, Bridges, etc.)	Yes	Good
13	Road name	Yes	Good
14	Application of LBT and/or EBT	Yes	Good



15 Surface type (Gravel, Earth, etc.) — Yes — Good	15 Surface type (Gravel, Earth, etc.) — Yes — fair
16 Distance (km) — Yes — Good	16 Distance (km) — Yes — Good-fair
17 Time frame of rural road maintenance works — Yes — Good	17 Time frame of rural road maintenance works — Yes — fair
18 Supervision expenses for rural road maintenance works — Yes — Good	18 Supervision expenses for rural road maintenance works — Yes — fair
19 Establishment of unit costs (per km) for road maintenance works (routine maintenance, spot improvement, periodic maintenance, etc.) — Yes — Good	19 Establishment of unit costs (per km) for road maintenance works (routine maintenance, spot improvement, periodic maintenance, etc.) — Yes — fair
20 Total cost (TSH) — Yes — Good	20 Total cost (TSH) — Yes — fair
21 Environmental issues — Yes — Good	21 Environmental issues — Yes — fair
22 Gender issues — Yes — Good	22 Gender issues — Yes — fair
23 HIV/AIDS issues — Yes — Good.	23 HIV/AIDS issues — Yes — fair
Checklist of Kondoa DC (Form 4)	Checklist of Mufindi DC (Form 4)

Figure 3-3: Results of Checklist in Disseminated Districts (Form 4 in Monitoring System)

(2) Indicator 2: The percentage of road maintenance works completed within the fiscal year (including indicator 2 of Output 4)

With reference to the percentage of road work completion (including defect liability period), both model and disseminated districts aimed at exceeding 85%[11]. Table 3-7 shows the achievements in the past four years. Chamwino DC has been exceeding the target value since 2012/13, and the indicator has been achieved. However, Iringa, Kondoa, and Mufindi DCs are aiming at achieving 85% of road work completion within the financial year. Thus, it is expected that those DCs shall attain the target value by formulating effective plans and promoting smooth scheduling management.

Table 3-7 The percentage of road maintenance completion in the model and disseminated districts (FY 2011/12 – 2014/15)

		FY 2011/12	FY 2012/13	FY 2013/14	FY 2014/15
Model Districts	Chamwino District	45.5%	95.2%	91.67%	92.86%
	Iringa District	76.2%	76.9%	75.00%	70.59%
Disseminated Districts	Kondoa District	—	—	—	78.13%[12]
	Mufindi District	—	—	—	70.00%[13]

Source: Form 5 of Monitoring System

[11] This target value was determined by reference to the target of Annual Performance Agreement concluded between PO-RALG and each LGA.

[12] Although Kondoa DC received only 33.5% of the total approved budget by the end of FY 2014/15, the percentage of road maintenance completion was 78.13%. Since the financial resources for contractors were not sufficient in the DC, the payments to contractors fell into arrears.

[13] The situation in Mufindi DC (received only 34.0% of the total approved budget) was the same as in Kondoa.

3.2.4. Achievements of Output 3

(1) Indicator 1: The ratings of district engineers and technicians of their practical skills and knowledge

The Project aims at achieving over 3.75 (the same as 75%) for the ratings (scales of 1 to 5) of district engineers and technicians of their practical skills and knowledge in the model districts. The ratings (10 question items with "5" in full points) were extracted from both RS Engineers (evaluation by another person) and Council Engineers/Technicians (self-evaluation) from the perspective of fairness (refer to Table 3-8 and Table 3-9).

Since the ratings of Council Engineers and Technicians of their practical skills and knowledge were calculated as an indicator to show the current status objectively, the trends would be easily grasped. The questionnaire survey on Council Engineers and Technicians was conducted by themselves ("self-evaluation") and RS Engineers ("evaluation by another person"), and the results were compared so as to avoid subjective evaluation.

Table 3-8 The results of the ratings of Council Engineers and Technicians in Chamwino DC of their practical skills and knowledge

	3rd Questionnaire (February 2014)		4th Questionnaire (June 2015)		5th Questionnaire (January 2016)	
	RSE	CE/CT	RSE	CE/CT	RSE	CE/CT
Q1. Planning skills and knowledge	3.00 (60.00%)	3.33 (66.67%)	4.14 (82.86%)	3.86 (77.14%)	4.71 (94.29%)	4.29 (85.71%)
Q2. Preparation of road inventories	3.17 (63.33%)	4.00 (80.00%)	4.29 (85.71%)	3.71 (74.29%)	4.43 (88.57%)	4.57 (91.43%)
Q3. Road structure design and/or drawing	2.33 (46.67%)	2.83 (56.67%)	3.57 (71.43%)	3.86 (77.14%)	4.00 (80.00%)	3.86 (77.14%)
Q4. Procedures of budget request for road maintenance works	2.33 (46.67%)	3.67 (73.33%)	4.00 (80.00%)	3.57 (71.43%)	4.57 (91.43%)	4.43 (88.57%)
Q5. Contents of Bill of Quantities (BOQ)	3.00 (60.00%)	3.83 (76.67%)	4.14 (82.86%)	4.14 (82.86%)	5.00 (100.0%)	4.43 (88.57%)
Q6. Inspection tasks	2.50 (50.00%)	3.67 (73.33%)	3.86 (77.14%)	4.14 (82.86%)	4.00 (80.00%)	4.71 (94.29%)
Q7. Technical advice and support for a contractor	2.33 (46.67%)	3.67 (73.33%)	4.00 (80.00%)	4.00 (80.00%)	4.57 (91.43%)	4.29 (85.71%)
Q8. Time management of road maintenance works during execution periods	2.17 (43.33%)	3.17 (63.33%)	3.86 (77.14%)	3.71 (74.29%)	4.00 (80.00%)	4.29 (85.71%)
Q9. Communication between district engineer/technicians and a contractor	2.17 (43.33%)	4.00 (80.00%)	4.00 (80.00%)	4.00 (80.00%)	4.71 (94.29%)	4.86 (97.14%)
Q10. Record-keeping skills	2.67 (53.33%)	3.00 (60.00%)	3.86 (77.14%)	3.86 (77.14%)	4.29 (85.71%)	4.00 (80.00%)
Total Rating on Average (Q1 – Q10)	**2.57 (51.3%)**	**3.52 (70.3%)**	**3.97 (79.4%)**	**3.89 (77.7%)**	**4.43 (88.6%)**	**4.37 (87.4%)**

Q11. Overall rating of practical skills and knowledge	2.83 (56.67%)	3.83 (76.67%)	4.00 (80.00%)	4.00 (80.00%)	4.00 (80.00%)	4.00 (80.00%)

Note 1) RSE: RS Engineer, CE: Council Engineer, CT: Council Technician

Note 2) The 1st and 2nd Questionnaire Surveys were carried out in September 2012 and September 2013, respectively.

Source: Questionnaire Survey through Forms 6-1 and 6-2 of Monitoring System

Table 3-9 The results of the ratings of Council Engineers and Technicians in Iringa DC of their practical skills and knowledge

	3rd Questionnaire (February 2014)		4th Questionnaire (June 2015)		5th Questionnaire (January 2016)	
	RSE	CE/CT	RSE	CE/CT	RSE	CE/CT
Q1. Planning skills and knowledge	3.38 (67.50%)	3.25 (65.00%)	4.20 (84.00%)	3.40 (68.00%)	4.90 (98.00%)	3.75 (75.00%)
Q2. Preparation of road inventories	3.75 (75.00%)	3.75 (75.00%)	4.00 (80.00%)	3.60 (72.00%)	4.70 (94.00%)	3.92 (78.33%)
Q3. Road structure design and/or drawing	2.50 (50.00%)	2.88 (57.50%)	3.60 (72.00%)	2.90 (58.00%)	4.30 (86.00%)	3.33 (66.67%)
Q4. Procedures of budget request for road maintenance works	3.38 (67.50%)	3.38 (67.50%)	4.00 (80.00%)	3.70 (74.00%)	4.40 (88.00%)	3.92 (78.33%)
Q5. Contents of Bill of Quantities (BOQ)	3.63 (72.50%)	3.50 (70.00%)	4.10 (82.00%)	4.00 (80.00%)	4.80 (96.00%)	4.00 (80.00%)
Q6. Inspection tasks	3.38 (67.50%)	3.13 (62.50%)	4.40 (88.00%)	3.60 (72.00%)	4.80 (96.00%)	4.25 (85.00%)
Q7. Technical advice and support for a contractor	3.13 (62.50%)	3.38 (67.50%)	4.50 (90.00%)	4.00 (80.00%)	4.80 (96.00%)	4.00 (80.00%)
Q8. Time management of road maintenance works during execution periods	3.00 (60.00%)	3.13 (62.50%)	3.90 (78.00%)	3.50 (70.00%)	4.50 (90.00%)	3.42 (68.33%)
Q9. Communication between district engineer/technicians and a contractor	3.13 (62.50%)	3.38 (67.50%)	3.90 (78.00%)	4.00 (80.00%)	4.60 (92.00%)	4.25 (85.00%)
Q10. Record-keeping skills	3.50 (70.00%)	2.88 (57.50%)	4.00 (80.00%)	3.30 (66.00%)	4.30 (86.00%)	3.42 (68.33%)
Total Rating on Average (Q1 – Q10)	**3.28 (65.5%)**	**3.26 (65.3%)**	**4.06 (81.2%)**	**3.60 (72.0%)**	**4.61 (92.2%)**	**3.83 (76.5%)**
Q11. Overall rating of practical skills and knowledge	3.38 (67.50%)	3.25 (65.00%)	3.90 (78.00%)	3.40 (68.00%)	4.50 (90.00%)	3.83 (76.67%)

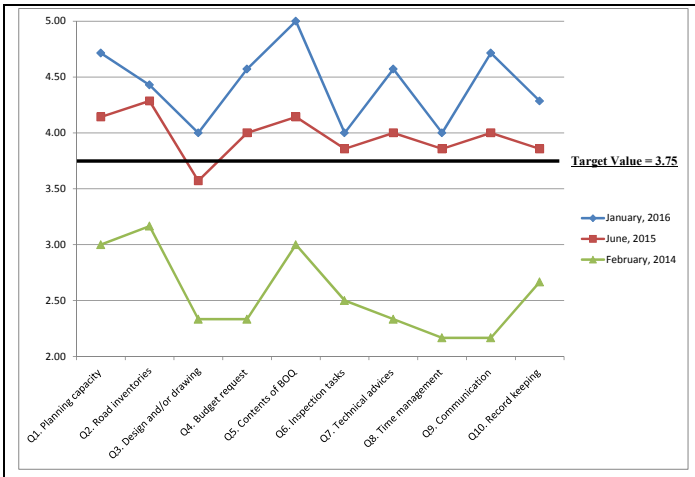
Source: Questionnaire Survey through Forms 6-1 and 6-2 of Monitoring System

In the 5th Questionnaire Survey (January 2016), since the total ratings of Q1 to Q10 on average in the model districts/regions exceeded 3.75, the target value, this indicator has ultimately been achieved. Also, all the rating items assessed by both RS Engineers (evaluation by another person) exceeded 3.75, the target value. On the other hand, for the self-evaluation by Council Engineers/Technicians in the model districts, the rating items below 3.75, the target value, were "road structure design and drawing

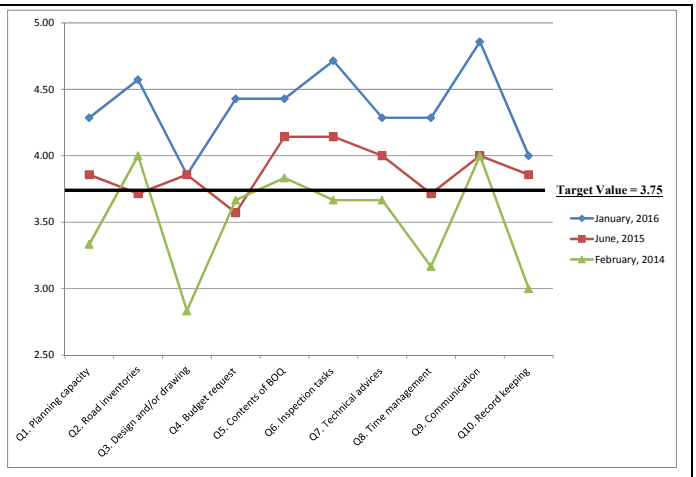
(Q3)", "time management (Q8)," and "record-keeping skills (Q10)" in Iringa DC only. Regarding the design and drawing of Q3, the greater enhancement of these technical skills is required through the dispatch of an expert who can instruct the topic and provide the training opportunity. With reference to the time management of Q8, the reduction and delay of the road maintenance budget made it difficult to execute and manage the works. For the record-keeping skills of Q10, the Council Engineers/Technicians in Iringa DC perceived the need for recording the progress and completion of road maintenance works and sharing the information within the office. It seems that the C/Ps try to enhance and promote their own skills and knowledge. For the purpose of nationwide expansion in the future, it is necessary for the Council Engineers/Technicians to cultivate their abilities and improve their skills and knowledge in each item (Q1 - Q10) through the continuation of their own efforts as resource persons in Tanzania.

Also, an upward trend is generally observed in the comparison of the last three questionnaire surveys (refer to Figures 3-4 and 3-5). In particular, the ratings of all items, except for the above-mentioned three items assessed by the Council Engineers/Technicians in Iringa DC, exceeded 3.75, the target value, in the 5th Questionnaire Survey.

Comparing the spider charts of the results of the 4th and 5th Questionnaire Surveys, shown in Figure 3-6 (Chamwino DC) and Figure 3-7 (Iringa DC), it is sure that the areas in the charts have gradually increased. In particular, in Chamwino DC, the rating results of the RS Engineers and Council Engineers/Technicians closely overlapped, and the results have come close to a round shape, balanced among each item. In Iringa DC, the rating results have gradually become balanced (rating results of RS Engineers), although there remain some differences between them. Ideally, it is desirable to come to a "round shape," balanced among each item, rather than a "polygonal shape," unbalanced among them. Ultimately, it is crucial to expand the area of round shape and overlap the rating results of RS Engineers and Council Engineers/Technicians.

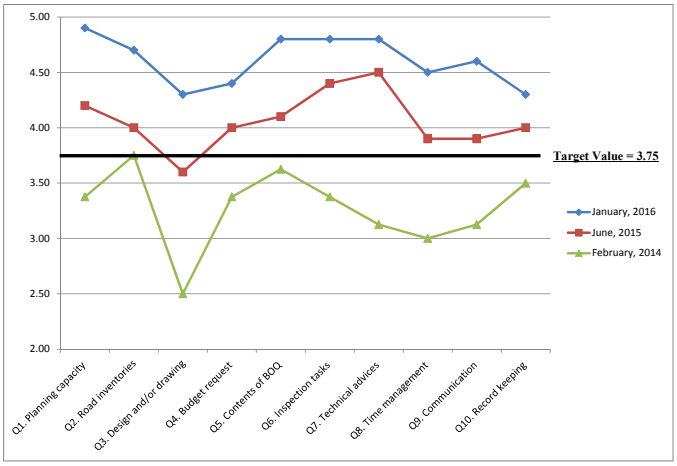


Change in the rating results by RS Engineers in Dodoma Region

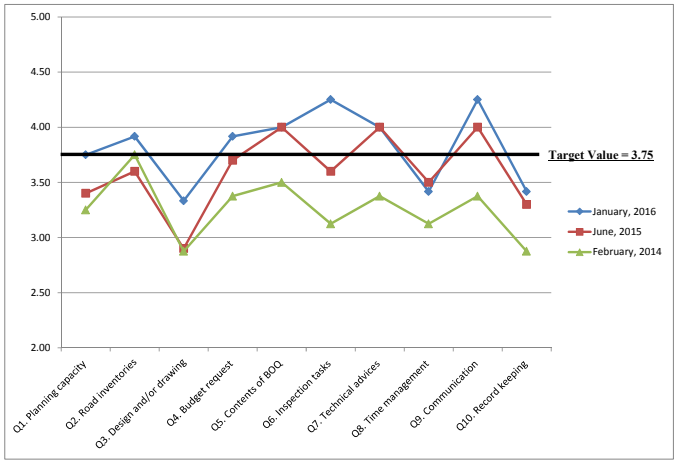


Change in the rating results by Council Engineers/ Technicians in Chamwino DC

Figure 3-4 Change in the rating results of the practical skills and knowledge of Council Engineers/Technicians by RS Engineers (evaluation by another person) in Dodoma Region and Council Engineers/Technicians (self-evaluation) in Chamwino DC (from 3rd to 5th Questionnaire Surveys)

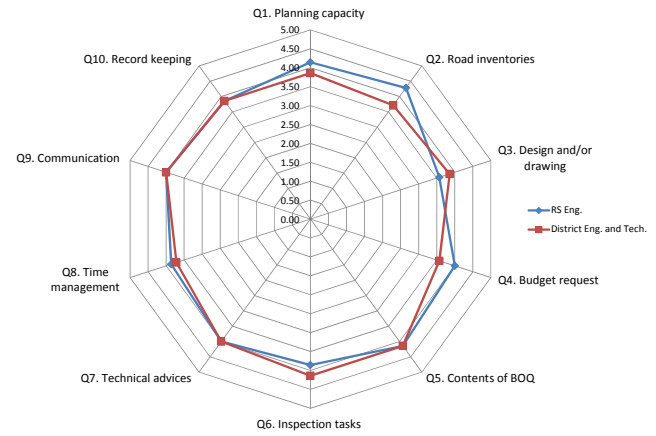


Change in the rating results by RS Engineers in Iringa Region

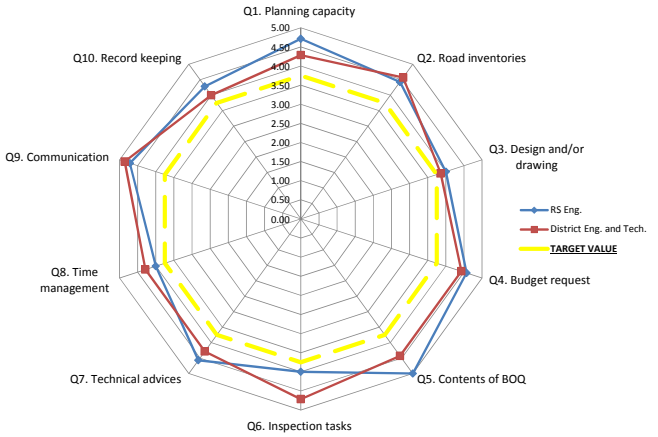


Change in the rating results by Council Engineers/ Technicians in Iringa DC

Figure 3-5 Change in the rating results of the practical skills and knowledge of Council Engineers/Technicians by RS Engineers in Iringa Region and Council Engineers/ Technicians in Iringa DC (from 3rd to 5th Questionnaire Surveys)

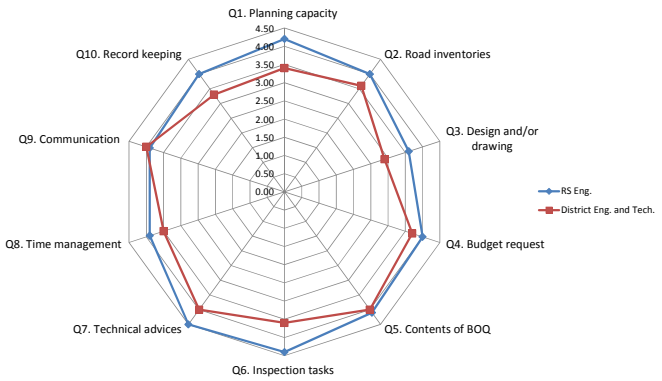


Results of 4th Questionnaire survey (June 2015)

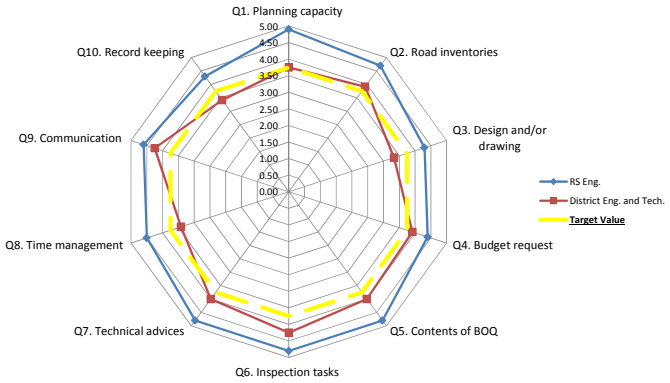


Results of 5th Questionnaire survey (January 2016)

Figure 3-6 Comparison of the rating results between Council Engineers and Technicians (self-evaluation) in Chamwino DC and RS Engineers (evaluation by another person) in Dodoma Region (4th and 5th Questionnaire Surveys)



Results of 4th Questionnaire survey (June 2015)



Results of 5th Questionnaire survey (January 2016)

Figure 3-7 Comparison of the rating results between Council Engineers and Technicians in Iringa DC and RS Engineers in Iringa Region (4th and 5th Questionnaire Surveys)

(2) Indicator 2: Number of consultations by council engineers/technicians (including indicator 3 of Output 4)

Chamwino and Iringa DCs aim at increasing the opportunities for consultations on rural road maintenance between contractors and Council Engineers/Technicians. The numbers of consultations by district engineers/technicians in FY 2013/2014 are shown in the table below. In particular, as direct consultations on sites greatly influence the perfection level of roads, it is crucial to provide proper instructions for contractors on sites. That is why the gradual increase in the numbers of consultations in the past two years is highly meaningful.

In addition, the numbers of consultations in the disseminated districts in FY 2014/15 are shown in Table 3-10. It is expected that the numbers of consultations in FY 2015/16 will exceed those in FY

2014/15.

Table 3-10 The numbers of consultations provided by Council Engineers/ Technicians in the model and disseminated districts (FY 2013/14 – FY 2014/15)

		FY 2013/14	FY 2014/15
Model Districts	Chamwino District	30 times (including 12 pilot projects)	36 times (including 9 pilot projects)
	Iringa District	56 times (including 10 pilot projects)	62 times (including 15 pilot projects)
Disseminated Districts	Kondoa District	—	31 times
	Mufindi District	—	20 times

Source: Form 7 of Monitoring System

(3) Indicator 3: The ratio of LBT works to all the maintenance works

With reference to the ratio of LBT works to all the maintenance works, Chamwino and Iringa DCs aim at attaining 20%, and they exceeded the target value in FY 2014/15. The achievements in the past four years are shown in Table 3-11 below.

Table 3-11 The ratio of LBT works to all the maintenance works in the model districts (FY 2011/12 – 2014/15)

		FY 2011/12	FY 2012/13	FY 2013/14	FY 2014/15
Model Districts	Chamwino District	0.0%	4.8%	16.67%	35.71%[14]
	Iringa District	23.8%	15.4%	56.25%	23.53%

Source: Form 5 of Monitoring System

3.2.5. Important Assumptions

(1) Important Assumptions for the Achievement of the Outputs

1) Institutional arrangement for rural road maintenance is not changed from the PMO-RALG to another governmental institute.

Since PMO-RALG operates and manages rural road maintenance works at this time, this assumption is fulfilled.

2) During the cooperation period, the RS engineers capacitated by the Project continue working in their respective positions at the RS offices in the respective regions.

[14] This percentage includes the number of road maintenance works in combination with EBT and LBT.

Since the RS Engineers capacitated by the Project are continuing to work in their respective positions in Dodoma and Iringa Regions at this time, this assumption is fulfilled.

3) Budget disbursement for rural road maintenance is not severely delayed in the model and disseminated districts of the respective regions.

The budget disbursement from the Ministry of Finance to Road Funds was delayed in FY 2014/15[15], and it affected the budget for rural road maintenance. For example, Iringa DC had received 60.6% of the total approved budget as of the end of June 2015. Kondoa and Mufindi DCs received only 33.5% and 34.0% of the total approved budget, respectively.

The project activities and the indicators are not largely influenced by this condition. However, supervision by Council Engineers and Technicians was not carried out properly because the budget necessary for transportation to sites was not disbursed sufficiently. Furthermore, payments to some contractors were left unpaid for a while because of the delay of budget disbursement. Accordingly, the contractors fell into arrears of wages to the community people participating in LBT works.

(2) Important Assumption for the Achievement of the Project Purpose

1) During the cooperation period, the district engineers capacitated by the Project continue working in their respective positions in the model and disseminated districts.

Model Districts

Since the District Engineers (DEs) capacitated by the Project are continuing to work in their respective positions in Chamwino and Iringa DCs at this time, this assumption is fulfilled.

Disseminated Districts

Although the former DE in Kondoa had been working at his office as of the end of FY 2014/15, a newly appointed DE came to the office at the beginning of FY 2015/16. Afterwards, as he has been participating in the AMTC, LBT specifications meeting, etc., there is the prospect that the DE will be able to perform the project activities properly.

The former DE in Mufindi transferred in August 2014, and a newly appointed DE came to the office three months after the beginning of FY 2014/15. It is considered that this condition does not severely affect the achievement of the Project Purpose.

3.2.6. Technical Transfer for Continuous Monitoring Operations (Activity 2-3)

In preparation for the termination of the Project in March 2016, a monitoring W/S was held in the Dodoma and Iringa Regions (on 26 January 2016 in Dodoma and 29 January in Iringa: the W/S agenda is shown in Table 3-12 (1) (2) and the participant list in Table 3-13 (1) (2)). Because the

[15] Although the road maintenance budget in FY 2015/16 is likely to be cut down by 50%, the precise percentages in each district council will be revealed after the end of FY 2015/16.

Project will be terminated before the end of the financial year of Tanzania, C/P shall collect the data and information that will be extracted and settled after the end of the financial year. Thus, the Monitoring Expert provided instructions on the overall picture of M/S, the indicators necessary for the monitoring operations, the method of data entry for each form, etc., for the C/P during the W/S. Also, the persons in charge of the collection and aggregation of monitoring results were decided as shown in Table 3-14, i.e., "Who does what and how." In any way, the Council Engineers/Technicians collect the data and information in each district after the end of FY 2015/16, and PO-RALG aggregates and summarizes them. Ultimately, PO-RALG needs to submit the achievements of the Project with the indicators to the JICA Tanzania Office.

Table 3-12 (1) Agenda of Monitoring W/S in Dodoma Region (26 January, 2016)

Time	Contents
9:30 – 10:10	1. Briefing of the Project Concept (PDM and PO/APO)
10:10 – 11:10	2. Explanation of Monitoring System (M/S) (1) Monitoring mechanism with the conceptual diagram
11:10 – 11:40	Tea Break
11:40 – 14:00	(2) Discussions on each Form (Form 1-7) by the facilitators as follows: Form 1: Makandi Form 2: Shama Form RALG-1: Makandi Form 3: Expert Form 4: Makandi Form 5: Makandi Form 6: Mkwata Form 7: Mpinzile
14:00 – 15:10	Lunch Break
15:10 – 15:25	(3) Presentation on the project indicators extracted from the M/S
15:25 – 15:55	(4) How to read and use the data and information of Form 1-7 with the files saved in your PC
15:55 – 16:20	(5) Data that shall be collected after the end of FY 2015/16 in the model and disseminated districts

Table 3-12 (2) Agenda of Monitoring W/S in Iringa Region (29 January, 2016)

Time	Contents
9:35 – 10:25	1. Briefing of the Project Concept (PDM and PO/APO)
10:25 – 11:30	2. Explanation of Monitoring System (M/S) (1) Monitoring mechanism with the conceptual diagram
11:30 – 12:00	Tea Break
12:00 – 14:10	(2) Discussions on each Form (Form 1-7) by the facilitators as follows: Form 1: Munissi Form 2: Mwagogo Form RALG-1: Munissi Form 3: Expert Form 4: Munissi Form 5: Munissi

	Form 6: David Form 7: Kasongo
14:10 – 15:25	Lunch Break
15:25 – 16:05	(3) Presentation on the project indicators extracted from the M/S
16:05 – 16:40	(4) How to read and use the data and information of Form 1-7 with the files saved in your PC
16:40 – 17:10	(5) Data that shall be collected after the end of FY 2015/16 in the model and disseminated districts

Table 3-13 (1) Participant List in Dodoma Region (26 January, 2016)

Name	Position	Organization
Eng. Nanai Nyariri	Executive Engineer	PO-RALG
Eng. Mkwata M. M.	RS Engineer	RAS Dodoma
Eng. Godwin S. Mpinzile	District Engineer	Chamwino DC
Qs. James M. Lukindo	Quantity Surveyor (District)	Chamwino DC
Mr. Makandi Mange	Head of Road Technician	Chamwino DC
Mr. Shama Amanzi	Road District Technician	Chamwino DC
Eng. Msafiri Seleman	Road District Engineer	Chamwino DC
Eng. Albert Maswaga	Building Engineer	Chamwino DC
Ms. Evelin Malilo	Technician	Chamwino DC
Eng. Meddah Donasian	Engineer	Kondoa DC
Mr. Ibrahim A. Ntomola	Technician	Kondoa DC
Mr. Magola Elias Lungwecha	Technician	Kondoa DC
Ms. Mayura Tsukamoto	JOCV	Kondoa DC

Table 3-13 (2) Participant List in Iringa Region (29 January, 2016)

Name	Position	Organization
Eng. David Mwakalalile	RS Engineer	RAS Iringa
Eng. Leopold Runji	District Engineer	Iringa DC
Eng. Anyitike Kasongo	Engineer	Iringa DC
Eng. Fidelis Shirima	Engineer	Iringa DC
Mr. Nestory Chacha	Quantity Surveyor	Iringa DC
Mr. Baraka Munissi	Technician	Iringa DC
Mr. Subira Munissi	Technician	Iringa DC
Mr. Ncholaus Mwagogo	Technician	Iringa DC
Mr. Alan Mhauka	Technician	Iringa DC
Ms. Elvira Wilbard	Technician	Iringa DC
Eng. Peter Johnson	District Engineer	Mufindi DC
Eng. Dickson Mkokota	Engineer	Mufindi DC
Mr. Aidani Maliva	Engineer	Mufindi DC
Mr. Haji Shabani	Technician	Mufindi DC
Mr. Naoya Kaneko	JOCV	Mufindi DC

Table 3-14 Persons in charge of each Form in Model and Disseminated DCs

Forms	Chamwino	Iringa	Kondoa	Mufindi
Form 1	Makandi	Munissi	Maombi	Maliva
Form RALG-1	Makandi	Munissi	Maombi	Mpaglke
Form 2-1 & 2	Msafiri (Shama)	Mwagogo Kibegenza	Meddah Ntomolah (Supported by Msafiri and Shama)	Maliva Mpaglke (Supported by Mwagogo and Kibegenza)
Form 3	—	—	—	—
Form 4	Makandi (Signed by Mpinzile and Mkwata)	Munissi Kajange (Signed by Runji and David)	Magola (Signed by Myaule and Mkwata)	Peter Mkokota (Signed by Peter and David)
Form 5	Shama	Munissi Shirima	Maombi	Mkokota
Form 6-1 & 2	—	—	—	—
Form 7	Mpinzile	Runji Kasongo	Myaule	Peter Maliva

4. Terminal Evaluation

JICA dispatched the Terminal Evaluation Team to the United Republic of Tanzania from 7th to 25th August 2015, with the project period remained of approximately 7 months. The Terminal Evaluation has been undertaken by the Team and Tanzania authorities concerned.

- **Objective of the Terminal Evaluation**

Objectives of the Terminal Evaluation are as follows:

a. To review the achievements and assess the major outcome of the Project according to the Project Design Matrix (PDM)
b. To clarify problems and issues to be addressed for the successful implementation of the Project for the remaining periods
c. To evaluate the project according to the five evaluation criteria(See details in 3.1), i.e. relevance, effectiveness, efficiency, impact and sustainability
d. To review and revise the PDM if necessary

- **Members of the Team**

Mr. Hiroshi TAKEUCHI	Leader	Director, Transportation and ICT Group, Infrastructure and Peacebuilding Department, Japan International Cooperation Agency (JICA)
Mr. Kiyohito SHIMADA	Project Coordinator	Transportation and ICT Division 2, Infrastructure and Peacebuilding Department, Japan International Cooperation Agency (JICA)
Mr. Masaya OMAE	Evaluation Analyst	General Manager Success Project Management Office Co., Ltd.

4.1 Results of the Terminal Evaluation

(1) Achievement of the Project Purpose

Table4-1 Rating of Achievement of Project Purpose

Rating of Achievement	A: It will be satisfactory achieved by the end of the Project B: It will be almost but not fully achieved by the end of the Project C: It will be difficult to be achieved by the end of the Project

Indicator 1	Indicator 2	Indicator 3
A	B	A

Project Purpose：	Administrative services of rural road maintenance provided by LGAs are improved in the target areas, and its nationwide expansion approach is developed.
Overall Achievement	The Project Purpose will be fulfilled until the end of the Project because the maintenance status of rural roads in model and disseminated districts have been developing at a certain levels respectively although there are some up and down according to the results of surveys conducted for the community people who were

involved in the pilot projects in the model and disseminated districts showing the positive status, such as "Good" and "Fair".

Also the satisfaction ratings of contractors showed almost at the target level of 75% satisfaction according to the results of surveys.

Furthermore, the percentage of the rollover funds for rural road maintenance showed properly low enough values comparing to the target values.

The approach for the nationwide expansion has been securing developing both on technically and administratively as clearly observed in the achievement of Outputs, especially Output 4; however it is necessary to take necessary measures to secure the budgets and to increase human resources in proportion to the huge burden for its nationwide expansion.

Verifiable Indicators	Achievement Level
1 The maintenance status (Good, Fair, and Poor) of rural roads is improved in the model and disseminated districts of the respective regions.	The results of Maintenance status of rural roads in Model Districts such as, Chamwino and Iringa DC from 2012 to 2015 and Disseminated Districts, such as Kondoa and Mufindi DC are as follows. Total values of Good and Fair indicate steady-going development over the target values of 80% in Chamwino and 70% of Iringa until FY 2013/14 but just downturned in Chamwino in FY 2014/15. This is because the total length of road network in Chamwino was extended from around 600 to 1,040km. However, the percentage exceeds 90% if the road network is retained as it was. In Disseminated Districts, these values show good results in an early stage.
2 The satisfaction ratings of the contractors/ community people in the model and disseminated districts of the respective	According to the result of the questionnaire survey conducted in February 2014 and June 2015[1], "Satisfaction ratings of contractors in Chamwino and Iringa DC" shows that they were exceeded at 1st survey but downturned at 2nd survey as shown in the table below; however they are still almost same level of target values.

Table 4-2 Maintenance status of rural roads in model and disseminated districts

	FY 2011/12	FY2012/13	FY2013/14	FY2014/15
Chamwino	74.71%	79.04%	81.5%	73.70%
Iringa	60.16%	66.36%	71.29%	92.49%
Kondoa	Nil.	Nil.	63.34%	77.35%
Mufindi	Nil.	Nil.	63.09%	57.08%

(Source: Form 1 of Monitoring System)

[1] This survey is targeted for the contractors and community people who were involved in the pilot projects implemented after the commencement of the Project

regions exceed 75/75% (Chamwino and Iringa) on average with reference to rural road maintenance works or status.

Table 4-3 Satisfaction ratings of contractors in Chamwino DC and Iringa DC

	1st Survey (February 2014)		2nd Survey (June 2015)	
	Chamwino	Iringa	Chamwino	Iringa
Number of responders	5	14	11	11
Total Rating on Average (Q1 – Q10)	76.0% (3.80)	87.3% (4.36)	72.9% (3.65)	72.4% (3.62)

(Source: Questionnaire survey through the Form 2-1 of Monitoring System)

On the other hand, the result of the questionnaire survey conducted in parallel with the above mentioned survey such as "Satisfaction ratings of community people in Chamwino and Iringa DC" shows that a steady-going development to almost reach the target value in Chamwino DC and already achieved in Iringa DC. The satisfaction rating by community people in Chamwino is lower than Iringa because they may feel such uneasiness due to the unexpected drainage flows to their own areas. It is necessary to take a preliminary survey on community needs precisely.

Table 4-4 Satisfaction ratings of community people in Chamwino DC and Iringa DC

	1st Survey (February 2014)		2nd Survey (June 2015)	
	Chamwino	Iringa	Chamwino	Iringa
Number of responders	36	43	171	148
Total Rating on Average (Q1 – Q10)	50.1% (2.50)	77.7% (3.89)	66.5% (3.32)	82.7% (4.13)

(Source: Questionnaire survey through the Form 2-2 of Monitoring System)

3 The percentage of the rollover funds for rural road maintenance is decreased in the model and disseminated districts of the respective regions.

With reference to the percentage of the rollover funds for rural road maintenance, all districts, such as the model districts and disseminated districts attained the level below 15% as follows.

Table 4-5 The percentage of the rollover funds for rural road maintenance in the model and disseminated districts

FY / Name	2011/12	2012/13	2013/14	2014/15
Chamwino	60.59%	1.23%	10.03%	1.23%
Iringa	12.03%	15.10%	4.60%	0.00 %
Kondoa	Nil.	Nil.	21.48%	3.64%
Mufindi	Nil.	Nil.	32.13%	0.51%

(Source: Form RALG-1
"Summary of Committed and Uncommitted Action Plan" by PMO-RALG)

(2) Achievement of the Outputs

Table 4-6 Rating of Achievement of Outputs

Rating of Achievement	A: It will be satisfactory achieved by the end of the Project B: It will be almost but not fully achieved by the end of the Project C: It will be difficult to be achieved by the end of the Project

Indicator 1-1	Indicator 1-2
A	B

Output 1 :	The capacity of PMO-RALG for coordinating and supporting LGAs in collaboration with MOW on rural road maintenance is strengthened.
Overall Achievement :	The Output 1 will be secured until the end of the Project. Activities for strengthening the capacity of PMO-RALG for coordinating and supporting LGA are conducted, the Rural Road Maintenance Operational Guidelines was authorized by MOW in 10th December, 2014 and printed and bounded on February 2015 which are waiting for reaching towards the target value of utilizing rates by the RSE and DE to exceed 80% from the latest value of 68.18% in August 2014. On the other hand, even though the following Verifiable Indicators from 1-1 and 1-2 are to be fulfilled, the most important effort should be paid for further development, such as 1) to collect information and data from the model districts, 2) to analyze and 3) to share among all the stakeholders. Such information sharing will contribute to the further effective planning by PMO-RALG and the self-reliant efforts for continuous development at site for each district.

Verifiable Indicators	Achievement Level
1-1 The Rural Road Maintenance Operational Guidelines are authorized by MOW.	Secured The operational guidelines were provided by the strong initiative of the Tanzanian side and finally approved by MOW. The guidelines were formally printed and bound on February 2015 and the guidelines launch ceremony was held in Dar es Salaam on 10th March, 2015. Therefore the indicator 1-1 was successfully secured; however this is not completed perfectly but continued to revise periodically to meet with the actual situation in the future.
1-2 The percentage of the RS and district engineers utilizing the operational guideline distributed by PMO-RALG and	Partially Secured The result of 1st questionnaire survey responded by forty-four (44) in August 2014 shows the percentage of RS/council engineers utilizing the Operational Guidelines 68.18% and reaching towards the target value to exceed 80% (Source: Questionnaire survey through the Form 3 of Monitoring System). The latest result will be confirmed soon at

MOW exceeds 80% across the mainland of Tanzania.	the Engineers Day at the end of August, 2015. RSEs play a major role in dissemination and promotion and are in charge of coordination for technical transfer to dissemination districts. RSEs are also in charge of similar tasks for dissemination working groups in the regions. In working groups, the Project provides training on GIS, medium/long-term plan and support RSEs to manage the working groups. In addition, the Project explained AMTC (Annual Monitoring and Training Cycle), which is a monitoring and training plan for sustainable technical transfer, to RSEs and DEs.

Indicator 2-1	Indicator 2-2
A	B

Output 2 :	The rural road maintenance procedure of the LGAs is strengthened in the model districts.
Overall Achievement :	The Output 2 will be secured until the end of the Project. Activities for strengthening the rural road maintenance procedure of the LGAs have been conducted as planned. Output 2 is likely to be achieved based on the achievement of activities at the Terminal Evaluation because the Annual Rural Road Maintenance Plan covered necessary items based on the checklist. On the other hand, the target values of road maintenance completion in the model districts (over 85%), it was reached 92.86% in Chamwino but 70.59% with a sideways movement since 2011/2012 in Iringa. Although these series of works may let the persons in charge impose a heavy burden every year, all the related persons should increase awareness about the importance of proper planning in advance to acquire necessary budget for necessary works timely and logically.

Verifiable Indicators	Achievement Level
2-1 Annual Rural Road Maintenance Plan prepared by the LGAs in the model districts contains necessary items based on the checklist.	Secured The Annual Rural Road Maintenance Plan was prepared on the basis of the medium- and long-term rural road maintenance plan, the prioritization of rural road maintenance, etc. Also, the Plan contains necessary items based on the checklist as required in the indicator 2-1 of the PDM. The specific items are shown below. Therefore the indicator 2-1 was successfully secured. However, it is necessary to pay attention to the assessment at the end of the year and comments from the contractors engaged in the maintenance and the benefitted communities in order to develop the level of the plan in the

succeeding year.

Table 4-7 Items necessary for the Annual Rural Road Maintenance Plan

(1) Mid- and long-term objectives (Vision)
(2) Annual objectives
(3) Strategies and specific activities for the annual objectives
(4) Information of classified roads
(5) Information of rural road inventories
(6) Needs and priority ranking
(7) Selection of rural road maintenance works
(8) Coverage of road network
(9) Preliminary schedule
(10) Procurement procedures
(11) Work type
(12) Type of structures
(13) Road name
(14) Application of LBT and/or EBT
(15) Surface type
(16) Distance (km)
(17) Time frame of rural road maintenance works
(18) Supervision by qualified person(s)
(19) Establishment of unit costs for road maintenance works
(20) Total cost (TSH)
(21) Cross-cutting issues (environment, gender)

(Source: Mid-term Progress Report by Consultant (2nd Year) in June 2015)

2-2	The percentage of the road maintenance works completed by contractors (including defect liability period) for all the maintenance works in the Plan exceeds 85% Chamwino and Iringa) within the financial year.	Partially secured Related to the achievement of target values of road maintenance completion in the model districts (over 85%), it was reached in Chamwino but in Iringa. Four (4) years' progress are as follows. The reason of low rate Iringa came from the geographical difficulty comparing to Chamwino, such as bumpy and rocky surface, longer distance, blockage by river and so on. The achievement values in the disseminated districts, Kondoa and Mufindi, were surveyed newly as 78.13% and 70.00% respectively which show a good results in an early stage. The standard rate of 85% for completion works is better to be revised based on the characteristics of each district from the perspectives, such as technical or financial difficulty, immediacy and others. Such a decision making process should be resulted taking findings of stakeholders into consideration and reflected into the Operational Guidelines.

Table 4-8 Percentages of the road maintenance works Completed in the model districts

Name \ FY	2011/12	2012/13	2013/14	2014/15
Chamwino	45.5%	95.2%	91.67%	92.86%
Iringa	76.2%	76.9%	75.00%	70.59%

(Source: Form 5 of Monitoring System)

Indicator 3-1	Indicator 3-2	Indicator 3-3
B	A	A

Output 3 :	The practical skills and knowledge of responsible organizations (concerned departments of the LGAs, contractors, etc.) on rural road maintenance are improved through the LBT application in the model districts.
Overall Achievement :	The Output 3 will be secured until the end of the Project. The practical skills and knowledge of responsible organizations (concerned departments of the LGAs, contractors, etc.) on rural road maintenance are improved through the LBT application in the model districts. However it is expected to reach the target value of DE/DT in Iringa DC from slightly below of 3.60 to 3.75. Apart from the statistics, it is obvious that the skills and knowledge have been improving because of the completed rural roads constructed by LBT comparing to such roads by EBT For the further improvement of the LBT application to the rural road maintenance, PMO-RALG decided to secure at least 20% of the maintenance works in all of the districts even though the latest rate is low. This policy will assist to promote the LBT nation widely.

Verifiable Indicators	Achievement Level
3-1 The rating of district engineers and technicians on their practical skills and knowledge exceeds 3.75 (1 to 5 scales) Chamwino and Iringa) on average in the model districts.	Partially secured The result of the questionnaires survey from September 2013 to June 2015 related to the "Overall rating on practical skills and knowledge" is as follows. Such ratings are over 3.75 except DE (District Engineer) in Iringa DC; however improving steadily year by year. (RSE: Regional Secretary Engineer, DE: District Engineer, DT: District Technician)

Table 4-9 The total rating on average results of engineers and technicians in Chamwino and Iringa DC on their practical skills and knowledge

	September, 2013	February, 2014	June, 2015

	RSE	DE/DT	RSE	DE/DT	RSE	DE/DT
Chamwino	2.64 (52.9%)	3.46 (69.1%)	2.57 (51.3%)	3.52 (70.3%)	3.97 (79.4%)	3.89 (77.7%)
Iringa	3.04 (60.8%)	2.89 (57.8%)	3.28 (65.5%)	3.26 (65.3%)	4.06 (81.2%)	3.60 (72.0%)

(Source: Questionnaire survey through the Form 6-1 and 6-2 of Monitoring System)

3-2 The number of consultations on rural road maintenance between contractors and district engineers and technicians is increased in the model districts.

Secured

Chamwino DC and Iringa DC have been aiming at increasing the opportunities for consultations on rural road maintenance between contractors and district engineers/technicians. The number of consultations by district engineers/technicians in FY 2013/2014 and FY 2014/2015 are shown in the table below with good values.

Table 4-10 The number of consultations provided by the district engineers/technicians in model districts

FY / Name	2013/14	2014/2015
Chamwino District, Dodoma Region	30 times (incl. 12 pilot projects)	36 times (incl. 9 pilot projects)
Iringa District, Iringa Region	56 times (incl. 10 pilot projects)	62 times (incl. 15 pilot projects)
Kondoa District, Kondoa Region	Nil.	31 times
Mufindi District, Mufindi Region	Nil.	20 times

(Source: Form 7 of Monitoring System)

The following comments were given at the consultations in the model districts.

Table 4-11 Statistics and comments at consultations in the model districts

	Chamwion	Iringa	Mufindi	Kondoa	Total	Rate
Construction work control	14	37	7	14	**72**	43%
Sample of Consultation Comments: Equipment utilization: Construction was made to the contractor to hire the equipment, such as towed grader, water bozzer, and pedestrian roller, during compaction.						
Quality Control	11	26	4	8	**49**	30%
Sample of Consultation Comments: Concreate works: At the first contractor proposed to use the aggregates from the locally made stones, but the office instructed him to bring the aggregates from Mswiswi in Mbeya which is approved by our office.						
Schedule Management	4	8	8	5	**25**	15%
Sample of Consultation Comments: Watering and compaction: The contractor was advised to share water bowser with other LBT contractor to fasten the						

speed of camber formation.						
Safety Management	4	8	1	4	17	10%
Sample of Consultation Comments: Drainage works: Insuring the contractor on excavation of cathwater and mitre drains.						
Others	3	0	0	0	3	2%
Sample of Consultation Comments: Gravelling works: Inculeds excavate garavel removal boudders, stock piles, load, houl up 5km, off load, spread, watering and compacting to average 150mm thick.						
Total number of comments: 166						

(Source: Form 7 of Monitoring System)

3-3 The ratio of LBT works to all the maintenance works is increased in the model districts.

Secured

The ratio of LBT works to all the maintenance work in the past three (3) years in Chamwino has been improving steadily as shown in the table below. However, it has been showing a seesaw tendency because of the same geographical difficulties mentioned in the indicator 2-2 above.

Table 4-12 The ratio of LBT works to all the road maintenance works in the model districts

FY / Name	2011/12	2012/13	2013/14	2014/15
Chamwino District, Dodoma Region	0.0%	4.8%	16.67%	35.71%
Iringa District, Iringa Region	23.8%	15.4%	56.25%	23.53%

(Source: Form 5 of Monitoring System)

Indicator 4-1	Indicator 4-2	Indicator 4-3
A	B	B

Output 4 :	The dissemination mechanism for rural road maintenance approach within the respective regions is established.
Overall Achievement :	The Output 4 will be secured until the end of the Project but some indicators, such as the completion rate and numbers of consultation on rural road maintenance, will be confirmed from the beginning of a new fiscal year, 1st of July 2015 and summarized for three (3) quarters at the end of the Project in March 2016. And the annual statistics will be analyzed in June 2016 after the completion of the project. The Annual Rural Road Maintenance Plan contains necessary items based on the checklist as required in the disseminated districts.

Furthermore, necessary equipment and materials were provided for the Project implementation, such as tractor, water pump, spare parts and others. Such equipment and materials were contributed for LBT application promotion and let save the renewal expense within 5 (five) years according to the result of monitoring. This leasing mechanism was confirmed as a feasible system. And also the combination of necessary equipment as a set was discussed and illustrated by some examples.

<table>
<tr><th colspan="2">Verifiable Indicators</th><th>Achievement Level</th></tr>
<tr><td>4-1</td><td>Annual Rural Road Maintenance Plan prepared by the LGAs in the disseminated districts contains necessary items based on the checklist.</td><td><u>Secured</u>
As stated at the Output 2, Indicator 2-1 above.</td></tr>
<tr><td>4-2</td><td>The percentage of the road maintenance works completed by contractors (including defect liability period) for all the maintenance works in the Plan is increased within the financial year.</td><td><u>Partially secured</u>
The Annual Rural Road Maintenance Plan was prepared. The technical instruction has been conducting in the disseminated district. This indicator will be fulfilled in the end of June, 2016 after the completion of the Project towards 85%.
Table 4-13 Percentages of the road maintenance works Completed in the disseminated districts
<table><tr><th>FY / Name</th><th>2014/15</th></tr><tr><td>Kondoa</td><td>78.13%</td></tr><tr><td>Mufindi</td><td>70.00%</td></tr></table>(Source: Form 5 of Monitoring System)</td></tr>
<tr><td>4-3</td><td>The number of consultations on rural road maintenance between contractors and district engineers and technicians is increased in the disseminated districts.</td><td><u>Partially secured</u>
The data will be commenced confirming from the beginning of a new fiscal year, 1st of July 2015 and summarized for three (3) quarters at the end of the Project in March 2016. And the annual statistics will be analyzed in June 2016 after the completion of the project.</td></tr>
</table>

(3) Possible Achievement of the Overall Goal

Table 4-14 Rating of Achievement of Overall Goal

Rating of Achievement	A: It will be satisfactory achieved by the end of the Project B: It will be achieved within five (5) years after the end of the Project C: It will be difficult to be achieved within five (5) years after the end of the Project

Indicator 1	Indicator 2	Indicator 3
B	B	B

Overall Goal :	The rural road maintenance procedure and services of LGAs in Dodoma and Iringa Regions are improved.
Overall Achievement :	To achieve the Overall Goal is also expected to be fulfilled same as the Project Purpose if the Tanzanian side takes necessary measures to secure the budgets and to increase human resources. Also the LGAs should work to simplify and promote the efficiency in order to reduce burden on each staff member. In addition, the Operational Guidelines of Rural Maintenance should be always utilized and be treated as the primary guideline for the rural road maintenance cycle duties, such as planning, execution and assessment to feedback necessary information for planning in the succeeding year.

	Verifiable Indicators	Achievement Level
1	Annual Rural Road Maintenance Plans prepared by the LGAs of the respective regions contain necessary items based on the checklist.	Will be fulfilled with a specific condition As this kind of indicator was fulfilled for the (Indicator 2-1) of the Output 2 in the model district, it may be fulfilled in the other districts, if the necessary human resources and budget are secured.
2	The percentage of the road maintenance works completed by contractors (including defect liability period) for all the maintenance works in the Plan is increased within the financial year in the respective regions.	Will be fulfilled with a specific condition As this kind of indicator was fulfilled for the (Indicator 2-2) of the Output 2 in Chamwino DC, it may be fulfilled in the other districts, if the necessary human resources and budget are secured.
3	The maintenance status (Good, Fair, and Poor) of rural roads is improved in the respective regions.	Will be fulfilled with a specific condition As this kind of indicator was fulfilled for the (Indicator 1) of the Project Purpose, it may be fulfilled, in the other districts, if the necessary human resources and budget are secured.

(3) Conclusion

In conclusion, the Team appreciated an enormous effort to achieve the Project Purpose by Tanzanian side through a series of activities together with the Japanese expert team. Both sides confirmed sufficient achievements and impacts were produced in principal as the result of the project activities. As both sides observed, if the following conditions are sincerely secured autonomously by the Tanzanian side, the tangible results will be created continuously to develop the rural traffic environment for the better, healthy and convenient community life in rural areas in future.

First of all, it is expected to monitor the activities and indicators for FY2015/16, which were not confirmed at the Terminal Evaluation because of the works waiting for the confirmation timing, end of June 2016, although the project would be terminated at that time. Those indicators related to the Output 4 (The dissemination mechanism for rural road maintenance approach within the respective regions is established.), which shows the percentage of the completed maintenance works and the number of consultations on rural road maintenance are necessary to measure the deepness of establishing the sustainable technical transfer mechanism as well as the possibility for the nationwide dissemination of the Project fruits.

Secondly, it is obvious to secure sufficient "Man, Machine and Money" are the key factors to proceed to develop and promote so that super goal and overall goal will be attained.. In order to secure such core conditions, PMO-RALG has a heavy duty to take a strong leadership.
As PMO-RALG has been trying to reinforce its capacity by the organizational reform since 1st July, 2015, the Team is willing to welcome for the further capacity development. Because it was observed that human resource management such as so busy situation of RSEs and transfer of counterpart engineers may hamper technical transfers in the Project progress process, some intervention or effort might be necessary to promote the technical transfer in further large scale.

The Project activity proved that necessary LBT equipment promotes construction progress and even to be replaced by self-absorbed leasing revenues. As per financial aspect, expenses for these kinds of development are expected to be provided, mainly from the Road Fund continuously and increasingly so as to match the current needs; however for the further dissemination of the result of the Project, the Tanzanian side is recommended to make an attempt on securing the new sources of funding.

As reference, the Overall Goal is "The rural road maintenance procedure and services of LGAs in Dodoma and Iringa regions are improved", and the Super Goal is "Rural roads in whole Tanzania are properly maintained through application of appropriate technology and methodology."

4.2. Recommendations from the Terminal Evaluation Team

(1) Contribution to establish technical specifications for the LBT

The developing operational guideline is focused on improvement of the local government

administration services, and as for the present PDM, the technical issues for the targeted regions/districts officers (e.g. RSE, DE) are not the major activities in the Project activity. However, technical specifications for the LBT implementation are required for conducting appropriate order, contract for LBT works and explanation to the auditor's technical questionnaire.

<Within the project period>
Considering the situation mentioned above, the Team recommends again turning to look at the recommendation at the Mid-term Review that the Project shall continuously challenge to help drafting specification for the Pilot Projects by conducting the additional workshop, seminar and arrangement for the meeting inviting the persons concerned as arranging now. LBT Specification meetings are planed 3 times by the end of the project period, so this meeting should be surely conducted and it is desirable that the drafted specification will be utilized for the next pilot projects. It is also important to collect the needs for specification in model district and disseminated districts which Japanese expert team have already started.

<After the project period>
The LBT specification needs to be finalized by PMO-RALG and then approved by MOW. Besides, the team expects that stakeholders should improve above LBT specification in the process of dissemination to other districts in the targeted regions and nationwide. This activity shall be crucial to achieve the purpose of the Project by considering an additional input to encourage the dissemination approach which is the super goal to be achieved.

(2) Comprehensive capacity of PMO-RALG to manage development and maintenance of rural road

For the development of the capacity of PMO-RALG, it is necessary that PMO-RALG needs to be able to organize information and data collecting, filing, analysing and releasing into the stakeholders. Such proper information and data management will contribute to secure the management cycle based on the planning, execution and assessment. This kind of approach will contribute to manage the nationwide expansion of LBT.

For this organizational enhancement, the following measures are recommended by the Team.

<Within the project period>
The Japanese Project Team is required to give instructions to PMO-RALG related to the above mentioned necessary know-how, on such as information and data collecting, filing, analysing and releasing into the stakeholders in order to offer the higher level of capacity-building assistance to PMO-RALG.

<After the project period>
Through such management mentioned above, PMO-RALG is required to grasp good practices and

challenge for the future, especially as the forefront, the Annual Rural Road Maintenance Plans should be prepared based on such information and data properly.

(3) Effective direction for use of the operational guidelines of rural road maintenance

The Operational Guidelines for District Roads Maintenance is accepted as the first official guidelines for the rural road maintenance in Tanzania. However, it further needs to be revised for the purpose to be used conveniently and serve as fitted guidelines for the latest situation in Tanzania.

For this purpose, it is recommended PMO-RALG to pay attention for necessary timing to review and revise the Guideline such as monitoring activities are conducted. When the guideline needs to be revised, PMO-RALG should convene the meetings and revise with the stakeholders who has participated the regular meetings on operational guideline, as it is described on the guideline article 2.8. This meeting should be convened on Tanzanian sides' initiative, which means PMO-RALG calls the stakeholders, leads meeting and submits the revised draft guideline to MOW to get approval timely.

(4) Necessity of monitoring for indicators in end of June, 2016

The next annual monitoring will be conduct after the end of June, 2016 - after the project period. This monitoring is quite important because the results show the situation and outcome of AMTC in disseminated districts. For this reason, PMO-RALG needs to conduct the monitoring by itself around July, 2016. The result of monitoring is expected to be shared with JICA Tanzania Office, before end of July 2016.

(5) Necessary budget and qualified staff allocation

To secure the sustainability of the Project, needless to say, one of the most important challenges is to reduce the budget shortfall and delay of disbursement and proper human resource management such as attach more manpower to RSE offices for the smooth implementation of continuous development and dissemination of fruits of the Project nation widely. The Team recommends strongly to take proper measures for such important factors continuously within and after the Project period.

(6) Harmonization and collaboration with BEJDPO and other DPs activities

The Team pointed out the importance of collaboration with other DP financed projects such as Tanzania First Business Environment for Jobs Development Policy Operation (BEJDPO1) supported by World Bank and JICA, other technical assistance and financial support in rural road sector by Europe Union, USAID, DFID, AFCAP and so forth, so that the each project can contribute for generating synergy effect and complementing one another. Dissemination process such as holding workshop together, support of human resource management of PMO-RALG and LGAs, procurement of LBT equipment could be candidates of collaborative activities.

4.3. Lessons Learned

The history of technical assistance on LBT in Tanzania by JICA dates to the implementation of the Project for Capacity Strengthening on Labor Based Technology (LBT) Training at ATTI in May, 2006. The counterpart personnel and Japanese experts have been working towards to develop the poor situation of rural road in Tanzania since the previous Project. As a result, the stakeholders related to the rural road maintenance have accumulated a certain level of experience, skill and knowledge.

The following findings are said as referable to the further ODA project implementation not only in Tanzania but also world widely.

(1) Initiative by C/P

Primary output from this Project is that the C/Ps prepared the Rural Road Maintenance Operational Guidelines on their own initiative. The Project has been assisting to realize its autonomous management of dissemination and stabilization of the Guidelines targeting until the end of Project period. The approach of the Project may give recommendations to the other Project as the way to respect activities by C/Ps their own initiative and to spread outputs from the district/region, zone and to all the country.

(2) Communication in native language

The Japanese experts have been trying to communicate in the national language in Tanzania, Swahili. This efforts have made communications with the C/P personnel smoothly and friendly.

(3) Monitoring in the Project

The Project has been conducting monitoring the process and achievement, and collecting necessary information and data for the smooth implementation of the Project and the periodical evaluation initiate by the specified expert cooperated with stakeholders. In addition, the counterpart personnel have been working with the said expert based on the project management tool, PDM; therefore the counterpart personnel understand the process well. At the same time, the format of questionnaires provided by the said expert is under discussion to be added in the Operational Guidelines together with the other management and assessment systems for the purpose to enhance both on internal and external assessment systems.

(4) Depreciable Equipment Management

The set of equipment for LBT provided by JICA was used for the demonstration experiment for the depreciable equipment management. As a result, it was confirmed to be depreciable within five (5) years to be renew for keeping such equipment.

5. Other Important Activities

5.1 Joint Coordinating Committee (JCC)

PMO-RALG and the Project convened the Joint Coordinating Committee (JCC) meetings as follows.

Table 5-1 RMSD Joint Coordinating Committee 2012-2016

Round	Date	Agenda	Participants
JCC-1	4/Oct/2012	・ Presentation of Plan of Operation and Annual Plan, Outline of the Project, ・ Baseline Survey, Establishment of Model District, Direction of Capacity Development	20
JCC-2	3/June/2013	・ Presentation of Annual Plan, Progress Report	17
JCC-3	24/July/2014	・ Progress of the Project, Achievement of the indicators ・ Plan of the Operational ・ PDM modification ・ Disseminated District Selection ・ Mid-term Review	32
JCC-4	20/Aug/2015	・ Progress of the Project, Achievement of the indicators ・ Terminal Evaluation ・ Draft of the Road Map	13
JCC-5	23/Feb/2016	・ Achievement of the Project ・ Summary of the Project Activities ・ Proposal from the RMSD ・ Road Map	21

5.2 Provision of Equipment

The Project procured the equipment for the project activities as follows. By the end of the project period, those were officially provided to the Tanzanian side.

Table 5-2 Equipment Procured by the Project

	Iringa DC	Chamwino DC
Equipment Procured by JICA	1.Tractor	1. Tractor
	2.Towed Type water Bowser	2.Vibrating Roller
	3.Vibrating Roller	3. Plate Compactor
	4.Plate Compactor	4. Engine Pump
	5.Engine Pump	
Operation Manegement	Direct	Direct
Maintenance Management	Contract(TEMESA)	Contract (TEMESA/Private)
Leasing Management	Direct	Direct
Fund Management	Road Fund Account	Road Fund Account

5.3 Conducting the Baseline Surveys

A Baseline survey was conducted in 2013 with the implementation sub-contracted to NIMETA Consult Ltd. The terms of reference for the baseline survey are shown below.

Table 5-3 Contents of Baseline Survey (TOR)

Items	TOR
A: Road Inventory Survey	(1) The Consultant shall reviews the Road Inventory survey of Dodoma and Iringa regions. Both regions have 6 and 4 councils respectively. (2) Review works will be done through the road inventory record analysis (indicated road conditions as Good, Fair, Poor). (3) Above mentioned records can get available at each Regional Secretariat Engineer (RSE) office or PMORALG head quarter office at Dodoma. Supplemental data, such as "Local Government Road Inventory and Condition Survey (LGRICS)" and "the Annual District Roads Inventory and Condition Survey (ADRICS)" were available by JICA Team. (4) The Consultants shall compile inventory's data on the Windows Excel Sheet. (5) To complement data accuracy, the consultant will visit at least two (2) district roads per region for site surveying.
B: Investigations of Local Government Authorities (LGA's) Capability	(1) The Consultant shall reviews the District Capability of Dodoma and Iringa regions. Both regions have 6 and 4 councils respectively. (2) Items of review of the assignment are following; • Personnel (name, affiliation, employee code, date of birth, etc.) • Organization (address, chart, number, name and positions of staff, etc.) • Position (position name, description, responsibility, salary level, etc.) • Annual budget (financial statements, balance sheets, annual/last five year, breakdown of components), depends upon the availability of the respective data. • Project (project name, description, date from, date to, site, length, surface type, etc.) • Construction Method (type of works-planning, required equipment; etc.) • Training (name of training; objective, affiliation of participants, etc.) • Registered contractors (CRB registration firms, registration record) • Plants and equipment for road works (name, number, managed by, date of purchase, condition) (if any) (3) Review works will be done through the district's annual report and other documents. Those reports can get available at the each Regional Secretariat Engineer (RSE) office or PMORALG head quarter office at Dodoma. (4) The Consultants shall compile reviewed data on the Windows Excel Sheet. (5) To complement data accuracy, the consultant will visit and interview at least two districts offices per region for Surveying.
C: Investigations of Districts Local Contractors Capability	(1) The Consultant shall reviews the Council's Local Contractor Capability of Dodoma and Iringa regions. Both regions have 6 and 4 councils respectively. (2) Items of review of the assignment are as follows; • Personnel (name, affiliation, employee code, date of birth, etc.) • Organization (address, chart, number, name and positions of staff, etc.)

	• Position (position name, description, responsibility, salary level, etc.) • Annual income (financial statements, balance sheets, annual/last five year, breakdown of components), depends upon the availability of the respective data. • Machinery and equipment owned (name, number, date purchased, condition) • Project (project name, description, date from, date to, site, length, surface type, etc.) (3) Review works will be done through the district's annual report and other documents. Those reports can get available at the each Regional Secretariat Engineer (RSE) office or PMORALG head quarter office at Dodoma. (4) The Consultants shall compile the reviewed data on the Windows Excel sheets. (5) To complement data accuracy, the consultant will visit and interview at least 2 district offices in two Regions.
D: Reporting	(1) The Consultants shall submit survey report based on compile review's data. The report shall contain "Introduction of the Project", "Methodology of the Survey", "The summary of the collected data", "Conclusion and remarks", and Appendix with references. (2) The report should be submitted one week after the completion of the survey. (3) The report requires three (3) hard copies with compellation and one (1) soft copy for data file.

5.4. Modification of the PDM

As the need to modify PDM1 was agreed on the RD, PDM2 was developed through the confirmation of the following points during the 1st JCC meeting (JCC-1) in the first year (refer to Annex 1 for the differences between PDM1 and PDM2). The indicators were set up based on the results of the baseline survey, targets of the Annual Performance Agreement, etc. In July 2014, PDM3 was also developed during JCC-3; the identified target indicators were set up for the disseminated districts. In addition, through the experiences of the project monitoring activities, the Project recognized that it is possible to obtain all the indicators through the monitoring system without an impact survey.

5.5. Training in Japan

The Project conducted training in Japan from 23/August to 10/September 2014. The purposes of the training are as follows;

- Understand the mechanism of rural road maintenance administration
- Understand rural road maintenance works in local government (inventory survey, mid-long term plan, prioritization, annual plan, monitoring, etc.)
- Acquire rural road evaluation system in local government
- Understand the process of participatory road maintenance works (procurement and construction control process)
- Understand the trial of "Local Rules" (1.5 lane etc.) which adjusts for local needs, low traffic

volume

- Acquire effective maintenance technology relating to rural roads (Do-nou technology etc.)

Table 5-4 Member of the Study Tour in Japan

No	Name	Title	Organization
1	Hassan Swalehe Matimbe	Assistant Director of Urban Road	MOW (Ministry of Works)
2	Ezron Charles Kilamhama	Principal Engineer	Infrastructure Development Unit PMO-RALG
3	Justin Mathew Lyatuu	Economist	Infrastructure Development Unit PMO-RALG
4	Daudi Sweke Lucas	Principal Engineer	Infrastructure Development Unit PMO-RALG
5	David Michael Mwakalalile	RSE	Iringa Region
6	Mohamed Musa Mkwata	RSE	Dodoma Region
7	Asel Yesaya Kajange	Engineer	Iringa DC
8	Baraka Sururu Munissi	Technician	Iringa DC
9	Mpinzile Godwin Samwel	DE	Chamwino DC
10	Shama Saidi Amanzi	Technician	Chamwino DC

5.6. Public Relations

The Project occasionally published “News Letters” on the JICA homepage website. The Project News Letters highlighted the activities and progress of the Project. PMO-RALG and the Project also had the opportunities to present the Project’s activities at the ILO international seminar in Cameroon in 2014, and in Benin in 2015. The ILO international seminar is regarding the LBT participants. In October 2015, the executive engineer of PMO-RALG had a presentation at the seminar, and it attracted the participants.

Participants for the ILO seminar in Benin

Eng.Nanai/PMO-RALG presented in the seminar

Figure5-1 Photos of ILO International Seminar in Benin 2015

6. Issues, Contrivance, and Lessons Learned

The issues, contrivance, and lessons learned from the project operation are summarized as follows.

6.1. Lessons Learned from the Project Operation

(1) Ownership of the Tanzanian Counterpart

All the costs of operating the Project were absorbed by the Tanzanian side accordingly, as specified in the Record of Discussion. PMO-RALG, the Regional Administrative Secretary and the model districts were all cooperative and showed full ownership to operate the Project. In particular, which is remarkable to note, the Operational Guidelines were produced by the initiative of the Tanzanian counterpart, and the model districts covered all the costs of the pilot projects by utilizing the limited resources of the Road fund. PMO-RALG also had the responsibility to secure the personnel required by the Project. The ownership of the Tanzanian counterpart will be contributed to sustain the outputs from the Project.

(2) Attract Engineers and Technicians through New Technologies

Through the operation of the technical training, the Project found that engineers and technicians were attracted by the introduction of new technologies and new techniques. The new technologies or techniques, such as GPS/GIS, Mapping, Hydrological Survey, and Structure Planning empowered the participants. Mostly the technical training was designed with two parts: one for training in the office through a series of lectures, and the other on site. Both contributed to the training being more practical. The engineers and technicians are sincere and willing to acquire the new technologies. Some of the engineers stayed late in the office to solve their issues by utilizing the new technologies, and others visited the Experts during the weekends for additional training. The tools such as GPS receiver or drive recorder introduced in the training course, also contributed to improving their efficiency.

(3) Insufficient Number of Equipment

1) GPS

GPS is an effective tool for inventory surveys. It remarkably improves the efficiency of measuring road length. Although the Project provided GPS units to the model and disseminated districts, the number of GPS was insufficient, i.e., only one respectively. Due to the insufficient number of GPS units, the inventory survey took a long time to complete. It is recommended to secure at least two GPS units for the districts to enhance the practical utilization of GPS.

2) PCs for Data Accumulation

The districts engineers and technicians normally use their own PCs for their work. There is no main server to accumulate all the data of each district. Due to the risk of damage to one PC, or personnel leaving after being assigned to another position, data accumulation in the districts is not secured. The Project proposed securing of one main PC in each district to ensure safe data accumulation.

3) LBT Equipment

The Project procured a set of LBT equipment for each of the two model districts. As mentioned in the lessons learned from the model districts, one set of LBT equipment is insufficient to encourage LBT works for up to 20 % of all annual road works in the districts, as defined in APA (Annual Performance Agreement). In addition, the LBT leasing system that the Project trialed, founded to share the LBT equipment among the LBT contractors was not practical. This is because all the LBT contractors had to implement the road works more or less at the same time, as contracted. Delay in LBT works due to leasing LBT equipment at one site caused delays in LBT works at another site.

As mentioned in Chapter-1, it is recommended to clarify that the LBT leasing system shall be managed by the districts while the accounting shall be the responsibility of the regions. Transferring the accounting management to the regions will enable acceleration of financial income as funds from the leasing system, thus making it possible to procure new equipment using the funds. The ideal number of LBT equipment in each region is assumed to be half of the total number of districts in the region, i.e., two sets of LBT equipment required for a region with four councils. In order to realize this, a cost of around 100,000 to 130,000 USD per one set of LBT equipment is estimated, including transport, spare parts and initial training. In view of the current budget in Tanzania for regional administration, it is preferable that the Japanese side provides the equipment.

6.2. Lessons Learned from the Capacity Development

(1) Development of AMTC

The Project has developed the dissemination system of the project outputs as AMTC. It aims to improve the administrative capacity of the disseminated districts by sharing the lessons learned from the application of the Operational Guidelines, by transferring the technical skills from the model districts. AMTC enables RSEs to monitor and instruct the practical procedure of the LGAs on a quarterly basis, according to the Operational Guidelines. This regular monitoring by RSEs shall contribute to improving the administrative capacity of LGAs, thus AMTC is developed as the approach to attain the project purpose.

（2）Technical Training

As described in Chapter-3, there remains a serious need for technical training, in particular, on road structure design and drawings. These technical skills, using software and tools, contribute to significantly improving the effectiveness of the rural road works in the districts. PMO-RALG requested the provision of further technical training by the Project, when the mid-term review team evaluated the progress. It shows the high level of motivation of the engineers and technicians for the acquisition of the technical skills. With respect for this request from the Tanzanian side, the Project could not reach the level of their satisfaction due to the limited assignment of technical experts. Providing further technical training to meet the requirement of Tanzania should have been incorporated in the Project activities.

(3) Integration of Data, Standardize Operation System

As mentioned above, road data and information are managed individually in the districts. The Project proposed to PMO-RALG the integration of road data, but it is still inactive due to the current Government regulation for document numbering and the filing system.

Regarding the PC operation system, it varies from personnel to personnel. In the technical training of QGIS, which requires downloading free software, some engineers succeeded in downloading the latest version of January 2016 in Windows 7, while others were unable to download in Windows 8 or 10. Moreover, DROMAS-2 has the aim to integrate the accumulation of rural road data and information in all LGAs. To realize this, it is recommended to standardize the PC operation system in the districts.

(4) Assignment of Monitoring Expert

The Project assigned an expert for the monitoring. This assignment enabled regular monitoring of the progress and achievement of the project. The results of the monitoring were shared among all the counterparts during the regular meetings or JCC meetings. The introduction of monitoring forms and the monitoring system contributed to visualizing the impacts of the pilot project on the community. The results of the questionnaire to the contractors were also analyzed and shown in terms of the percentages of their capacity of supervision. It seems that all of the experience is impressive for the districts, as monitoring used to be only by the percentage of budget utilized, the quality of the works, and the number of road works completed.

6.3. Lessons Learned from the Dissemination of the Output

(1) Collaboration to JOCV (Japan Overseas Cooperation Volunteers)

The Project collaborated with JOCV in the dissemination process. JOCV in the sector of public administration was assigned in the disseminated districts, in Kondoa DC and in Mufindi DC. The disseminated districts are in charge of transferring outputs from the model districts through AMTC. As the experts normally stayed in the model districts, in Dodoma and in Iringa, the progress of the dissemination has been mainly monitored by JOCV. As the assignment of JOCV was in the works department of the disseminated districts, it was sometimes required to monitor the progress technically. It seems difficult for JOCV to monitor the progress and issues technically. The collaboration with JOCV shall be reviewed to assign those with appropriate experience and knowledge.

(2) Improvement of AMTC

It is essential for PMO-RALG to stabilize the outputs of the Project in the two model regions through AMTC. The dissemination and stabilization of the contents of the Operational Guidelines shall be approached to the overall goal of the Project. The lessons learned from the RSEs include some proposals to improve AMTC regarding topic and timing.

As of the middle of February 2016, the sustainable securement of the budget for operating AMTC is

undefined. PMO-RALG is required to improve the AMTC with the consideration mentioned by the RSEs, and secure the budget for operating AMTC.

(3) Institutional Enhancement of RSEs

It is crucial to secure the appropriate number of qualified RSEs. This point was mentioned in the mid-term review and the terminal evaluation. In most of the region, the RSE is the only personnel assigned. PMO-RALG, in this regard, requested the human resource department to increase the number of qualified RSEs. By January 2016, additional assignment of RSEs had been conducted in several regions out of the 28 in total. The further progress of the institutional enhancement of RSEs shall be expected.

PMO-RALG was transferred from the "Prime Minister's Office" to the "President's Office (referred to as PO-RALG)" in January 2016. The Infrastructure unit was reformed in PO-RALG to three divisions: Urban, Rural, and Research Centre. The total number of engineers in the Infrastructure division has exceeded 20 so far. This institutional enhancement reflects the importance of infrastructure development in Tanzania. The Project team has the privilege of operating the project for rural road development in these circumstances.

7. Recommendation for Further Action

The overall goal, project purpose and outputs are listed as follows.

- Overall Goal: The rural road maintenance procedure and services of LGAs in Dodoma and Iringa regions are improved
- Project Purpose: Administrative services of rural road maintenance provided by LGAs are improved in the target areas, and its nationwide expansion approach is developed
- Output-1: The capacity of PMO-RALG for coordinating and supporting LGAs in collaboration with MOW on rural road maintenance is strengthened.
  Output-2: The rural road maintenance procedure of the LGAs is strengthened in the model districts.
  Output-3: The practical skills and knowledge of responsible organizations (concerned departments of the LGAs, contractors, etc.) on rural road maintenance are improved through the LBT application in the model districts
  Output-4: The dissemination mechanism for rural road maintenance approach within the respective regions is established

The Road Map after the Project completion was presented by PMO-RALG in JCC-5. The Project recommends the following as the conclusion of the Project, to encourage the steady progress of the Road Map by the Tanzanian side.

7.1. Implementation of the Road Works to achieve the target value of the Overall Goal

The following three indicators are confirmed for the overall goal in Dodoma and Iringa regions. Regarding the indicator for the annual plan of the districts (as described in indicator-1 below), PMO-RALG is required to identify whether it is ng the annual plan proposed by the Project, or the one for DROMAS-2 by August 2016, when PMO-RALG will reports the summary of the achievements of outputs in FY 2015/2016 to the JICA Tanzania Office.

Table 7-1 Indicators and the means of verifications for the Overall Goal

- Indicator-1: Annual Rural Road Maintenance Plans prepared by the LGAs of the respective regions containing necessary items based on the checklist (means of verification from Form-4 in the monitoring system)
- Indicator-2: The percentage of the road maintenance works completed by contractors (including defect liability period) for all the maintenance works in the Plan is increased within the fiscal year in the respective regions. (means of verification from Form-5 in the monitoring system)
- Indicator-3: The maintenance status (Good, Fair, and Poor) of rural roads is improved in the respective regions. (means of verification from Form-1 in the monitoring system)

In order to measure the achievements based on the indicators, it is necessary to utilize the monitoring forms mentioned above. The Project has conducted the monitoring workshop occasionally, thus all the C/P have mastered the utilization of the monitoring forms. PMO-RALG and RSEs are required to have the responsibility to instruct the model and disseminated districts to measure the achievement based on the indicators in FY 2015/2016.

7.2. Standardization of AMTC

AMTC has been designed in accordance with the quarterly monitoring cycle of RSEs. It aims to monitor and instruct the administrative procedure of each work stages in the model and disseminated districts. Through the standardization of AMTC, the monitoring activities of RSEs shall be enhanced. In addition, it is expected not only for the model and disseminated districts, but also the rest of the districts in the model regions, to improve the administrative procedure of the road works through AMTC. Thus, PMO-RALG and RSEs are required to operate AMTC continuously to achieve the overall goal even after the project‘s completion.

To realize the sustainable operation of AMTC, PMO-RALG is required; (1) to utilize the Operational Guidelines, (2) to produce and improve the practical materials through the lessons learned from RSEs and the model districts, (3) to secure sufficient budget and assignment for RSEs to enable quarterly monitoring, and (4) to ensure funds for the model districts, i.e., to cover allowance and transport costs. The Project expects PMO-RALG to encourage RFB to secure the necessary funds to operate AMTC.

7.3. Utilization of the Operational Guidelines, LBT Specification Guidelines

The Operational Guidelines, which are produced in the Project, are essential to check the appropriate procedures and to meet audit requirements. Ensuring the utilization of the Operational Guidelines shall contribute to improving the administrative capacity of rural road works. Therefore, the Operational Guidelines are required to be sustainably fruitful through updating or revising when necessary.

LBT technical specification guidelines, which are also produced in the Project and named “Guidelines for Labour Based Road Work in LGAs,” are expected to promote LBT construction in the LGAs. Applying these technical guidelines will enable the LGAs to meet the requirements of the technical audit. The Project recommends that PMO-RALG encourages the utilization of the LBT technical specification guidelines in the LGAs through an announcement from time to time, such as on Engineers Day.

7.4. Promoting Effective Use of the Monitoring Forms

As described in Section 7-1 above, the Project has been carried out to monitor the achievements based on the indicators. The monitoring system that the Project trialed is the feasible tool to manage any project in the road works. The engineers, both in the regions and the model and disseminated districts, are capable of doing data analysis with Excel spreadsheets. The Project proposes to promote the effective use of monitoring forms even after the Project is completed.

7.5. Providing Technical Training Sustainably

The road classification of “Good,” “Fair” and “Poor” in the Operational Guidelines is defined as referring to the definition of TANROAD. It is, however, not always applicable to rural roads. It was modified to apply the IRI (International Roughness Index) as described in ADRICS. In practice during the inventory survey, the Project found that how the roughness was defined depended on how one inspects subjectively. It is one of the critical examples in rural road administration in Tanzania. Currently, there are a number of issues, such as insufficient reliability of the road data, lack of data accumulation, inadequate criteria to classify, technical gaps between engineers, and inadequate funds for supervision.

To overcome those challenges, the Project recommends that PMO-RALG effectively uses the limited resources, as well as invite Development Partners to support their challenges. JICA has long history and experience to contribute to capacity development of the infrastructure sector through technical cooperation in Tanzania. It is supposed that JICA is the most appropriate to provide continuous support in order to overcome the challenges as one of the pioneer partners for rural road maintenance in Tanzania.

7.6. Continuous Trial of LBT Equipment Leasing System

During the Project implementation, leasing system of LBT equipment in the model districts was developed. The system was aimed to support LBT contractors due to limited number of construction equipment in the market. The system shall contribute to increase LBT works in LGAs. The Project request PMO-RALG and RSEs to monitor the achievement of the leasing system for future benefit of rural road maintenance especially LBT method.

ANNEXES

Annex 1: Project Design Matrix (PDM_1)

Project Title: Rural Road*1 Maintenance System Development Project | Project Period : XX, 2012 – YY, 2016 (Four (4) Years) | Version No. 1

Target Areas*2: Two (2) districts*3 in each region of Dodoma and Iringa

Target Group: RS and District Engineers, District Technicians, contractors, and community people living around the sites for pilot projects | Date : December 12, 2011

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Super Goal Rural roads in whole Tanzania are properly maintained through application of appropriate technology and methodology.			
Overall Goal The rural road maintenance procedure and services of LGAs in Dodoma and Iringa regions are improved.	1. Annual Rural Road Maintenance Plans prepared by the LGAs of the respective regions contain necessary items based on the checklist. 2. The number of audit queries (technical and financial aspects) against the LGAs is decreased in the districts of the respective regions. 3. The maintenance status (Good, Fair, and Poor) of rural roads is improved in the respective regions.	1. Monitoring checklist prepared in the Activity 2-8 2. Annual Audit Reports of the LGAs 3. Rural road inventory reports	
Project Purpose Administrative services of rural road maintenance provided by LGAs are improved in the target areas, and its nationwide expansion approach is developed.	1. The maintenance status (Good, Fair, and Poor) of rural roads is improved in the model and disseminated districts of the respective regions. 2. The satisfaction ratings of the contractors and community people in the model and disseminated districts of the respective regions exceed XX%*4 on average with reference to the maintenance status of rural roads. 3. The percentage of the rollover funds for rural road maintenance from the previous fiscal year is decreased in the model and disseminated districts of the respective regions.	1. Rural road inventory reports 2. Questionnaire surveys to the contractors and community people 3. Annual Rural Road Maintenance Performance Reports	Budgetary and human resources necessary for the rural road maintenance are continuously allocated by the Government of Tanzania.
Outputs 1. The capacity of PMO-RALG for coordinating and supporting LGAs in collaboration with MOW on rural road maintenance is strengthened. 2. The rural road maintenance procedure of the LGAs is strengthened in the model districts. 3. The practical skills and knowledge of responsible organizations (concerned departments of the LGAs, contractors, etc.) on rural road maintenance are improved through the LBT application in the model districts. 4. The dissemination mechanism for rural road maintenance approach within the respective regions is established.	1-1. The Rural Road Maintenance Guidelines are authorized by MOW. 1-2. The percentage of the RS and district engineers utilizing the Guidelines distributed by PMO-RALG and MOW exceeds XX%*4 across the mainland of Tanzania. 2-1. Annual Rural Road Maintenance Plan prepared by the LGAs in the model districts contains necessary items based on the checklist. 2-2. The number of audit queries (technical and financial aspects) against the LGAs is decreased in the model districts. 3-1. The rating of district engineers and technicians whose practical skills and knowledge have been improved exceeds XX%*4 on average in the model districts. 3-2. The number of consultations on rural road maintenance between contractors and district engineers and technicians is increased in the model districts. 3-3. The number of road maintenance works executed by contractors is increased in the model districts. 3-4. The ratio of LBT works to all the maintenance works is increased in the model districts. 4-1. Annual Rural Road Maintenance Plan prepared by the LGAs in the disseminated districts contains necessary items based on the checklist. 4-2. The number of audit queries (technical and financial aspects) against the LGAs is decreased in the disseminated districts. 4-3. The number of consultations on rural road maintenance between contractors and district engineers and technicians is increased in the disseminated districts.	1-1. Rural Road Maintenance Guidelines 1-2. Questionnaire surveys to the RS and district engineers (during the Annual Meetings) 2-1. Monitoring checklist prepared in the Activity 2-8 2-2. Annual Audit Reports of the LGAs 3-1. Questionnaire surveys to RS engineers and contractors 3-2. Monitoring sheets prepared in the Activity 2-8 3-3. Annual Rural Road Maintenance Performance Reports 3-4. Monitoring sheets prepared in the Activity 2-8 4-1. Monitoring checklist prepared in the Activity 2-8 4-2. Annual Audit Reports of the LGAs 4-3. Monitoring sheets prepared in the Activity 2-8	During the cooperation period, the district engineers capacitated by the Project continue working for their respective positions in the model and disseminated districts.

Annex-2

Activities	Inputs		Pre-condition
0 Conduct the baseline and impact surveys. 1-1 Convene regular meetings on operational guidelines development for rural road maintenance with PMO-RALG and MOW. 1-2 Prepare and revise operational guidelines of rural road maintenance with PMO-RALG and MOW. 1-3 Share the contents of the guidelines and the lessons learned from LGAs in the model districts during the Annual Meeting between PMO-RALG, RS Engineers and District Engineers. 1-4 Assist RS engineers to monitor rural road maintenance in LGAs based on the guidelines. 2-1 Select model districts based on the criteria established. 2-2 Review the current activities done by technical staff in the model districts. 2-3 Provide training on rural road maintenance for the district engineers and technicians in the model districts. 2-4 Prepare and update rural road inventories in the model districts. 2-5 Prepare and revise a mid- and long-term rural road maintenance plan. 2-6 Confirm the needs of rural road maintenance in the model districts and prioritize the needs. 2-7 Prepare annual rural road maintenance plans, including procurement, construction method, etc., in consideration of gender aspects in the model districts. 2-8 Monitor the rural road maintenance in the model districts. 3-1 Select pilot projects in the model districts from the annual rural road maintenance plan. 3-2 Formulate the work plans of the pilot projects. 3-3 Assist district engineers and technicians in the model districts to procure contractors and supervise the pilot projects based on the work plans. 3-4 Provide consultations on the operation of the pilot projects for the district engineers and technicians, contractors, etc. through ATTI. 3-5 Promote PR activities on rural road maintenance through the pilot projects. 3-6 Document the process, experiences, outcomes, and lessons learned of the pilot projects. 4-1 Organize sensitization workshops on rural road maintenance for the other LGAs in the respective regions in collaboration with the RS engineers. 4-2 Select a LGA to be disseminated in the respective regions. 4-3 Assist the LGAs selected in the respective regions to promote rural road maintenance based on the guidelines with the full commitments of RS engineers. 4-4 Monitor the rural road maintenance promoted by the LGAs in the respective regions. 4-5 Feedback the monitoring results into the guidelines.	Japanese side 1. Experts ・ Chief Advisor /Road Maintenance ・ Rural Road Planning ・ LBT ・ Construction Management ・ Light Equipment Management ・ Public Relations (PR) ・ Others as necessary 2. Training of counterpart personnel in Japan and/or the Third Countries 3. Provision of machinery and equipment as necessary 4. Local expenses for the project activities, which is not covered by Tanzanian side 5. Others as necessary	Tanzanian side 1. Personnel ・ Project Director ・ Project Manager ・ Counterpart personnel 2. Provision of the project offices and facilities necessary for the project implementation 3. Expenses for implementing pilot projects in the model and disseminated districts of the respective regions 4. Administrative and operational expenses ・ Electricity, water, communication, etc. ・ Local traveling costs and daily subsistence allowance (DSA) for counterpart personnel 5. Others as necessary	1. Institutional arrangement for rural road maintenance is not changed from the PMO-RALG to another governmental institute. 2. During the cooperation period, the RS engineers capacitated by the Project continue working for their respective positions at the RS offices in the respective regions. 3. Budget disbursement for rural road maintenance is not severely delayed in the model and disseminated districts of the respective regions.
			Pre-condition Understanding and cooperation on rural road maintenance are obtained from the RS offices in the respective regions.

*1: For the purpose of the Project, "Rural Road" includes district road, urban road and feeder road.
*2: The target areas of the Project are the "**model district**" and the "district to be disseminated (**disseminated district**)" in the Output 4 in respective regions.
*3: The "district" includes "municipality" and "town".
*4: Indicators described as "XX%" will be set in JTC to be held in early stage of the Project

Annex 1: Project Design Matrix (PDM_2)

Project Title: Rural Road*1 Maintenance System Development Project (RMSD) Project Period : March, 2012 – March, 2016 (Four (4) Years) Version No. 2

Target Areas*2: Two (2) districts*3 in each region of Dodoma and Iringa

Target Group: RS and District Engineers, District Technicians, contractors, and community people living around the sites for pilot projects Date : October 4, 2012

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Super Goal: Rural roads in whole Tanzania are properly maintained through application of appropriate technology and methodology.			
Overall Goal The rural road maintenance procedure and services of LGAs in Dodoma and Iringa regions are improved.	1. Annual Rural Road Maintenance Plans prepared by the LGAs of the respective regions contain necessary items based on the checklist. 2. The percentage of the road maintenance works completed by contractors (including defect liability period) for all the maintenance works in the Plan is increased within the fiscal year in the respective regions. 3. The maintenance status (Good, Fair, and Poor) of rural roads is improved in the respective regions.	1. Monitoring checklist prepared in the Activity 2-8 2. Annual Rural Road Maintenance Plan 3. Rural road inventory reports	
Project Purpose Administrative services of rural road maintenance provided by LGAs are improved in the target areas, and its nationwide expansion approach is developed.	1. The maintenance status (Good, Fair, and Poor) of rural roads is improved in the model and disseminated districts of the respective regions. 2. The satisfaction ratings of the contractors/community people in the model and disseminated districts of the respective regions exceed 75/75%*4 (Chamwino and Iringa) on average with reference to rural road maintenance works or status. 3. The percentage of the rollover funds for rural road maintenance is decreased in the model and disseminated districts of the respective regions.	1. Rural road inventory reports 2. Questionnaire surveys to the contractors and community people 3. Summary of Committed and Uncommitted Action Plans	Budgetary and human resources necessary for the rural road maintenance are continuously allocated by the Government of Tanzania.
Outputs			
1. The capacity of PMO-RALG for coordinating and supporting LGAs in collaboration with MOW on rural road maintenance is strengthened.	1-1 The Rural Road Maintenance Operational Guidelines are authorized by MOW. 1-2. The percentage of the RS and district engineers utilizing the Guidelines distributed by PMO-RALG and MOW exceeds 80%*4 across the mainland of Tanzania.	1-1. The Operational Guidelines 1-2. Questionnaire surveys to the RS and district engineers (during the Annual Meetings)	During the cooperation period, the district engineers capacitated by the Project continue working for their respective positions in the model and disseminated districts.
2. The rural road maintenance procedure of the LGAs is strengthened in the model districts.	2-1. Annual Rural Road Maintenance Plan prepared by the LGAs in the model districts contains necessary items based on the checklist. 2-2. The percentage of the road maintenance works completed by contractors (including defect liability period) for all the maintenance works in the Plan exceeds 85%*4, 5 (Chamwino and Iringa) within the fiscal year.	2-1. Monitoring checklist prepared in the Activity 2-8 2-2. Annual Rural Road Maintenance Plan	
3. The practical skills and knowledge of responsible organizations (concerned departments of the LGAs, contractors, etc.) on rural road maintenance are improved through the LBT application in the model districts.	3-1. The rating of district engineers and technicians on their practical skills and knowledge exceeds 3.75 (1 to 5 scales)*4 (Chamwino and Iringa) on average in the model districts. 3-2. The number of consultations on rural road maintenance between contractors and district engineers and technicians is increased in the model districts. 3-3. The ratio of LBT works to all the maintenance works is increased in the model districts.	3-1. Questionnaire surveys to RS and district engineers/technicians 3-2. Monitoring sheets prepared in the Activity 2-8 3-3. Monitoring sheets prepared in the Activity 2-8	
4. The dissemination mechanism for rural road maintenance approach within the respective regions is established.	4-1. Annual Rural Road Maintenance Plan prepared by the LGAs in the disseminated districts contains necessary items based on the checklist. 4-2. The percentage of the road maintenance works completed by contractors (including defect liability period) for all the maintenance works in the Plan is increased within the fiscal year. 4-3. The number of consultations on rural road maintenance between contractors and district engineers and technicians is increased in the disseminated districts.	4-1. Monitoring checklist prepared in the Activity 2-8 4-2. Annual Rural Road Maintenance Plan 4-3. Monitoring sheets prepared in the Activity 2-8	

Annex-4

Activities	**Inputs**		
0 Conduct the baseline and impact surveys.	Japanese side	Tanzanian side	1. Institutional arrangement for rural road maintenance is not changed from the PMO-RALG to another governmental institute.
1-1 Convene regular meetings on operational guidelines development for rural road maintenance with PMO-RALG and MOW.	1. Experts ・ Chief Advisor /Road Maintenance ・ Sub-chief Advisor /Rural Road Planning ・ LBT ・ Construction/Contract Management ・ Light Equipment Management ・ Capacity Building ・ Monitoring ・ Public Relations (PR) ・ Coordinator/Training Planning ・ Others as necessary 2. Training of counterpart personnel in Japan and/or the Third Countries 3. Provision of machinery and equipment as necessary 4. Local expenses for the project activities, which is not covered by Tanzania side 5. Others as necessary	1. Personnel ・ Project Director ・ Project Manager ・ Counterpart personnel 2. Provision of the project offices and facilities necessary for the project implementation 3. Expenses for implementing pilot projects in the model and disseminated districts of the respective regions 4. Administrative and operational expenses ・ Electricity, water, communication, etc. ・ Local traveling costs and daily subsistence allowance (DSA) for counterpart personnel 5. Others as necessary	2. During the cooperation period, the RS engineers capacitated by the Project continue working for their respective positions at the RS offices in the respective regions. 3. Budget disbursement for rural road maintenance is not severely delayed in the model and disseminated districts of the respective regions.
1-2 Prepare and revise operational guidelines of rural road maintenance with PMO-RALG and MOW.			
1-3 Share the contents of the guidelines and the lessons learned from LGAs in the model districts during the Annual Meeting between PMO-RALG, RS Engineers and District Engineers.			
1-4 Assist RS engineers to monitor rural road maintenance in LGAs based on the guidelines.			
2-1 Select model districts based on the criteria established.			
2-2 Review the current activities done by technical staff in the model districts.			
2-3 Provide training on rural road maintenance for the district engineers and technicians in the model districts.			
2-4 Prepare and update rural road inventories in the model districts.			
2-5 Prepare and revise a mid- and long-term rural road maintenance plan.			
2-6 Confirm the needs of rural road maintenance in the model districts and prioritize the needs.			
2-7 Prepare annual rural road maintenance plans, including procurement, construction method, etc., in consideration of gender aspects in the model districts.			
2-8 Monitor the rural road maintenance in the model districts.			
3-1 Select pilot projects in the model districts from the annual rural road maintenance plan.			**Pre-condition**
3-2 Formulate the work plans of the pilot projects.			
3-3 Assist district engineers and technicians in the model districts to procure contractors and supervise the pilot projects based on the work plans.			Understanding and cooperation on rural road maintenance are obtained from the RS offices in the respective regions.
3-4 Provide consultations on the operation of the pilot projects for the district engineers and technicians, contractors, etc. through ATTI.			
3-5 Promote PR activities on rural road maintenance through the pilot projects.			
3-6 Document the process, experiences, outcomes, and lessons learned of the pilot projects.			
4-1 Organize sensitization workshops on rural road maintenance for the other LGAs in the respective regions in collaboration with the RS engineers.			
4-2 Select a LGA to be disseminated in the respective regions.			
4-3 Assist the LGAs selected in the respective regions to promote rural road maintenance based on the guidelines with the full commitments of RS engineers.			
4-4 Monitor the rural road maintenance promoted by the LGAs in the respective regions.			
4-5 Feedback the monitoring results into the guidelines.			

*1: For the purpose of the Project, "Rural Road" includes district road, urban road and feeder road.
*2: The target areas of the Project are the "**model district**" and the "district to be disseminated (**disseminated district**)" in the Output 4 in respective regions.
*3: Chamwino and Iringa districts are the model districts in each region of Dodoma and Iringa respectively.
*4: Those indicators with the percentage (%) are subject to modification according to the progress of the Project.
*5: The percentage (85%) is established with reference to the performance indicators and targets in the Annual Performance Agreement FY 2012 – 2013.

Annex 1: Project Design Matrix (PDM3)

Project Title: Rural Road*1 Maintenance System Development Project (RMSD) Project Period : March, 2012 – March, 2016 (Four (4) Years) Version No. 3

Target Areas*2: Two (2) districts*3 in each region of Dodoma and Iringa

Target Group: RS and District Engineers, District Technicians, contractors, and community people living around the sites for pilot projects Date : July 24, 2014

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Super Goal: Rural roads in whole Tanzania are properly maintained through application of appropriate technology and methodology.			
Overall Goal The rural road maintenance procedure and services of LGAs in Dodoma and Iringa regions are improved.	1. Annual Rural Road Maintenance Plans prepared by the LGAs of the respective regions contain necessary items based on the checklist. 2. The percentage of the road maintenance works completed by contractors (including defect liability period) for all the maintenance works in the Plan is increased within the fiscal year in the respective regions. 3. The maintenance status (Good, Fair, and Poor) of rural roads is improved in the respective regions.	1. Monitoring checklist prepared in the Activity 2-8 2. Annual Rural Road Maintenance Plan 3. Rural road inventory reports	
Project Purpose Administrative services of rural road maintenance provided by LGAs are improved in the target areas, and its nationwide expansion approach is developed.	1. The maintenance status (Good, Fair, and Poor) of rural roads is improved in the model and disseminated districts of the respective regions. 2. The satisfaction ratings of the contractors/community people in the model and disseminated districts of the respective regions exceed 75/75%*4 (Chamwino, Iringa, Kondoa, and Mufindi) on average with reference to rural road maintenance works or status. 3. The percentage of the rollover funds for rural road maintenance attains to and retains below 15% in the model and disseminated districts of the respective regions.	1. Rural road inventory reports 2. Questionnaire surveys to the contractors and community people 3. Summary of Committed and Uncommitted Action Plans	Budgetary and human resources necessary for the rural road maintenance are continuously allocated by the Government of Tanzania.
Outputs			
1. The capacity of PMO-RALG for coordinating and supporting LGAs in collaboration with MOW on rural road maintenance is strengthened.	1-1. The Rural Road Maintenance Operational Guidelines are authorized by MOW. 1-2. The percentage of the RS and district engineers utilizing the Guidelines distributed by PMO-RALG and MOW exceeds 80%*5 across the mainland of Tanzania.	1-1. The Operational Guidelines 1-2. Questionnaire surveys to the RS and district engineers (during the Annual Meetings)	During the cooperation period, the district engineers capacitated by the Project continue working for their respective positions in the model and disseminated districts.
2. The rural road maintenance procedure of the LGAs is strengthened in the model districts.	2-1. Annual Rural Road Maintenance Plan prepared by the LGAs in the model districts contains necessary items based on the checklist. 2-2. The percentage of the road maintenance works completed by contractors (including defect liability period) for all the maintenance works in the Plan exceeds 85%*4, 5 (Chamwino and Iringa) within the fiscal year.	2-1. Monitoring checklist prepared in the Activity 2-8 2-2. Annual Rural Road Maintenance Plan	
3. The practical skills and knowledge of responsible organizations (concerned departments of the LGAs, contractors, etc.) on rural road maintenance are improved through the LBT application in the model districts.	3-1. The rating of district engineers and technicians on their practical skills and knowledge exceeds 3.75 (1 to 5 scales)*4 (Chamwino and Iringa) on average in the model districts. 3-2. The number of consultations on rural road maintenance between contractors and district engineers and technicians is increased in the model districts. 3-3. The ratio of LBT works to all the maintenance works is increased in the model districts.	3-1. Questionnaire surveys to RS and district engineers/technicians 3-2. Monitoring sheets prepared in the Activity 2-8 3-3. Monitoring sheets prepared in the Activity 2-8	
4. The dissemination mechanism for rural road maintenance approach within the respective regions is established.	4-1. Annual Rural Road Maintenance Plan prepared by the LGAs in the disseminated districts contains necessary items based on the checklist. 4-2. The percentage of the road maintenance works completed by contractors (including defect liability period) for all the maintenance works in the Plan exceeds 85%*4 (Kondoa and Mufindi) within the fiscal year. 4-3. The number of consultations on rural road maintenance between contractors and district engineers and technicians is increased in the disseminated districts.	4-1. Monitoring checklist prepared in the Activity 2-8 4-2. Annual Rural Road Maintenance Plan 4-3. Monitoring sheets prepared in the Activity 2-8	

Activities	Inputs		
0 Conduct the baseline survey.	Japanese side	Tanzanian side	1. Institutional arrangement for rural road maintenance is not changed from the PMO-RALG to another governmental institute.
1-1 Convene regular meetings on operational guidelines development for rural road maintenance with PMO-RALG and MOW.	1. Experts ・Chief Advisor /Road Maintenance ・Sub-chief Advisor /Rural Road Planning ・LBT ・Construction/Contract Management ・Light Equipment Management ・Capacity Building ・Monitoring ・Public Relations (PR) ・Coordinator/Training Planning ・Others as neeessary 2. Training of counterpart personnel in Japan and/or the Third Countries 3. Provision of machinery and equipment as necessary 4. Local expenses for the project activities, which is not covered by Tanzania side 5. Others as necessary	1. Personnel ・Project Director ・Project Manager ・Counterpart personnel 2. Provision of the project offices and facilities necessary for the project implementation 3. Expenses for implementing pilot projects in the model and disseminated districts of the respective regions 4. Administrative and operational expenses ・Electricity, water, communication, etc. ・Local traveling costs and daily subsistence allowance (DSA) for counterpart personnel 5. Others as necessary	2. During the cooperation period, the RS engineers capacitated by the Project continue working for their respective positions at the RS offices in the respective regions. 3. Budget disbursement for rural road maintenance is not severely delayed in the model and disseminated districts of the respective regions.
1-2 Prepare and revise operational guidelines of rural road maintenance with PMO-RALG and MOW.			**Pre-condition** Understanding and cooperation on rural road maintenance are obtained from the RS offices in the respective regions.
1-3 Share the contents of the guidelines and the lessons learned from LGAs in the model districts during the Annual Meeting between PMO-RALG, RS Engineers and District Engineers.			
1-4 Assist RS engineers to monitor rural road maintenance in LGAs based on the guidelines.			
2-1 Select model districts based on the criteria established.			
2-2 Review the current activities done by technical staff in the model districts.			
2-3 Provide training on rural road maintenance for the district engineers and technicians in the model districts.			
2-4 Prepare and update rural road inventories in the model districts.			
2-5 Prepare and revise a mid- and long-term rural road maintenance plan.			
2-6 Confirm the needs of rural road maintenance in the model districts and prioritize the needs.			
2-7 Prepare annual rural road maintenance plans, including procurement, construction method, etc., in consideration of gender aspects in the model districts.			
2-8 Monitor the rural road maintenance in the model districts.			
3-1 Select pilot projects in the model districts from the annual rural road maintenance plan.			
3-2 Formulate the work plans of the pilot projects.			
3-3 Assist district engineers and technicians in the model districts to procure contractors and supervise the pilot projects based on the work plans.			
3-4 Provide consultations on the operation of the pilot projects for the district engineers and technicians, contractors, etc. through ATTI.			
3-5 Promote PR activities on rural road maintenance through the pilot projects.			
3-6 Document the process, experiences, outcomes, and lessons learned of the pilot projects.			
4-1 Organize sensitization workshops on rural road maintenance for the other LGAs in the respective regions in collaboration with the RS engineers.			
4-2 Select a LGA to be disseminated in the respective regions.			
4-3 Assist the LGAs selected in the respective regions to promote rural road maintenance based on the guidelines with the full commitments of RS engineers.			
4-4 Monitor the rural road maintenance promoted by the LGAs in the respective regions.			
4-5 Feedback the monitoring results into the guidelines.			

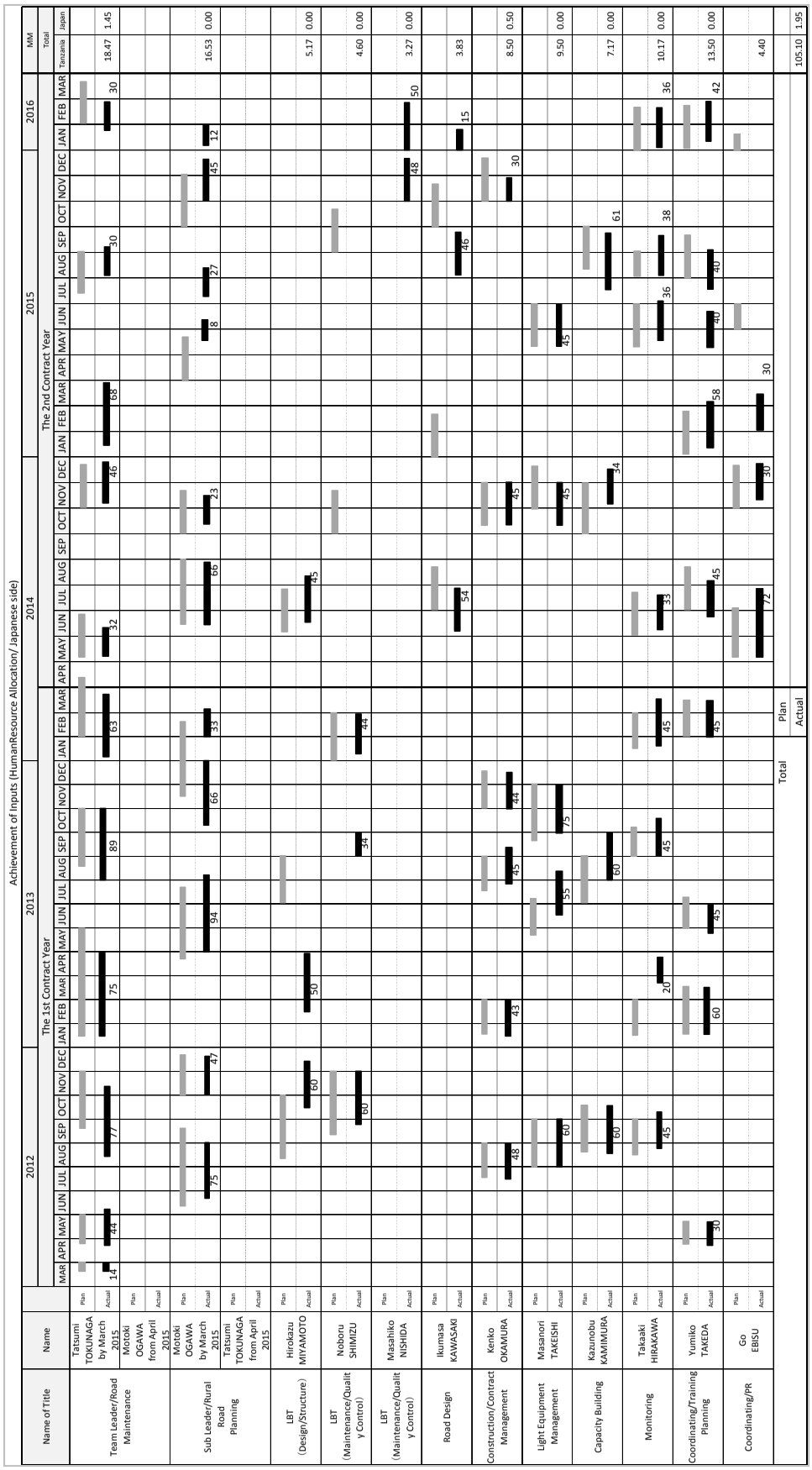
*1: For the purpose of the Project, "Rural Road" includes district road, urban road and feeder road.
*2: The target areas of the Project are the "**model district**" and the "district to be disseminated (**disseminated district**)" in the Output 4 in respective regions.
*3: Chamwino and Iringa districts are the model districts in each region of Dodoma and Iringa respectively.
*4: Those indicators with the percentage (%) are subject to modification according to the progress of the Project.
*5: The percentage (85%) is established with reference to the performance indicators and targets in the Annual Performance Agreement FY 2012 – 2013.

Annex-2: PO for the Project (2012 - 2016)

Note : The schedules described in this chart are subject to modifications through further discussions in future.
: To complete project activities within the solid line.
: To continuously conduct project activities during the dotted line.
: To conduct workshops, documentation, etc.

Annex-3: RMSD Expert Team Assignment

Japanese Expert Assignment (March 2012 – March 2016)



Monitoring System

Chamwino District Council

Annex-11

Monitoring System in Chamwino District, Dodoma Region **Ver. 1-3 (26/1/16)**

Components of the PDM			Monitoring Plan			Baseline Value and Final Target Value		Achievements of Each Fiscal Year			
Narrative Summary	**Indicators**	**Means of Verification**	**Persons/ Organizations in Charge**	**Frequency**	**Remarks**	**Baseline Value (year/month)**	**Final Target Value (year/month)**	**FY 2012-2013**	**FY 2013-2014**	**FY 2014-2015**	**FY 2015-2016**
Project Purpose: Administrative services of rural road maintenance provided by LGAs are improved in the target areas, and its nationwide expansion approach is developed.	(1) Maintenance status (Good, Fair, and Poor) of rural roads	Rural road inventory reports (Refer to "***Form 1***")	District Engineers	Every year	The Project aims at achieving 80 % as a final target value in combination with "Good" and "Fair".	74.71 % (FY 2011/12) Good: 40.67% Fair: 34.04% Poor: 25.29%	Over 80 % (June, 2016)	79.04 % Good: 42.41% Fair: 36.63% Poor: 20.96%	81.50 % Good: 47.30% Fair: 34.20% Poor: 18.49%	73.70% Good: 50.31% Fair: 23.39% Poor: 26.30%	% Good: % Fair: % Poor: %
	(2) Satisfaction ratings of the contractors and community people with reference to road maintenance works or status	Questionnaire surveys to the contractors (Refer to "***Form 2-1***") and community people (Refer to "***Form 2-2***")	District Engineers/ Technicians	Every year	As the pilot projects of the 1st cycle are completed in Feb. 2014, the questionnaire survey will be conducted around Mar. 2014.	**Contractors**: 56.2 % **Community people**: 46.7 % (Sep. 2012)	**Contractors**: 75 % **Community people**: 75 % (Feb. 2016)	—	76.0% 50.1% (Feb.2014)	72.9% 66.5% (Jun.2015)	% %
	(3) Percentage of the rollover funds for rural road maintenance	Summary of Committed and Uncommitted Action Plans (PMO-RALG)	District Engineers	Every year	The percentage of the rollover funds is calculated as the "bank balance" to the	60.59 % (39.41 % for spending) (FY 2011/12)	Below 15 % (Over 85 % for spending) (June 2016)	1.23% (98.77 % for spending)	10.03% (89.97% for spending)	1.23% (98.77% for spending)	% (% for spending)

Components of the PDM			Monitoring Plan			Baseline Value and Final Target Value		Achievements of Each Fiscal Year			
Narrative Summary	Indicators	Means of Verification	Persons/ Organizations in Charge	Frequency	Remarks	Baseline Value (year/month)	Final Target Value (year/month)	FY 2012-2013	FY 2013-2014	FY 2014-2015	FY 2015-2016
					"received fund." Also, the retention money is subtracted from the bank balance.						
Output 1: The capacity of PMO-RALG for coordinating and supporting LGAs in collaboration with MOW on rural road maintenance is strengthened.	(1) Rural Road Maintenance Operational Guidelines authorized by MOW	Rural Road Maintenance Operational Guidelines	Director of Infrastructure Development Unit (IDU)	Final year only		—	Authorized	—	—	Authorized in December, 2014	N/A
	(2) Percentage of the RS and district engineers utilizing the Operational Guidelines	Questionnaire surveys to the RS and district engineers (during the Annual Meetings) (Refer to "***Form 3***")	Director of IDU	Every year (from 2014)	Because the Guidelines is drafted before the Annual Meeting in 2013, the usage monitoring will be conducted at the Annual Meeting in 2014.	—	80 % (June 2016)	—	68.18% (Aug, 2014)	65.24% (Aug, 2015)	—

Components of the PDM			Monitoring Plan			Baseline Value and Final Target Value		Achievements of Each Fiscal Year			
Narrative Summary	**Indicators**	**Means of Verification**	**Persons/ Organizations in Charge**	**Freq-uency**	**Remarks**	**Baseline Value (year/month)**	**Final Target Value (year/month)**	**FY 2012-2013**	**FY 2013-2014**	**FY 2014-2015**	**FY 2015-2016**
Output 2: The rural road maintenance procedure of the LGAs is strengthened in the model districts.	(1) Content confirmation of the Annual Rural Road Maintenance Plan based on the checklist	Monitoring checklist prepared in the Activity 2-8 (Refer to "***Form 4***")	RS Engineer	Every year		—	To contain all necessary items based on the checklist	—	All items have been contained along the checklist (For the Annual Plan of the next FY)	All items have been contained along the checklist (For the Annual Plan of the next FY)	(For the Annual Plan of the next FY)
	(2) Percentage of the road maintenance works completed by contractors within the fiscal year (including defect liability period) to all the maintenance	Annual Rural Road Maintenance Plan & monitoring sheets prepared in the Activity 2-8 (Refer to "***Form 5***")	District Engineers	Every year		45.5 % (FY 2011/12) 5 road maintenance works, including the defect liability period, were completed before June, 2012.	85 % (June 2016)	95.2%	91.67%	92.86%	%

Components of the PDM			Monitoring Plan			Baseline Value and Final Target Value		Achievements of Each Fiscal Year			
Narrative Summary	**Indicators**	**Means of Verification**	**Persons/ Organizations in Charge**	**Frequency**	**Remarks**	**Baseline Value (year/month)**	**Final Target Value (year/month)**	**FY 2012-2013**	**FY 2013-2014**	**FY 2014-2015**	**FY 2015-2016**
	works in the Annual Rural Road Maintenance Plan										
Output 3: The practical skills and knowledge of responsible organizations (concerned departments of the LGAs, contractors, etc.) on rural road maintenance are improved through the LBT application in the model districts.	(1) Rating of District Engineers and Technicians on their practical skills and knowledge	Questionnaire surveys to RS Engineer (refer to "***Form 6-1***") as well as District Engineers and Technicians (refer to "***Form 6-2***")	RS Engineer	Every year	The first questionnaire survey will be conducted at the initial stage of the pilot projects executed in September 2013.	**RS Engineer**: The rating is "2.48" (out of 5.0) on average for three (3) District Engineers and two (2) Technicians **District Engineers and Technicians:** The rating is "2.75" on average by	**RS Engineer**: "3.75" for District Engineers and Technicians **District Engineers and Technicians:** "3.75" in self-evaluation (Mar. 2016)	—	**RS Eng.**: "2.64" (Before P.P. in Sep. 2013) "2.57" (After P.P. in Feb. 2014) **District Eng./Tec:** "3.46" (Before P.P. in Sep. 2013) "3.52" (After P.P. in Feb. 2014)	**RS Eng.**: "3.97" (In June, 2015) **District Eng./Tec:** "3.89" (In Jun. 2015)	**RS Eng.**: "4.43" (In January, 2016) **District Eng./Tec:** "4.37" (In January, 2016)

Components of the PDM			Monitoring Plan			Baseline Value and Final Target Value		Achievements of Each Fiscal Year			
Narrative Summary	Indicators	Means of Verification	Persons/ Organizations in Charge	Frequency	Remarks	Baseline Value (year/month)	Final Target Value (year/month)	FY 2012-2013	FY 2013-2014	FY 2014-2015	FY 2015-2016
						three (3) District Engineers and three (3) District Technicians in self-evaluation (Sep. 2012)					
	(2) Number of consultations on rural road maintenance between contractors and District Engineers and Technicians	Monitoring sheets prepared in the Activity 2-8 (Refer to "***Form 7***")	District Engineers	Every half year	As pilot projects are executed from FY 2013/14, the number of consultations will be confirmed by the end of the fiscal year, *i.e.*, June 2014.	—	—	—	30 times (Including 12 times with pilot projects)	36 times (Including 9 times with pilot projects)	
	(3) Ratio of LBT works to all the maintenance works	Monitoring sheets prepared in the Activity 2-8 (Refer to "***Form 5***")	District Engineers	Every year	Although 11 maintenance works were executed in FY 2011/12, LBT works were not executed.	0 % (FY 2011/12)	20 % (June 2016)	4.8%	16.67%	35.71% (Including maintenance works in combination with EBT and LBT)	%

Annex-15

Iringa District Council

Monitoring System in Iringa District, Iringa Region **Ver. 1-3 (28/1/16)**

Components of the PDM			Monitoring Plan			Baseline Value and Final Target Value		Achievements of Each Fiscal Year			
Narrative Summary	**Indicators**	**Means of Verification**	**Persons/ Organizations in Charge**	**Frequency**	**Remarks**	**Baseline Value (year/month)**	**Final Target Value (year/month)**	**FY 2012-2013**	**FY 2013-2014**	**FY 2014-2015**	**FY 2015-2016**
Project Purpose: Administrative services of rural road maintenance provided by LGAs are improved in the target areas, and its nationwide expansion approach is developed.	(1) Maintenance status (Good, Fair, and Poor) of rural roads	Rural road inventory reports (Refer to "***Form 1***")	District Engineer	Every year	The Project aims at achieving 70 % as a final target value in combination with "Good" and "Fair".	60.16 % (FY 2011/12) ・ Good: 44.52 % ・ Fair: 15.64 % ・ Poor: 39.84 %	Over 70 % (June, 2016)	66.36 % Good: 51.96 % Fair: 14.40 % Poor: 33.64 % Note: The data were extracted in Aug., 2013.	71.29 % Good: 58.40% Fair: 12.89% Poor: 28.71%	92.49 % Good: 72.86% Fair: 19.63% Poor: 7.51%	% Good: % Fair: % Poor: %
	(2) Satisfaction ratings of the contractors and community people with reference to road maintenance works or status	Questionnaire surveys to the contractors (Refer to "***Form 2-1***") and community people (Refer to "***Form 2-2***")	District Engineer/ Technicians	Every year	As the pilot projects of the 1st cycle are completed in Feb. 2014, the questionnaire survey will be conducted around Mar. 2014.	**Contractors**: 83.4 % **Community people**: 69.7 % (Sep. 2012)	**Contractors**: 75 % **Community people**: 75 % (Feb. 2016)	— —	87.3% 77.7% (Feb.2014)	72.4% 82.7% (Jun.2015)	% %

Components of the PDM			Monitoring Plan			Baseline Value and Final Target Value		Achievements of Each Fiscal Year			
Narrative Summary	**Indicators**	**Means of Verification**	**Persons/ Organizations in Charge**	**Frequency**	**Remarks**	**Baseline Value (year/month)**	**Final Target Value (year/month)**	**FY 2012-2013**	**FY 2013-2014**	**FY 2014-2015**	**FY 2015-2016**
	(3) Percentage of the rollover funds for rural road maintenance	Summary of Committed and Uncommitted Action Plans (PMO-RALG)	District Engineer	Every year	The percentage of the rollover funds is calculated as the "bank balance" to the "received fund." Also, the retention money is subtracted from the bank balance.	12.03 % (87.97 % for spending) (FY 2011/12)	Below 15 % (Over 85 % for spending) (June 2016)	15.10 % (84.90 % for spending)	4.60% (95.40% for spending)	0.00% (100.00% for spending)	% (% for spending)
Output 1: The capacity of PMO-RALG for coordinating and supporting LGAs in collaboration with MOW on rural road maintenance is strengthened.	(1) Rural Road Maintenance Operational Guidelines authorized by MOW	Rural Road Maintenance Operational Guidelines	Director of Infrastructure Development Unit (IDU)	Final year only		—	Authorized	—	—	Authorized in December, 2014	N/A
	(2) Percentage of the RS and district engineers utilizing the Operational Guidelines	Questionnaire surveys to the RS and district engineers (during the Annual Meetings) (Refer to "***Form 3***")	Director of IDU	Every year (from 2014)	Because the Guidelines is drafted before the Annual Meeting in 2013, the usage monitoring will be conducted at the Annual Meeting in 2014.	—	80 % (June 2016)	—	68.18% (Aug, 2014)	65.24% (Aug, 2015)	—

Components of the PDM			Monitoring Plan			Baseline Value and Final Target Value		Achievements of Each Fiscal Year			
Narrative Summary	**Indicators**	**Means of Verification**	**Persons/ Organizations in Charge**	**Freq-uency**	**Remarks**	**Baseline Value (year/month)**	**Final Target Value (year/month)**	**FY 2012-2013**	**FY 2013-2014**	**FY 2014-2015**	**FY 2015-2016**
Output 2: The rural road maintenance procedure of the LGAs is strengthened in the model districts.	(1) Content confirmation of the Annual Rural Road Maintenance Plan based on the checklist	Monitoring checklist prepared in the Activity 2-8 (Refer to "***Form 4***")	RS Engineer	Every year		—	To contain all necessary items based on the checklist	—	All items have been contained along the checklist (For the Annual Plan of the next FY)	All items have been contained along the checklist (For the Annual Plan of the next FY)	(For the Annual Plan of the next FY)
	(2) Percentage of the road maintenance works completed by contractors within the fiscal year (including defect liability period) to all the maintenance works in the Annual Rural Road Maintenance Plan	Annual Rural Road Maintenance Plan & monitoring sheets prepared in the Activity 2-8 (Refer to "***Form 5***")	District Engineer	Every year		76.2 % (FY 2011/12) 16 road maintenance works, including the defect liability period, were completed before June, 2012.	85 % (**June** 2016)	76.9 %	75.00%	70.59%	%

Annex-19

Components of the PDM			Monitoring Plan			Baseline Value and Final Target Value		Achievements of Each Fiscal Year			
Narrative Summary	**Indicators**	**Means of Verification**	**Persons/ Organizations in Charge**	**Freq-uency**	**Remarks**	**Baseline Value (year/month)**	**Final Target Value (year/month)**	**FY 2012-2013**	**FY 2013-2014**	**FY 2014-2015**	**FY 2015-2016**
Output 3: The practical skills and knowledge of responsible organizations (concerned departments of the LGAs, contractors, etc.) on rural road maintenance are improved through the LBT application in the model districts.	(1) Rating of District Engineers and Technicians on their practical skills and knowledge	Questionnaire surveys to RS Engineer (refer to "***Form 6-1***") as well as District Engineers and Technicians (refer to "***Form 6-2***")	RS Engineer	Every year	The first questionnaire survey will be conducted at the initial stage of the pilot projects executed in September 2013.	**RS Engineer**: The rating is "2.91" (out of 5.0) on average for two (2) District Engineers and five (5) Technicians **District Engineer and Technicians:** The rating is "3.18" on average by one (1) District Engineer and four (4) District Technicians in	**RS Engineer**: "3.75" for District Engineers and Technicians **District Engineer and Technicians:** "3.75" in self-evaluation (Mar. 2016)	—	**RS Eng.** "3.04" (Before P.P. in Sep. 2013) "3.28" (After P.P. in Feb. 2014) **District Eng./Tec:** "2.89" (Before P.P. in Sep. 2013) "3.26" (After P.P. in Feb. 2014)	**RS Eng.** "4.06" (In June, 2015) **District Eng./Tec:** "3.60" (In June, 2015)	**RS Eng.**: "4.61" (In January, 2016) **District Eng./Tec:** "3.83" (In January, 2016)

Annex-20

Components of the PDM			Monitoring Plan			Baseline Value and Final Target Value		Achievements of Each Fiscal Year			
Narrative Summary	Indicators	Means of Verification	Persons/ Organizations in Charge	Frequency	Remarks	Baseline Value (year/month)	Final Target Value (year/month)	FY 2012-2013	FY 2013-2014	FY 2014-2015	FY 2015-2016
						self-evaluation (Sep. 2012)					
	(2) Number of consultations on rural road maintenance between contractors and District Engineers and Technicians	Monitoring sheets prepared in the Activity 2-8 (Refer to "***Form 7***")	District Engineer	Every half year	As pilot projects are executed from FY 2013/14, the number of consultations will be confirmed by the end of the fiscal year, *i.e.*, June 2014.	—	—	—	56 times (Including 10 times with pilot projects)	62 times (Including 15 times with pilot projects)	
	(3) Ratio of LBT works to all the maintenance works	Monitoring sheets prepared in the Activity 2-8 (Refer to "***Form 5***")	District Engineer	Every year	21 maintenance works were executed in FY 2011/12, and five (5) LBT works were executed.	23.8 % (FY 2011/12)	20 % (June 2016)	15.4 %	56.25%	23.53%	%

Annex-21

Kondoa District Council

Monitoring System in Kondoa District, Dodoma Region **Ver. 1-1 (20/8/15)**

Components of the PDM			Monitoring Plan			Baseline Value and Final Target Value		Achievements of Each Fiscal Year		
Narrative Summary	Indicators	Means of Verification	Persons/ Organizations in Charge	Frequency	Remarks	Baseline Value (year/month)	Final Target Value (year/month)	FY 2013-2014	FY 2014-2015	FY 2015-2016 (Mar. 2016)
Project Purpose: Administrative services of rural road maintenance provided by LGAs are improved in the target areas, and its nationwide expansion approach is developed.	(1) Maintenance status (Good, Fair, and Poor) of rural roads	Rural road inventory reports (Refer to "***Form 1***")	District Engineer	Every year	The Project aims at achieving 70% as a final target value in combination with "Good" and "Fair".	63.34% (FY 2013/14) ・ Good: 43.40% ・ Fair: 19.94% ・ Poor: 36.66%	Over 70% (June, 2016)	—	77.35% Good: 61.87% Fair: 15.48% Poor: 22.65%	% Good: % Fair: % Poor: %
	(2) Satisfaction ratings of the contractors and community people with reference to road maintenance works or status	Questionnaire surveys to the contractors (Refer to "***Form 2-1***") and community people (Refer to "***Form 2-2***")	District Engineer/ Technicians	Every year	As the pilot projects are completed in Dec. 2015, the questionnaire survey will be conducted around Mar. 2016.	—	**Contractors**: 75% **Community people**: 75% (Mar. 2016)	—	—	% %
	(3) Percentage of the rollover funds for rural road maintenance	Summary of Committed and Uncommitted Action Plans (PMO-RALG)	District Engineer	Every year	The percentage of the rollover funds is calculated as the "bank balance" to the "received fund." Also, the retention money is subtracted from the bank balance.	21.48% (78.52% for spending) (FY 2013/14)	Below 15% (Over 85% for spending) (June 2016)	—	3.64% (96.36 % for spending)	% (% for spending)

Components of the PDM			Monitoring Plan			Baseline Value and Final Target Value		Achievements of Each Fiscal Year		
Narrative Summary	**Indicators**	**Means of Verification**	**Persons/ Organizations in Charge**	**Frequency**	**Remarks**	**Baseline Value (year/month)**	**Final Target Value (year/month)**	**FY 2013-2014**	**FY 2014-2015**	**FY 2015-2016 (Mar. 2016)**
Output 4: The dissemination mechanism for rural road maintenance approach within the respective regions is established.	(1) Content confirmation of the Annual Rural Road Maintenance Plan based on the checklist in the disseminated district	Monitoring checklist prepared in the Activity 2-8 (Refer to "***Form 4***")	RS Engineer	Every year from FY 2014/15		—	To contain all necessary items based on the checklist	—	All items have been contained along the checklist (For the Annual Plan of the next FY)	(For the Annual Plan of the next FY)
	(2) Percentage of the road maintenance works completed by contractors within the fiscal year (excluding liability period) for all the maintenance works in the	Annual Rural Road Maintenance Plan & Monitoring sheets prepared in the Activity 2-8 (Refer to "***Form 5***")	District Engineer	Every year from FY 2014/15	The road maintenance works completed by contractors include the maintenance works during the liability period.	50.00% (FY 2013/14) 10 road maintenance works, including the defect liability period, were completed before June, 2014	85% (June 2016)	—	78.13%	%

Annex-24

Components of the PDM			Monitoring Plan			Baseline Value and Final Target Value		Achievements of Each Fiscal Year		
Narrative Summary	Indicators	Means of Verification	Persons/ Organizations in Charge	Frequency	Remarks	Baseline Value (year/month)	Final Target Value (year/month)	FY 2013-2014	FY 2014-2015	FY 2015-2016 (Mar. 2016)
	Annual Rural Road Maintenance Plan in the disseminated district									
	(3) Number of consultations on rural road maintenance between contractors and district engineers and technicians in the disseminated district	Monitoring sheets prepared in the Activity 2-8 (Refer to *"Form 7"*)	District Engineer	Every half year from FY 2014/15		—	—	—	31 times	

Mufindi District Council

Monitoring System in Mufindi District, Iringa Region **Ver. 1-1 (20/8/15)**

Components of the PDM			Monitoring Plan			Baseline Value and Final Target Value		Achievements of Each Fiscal Year		
Narrative Summary	Indicators	Means of Verification	Persons/ Organizations in Charge	Frequency	Remarks	Baseline Value (year/month)	Final Target Value (year/month)	FY 2013-2014	FY 2014-2015	FY 2015-2016 (Mar. 2016)
Project Purpose: Administrative services of rural road maintenance provided by LGAs are improved in the target areas, and its nationwide expansion approach is developed.	(1) Maintenance status (Good, Fair, and Poor) of rural roads	Rural road inventory reports (Refer to "***Form 1***")	District Engineer	Every year	The Project aims at achieving 70 % as a final target value in combination with "Good" and "Fair".	63.09% (FY 2013/14) ・ Good: 34.77% ・ Fair: 28.32% ・ Poor: 36.91%	Over 70% (June, 2016)	—	57.08% Good: 18.13% Fair: 38.95% Poor: 42.92%	% Good: % Fair: % Poor: %
	(2) Satisfaction ratings of the contractors and community people with reference to road maintenance works or status	Questionnaire surveys to the contractors (Refer to "***Form 2-1***") and community people (Refer to "***Form 2-2***")	District Engineer/ Technicians	Every year	As the pilot projects are completed in Dec. 2015, the questionnaire survey will be conducted around Mar. 2016.	—	**Contractors**: 75% **Community people**: 75% (Mar. 2016)	—	—	% %
	(3) Percentage of the rollover funds for rural road maintenance	Summary of Committed and Uncommitted Action Plans (PMO-RALG)	District Engineer	Every year	The percentage of the rollover funds is calculated as the "bank balance" to the "received fund." Also, the retention money is subtracted from the bank balance.	32.13% (67.87% for spending) (FY 2013/14)	Below 15% (Over 85% for spending) (June 2016)	—	0.51% (99.49 % for spending)	% (% for spending)

Components of the PDM			Monitoring Plan			Baseline Value and Final Target Value		Achievements of Each Fiscal Year		
Narrative Summary	**Indicators**	**Means of Verification**	**Persons/ Organizations in Charge**	**Frequency**	**Remarks**	**Baseline Value (year/month)**	**Final Target Value (year/month)**	**FY 2013-2014**	**FY 2014-2015**	**FY 2015-2016 (Mar. 2016)**
Output 4: The dissemination mechanism for rural road maintenance approach within the respective regions is established.	(1) Content confirmation of the Annual Rural Road Maintenance Plan based on the checklist in the disseminated district	Monitoring checklist prepared in the Activity 2-8 (Refer to "***Form 4***")	RS Engineer	Every year from FY 2014/15		—	To contain all necessary items based on the checklist	—	All items have been contained along the checklist (For the Annual Plan of the next FY)	(For the Annual Plan of the next FY)
	(2) Percentage of the road maintenance works completed by contractors within the fiscal year (excluding liability period) for all the maintenance works in the	Annual Rural Road Maintenance Plan & Monitoring sheets prepared in the Activity 2-8 (Refer to "***Form 5***")	District Engineer	Every year from FY 2014/15	The road maintenance works completed by contractors include the maintenance works during the liability period.	92.31% (FY 2013/14) 12 road maintenance works, including the defect liability period, were completed before June, 2014	85% (June 2016)	—	70.00%	%

Annex-28

Components of the PDM			Monitoring Plan			Baseline Value and Final Target Value		Achievements of Each Fiscal Year		
Narrative Summary	Indicators	Means of Verification	Persons/ Organizations in Charge	Frequency	Remarks	Baseline Value (year/month)	Final Target Value (year/month)	FY 2013-2014	FY 2014-2015	FY 2015-2016 (Mar. 2016)
	Annual Rural Road Maintenance Plan in the disseminated district									
	(3) Number of consultations on rural road maintenance between contractors and district engineers and technicians in the disseminated district	Monitoring sheets prepared in the Activity 2-8 (Refer to *"Form 7"*)	District Engineer	Every half year from FY 2014/15		—	—	—	20 times	

Important Assumptions

Monitoring System: Important Assumptions (IAs) **Ver. 1-2 (20/8/15)**

Important Assumptions for the achievement of the Outputs	Person(s) in charge	FY 2012/13 (End of the 1st FY: by June 2013)	FY 2013/14 (End of the 2nd FY: by June 2014)	FY 2014/15 (End of the 3rd FY: by June 2015)	FY 2015/16 (End of the 4th FY: by June 2016)	Measures and undertakings by the Project
Institutional arrangement for rural road maintenance is not changed from the PMO-RALG to another governmental institute.	Director of Department of Infrastructure Development (DID), PMO-RALG	· Fulfilled or unfulfilled: **"Fulfilled"** · Its cause(s): **N/A** · Influence(s) to the Project: **N/A**	· Fulfilled or unfulfilled: **"Fulfilled"** · Its cause(s): **N/A** · Influence(s) to the Project: **N/A**	· Fulfilled or unfulfilled: **"Fulfilled"** · Its cause(s): **N/A** · Influence(s) to the Project: **N/A**	· Fulfilled or unfulfilled: · Its cause(s): · Influence(s) to the Project:	· 1st year: **N/A** · 2nd year: **N/A** · 3rd year: **N/A** · 4th year:
During the cooperation period, the RS engineers capacitated by the Project continue working for their respective positions at the RS offices in the respective regions.	Director of DID, PMO-RALG	· Fulfilled or unfulfilled: **"Fulfilled"** · Its cause(s): **N/A** · Influence(s) to the Project: **N/A**	· Fulfilled or unfulfilled: **"Fulfilled"** · Its cause(s): **N/A** · Influence(s) to the Project: **N/A**	· Fulfilled or unfulfilled: **"Fulfilled"** · Its cause(s): **N/A** · Influence(s) to the Project: **N/A**	· Fulfilled or unfulfilled: · Its cause(s): · Influence(s) to the Project:	· 1st year: **N/A** · 2nd year: **N/A** · 3rd year: **N/A** · 4th year:

Budget disbursement for rural road maintenance is not severely delayed in the model and disseminated districts of the respective regions.	Director of DID, PMO-RALG, and RS Engineers	· Fulfilled or unfulfilled: **"Fulfilled"** · Its cause(s): **N/A** · Influence(s) to the Project: **N/A**	· Fulfilled or unfulfilled: **"Fulfilled"** · Its cause(s): **N/A** · Influence(s) to the Project: **N/A**	· Fulfilled or unfulfilled: **"Unfulfilled"** · Its cause(s): *The budget disbursement from the Ministry of Finance to Road Funds was delayed. As a result, it affected the budget for rural road maintenance.* - *Iringa DC received 60.6% of the total approved budget by the end of June, 2015.* - *Kondoa and Mufindi DC received only 33.5% and 34.0% of the total approved budget respectively by the end of June, 2015.* · Influence(s) to the Project: *The project activities and the indicators are not largely influenced by this condition. However, the supervisions by DE and DT were not carried out properly because the budget necessary for the transportation to sites was not disbursed sufficiently. Furthermore, the payment to some contractors has been left unpaid for a while because of the delay of the budget disbursement. Accordingly, the contractors have fallen into arrears of wages to the community people participating in LBT works.*	· Fulfilled or unfulfilled: · Its cause(s): · Influence(s) to the Project:	· 1st year: **N/A** · 2nd year: **N/A** · 3rd year: *To encourage the Tanzanian side to disburse the budget for rural road maintenance.* · 4th year:

Important Assumptions for the achievement of the Project Purpose	**Person(s) in charge**	**End of the 1st FY (Around June 2013)**	**End of the 2nd FY (Around June 2014)**	**End of the 3rd FY (Around June 2015)**	**End of the 4th FY (Around June 2016)**	**Measures and undertakings by the Project**
During the cooperation period, the district engineers capacitated by the Project continue working for their respective positions in the model and disseminated districts.	Director of DID, PMO-RALG	· Fulfilled or unfulfilled: **"Fulfilled"** · Its cause(s): **N/A** · Influence(s) to the Project: **N/A**	· Fulfilled or unfulfilled: **"Fulfilled"** · Its cause(s): **N/A** · Influence(s) to the Project: **N/A**	· Fulfilled or unfulfilled: **"Unfulfilled"** · Its cause(s): **Transferred** · Influence(s) to the Project: **Almost not** *Although DE in Mufindi DC has transferred, it was the 2nd month of the FY. Thus, this condition did not severely affect to the achievement of the Project Purpose.*	· Fulfilled or unfulfilled: · Its cause(s): · Influence(s) to the Project:	· 1st year: **N/A** · 2nd year: **N/A** · 3rd year: **N/A** · 4th year:
Important Assumptions for the achievement of the Overall Goal	**Person(s) in charge**	**End of the 1st FY (Around June 2013)**	**End of the 2nd FY (Around June 2014)**	**End of the 3rd FY (Around June 2015)**	**End of the 4th FY (Around June 2016)**	**Measures and undertakings by the Project**
Budgetary and human resources necessary for the rural road maintenance are continuously allocated by the Government of Tanzania.	Director of DID, PMO-RALG	N/A at this moment	N/A at this moment	N/A at this moment	· Fulfilled or unfulfilled: · Its cause(s): · Influence(s) to the Project:	· 1st year: **N/A** · 2nd year: **N/A** · 3rd year: · 4th year:

Instruction Manual
for
Monitoring System
(Version 2-2)

January 2016

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Instruction Manual for the Monitoring System

Monitoring is the routine work and internal operation of the Project. After the commencement of the Project, monitoring activities will be conducted so as to check whether or not project activities are favorably implemented and project outputs are produced as planned. If it is necessary, the modification of the Project is considered and carried out. Thus, monitoring is a pillar of the project management because the Project shall meet the objectives initially established as the indicators in the Project Design Matrix (PDM) and revise the project activities and outputs in response to the progress and various changes during the implementation period.

Monitoring activities shall be conducted mainly by the counterparts (C/P) in consideration of the project sustainability after the termination of the Project. Under this circumstance, the Monitoring System was consensually established in cooperation with the C/P and Japanese experts.

The Monitoring System is composed of the (1) Components of the PDM (Narrative Summary, Indicators, and Means of Verification), (2) Monitoring Plan (Persons/Organizations in Charge, Frequency, and Remarks), (3) Baseline Value and Final Target Value, and (4) Achievements of Each Fiscal Year.

Under the (1) Components of the PDM, the indicators have been established for the Overall Goal, Project Purpose, and Outputs of the Narrative Summary as shown in the below table.

Table: Components of the PDM in relation to Narrative Summary and Indicators

Narrative Summary	Indicators
Overall Goal: The rural road maintenance procedure and services of LGAs in Dodoma and Iringa regions are improved.	(1) Content confirmation of the Annual Rural Road Maintenance Plans of LGAs based on the checklist in Dodoma and Iringa regions
	(2) Percentage of the road maintenance works completed by contractors within the fiscal year (excluding liability period) for all the maintenance works in the Annual Rural Road Maintenance Plan in Dodoma and Iringa regions
	(3) Maintenance status (Good, Fair, and Poor) of rural roads in Dodoma and Iringa regions
Project Purpose: Administrative services of rural road maintenance provided by LGAs are improved in the target areas, and its nationwide expansion approach is developed.	(1) Maintenance status (Good, Fair, and Poor) of rural roads
	(2) Satisfaction ratings of the contractors and community people with reference to road maintenance works or status
	(3) Percentage of the rollover funds for rural road maintenance

Output 1: The capacity of PMO-RALG for coordinating and supporting LGAs in collaboration with MOW on rural road maintenance is strengthened.	(1) Rural Road Maintenance Operational Guidelines authorized by MOW
	(2) Percentage of the RS and district engineers utilizing the Operational Guidelines
Output 2: The rural road maintenance procedure of the LGAs is strengthened in the model districts.	(1) Content confirmation of the Annual Rural Road Maintenance Plan based on the checklist
	(2) Percentage of the road maintenance works completed by contractors within the fiscal year (including defect liability period) for all the maintenance works in the Annual Rural Road Maintenance Plan
Output 3: The practical skills and knowledge of responsible organizations (concerned departments of the LGAs, contractors, etc.) on rural road maintenance are improved through the LBT application in the model districts.	(1) Rating of district engineers and technicians on their practical skills and knowledge
	(2) Number of consultations on rural road maintenance between contractors and district engineers and technicians
	(3) Ratio of LBT works to all the maintenance works
Output 4: The dissemination mechanism for rural road maintenance approach within the respective regions is established.	(1) Content confirmation of the Annual Rural Road Maintenance Plan based on the checklist in the disseminated district
	(2) Percentage of the road maintenance works completed by contractors within the fiscal year (excluding liability period) for all the maintenance works in the Annual Rural Road Maintenance Plan in the disseminated district
	(3) Number of consultations on rural road maintenance between contractors and district engineers and technicians in the disseminated district

During the cooperation period of the Project, the above indicators shall be monitored on the basis of the Monitoring System. The details will be explained as shown below.

1. Project Purpose

(1) Indicator 1:

The maintenance status ("Good", "Fair" or "Poor") of rural roads is obtained from the Format of Rural Road Inventory Record (refer to the **Form 1** of the Monitoring System) extracted from the Rural Road Inventory Report. The data collection is annually conducted by District Engineers at the ends of the fiscal years, *i.e.*, in June.

The Project aims at achieving **over 80% in Chamwino D.C.** and **over 70%**[1] **in Iringa D.C.** as well as **over 70% in Kondoa and Mufindi D.C.** as final target

[1] The target value in Iringa DC was established by 10% lower than the one in Chamwino DC because of the road length (around two times in Iringa DC compared to Chamwino DC), the number of structures (about four times), etc.

values in combination with "Good" and "Fair" by June, 2016, *i.e.*, FY 2015/16.

In the Form 1, you can input the data (distance in km) in the underlined columns only as shown in the following color ( ).

(2) Indicator 2:

The satisfaction ratings of contractors (refer to the **Form 2-1** of the Monitoring System) and community people (refer to the **Form 2-2**) on the rural road maintenance works are collected through the questionnaire surveys. The data collection is annually conducted by District Technicians under the supervision of the District Engineers in a few months after the completion of the maintenance works/pilot projects.

The Project aims at achieving **over 75% for contractors** and **over 75% for community people** in Chamwino, Iringa, Kondoa, and Mufindi D.C. as final target values by the end of FY 2015/16.

In the Form 2-1, the following question items are established in the questionnaire for contractors:

- Payment of construction costs from the District Council on a timely manner;
- Scale or size of road maintenance works;
- Number of road maintenance works;
- Instructions and directions on road maintenance works by District Engineer and Technicians;
- Prompt and concrete responses to the inquiries about road maintenance works;
- Contents of Bill of Quantities (BOQ) for road maintenance works;
- Public notices of road maintenance works in a timely manner;
- Process from the tender award to the sign of a contract according to the official schedule;
- Lend-lease condition of light equipment for LBT works; and
- Inspection tasks executed by the District Engineer and Technicians.

In the Form 2-2, the following question items are established in the questionnaire for community people:

- Traffic time for passing through the road;
- Convenience of the public transportation;
- Passable throughout the year;
- Drained conditions of the road;
- Road dusts;
- Accidents on the road;

- To carry agricultural crops to the market;
- Number of customers of local shops around the road;
- Change in incomes; and
- Continuous participation in LBT works.

(3) Indicator 3:

The percentages of the rollover funds for rural road maintenance are extracted from the Summary of Committed and Uncommitted Action Plans (official form of PMO-RALG: Form RALG-1). The data collection is annually conducted by District Engineers at the ends of the fiscal years.

The financial figures at the end of the fiscal year shall be utilized for the calculation of the indicator, and the percentage of the rollover funds is calculated as the "Bank Balance" to the "Received Funds" as shown in the below formula (within the frame border). However, the retention money is subtracted from the bank balance since the retention is paid to contractors after the defect liability period (3 to 6 months) after all. This percentage is defined as the rollover funds from the previous fiscal year because the uncommitted funds have remained at the beginning of the next fiscal year. In this way, the percentages are annually observed and compared at the same point in time (at the ends of the fiscal years).

$$\text{Percentage of Rollover Fund (\%)} = \frac{\text{"Bank Balance (deduction of the retention money)"}}{\text{"Received Funds"}}$$

After calculating the percentage of the rollover funds, you shall consult with PMO-RALG as to your percentage in comparison with the percentage extracted by PMO-RALG.

Lastly, the Project aims at achieving and retaining **below 15% in Chamwino, Iringa, Kondoa, and Mufindi D.C.** as final target values.

2. Output 1

(1) Indicator 1:

At the end of the Project, the Rural Road Maintenance Operational Guidelines shall be authorized by MOW. Thus, the Director of Infrastructure Development Division

(IDD), PMO-RALG, is responsible for the completion of the Operational Guidelines authorized by MOW before the termination of the Project.

(2) Indicator 2:

The percentages of the RS and District Engineers utilizing the Operational Guidelines are collected through the questionnaire surveys (refer to the **Form 3** of the Monitoring System) during the Annual Meetings for RS and District Engineers in the country. The data collection is annually conducted by the PMO-RALG under the supervision of the Director of IDD.

As the Operational Guidelines is drafted and distributed during the FY 2013/14, the usage monitoring of the Operational Guidelines will be conducted during the Annual Meeting in 2014 through the questionnaire survey.

The Project aims at achieving **over 80% of all the RS and District Engineers** across the mainland of Tanzania as the final target value by the time of the Annual Meeting in 2015.

In the Form 3, the following question items are established in the questionnaire for RS and District Engineers utilizing the Operational Guidelines:

- Frequency of usage;
- Easiness for understanding,
- User-friendliness;
- Applicability to various types of rural road maintenance works;
- Reference to the Operational Guidelines when occurring issues/problems;
- Satisfaction and usefulness of the Targets and Policy Directives of the Operational Guidelines;
- Satisfaction and improvement of the Planning Section;
- Satisfaction and improvement of the Procurement and Implementation Sections;
- Satisfaction and improvement of the Monitoring and Evaluation (M&E) Section; and
- Satisfaction and improvement of the Annexes in the Operational Guidelines.

You will be able to compare the results of the questionnaire survey in each chapter of the Operational Guidelines. If a certain chapter is highly appreciated, then the WG responsible for the chapter is proud of their achievements. On the other hand, if another chapter is assessed with a low rating, then the responsible WG is likely to make more efforts to accommodate and improve the contents of the chapter.

3. Output 2

(1) Indicator 1:

The contents of the Annual Rural Road Maintenance Plan are confirmed on the basis of the monitoring checklist (refer to the **Form 4** of the Monitoring System) prepared in the Activity 2-8. RS Engineers shall annually confirm the contents of the Annual Plans a few months before the beginning of the fiscal years.

LGAs shall contain all necessary items in the Annual Rural Road Maintenance Plan according to the Form 4 as follows:

[I. Introduction]

- Vision (Mid- and long-term objectives) of the LGA for rural road maintenance;
- Annual objectives of the LGA for rural road maintenance in the fiscal year;
- Strategies and specific activities for the achievement of the annual objectives, such as utilization of standard drawings and technical specifications for roads and drainage structures, quality control issues, etc.;

[II. Selection of the Rural Road Maintenance Works in the Fiscal Year]

- Information of classified roads and rural road inventories;
- Needs of rural road maintenance works with priority ranking, including *the* reasons, in the fiscal year in line with the vision (Mid- and long-term objectives) of the LGA;
- Selection of the rural road maintenance works and *the* reasons;
- Coverage of road networks through the road maintenance works in the fiscal year;
- Preliminary schedule of the rural road maintenance works;
- Procurement procedures for the road maintenance works selected above;

[III. Information of the Rural Road Maintenance Works]

- Work type (Routine/Spot/Periodic/Emergence/Rehabilitation);
- Type of structures (Culverts, Drifts, Bridges, etc.);
- Road name;
- Application of LBT and/or EBT;
- Surface type (Gravel, Earth, etc.);
- Distance (km);
- Time frame of rural road maintenance works;
- Supervision expenses for rural road maintenance works;
- Establishment of unit costs (per kilometer) for road maintenance works, such as

routine maintenance, spot improvement, periodic maintenance, rehabilitation, etc.;
- Total costs, including supervision cost (TSH);

[IV. Specific Policy Issues]
- Environmental issues;
- Gender issues;
- HIV/AIDS issues; and
- Others.

Note: Assessment by RS Engineers in the Form 4
⇒ "Good" or "Fair": No recommendations/comments
⇒ "Poor": Necessary to put recommendations/comments

(2) Indicator 2:

The percentage of the road maintenance works completed by contractors to all the maintenance works specified in the Annual Rural Road Maintenance Plan is extracted from the monitoring sheet prepared in the Activity 2-8 (refer to the **Form 5** of the Monitoring System). The data collection is annually conducted by District Engineers at the end of the fiscal years.

The road maintenance works completed by contractors within the fiscal year include the maintenance works during the defect liability period.

Ultimately, the Project aims at achieving **over 85%**[2] **of all the road maintenance works** in Chamwino D.C. and Iringa D.C. as a final target value.

In the Form 5, the following items are supposed to be filled out by District Engineers:
- Name of the project/ Name of road section;
- Contract number;
- Construction method (EBT/LBT)[3];
- Work type (routine/spot/periodic/structure/emergence/rehabilitation);
- Surface type (gravel/earth/others);
- Length (km);
- Starting and complete date;
- Funded by;
- Supervised by;

[2] The percentage of "85%" was set up with reference to the performance indicators and targets in the Annual Performance Agreement.
[3] This information also contributes to the calculation for the indicator 3 of the Output 3.

- Name of contractors;
- Total cost (TSH); and
- Condition of work completions.

If a single road project (or road section) includes both components in the construction method, *i.e.*, EBT and LBT, then you can put "EBT/LBT" in the column of the construction method. In the same way, you can fill out the columns of the work type, *e.g.*, "Spot/Periodic", and the surface type, *e.g.*, "Gravel/Earth."

4. Output 3

(1) Indicator 1:

The ratings of District Engineers/Technicians on their practical skills and knowledge are collected through the questionnaire surveys. RS Engineers (refer to the **Form 6-1**) assesse District Engineers/Technicians while District Engineers/Technicians (refer to the **Form 6-2**) conduct self-evaluation in terms of their practical skills and knowledge. As the question items are the same for RS Engineers and District Engineers/Technicians, their practical skills and knowledge are confirmed from the mutual perspectives of both administrative levels, *i.e.*, regional and district levels. It is crucial for RS Engineers to observe their changes and grasp the capacity of District Engineers/Technicians.

The results of assessments by RS Engineers and self-evaluation by District Engineers/Technicians imply whether or not they come to apply the practical skills and knowledge to their actual works at the district level. In other words, the results indicate the performance of the Japanese experts who transfer technical skills and knowledge to District Engineers/Technicians in the model districts. If the ratings are low with some items as mentioned below, then it is the indication of necessary assistance which the Project has not provided for District Engineers/Technicians. If so, the Project can take measures for the specific items pointed out so as to overcome their weak points and improve their practical skills and knowledge on sites.

The Project aims at achieving **over 3.75 (1 to 5 scales) for District Engineers/Technicians assessed by RS Engineers** and **over 3.75 for District Engineers/Technicians in self-evaluation** in Chamwino D.C. and Iringa D.C.

In the Form 6-1 and 6-2, the following question items are lined up in the questionnaire for RS Engineers and District Engineers/Technicians respectively:

- Planning skills and knowledge;
- Preparation of road inventories;

- Road structure design and drawing;
- Procedures of budget request for road maintenance works;
- Contents of Bill of Quantities (BOQ);
- Inspection tasks;
- Technical advices and supports for a contractor;
- Time management of road maintenance works during execution periods;
- Communication between District Engineer/Technicians and a contractor; and
- Record keeping skills.

(2) Indicator 2:

The number of consultations on rural road maintenance between contractors and District Engineers/Technicians is calculated through the monitoring sheet prepared in the Activity 2-8 (refer to the **Form 7** of the Monitoring System). The data collection is semiannually conducted by District Technicians under the supervision of the District Engineers. The data collection might be conducted, for instance, in December and May on the basis of the progress of the road maintenance works (or pilot projects).

The Project aims at increasing the number of consultations on rural road maintenance between contractors and District Engineers/Technicians in Chamwino and Iringa D.C.

In the Form 7, the following items are supposed to be filled out by District Engineers/Technicians under the supervision of District Engineers:

- Name of District Engineers/Technicians providing consultations;
- Name of contractors;
- Contents of consultations;
- Date (day/month/year);
- Contract number;
- Name of the project/ Name of road section;
- Construction method (EBT/LBT); and
- Work type (routine/spot/periodic/emergence/rehabilitation).

Regarding the "contents of consultations," you shall summarize what kinds of consultations you have had with contractors through site visits/meetings, etc. Moreover, "name of the project", "construction method", and "work type" are the same as the items of the Form 5. With reference to the construction method and work type, you can also put "EBT/LBT" and "Routine/Periodic/Spot" in those columns respectively if a

single road project (or road section) includes several components in the construction method and work type.

What is the consultation?

"Consultation" is to provide an educational opportunity for contractors through the instruction/advice of council engineers/technicians. It is crucial for the engineers/technicians to make the contractors recognize how to execute rural road maintenance works in the right way if they are facing some problems or issues unsolvable by themselves. Thus, if there is a problem during the maintenance works, the engineers/technicians shall provide a consultation for the contractor to adjust and modify the maintenance works.

When you describe the contents of consultations, you can specify in the following categories:

(A) Construction Work Control;
(B) Quality Control;
(C) Schedule Control;
(D) Safety Management; and
(E) Others.

For example, if a soil problem is found during the maintenance works, the engineers/technicians can provide a specific consultation for contractors so as to ensure the standard of roads by replacing suitable soil materials. In this case, you shall put "(A) & (B)" with your specific consultation for contractors in the column of "content of consultations" in the Form 7.

From the above aspects, importantly, you do not have to itemize and describe your routine works which you normally do on site, such as introduction of ward/village leaders to contractors, site possession to contractors, periodic inspection works of roads/culverts, approval of job order, etc.

(3) Indicator 3:

The ratio of LBT works to all the rural road maintenance works is calculated through the monitoring sheet prepared in the Activity 2-8 (refer to the **Form 5** of the Monitoring System). The data collection is annually conducted by District Engineers through the Form 5 as mentioned above.

If a single road project (or road section) includes both EBT and LBT in the column of the construction method, then you shall count the road project (or road section) as one (1) LBT work.

The Project aims at achieving and retaining **over 20% of all the road maintenance works accounted for LBT works in Chamwino and Iringa D.C.**

5. Output 4

(1) Indicator 1:

As mentioned in the indicator 1 of the Output 2, this is the same as the indicator 1 of the Output 4 in the disseminated districts commenced from the second half of the cooperation period. The Annual Rural Road Maintenance Plan is prepared during the FY 2014/15, *i.e.*, Annual Plan for FY 2015/16. RS Engineers shall annually confirm the contents of the Annual Plans on the basis of the **Form 4** a few months before the beginning of FY 2015/16.

LGAs in the disseminated districts shall contain all necessary items in the Annual Rural Road Maintenance Plan according to the Form 4 as itemized above.

(2) Indicator 2:

As described in the indicator 2 of the Output 2, this is the same as the indicator 2 of the Output 4 in the disseminated districts commenced from the second half of the cooperation period. The percentage of the road maintenance works completed by contractors to all the maintenance works is also confirmed through the **Form 5** at the end of the fiscal years. District Engineers shall annually conduct the data collection at the end of the fiscal years.

The Project aims at achieving over 85% of all the road maintenance works in the disseminated districts as a final target value.

(3) Indicator 3:

As described in the indicator 2 of the Output 3, this is the same as the indicator 3 of the Output 4 in the disseminated districts commenced from the second half of the cooperation period. The number of consultations on rural road maintenance between contractors and District Engineers/Technicians is calculated through the **Form 7** at the middle and end of the fiscal years. The data collection shall semiannually be conducted by District Technicians under the supervision of the District Engineers.

The Project aims at increasing the number of consultations on rural road maintenance between contractors and District Engineers/Technicians in the

disseminated districts.

6. Overall Goal

(1) Indicator 1:

As mentioned in the indicator 1 of the Output 2, this is the same as the indicator 1 of the Overall Goal in the other districts of Dodoma and Iringa Regions. The Annual Rural Road Maintenance Plan will be prepared with the inclusion of all the necessary items on the basis of the **Form 4** a few months before the beginning of fiscal years. RS Engineers shall annually confirm the contents of the Annual Rural Road Maintenance Plans according to the Form 4.

Therefore, LGAs in the other districts in Dodoma and Iringa Regions shall contain all the necessary items in the Annual Rural Road Maintenance Plans a few months before the beginning of FY 2017/18, which will be effective for FY 2018/19.

(2) Indicator 2:

As described in the indicator 2 of the Output 2, this is the same as the indicator 2 of the Overall Goal in the other districts of Dodoma and Iringa Regions. The percentage of the road maintenance works completed by contractors to all the maintenance works is confirmed through the **Form 5** at the end of the fiscal years, and the data collection shall annually be conducted by District Engineers.

The Project aims at increasing the percentage of road maintenance works completed by contractors in the other districts of Dodoma and Iringa Regions by June, 2019.

(3) Indicator 3:

As described in the indicator 1 of the Project Purpose, this is the same as the indicator 3 of the Overall Goal in the other districts of Dodoma and Iringa Regions. The maintenance status ("Good", "Fair", or "Poor") of rural roads is obtained from the **Form 1**. The data collection is annually conducted by District Engineers at the ends of the fiscal years.

The Project aims at improving the maintenance status of rural roads in the other districts of Dodoma and Iringa Regions by June, 2019.

In the Form 1, you can input the data (distance in km) in the underlined columns only as shown in the following color ( ).

7. Important Assumptions

The Important Assumptions (IAs) shall annually be monitored at the end of fiscal years. In the first place, you determine whether or not the IAs are "fulfilled" or "unfulfilled." If an IA is "unfilled," then you shall put its explanation in the Monitoring System according to the following points:

- Causes;
- Influences to the Project; and
- Measures and undertakings by the Project.

First of all, the persons in charge shall be confirmed so as to oversee the conditions described in the IAs at each level. Secondly, you shall observe the conditions whether they are fulfilled or unfulfilled. If the "unfulfilled" is selected, then you shall scrutinize the causes and explore the influences to the Project. Lastly, you could find the measures and suggest the undertakings toward the "unfilled" conditions. Also, it might be necessary for the Project to modify parts of project components so as to avoid the effects of the unfilled IAs.

(1) Important Assumptions for the achievement of the Outputs

1) Institutional arrangement for rural road maintenance is not changed from the PMO-RALG to another governmental institute.
2) During the cooperation period, the RS engineers capacitated by the Project continue working for their respective positions at the RS offices in the respective regions.
3) Budget disbursement for rural road maintenance is not severely delayed in the model and disseminated districts of the respective regions.

(2) Important Assumption for the achievement of the Project Purpose:

1) During the cooperation period, the district engineers capacitated by the Project continue working for their respective positions in the model and disseminated districts.

(3) Important Assumption for the achievement of the Overall Goal:

1) Budgetary and human resources necessary for the rural road maintenance are continuously allocated by the Government of Tanzania.

END

Annex-5: Equipment

Number	Date of registration	Description/Name of equipment / Goods	Specification・Standard	QTY	Price	unit	Provider	User	Purpose of Use	Place of Use	Responsible Person
1	7-Sep-12	Printer	HP Laser Jet M1212nf MFP	1	730,000	Tsh	RAL Computer Store	Expert	Means of Documentation	Iringa DC Office	Expert
2	5-Mar-13	Scanner	HP M1536mfp	1	980,000	Tsh	RAL Computer Store	Expert	Means of Documentation	Chamwino DC Office	Expert
3	28-Mar-13	Camera Memory	Sony DSC-Hxbr Fuji Firm Memory 2GB	1	840,000	Tsh	ANISUMA	C/P	Recording Project Activities	Iringa DC Office	Iringa DE
4	21-Jun-13	Camera Memory	PENTAX Optio WG-2GPS Transcend SDHC 16GB	1	22,997	JPN	Amazon	C/P	Recording Project Activities	Chamwino DC Office	Chamwino DE
5	17-Jun-13	Tractor	New Holland 8030 ZCCA03067 CW 6658	1	76,000	USD	General Motors Investment (GMI)	C/P	For Project Activities	Chamwino DC Garage	Chamwino DE
6	17-Jun-13	Pedistrian Vivratory Roller	Sakai HV80	1	18,508	USD	Panafrican Equipment	C/P	For Project Activities	Chamwino DC	Chamwino DE
7	17-Jun-13	Plate Compactor	Sakai PC800	1	6,905	USD	Panafrican Equipment	C/P	For Project Activities	Chamwino DC	Chamwino DE
6	17-Jun-13	Engine Suction Water Pump	WP 30X	1	500	USD	GMI	C/P	For Project Activities	Chamwino DC Garage	Chamwino DE
8	18-Jun-13	Tractor Maintenance Parts			7,600	USD	GMI	C/P	For Project Activities	Chamwino DC Garage	Chamwino DE
9	18-Jun-13	Water Pump Maintenance Parts			50	USD	GMI	C/P	For Project Activities	Chamwino DC Garage	Chamwino DE
10	18-Jun-13	Transport Cost to Site in Chamwino			2,850	USD	GMI	C/P	For Project Activities	Chamwino	Chamwino DE
11	18-Jun-13	Training Cost at Site in Chamwino			300	USD	GMI	C/P	For Project Activities	Chamwino	Chamwino DE
12	20-Jun-13	Tractor	New Holland 8030 ZCCA02721 CW 6657	1	76,000	USD	GMI	C/P	For Project Activities	Iringa DC	Iringa DE
13	17-Jun-13	Pedistrian Vivratory Roller	Sakai HV80	1	18,508	USD	Panafrican Equipment	C/P	For Project Activities	Iringa DC	Iringa DE
14	17-Jun-13	Plate Compactor	Sakai PC800	1	6,905	USD	Panafrican Equipment	C/P	For Project Activities	Iringa	Iringa DE
15	20-Jun-13	Engine Suction Water Pump	WP 30X	1	500	USD	GMI	C/P	For Project Activities	Iringa DC Garage	Iringa DE
16	20-Jun-13	Tractor Maintenance Parts		1	7,600	USD	GMI	C/P	For Project Activities	Iringa DC Garage	Iringa DE
17	20-Jun-13	Water Pump Maintenance Parts		1	50	USD	GMI	C/P	For Project Activities	Iringa DC Garage	Iringa DE
18	20-Jun-13	Transport Cost to Site in Iringa		1	2,850	USD	GMI	C/P	For Project Activities	Iringa	Iringa DE
19	20-Jun-13	Training Cost at Site in Iringa		1	300	USD	GMI	C/P	For Project Activities	Iringa	Iringa DE
20	20-Jun-13	Water Bowser	GMI/WB/00001 CW 6659	1	18,000	USD	GMI	C/P	For Project Activities	Iringa DC Garage	Iringa DE
21	20-Jun-14	GPS	eTrex 30	1	28,483	JPN	IDA/Japan	C/P	For Project Activities	Iringa DC	Iringa DE
22	20-Jun-14	GPS	eTrex 30	1	28,483	JPN	IDA/Japan	C/P	For Project Activities	Iringa RS	Iringa RSE
23	20-Jun-14	GPS	eTrex 30	1	28,483	JPN	IDA/Japan	C/P	For Project Activities	Chamwino DC	Chamwino DE
24	20-Jun-14	GPS	eTrex 30	1	28,483	JPN	IDA/Japan	C/P	For Project Activities	Dodoma RS	Dodoma RSE
25	20-Jun-14	GPS	eTrex 30	1	28,483	JPN	IDA/Japan	C/P	For Project Activities	Kondoa DC	Kondoa DE
26	20-Jun-14	GPS	eTrex 30	1	28,483	JPN	IDA/Japan	C/P	For Project Activities	Mufindi DC	Mufindi DE
27	20-Jun-14	GPS Camera	Ricoh WG-4 GPS Toshiba SDHC 16GB	1	35,890	JPN	Yodobashi/Japan	C/P	For Project Activities	Iringa RS	Iringa RSE
28	20-Jun-14	GPS Camera	Ricoh WG-4 GPS Toshiba SDHC 16GB	1	35,890	JPN	Yodobashi/Japan	C/P	For Project Activities	Dodoma RS	Dodma RSE
29	20-Jun-14	GPS Camera	Ricoh WG-4 GPS Toshiba SDHC 16GB	1	35,890	JPN	Yodobashi/Japan	C/P	For Project Activities	Kondoa DC	Kondoa DE
30	20-Jun-14	GPS Camera	Ricoh WG-4 GPS Toshiba SDHC 16GB	1	35,890	JPN	Yodobashi/Japan	C/P	For Project Activities	Mufindi DC	Mufindi DE
31	20-Jan-15	Projector	Epson EB-S18	1	850,000	Tsh	CLOUD COMPUTERS	C/P	For Project Activities	Dodoma RS	Dodoma RSE
32	20-Jan-15	Projector	Epson EB-S18	1	850,000	Tsh	CLOUD COMPUTERS	C/P	For Project Activities	Iringa RS	Iringa RSE

Annex-6: JCC

JCC-4 Agenda

Rural roads Maintenance System Development Project (RMSD)
PRIME MINISTER'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT (PMO-RALG)
JAPAN INTERNATINAL COOPERATION AGENCY (JICA)

4rdJoint Coordination Committee on 20th August 2015
Conference Room, PMO-RALG

Agenda: 4rd JCC Meeting Part 1: Progress and Achivement of the Project

Time	Agenda	Responsible	Remarks
09:00 - 09:10	Opening	Chairperson/PS PMORALG	5 min
		JICA Chief Representative	5 min
09:10 - 10:00	Presentation of the Progress and Achievement of the RMSD Project	Eng Nanai/ Eng. Mpinzile, Eng. Runji	50 min
10:00-10:45	The wayforward to Disseminate the Progress	Eng. Nanai/ Eng. Mkwata/ Eng. David	45 min
10:45 - 12:00	Discussions	All	75 min
12:00-12:05	Closing remarks	PMO-RALG	5 min
12:05-13:00	Lunch		

Rural roads Maintenance System Development Project (RMSD)

PRIME MINISTER'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT (PMO-RALG)

JAPAN INTERNATINAL COOPERATION AGENCY (JICA)

RMSD Terminal Evaluation Meeting on 21th August 2015

Conference Room, PMO-RALG

Agenda: RMSD Terminal Evaluation Meeting and JCC-4 Part 2 on 21th August 2015

Time	Agenda	Responsible	Remarks
09:00 - 09:10	Opening	Chairperson/PS PMORALG	5 min
		JICA Chief Representative HQ	5 min
9:10- 10:00	Terminal Evaluation Report	Joint Evaluation Team (JICA Evaluation Team / PMORALG)	50 min
10:00 – 10:30	Break		All
10:30 -12:00	Discussions	All	90 min
12:00-12:15	Sign on M/M	JICA PMO-RALG	15 min
12:15	Closing remarks	PMO-RALG	

JCC-4 Participants

Rural Road Maintenance System Development Project (RMSD)

Participants List

* Topic **RMSD Joint Coordinating Committee JCC-4**
* Date 20-Aug-15
* Place PMO-RALG

No	Name	Title	Organization
1	Eliva Kayanda	DRD	PMORALG
2	Takeuchi Hiroshi	Director	JICA
3	Tatsumi Tokunaga	Acting Project Leader	RMSD/EJEC
4	Kiyohito SHIMADA	Deputy Assistant Director	JICA
5	Masaya OMAE	General Manager	Success Project Management Office
6	Nobuyuki KOBE	Representative	JICA TANZANIA
7	Kazunobu Kashimura	Org. Cap. Dev	RMSD/JICA
8	Mohamed Mkwata	RSE	DODOMA
9	David M. Mwakalukile	RSE	RS-IRINGA
10	ZEPHRINE FELIX	Assistant RSE-Iringa	RSE - Iringa
11	Mayuka TSUKAMOTO	JICA volunteer	JICA
12	Salimu KISAKA	Coordinator	RMSD/EJEC/JICA
13	Naoya Kaneko	JICA Volunteer	JICA/Mufindi DC
14	Takaaki HIRAKAWA	JICA expert	RMSD
15	LEOPOLD RUNJI	DE	IRINGA DC
16	Magola Elias Lungwecha	Tech Assistant - ICONDOA	RS - DODOMA
17	MGEDAH DONASIAN	Ag DE	KONDOA DC
18	GODWIN MPINZILE	DE	CHAMWINO DC
19	PETER-G JOHNSON	DE	MUFINDI DC
20	Nanai, N.	S. Eng.	Pmo-RALG
21	Yumiko Takeda	coordinator	JICA-RMSD
22	Ikumasa Kawasaki	Road Engineer	JICA-RMSD
23			

JCC-5 Agenda

Rural roads Maintenance System Development Project (RMSD)

PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT (PO-RALG)

JAPAN INTERNATINAL COOPERATION AGENCY (JICA)

5th Joint Coordination Committee on 23th February 2016

Conference Room, Protea Court Yard Hotel, Dar es Salaam

Agenda: 5th JCC Meeting and RMSD Terminal Seminar

JCC-5 Final

Time	Agenda	Responsible	Remarks
09:00 - 09:10	Opening	Chairperson/PS PORALG	5 min
		JICA Chief Representative	5 min
09:10 - 09:40	Achievement of the RMSD Project	Eng Nanai/PO-RALG	30 min
09:40 - 10:10	Achievement of the RMSD Project and Lessons Learnt from the Model Districts	Eng. Mpinzile/DE Chamwino Eng. Runji/DE Iringa	30 min
10:10- 10:40	Lessons Learnt from AMTC in the Disseminated Districts	Eng. Myaule /DE Kondoa Eng. Johnson / DE Mufindi	30 min
Tea Break			
11:00-11:30	The way forward to Disseminate the Output in the Model Regions	Eng. Mkwata/ RSE Dodoma Eng. Mwakalille /RSE Iringa	30 min
11:30-11:40	The Activities to be completed by Tanzanian Side	Eng Nanai/PO-RALG	10 min
11:40- 12:10	The Road Map to be attained the Overall Goal	Eng Kayanda/DID,PO-RALG	30 min
12:10-12:25	Summarization of the Project and Proposal for the Future Action in Tanzania	Dr. Tokunaga/JICA-RMSD	15 min
12:25 -13:20	Discussions	All	55 min
13:20-13:25	Sign on MM	PO-RALG/JICA-RMSD	5 min
13:25-13:30	Closing remarks	PO-RALG	5 min
13:30-14:30	**Lunch**		

JCC-5 Participants

Rural Road Maintenance System Development Project (RMSD)

Participants List

* Topic **JCC-5 Final**
* Date 23-Feb-16
* Place Protea Courtyard Hotel, DSM

No	Name	Title	Organization
1	Eng. Musa I. Iyombe	PS - PO-RALG	MINISTRY OF REGIONAL ADMINISTRATION AND LOCAL GOVT
2	TOSHIO NAGASE	JICA TANZANIA CR	
3			
4	Nobuyuki KOBE	Representative ~~JICA~~	JICA Tanzania
5	Flavia Manyanga	Asst. Programme Officer	— do —
6	Eng. Ally MWINCHANDE	INFRASTRUCTURE-PO	EU Tanzania
7	Eng. LEOPOLD RUNJI	DE	IRINGA DC
8	Eng. DAVID MWAKALALILE	RSE	IRINGA RS
9	Eng. Mbwasta M.M	RSE	DODOMA RS
10	Mr. Magda E. Lungwecha.	Technical Assistant - Kondoa DC	KONDOA DC
11	AYUBU MYAULE (Eng)	DE	KONDOA DC
12	Eng. MPINZILE G.S	DE	CHAMWINO DC
13	Eng. PETER JOHNSON	DE	MUFINDI DC
14	Eng. Richard Mwakasisya	IRRI ROADS CL	CDM Smith Contractor of USAI
15	Masahiko Nishida	RMSD LBT Maintenance	EJEC
16	Tatsumi TOKUNAGA	Deputy Team Leader RMSD	EJEC
17	Nanai, Nat.	S/Eng.	PO-RALG
18	Eng Eline Kapunda	DTD	PO RALG
19	Salimu KISAKA	Coordinator (RMSD)	EJEC / JICA
20	Yutsuko Takeda	RMSD / JICA	RMSD / JICA
21	FRED J. KIBANO	PMO-RALG	PRO
22			
23			
24			
25			

MINUTES OF THE MEETING
BETWEEN
PRESIDENT'S OFFICE, REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT
AND
THE JAPAN INTERNATIONAL COOPERATION AGENCY
FOR THE FINAL JOINT COORDINATING COMMITTEE (JCC-FINAL)
IN THE RURAL ROAD MAINTENANCE SYSTEM DEVELOPMENT PROJECT (RMSD)

Dar es Salaam, 23 February, 2016

The Final Joint Coordinating Committee meeting (JCC-Final) between members of the President's Office, Regional Administration and Local Government (hereinafter referred to as "PO-RALG") and the Project Team organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") was convened on 23rd February, 2016 at the Protea Courtyard Hotel in Dar es Salaam for the purpose of concluding the activities and achievements of "Rural Road Maintenance System Development (RMSD) Project" (hereinafter referred to as "the Project").

As a result of discussion, both sides agreed to the matters in the documents attached hereto.

Eng. Musa Iyombe
Permanent Secretary
President's Office
Regional Administration and Local Government,
The United Republic of Tanzania

Mr. Motoki OGAWA
Chief Adviser/ Team Leader
JICA-Rural Road Maintenance System Development Project

Attached Document

Major Points Discussed

1. Achievements of the Project Activities

PO-RALG presented achievements based on the indicators during the Project operation. The summary of lessons learned and the achievements in the model districts, experience from Annual Maintenance and Training Cycle (AMTC) in the disseminated districts, and monitoring activities by Regional Secretariat Engineers (RSEs) were presented respectively by the RMSD Project Team and Counterparts. The Operational Guidelines for the District Roads maintenance have developed by the RMSD Project. Moreover, guidelines for LBT works in LGAs have been drafted. Those guidelines will significantly contribute to the improvement of rural road maintenance management in Tanzania. Regarding the dissemination of the Project output to other LGAs, RMSD has developed an Annual Monitoring and Training Cycle (referred as AMTC) as a tool for dissemination.

2. Activities remain after the Project period

Due to the delay of budget disbursement in FY2015/2016 which led to delayed implementation of pilot projects, some of the planned activities will not be completed within the project period. Therefore, PO-RALG, with the full of ownership, shall implement the remaining activities as follows.

- The model and disseminated districts shall collect the data of FY2015/2016 for the indicators, and PO-RALG shall report the summary of the achievement based on the collected indicators to JICA around August 2016.
- PO-RALG shall clarify the items in the proposed Project annual plan, which shall be compatible to DROMAS-2, if any.

3. Road Map to attain the Project Overall Goal

PO-RALG expressed the appreciation to JICA for the technical assistance in the sector of rural road in Tanzania. Majority of LGAs roads network in Tanzania are rural roads, whereby a number of issues and challenges are yet to be tackled so as to improve rural roads condition. PO-RALG presented the Road Map to achieve the Overall Goal by building on the outputs from the first phase of the Project. The keywords for the Road Map are to improve “Cost-effectiveness” in maintenance approaches/strategies as well as to develop the “Appropriate

Technology" that will improve rural road maintenance. The proposed outputs and activities under the Road Map are summarized as follows;

- Project Purpose : Capacity Development for Rural Road Maintenance (Operational and Technical) in the five (5) selected regions

- Outputs:
  - Output-1: Enhance the Institutional Capacity of PO-RALG
  - Output-2: Enhance the Operational Capacity of RSEs and Council Engineers in five (5) regions
  - Output-3: Enhance the technical capacity in construction of Rural Road, Develop Appropriate Construction technology for Rural Road Maintenance
- Activities

<For Output-1>

- Identify and prioritize capacity gaps, issues and challenges of rural road maintenance
- Convene stakeholder meetings to discuss and deliberate on the issues of rural road maintenance
- Support to modify the standards, manuals, guidelines of rural road maintenance (e.g. Guidelines for bridge design for rural road)

<For Output-2>

- All LGAs in Dodoma and Iringa regions to improve their administrative/technical skills through AMTC
- Five (5) regions and two (2) district councils from each region shall be selected as the disseminated regions and councils to enhance their administrative/technical skills through AMTC
- RSEs and council engineers in those five selected regions and ten councils shall be involved into AMTC based on Dodoma and Iringa regions for the first two (2) years. After two (2) years, five (5) regions shall operate AMTC in their own regions while involving other neighboring regions as a national wide dissemination mechanism.
- RSEs and council engineers in five (5) regions and ten (10) councils share the experience of the RMSD through AMTC in the Stakeholder Meeting (e.g. LGAs' Engineers Day)

<For Output-3>

- Select the pilot site and appropriate construction technology in Dodoma and Iringa regions
- Prepare the construction methods, design, procurement, contract
- Procure set of LBT equipment for each of the five targeted regions and introduce the LBT equipment leasing system
- Support the study in Research Centre for the appropriate surfacing method
- Provide the study tour to the country which is familiar to the relevant technology (Ghana, Kenya, Ethiopia etc.)
- Construct the demonstration rural road in Dodoma and Iringa (Implementation)
- Provide technical training during the construction including Equipment operation and management
- Provide technical Cost-Benefit analysis of each construction technology
- Support the policy dialog and standardization/regulation of appropriate technology to be utilized in the rural road maintenance.

4. Summary and Proposal from the JICA-RMSD Team

The sub-leader of RMSD summarized the current Project operation, and proposed further actions to approach the Road Map.

- Utilization of the Operational Guidelines, LBT Specification Guidelines

The Operational Guidelines are essential to monitor the appropriate procedures to meet the requirement from the audit. To ensure the utilization of the Operational Guidelines shall contribute to improve the administrative capacity of rural road works. Therefore, the Operational Guidelines is required to be sustainably fruitful by updating or revising when it is necessary.

LBT technical specification guidelines are also expected to promote the use of LBT construction in the LGAs. Applying these technical guidelines will enable LGAs to meet the requirement of the Annual Performance Agreement (APA) between PO-RALG and LGAs, which direct LGAs to deploy 20% of the maintenance activities for LBT wherever feasible. The Project recommends PO-RALG to encourage the utilization of the draft LBT technical specification guidelines in the LGAs through the announcement from time to time, such as in the Engineers Day.

- Standardization of AMTC

AMTC has been designed in accordance with the quarterly monitoring cycle of RSEs. It aims to monitor and instruct the administrative procedure of the each road work stages in the model and disseminated districts. Before the

production of the Operational Guidelines and the introduction of AMTC, RSEs had forced to supervise LGAs so many times to modify or correct the documents required to submit to PO-RALG. It is due to insufficient preparation of the documents. It resulted in difficult to meet the requirement from the audit and inefficiency of monitoring works of RSEs. Through the utilization of AMTC, the monitoring activities of RSEs shall be enhanced in both the effectiveness and the quality. PO-RALG and RSEs are required to operate AMTC continuously to achieve the overall goal even after the project completion.

To realize the sustainable operation of AMTC, PO-RALG is required; (i) to utilize the Operational Guidelines, (ii) to produce and improve the practical materials through the lessons learned from RSEs and the model districts, (iii) to secure sufficient budget and assignment for RSEs to enable monitoring in quarterly basis, (iv) to ensure the fund for the model districts, i.e. allowance and the transport cost. The Project expects PO-RALG to encourage RFB to secure necessary fund to operate AMTC.

- LBT Equipment leasing system in Chamwino and Iringa DCs

During the project implementation leasing system in Chamwino and Iringa DCs was developed. Accordingly the APA (Annual Performance Agreement), LGAs are supposed to implement LBT works as 20% of total rural road works. Most of councils, however, it is difficult to implement LBT works up to 20% of total, partly because insufficient number of LBT equipment in the market. The trialed leasing system of EBT equipment verified the model districts to accumulate the cost for future replacement. It is supposed this leasing system contributes to increase the number of LBT works in LGAs. The project recommends PO-RALG and RSEs to continue the trial and to verify the benefit from it.

5. Commitment from PO-RALG

1) Operational Guidelines and LBT Specification Guidelines

The Operational Guidelines were distributed to LGAs with the letter named by PS requested councils to activate it into rural road works. In the Stakeholder's Meeting, in Arusha August 2015, PO-RALG and RMSD team shared the contents of Operational Guidelines among the participants of 250 engineers. PO-RALG, as a responsible organization, strongly commit LGAs to utilize the Guidelines continuously, and monitor their utilization and feedback occasionally such as Engineer's Day in every year.

Regarding LBT Specification, it has drafted and ready to submit to MoW for the approval. PO-RALG has responsible to enable LGAs to fully utilize the Guidelines

for their rural road work in order to ensure increasing number of LBT work application in LGAs.

2) AMTC

AMTC, as a monitoring and training cycle, has been applied in the model and disseminated districts. RSEs and staffs in the Chamwino DC, Kondoa DC, Iringa DC, Mufindi DC has administratively capacitated through AMTC.
They all well understood and moreover they are able to instruct to the other councils by the end of the Project. Currently, the challenge for AMTC is how to apply the administrative skills into the practical implementation.

PO-RALG assumes obligation to improve AMTC for further dissemination of the contents of Operational Guidelines. (i) For future, PO-RALG shall continuously request RF to secure the budget for AMTC, although it would take some time to be approved from the RF. (ii) In the short while, PO-RALG shall commit to operate one week AMTC training in Dodoma and Iringa regions respectively, and two or three additional days for AMTC in the Stakeholders' Meeting or Engineer's Day for the model regions. (iii) Regarding the number of qualified engineers in RAS, PO-RALG has already requested to PO-PSM, and resulted in increasing two or three RSEs respectively in each regions. PO-RALG aims to eliminate the regions with only one RSE assigned.

3) Summary of the Achievement based on the Indicators FY2015/2016

As requested by the terminal evaluation team, PO-RALG has obligated to report JICA Tanzania office in August.

4) LBT Equipment

PO-RALG has strong interests in LBT equipment leasing system. It shall contribute to minimize the cost for rural road maintenance, and accelerate the progress, i.e. improve the cost-effectiveness of the rural road maintenance. Thus, PO-RALG has to commit to sustain the trial of LBT Equipment leasing system, and verify its effectiveness. To do so, PO-RALG request Dodoma and Iringa RSEs to report the benefit and achievement at least once a year in Engineer's Day.

ANNEX: Road Map

ANNEX: Road Map

Project Purpose	Capacity Development for Rural Road Maintenance (Operational and technical) in five regions	
Output-1	Enhance the Institutional capacity of PO-RALG	
	Activity-1	Identify the issues and challenges of Rural Road Maintenance
	Activity-2	Convene stakeholder meeting to discuss the issues of rural road maintenance
	Activity-3	Support to modify the standards, manuals, guidelines of rural road maintenance
Output-2	Enhance the Operational Capacity of RSEs and DEs in 5 regions	
	Activity-1	Provide operational Training for RSEs and DEs of 5 regions through AMTC in Dodoma and Iringa Regions
	Activity-2	Provide operational training for councils through AMTC in the 5 regions
	Activity-3	Present the lessons learned through AMTC in the 5 regions in the Engineers Day in the third and fourth year
Output-3	Enhance the technical capacity in construction of Rural Road, Develop Appropriate Construction technology for Rural Road Maintenance	
	Activity-1	Decide the pilot site and appropriate construction technology in Dodoma and Iringa
	Activity-2	Prepare the construction methods, design, procurement, contract Procure the LBT equipment for the each target regions Verify the LBT equipment leasing system
	Activity-3	Support the study in Research Centre for the appropriate surfacing Provide the study tour to the country which is familiar to the relevant technology (Ghana, Kenya, Ethiopia etc.)
	Activity-4	Construct the demonstration rural road in Dodoma and Iringa (Implementation)
	Activity-5	Provide technical training during the construction incl. Equipment management
	Activity-6	Provide technical Cost-Benefit analysis of each construction technology
	Activity-7	Support the policy dialog and standardization/regulation of appropriate technology to be utilized in the Rural Road

JCC-5 Presentation

5th RMSD Joint Coordinating Committee Meeting

Presentation of the Progress and Achievement of the RMSD Project

23-February 2016
Eng. N. Nanai / PO-RALG

Contents

- Background
- Project Objectives
- Project Outputs
- Progress and Achievements by Project Outputs
- Other related project activities

Background

- Road network for LGAs is estimated to be 108,946 km
- 42.8% of the network is in POOR condition
- 81% of the network is earth roads, 18% is gravel and only 1% is paved
- Government of Tanzania requested JICA to support rural road maintenance in 2010
- RMSD became effective in February 2012; to be implemented for four (4) years in two operational phases
  - February 2012 to March 2014 focusing on Model Districts
  - May 2014 to March 2016 focusing on Dissemination Districts

Background

- RMSD was implemented in the Model Districts for the first operational phase
  - Chamwino DC in Dodoma
  - Iringa DC in Iringa
- Second operational phase included Disseminated Districts
  - Kondoa DC in Dodoma
  - Mufindi DC in Iringa
- RMSD project is in the final year of implementation
  - Terminal Evaluation to assess the project achievement was carried out in August 2015
  - PO-RALG to prepare a Roadmap for sustainability of the project

Project Objectives

- Super Goal
  Rural Roads in Tanzania are properly maintained through application of appropriate technology and methodology
- Overall Goal
  Rural roads maintenance procedures and services of LGAs in Dodoma and Iringa regions are improved
- Project Purpose
  Administrative services of rural road maintenance provided by LGAs are improved in the target areas and its nationwide expansion approach is developed

Project Outcomes

- The capacity of PMO-RALG for coordinating and supporting LGAs in collaboration with Ministry of Works on rural road maintenance is strengthened
- The rural road maintenance procedure of the LGAs is strengthened in the model districts
- The practical skills and knowledge of responsible organizations (concerned departments of the LGAs, contractors etc) on rural road maintenance are improved through the L&T application in the model districts
- The dissemination mechanism for rural road maintenance approach within the respective regions is established.

Project Outcome 1:
Strengthened capacity of PMO-RALG in supporting LGAs in rural road maintenance

- Operational Guidelines for District Road Maintenance was prepared by technical staff from PMO-RALG, Regional Secretariats from Iringa and Dodoma, Model districts of Chamwino and Iringa
- Working groups were established and assigned to work on different topics of the Guidelines. Draft Guideline was shared with LGAs during Annual LGAs' Engineers Day (July 24, 2013)
- RMSD facilitated all 9 regular meetings in the course of preparing the Guidelines
- Ministry of Works approved the Guidelines in December 2014 and it was officially launched on March 10, 2015 by Permanent Secretary (PMO-RALG)

Project Output 1:
Strengthened capacity of PMO-RALG in supporting LGAs in rural road maintenance

- Feedbacks from Model Districts, Dissemination Districts, Regional Secretariats, Annual Engineers Meetings, Stakeholders Meetings, Local & International Study Tours will be considered for revision of the Guidelines whenever need arises.

Project Output 2:
Strengthened rural road maintenance procedure

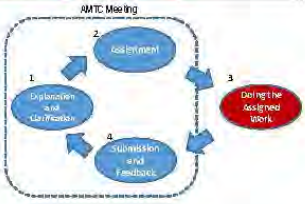
- Model districts were selected based on the criteria agreed upon by PMO-RALG and Regional Secretariats
- Roles and responsibilities of rural road maintenance for technical staff in model districts were reviewed for the purpose of establishing efficient and effective approach of implementing their functions
- Various training were provided to technical staff from model districts, mainly in the areas of road maintenance, planning and designing of structures, operational and management of LBT equipment, processing ADRICS data, GIS/GPS training, preparation of mid-long term plans
- Eventually RMSD developed a tool known as Annual Maintenance and Training Cycle (AMTC) from November 2014

Project Output 2:
Annual Maintenance Training Cycle (AMTC)

- AMTC is a tool used to impart knowledge and skills to LGAs technical staff through practical training at various stages of rural road maintenance procedures
  - Preparation and updating of rural road inventories
  - Preparation and revision of medium and long term road maintenance plans
  - Identify rural road maintenance needs and how to prioritize them
  - Preparation of Annual rural road maintenance plans including construction methods, procurement e.t.c.
  - Monitoring the rural road maintenance by PMO-RALG and RS Engineers
- AMTC is divided in four main stages
  - Inventory
  - Planning and Budgeting
  - Procurement
  - Supervision and Contract Management

Project Output 2:
Annual Maintenance Training Cycle (AMTC)

1. Work procedures for the following quarter are explained and clarified.
2. Data and documents to be prepared will be explained at the end of a AMTC meeting.
3. Do the assignments in three months.
4. Submission of the work and feedback in the first session of the AMTC meeting.



Project Output 3:
Improved practical skills & knowledge through LBT

- Model districts implemented pilot projects using LBT for two consecutive years i.e. FY 2013/2014 and FY 2014/2015
  - Formulate work plans of the pilot projects
  - Procurement of contractors
  - Supervision of construction works as per the project workplans
- Provision of light LBT equipment for model districts
- Establishment of LBT equipment leasing system
- Provision of consultations from ATTI to the model districts
- PR activities for rural road maintenance through pilot projects i.e. Brochure, TV programme, Regional Board Meetings
- Documentation of process, experiences, outcomes and lessons learnt through pilot projects

Project Output 3:
Improved practical skills & knowledge through LBT

Model District	FY 2013/2014	FY 2014/2015
Chamwino DC	Handali – Chanhumba – Igandu Road – 26.8 Km *(7 Km stretch was maintained using LBT)*	• Nkwenda – Nhinhi – Wiliko – Mlowa Bwawani Road – 34 Km *(2.5 Km was maintained by LBT)* • Haneti – Humweka Road – 18.2 Km *(2.5 Km stretch was maintained by LBT)*
Iringa DC	Wema – Mgama Road – 20 Km *(9 Km was maintained using LBT in 3 Lots)*	Makombe – Magunga Road – 10 Km *(the whole stretch was maintained by LBT in four Lots of 2.5 Km each)*

Project Output 3:
Improved practical skills & knowledge through LBT

Iringa LBT Site-1: Before

Iringa LBT Site-1: After

Project Output 4:
Dissemination mechanism within the regions

- Dissemination LGAs were selected based on thorough evaluation of qualifications for dissemination
- Kondoa DC was selected for Dodoma region
- Mufindi DC was selected for Iringa region
- RS engineers play a leading role in dissemination of road maintenance approach within the regions
- Regional workshops (AMTC) are conducted to share the contents of the Guidelines through knowledge and experience from the model districts

Achievement against Indicators:
Project Purpose

Description	Target	13/13	13/13	13/14	14/15
Indicator 1: Good & fair Road Condition					
Chamwino DC	80%	74.74%	79.84%	81.80%	75.78%
Iringa DC	80%	60.19%	66.24%	71.25%	62.49%
Kondoa DC	80%	0	0	62.24%	77.33%
Mufindi DC	80%	0	0	62.05%	57.08%
Indicator 2: Community/Contractor Satisfaction					
Chamwino DC	75%/75%	0	0	50.0%/76.8%	66.5%/72.9%
Iringa DC	75%/75%	0	0	77.3%/87.5%	83.5%/72.4%
Kondoa DC	75%/75%	0	0	0	0
Mufindi DC	75%/75%	0	0	0	0
Indicator 3: Roll Over Funds					
Chamwino DC	15%	60.38%	1.25%	10.85%	7.22%
Iringa DC	15%	12.85%	13.18%	4.88%	0.00%
Kondoa DC	15%	0	0	21.48%	0.94%
Mufindi DC	15%	0	0	52.15%	0.31%

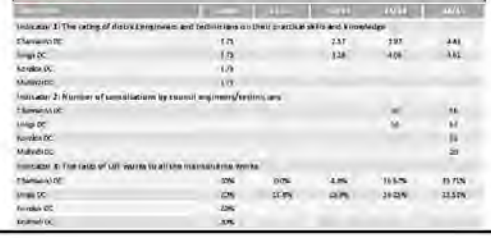
Achievement against Indicators:
Output 1

- Indicator 1: Operational Guidelines for District Road Maintenance
  Operational Guidelines was approved by MoW in December 2014
- Indicator 2: Percentage of RS/Council Engineers utilizing Operation Guidelines **(TARGET is 80%)**
  August 2014: 61.18%
  August 2015: 65.24%

Achievement against Indicators:
Output 2

Description	Target	13/13	13/13	13/14	14/15
Indicator 1: Preparation of Annual Maintenance Plans as per the checklist					
Chamwino DC				Yes	Yes
Iringa DC				Yes	Yes
Kondoa DC				Yes	Yes
Mufindi DC				Yes	Yes
Indicator 2: Percentage of road maintenance works completed within the fiscal year					
Chamwino DC	85%	95.5%	95.2%	91.67%	82.29%
Iringa DC	85%	79.2%	79.9%	73.08%	70.38%
Kondoa DC	85%	0	0	0	28.13%
Mufindi DC	85%	0	0	0	70.00%

Achievement against Indicators:
Output 3



Achievement against Indicators:
Important Assumptions

Overall Goal:

Budgetary and human resources necessary for the rural road maintenance are continuously allocated by the Government of Tanzania.

Project Purpose:

During the cooperation period, the district engineers capacitated by the Project continue working for their respective positions in the model and disseminated districts

Achievement against Indicators:
Important Assumptions

Outputs:

1. Institutional arrangement for rural road maintenance is not changed from the PMO-RALG to another governmental institute.
2. During the cooperation period, the RS engineers capacitated by the Project continue working for their respective positions at the RS offices in the respective regions.
3. Budget disbursement for rural road maintenance is not severely delayed in the model and disseminated districts of the respective regions

Other Related Project Activities:

- Joint Coordination Meetings (5 Nos)
- Procurement and Management Plan of LBT equipment in the Model Districts
- Establishment of LBT equipment leasing system
- Baseline Survey to collect data for Operational Guidelines, Manuals and planning for training
- Modifying PDM due to baseline survey
- Training in Japan – August/September 2014

Thanks for Listening

Chamwino District Council

Rural Roads Maintenance System Development Project

LESSON LEARNT

Presented by: Mpinzile G. S.

JICA RMSD JCC Final S
February, 2016

Project Overview

- RMSD project was launched on March 2012
- 12 JICA experts were hosted for whole period of the project; the team engaged different experts according to the required skills and knowledge as per schedule.
- Objective of RMSD was to improve maintenance system in order to attain quality rural roads. By formulation of efficient rural roads maintenance system.

Goals & Indicators

- Rural roads maintenance procedure and services of model LGAs are improved.
  - Maintenance Plans prepared by the LGAs contain necessary items based on the checklist
  - % of maintenance works completed by contractors increase every financial year
  - Maintenance status (Good, Fair, and Poor) of rural roads is improved

Goals & Indicators Cont...d

- Administrative services of rural roads maintenance provided by LGAs are improved and disseminated national-wide
  - Satisfaction ratings of community people exceed 75% on average with reference to rural roads maintenance works.
  - Percentage of the rollover funds for rural roads maintenance is decreased
  - Disseminating knowledge in one District based in Dodoma Region

Performance of the Project

- Provide training on rural roads maintenance for District Engineer and Technicians
  - Planning and Designing of Structures
  - Operations and Management of Equipment
  - Data processing, Quality Management
  - Procedure for carrying out road inventory survey, calibration of vehicle odometer
  - Map drawing with the aid of GPS
  - Relationship between AutoCAD and GIS

Performance of the Project Cont.d

- Prepare and update rural roads inventories in the district
  - ADRICS exercise was done jointly
  - Training for carrying out inventory survey was provided
- Revise a mid- and long-term rural roads maintenance plans
  - Mid & long term plans were developed

Performance of Project Cont...d

- Rural roads maintenance needs and prioritize the needs to fit available budget
- Monitor the rural roads maintenance
- Formulate the work plans of pilot projects
- Promote PR activities on rural roads maintenance through the pilot projects
- Document the process, experiences, outcomes, and lessons learned of the pilot projects

Pilot Project

- Four pilot projects were undertaken and completed during the project period.
- Maintenance activities were executed by Labour Based Technology (LBT).
- Several challenges were experienced
  - Variation of soil type
  - Project period to coincide with farming season
  - Experience of people participating in roadworks

Pilot Project Cont...d

Gravel Excavation and Loading

Technical Challenges

- Contractors had no adequate project management skills
- Labourers had no experience of labour based roadworks
- Contractors have no 'owned' plants

Strength

- Regular site visits and meetings provided good inputs for noted challenges
- RMSD provided technical input from ATTI
- Equipment provided by JICA were available
- Ward leaders had positive ideas on road maintenance
- Technical knowledge provided by JICA experts to DE staff were disseminated to Contractors' supervisors

Equipment

- JICA through RMSD project provided new light equipment to aid LBT activities
  - 1 no. Tractor New Holland 8030
  - 1 no. Pedestrian roller Sakai HV 80
  - 1 no. Plate compactor
  - 1 no. Water pump
  - Accessories and service parts for the above equipment
  - 1 no. Camera (Pentax)

Study tour

- Study tour in Uganda & Kenya was organized and financed by JICA
- There were several lessons for participants
  - The establishment of gravel pits
  - Involvement of community in preparation of budget for rural roads
  - Maintenance of rural roads in phases, earthwork in 1st phase and low cost seal in the next phases

Study tour cont...d

- JICA organized and financed a study tour; a team of 10 people went and stayed in Japan for two weeks.
- To improve knowledge of maintenance, management system and skills for rural road administration
  - **System of rural roads maintenance administration**
  - **Rural roads maintenance work in Local Government**
  - **Rural Roads evaluation technology in Local Government**
  - **Community involvement for roads maintenance**
  - **Effective maintenance technology relating to rural roads**

Bridge Inspection

Impressive Lessons

- Prefecture and Municipal Governments prepare roads construction and maintenance activities which contribute to sustainable maintenance.
- Prefectures and Municipals own the roads and set aside fund for road development and maintenance activities
- Visual inspection is done through road patrol and all noted defects are attended and fixed promptly by the appropriate technical staffs.

Training

In-house trainings were conducted

- Planning and Designing of Structures
- Operation and Management of Equipment
- Data processing, Quality Management
- Procedure for carrying out road inventory survey, calibration of vehicle odometer
- Map drawing with the aid of GPS
- Relationship between AutoCAD and GIS

Calibration of Vehicle Odometer

Operating Equipment

Equipment Operation

Project Facilitators

Tatsumi Tokunaga	Sub leader/Road Maintenance
Motoki Ogawa	Team leader/ Rural roads planning
Hirokazu Miyamoto	Structure design for LBT road works
Yumiko Takeda	Coordinator (training & planning)
Noboru Shimizu	Maintenance & Quality control/ LBT
Kenko Okamura	Construction & contract management
Masanori Takeishi	Light equipment management
Kazunobu Kamimura	Capacity building
Takaaki Hirakawa	Monitoring
Ikumasa Kawasaki	Software specialist
Nishida Masahiko	Labour based specialist
Salimu Kisaka	Local Project Coordinator

Arigato gozaimasu!

Asanteni sana!

Welcome to RMSD project

Experience of the application on the RMSD project

DATE: 23. February. 2016
NAME: Eng. RUNJI Leopold
DE-Iringa DC

Content of presentation

- Impact of RMSD project in Iringa
  - Overall goal of the RMSD project
  - The use of Operational guidelines
  - Technical assistance from JICA experts
  - Challenges
  - Conclusion

1.Overall goal

"The rural road maintenance procedure and services of LGAs in Dodoma and Iringa regions are improved"

- Improved road network from 40% up to 90% for good & fair condition
- Reduced backlog activities and funds from the previous years ie from 15% – 00%
- Good quality of works for road and structures

2.The use of Operational guidelines

- It is a tool of day to day operation
- Attached forms at index guiding planning , procurement, implementation and evaluation.
- Uniformity of implementation of roads work within LGA

3. Technical assistance from JICA experts

i. Road drainage structures design

Example of internal training schedule

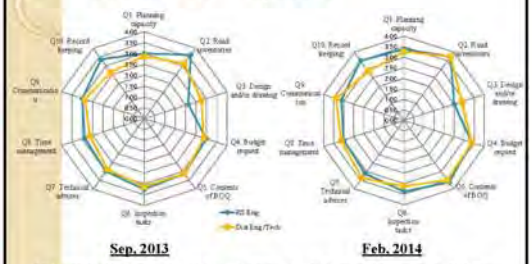
13:30	Registration	All
13:30-13:35	Opening Speech	DE Mr. Runji
13:35--15:45	Lecture-2: Topographic Survey and Hydrology for Bridge Planning	Mr. MIYAMOTO/RRID Mr. KAWASAKI/RRID
15:45--16:00	Discussion, Q&A	All
16:00	Closing	DE Mr. Runji

6

Internal training after data collection on 18/07/2014

Completed bridge after construction

ii. Satisfaction rating/ self evaluation system



Sep. 2013 Feb. 2014

Figure1-2: Rating of district engineers/technicians in their practical skills and knowledge in Iringa DC

iii. Assisting the use of Labour Based Technology for roads works

- Supply of light equipment for the labour based like Tractor, water bowser, compactor and Pedestrian roller.
- Assessing the performance of the road section maintained by the LBT and EBT.

iv. Study tours

1. **Visit of Uganda and Kenya**
   - Difficulties on the use of force account in Uganda.
   - JICA support of the Road mapping project in Uganda.
   - Road construction materials are so expensive in Uganda.
   - Systematic way of Itemized BOQ for all roads and coded in Kenya
   - Established road authorities for national, local and wildlife roads in Kenya.
   - Road construction materials are so expensive in Kenya

2. Visiting Japan

Many important things were studied but few of them are:

- Promoting the use of bicycles
- Introduction of cost deduction measures
- Encourage on the compact settlements
- Preparedness for the disaster
- Use of D-box for swampy area construction
- Road patrolling concept

Challenges on the RMSD

i. Missing technical specifications for the LBT

ii. Still JICA experts are need during dissemination process.

iii. Shortage of LBT light equipment

- ASANTE SANA
- (Arigatoo gozaimas)

LESSONS LEARNT FROM AMTC IN THE DISSEMINATED DISTRICTS.

For JICA-RMSD JCC-5 Final
23rd February 2016

Prepared and Presented by:
Eng. Ayubu Myaule.
District Engineer
Kondoa District Council

LESSONS LEARNT FROM AMTC IN THE DISSEMINATED DISTRICTS.

- ANNUAL MONITORING AND TRAINING CYCLE.

Introduction and background.

AMTC is approach formulated in imparting skills and knowledge to local government engineers and technicians.

The purpose of designing and implementing AMTC is to make all the operations on the rural road management standardized at all the Works Departments.

AMTC aiming to transfer knowledge and skills from Pilot district i.e. Chamwino to Disseminated district i.e. Kondoa.

INTRODUCTION AND BACKGROUND. ...*CONT*...

The activities of rural road management have four phases:

- Inventory;
- Planning:
- Procurement; and
- Implementation.

The item inventory is a part of Planning in the OG-DRM Chapter III; Procurement in Chapter IV; and Implementation in Chapter V.

TRAINING – IMPLEMENTATION RELATIONSHIP

- The training is conducted based on a feedback system. The district engineers take part in training sessions, and after the training session, they will actually implement what has been learned in their own districts

TRAINING – IMPLEMENTATION RELATIONSHIP

AMTC METHODOLOGY

AMTC methodology for its conduction is training and site visit. On each quarter the following training are conducted:

- presentations /Feedback
- monitoring and evaluation by RS Engineer
- Lecture
- Workshop
- Assignment

AMTC cycle is conducted on quarterly bases per year.

TYPICAL ACTIVITIES UNDER AMTC TRAINING CYCLE

- **Inventory (The Cycle One)**

In cycle one, inventory, shall be conducted during the period from July to September.

- **Planning (The Cycle Two)**

In cycle two, planning, shall be conducted during the period from October to December.

- **Procurement (The Cycle Three)**

In cycle three, procurement, shall be conducted during the period from January to March.

- **Implementation (The Cycle Four)**

In cycle four, implementation, shall be conducted during the period from April to June.

SELECTED PILOT PROJECT IN KONDOA DC

In disseminated district in FY 2014/15 the following road was selected:

- Kondoa – Bolisa – Gubali (16km) having an approved budget of Tshs 62.7millions, and project length of 8.1km. and its maintenance status is **completed using Labor Based Technology (LBT).**

In FY 2015/16 the following roads were selected:

- Unkuku – Loo – Kalamba (24km) having an approved budget of Tshs 10.0milions, and project length of 10.0km. and its maintenance status is **on procurement using Labor Based Technology(LBT).**
- Haubi – Mwisanga (9.5km) having an approved budget of Tshs 20.0millions, and project length of 8.0km. and its maintenance status is **on procurement using Labor Based Technology(LBT).**

LESSONS LEARNT

- Ability to conduct ADRICS and Documentation
- Ability in Budget preparation
- Ability to formulate Annual, Medium and Long term plan scientifically i.e. basing on scientific criteria hence getting away from traditional planning (adhock planning) thus having stable plans which can not be affected by other parties.
- Good use of Operation Guidelines in Maintenance of Rural roads.

LESSONS LEARNT …. *CONT….*

- Ability to develop road map using GPS and QGIS program.
- To determine precisely the location and length of district roads.
- Increase skills in procurement hence collaborate efficiently and effectively with PMU, CTB, and AO
- Contract Management conducted in a better way from site possession to completion

CHALLENGES FACED

- Financial constraints in FY 2014/2015 that affect also FY 2015/2016
- Availability of proper LBT Contractors timely.
- Lack of Labor Base Equipments

Thank you

for your attention

THE UNITED REPUBLIC OF TANZANIA

PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT (PO-RALG).

THE 5th JCC MEETING and RMSD TERMINAL SEMINAR

Eng. Peter Johnson
Mufindi District Engineer

Main issue:

i. Introduction
ii. Lessons learnt from AMTC as a Disseminated District.
iii. Challenges

Introduction

- Mufindi District Council is one of the four local government authorities in Iringa Region.
- Mufindi District Council is divided into Five Divisions. Twenty seven Wards and One hundred twenty five Villages; there are also two Parliamentary electoral constituencies, namely Northern Mufindi and Southern Mufindi.
- **Vision;**

  Mufindi District Council would like to see its people having sustainable and better life, To make sure all district and rural roads are passable throughout the year from 875km to 1099km, To make sure foot paths are increased up to 103 km to the year 2020/2021 and To sustain the skilled and knowledgeable staffs to the Mufindi District Council.

Introduction continue…

- **Mission;**

  Mufindi District Council in collaboration with internal and external stakeholders is committed to facilitate delivery of sustainable good services by considering priorities set by stakeholders through the use of available and expected resources by the year 2025.

Lesson Learnt from AMTC

1. Annual Monitoring and Training Cycle (AMTC) is a key tools to improve quality of work and to build capacity through in house training between model, disseminated district and JICA Expert.
2. Important of AMTC as a disseminate district council.
   - ❖ Mufindi learnt how to develop annual, medium and long term plans, though in LGAs is very difficult to implement medium and long term plans due to budget limitation.

- ❖How to conduct Annual District Roads Inventory and Condition Survey (ADRICS) by using GPS.
- ❖Processing the GPS data in QGIS software (Mapping)
- ❖It to help to undertake monitoring resources vise needs. The project has been conducting monitoring the process and achievement and collecting necessary information and data for the smooth implementation of the project.
- ❖The practice of AMTC in Mufindi as disseminate it help to stabilization of the guidelines targeting of LBT project (Implementation as per APA i.e. at least 20% of maintenance activities shall be LBT wherever feasible).

- ❖Prioritization of road works based on the indicators.
- ❖QGIS can be used without internet connection.
- ❖Proper planning for AMTC will reduce rollover fund in LGAs if the budget disbursement is not severely delayed.
- ❖Usage of GPS will reduce time of carrying out the ADRICS.

Photos

AMTC in Mufindi DC

Challenges

i. Political interference during the planning, which leads to interfere the prioritization of fund allocation for road maintenance projects especial during Budget.

ii. Delay in approved budget and disbursement from central Government which cause unfit the operation guideline for road maintenance.

iii. Limited number of transport which cause improper supervision of road maintenance projects to be executed.

THE WAY FORWARD

i. Council management to continues to give education on important of the prioritization of fund allocation for road maintenance and Sufficient fund allocation for road maintenance projects regarding the actual requirements of infrastructures.

ii. Central Government should have ensured that budget and funds for road maintenance works are released to LGAs timely.

iii. PO- RALG should have been ensure the availability of supervisor car on basis of actual demand instead of being confined by number of district because should differ with geographical feature.

Thanks for listen

THE WAY FORWARD TO DISSEMINATE THE OUTPUT IN THE MODEL REGIONS

PRESENTED IN THE FINAL JCC MEETING HELD IN DAR ES SALAAM ON 22/FEBRUARY/2016 BY ES ENGINEERS BOOGNA AND KIMOSA

CONTENTS

- SCHEDULE FOR AMTC
- WAY FORWARD TO DISSEMINATE THE OUTPUT IN THE MODEL REGIONS
- CONCLUSION

SCHEDULE FOR AMTC

The period of implementation of the AWP has been split into four small periods (quarterly basis) depending on the progress of the project cycle to enhance detailed collection of information and take on board specific relevant trainings to LGAs staff

SCHEDULE FOR AMTC...cont'd

Proposed AMTC to Support Monitoring Visits

- **January – March**
  Procurement to be used from April- June
- **April – June**
  Supervision, Contract Management to be used for supervision
- **July – September**
  Inventory to be used from Oct- Dec
- **October – December**
  Planning, Budgeting to be used from Jan- March

SCHEDULE FOR AMTC ...cont'd

Relevant Information to be Collected

•January – March	Planning, Budgeting
•April – June	Procurement
•July – June	Project Implementation
•October – December	Inventory

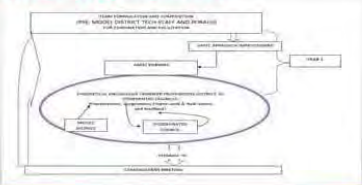
AMTC IN MUFINDI ...cont'd

Field inventory training conducted by the Iringa RSE in the Disseminated District - Mufindi during AMTC

AMTC IN KONDOA

One of the AMTC session conducted by the Dodoma RSE in the Disseminated District- Kondoa

WAY FORWARD FOR DISSEMINATION



FEEDBACK MECHANISM

CONCLUSION

The programme has revolutionalized the management system of the rural roads (i.e. it has began to achieved its goal and purpose); it is imperative to input from time to time all observations, comment which will be spotted or obtained during AMTC and implementation process to make the AMTC forum an important backstopping tool.

THANK YOU FOR YOUR ATTENTION

Summarization of the Project and Proposal for the Future actions in Tanzania

Dr. Tatsumi Tokunaga
Deputy Project Leader
RMSD

Summarization of the Project Operation

1. Ownership of the Tanzanian Counterpart.
2. Attract Engineers and Technicians through the new/appropriate Technology.
3. Insufficient Number of Equipment.
   I. GPS
   II. PC for the Data Accumulation/Server
   III. LBT Equipment

Refer to JCC handout(Yellow file) p44

Summarization of the Capacity Development

1. Development of AMTC.
2. Technical Training
3. Integration of the Data, Standardize Operations Systems
4. Assignment of Monitoring Expert(Mr. Hirakawa)

Refer to JCC handout(Yellow file) p47

Summarization the Disseminations of the Output

1. Collaboration to JOCV
2. Improvement of AMTC
3. Institutional Enhancement of RSEs

Refer to JCC handout(Yellow file) p46

Recommendations for the Further Actions

1. Implementation of the Road Works to achieve the target value of the Over Goal.
2. Standardization of AMTC.
3. Utilization of Operational Guidelines(OG), LBT specification Guidelines.
4. Promoting Effective use of the Monitoring Forms.

Refer to JCC handout(Yellow file) p47

Recommendations for the Further Actions

5. Providing Technical Training Sustainability
6. Continues Trail of LBT Equipment Leasing Systems.

Refer to JCC handout(Yellow file) p49

5th RMSD Joint Coordinating Committee Meeting

Roadmap for Sustainability of RMSD 1 Outputs

Contents

- Background
- Project Purpose
- Project Outputs

Background

- RMSD 1 was implementation in 2 Regions (Dodoma and Iringa) with four (4) LGAs (i.e. Chamwino DC, Iringa DC, Kondoa DC and Mufindi DC)
- The project super goal is to disseminate the RMSD 1 achievements to all 180 LGAs in Tanzania
- Challenges
  - Financing of the dissemination process through AMTC
  - Adequate and qualified Personnel to disseminate the RMSD outputs
  - Standardization of AMTC training materials
  - LBT equipment and specifications
- GoT has requested an extension of support from JICA for another four (4) years

Project Purpose

Capacity Development for Rural Road Maintenance (Operational and Technical) in the five (5) selected regions

Project Outputs

Output-1: Enhance the Institutional Capacity of PO-RALG

Output-2: Enhance the Operational Capacity of RSEs and Council Engineers in five (5) regions

Output-3: Enhance the technical capacity in construction of Rural Road, Develop Appropriate Construction technology for Rural Road Maintenance

Output 1:
Enhance the Institutional Capacity of PO-RALG

- Identify and prioritize capacity gaps, issues and challenges of rural road maintenance
- Convene stakeholder meetings to discuss and deliberate on the issues of rural road maintenance
- Support to modify the standards, manuals, guidelines of rural road maintenance (e.g. Guidelines for bridge design for rural road)

Output 2:
Enhance the Operational Capacity of RSEs and Council Engineers in five (5) regions

- All LGAs in Dodoma and Iringa regions to improve their administrative/technical skills through AMTC
- Five (5) regions and two (2) district councils from each region shall be selected as the disseminated regions and councils to enhance their administrative/technical skills through AMTC

Output 2:
Enhance the Operational Capacity of RSEs and Council Engineers in five (5) regions

- RSEs and council engineers in the five selected regions and ten councils shall be involved into AMTC based on Dodoma and Iringa regions for the first two (2) years. After two (2) years, five (5) regions shall operate AMTC in their own regions while involving other neighboring regions as a national wide dissemination mechanism.
- RSEs and council engineers in five (5) regions and ten (10) councils share the experience of the RMSD through AMTC in the Stakeholder Meeting (e.g. LGAs' Engineers Day)

Output 3:
Enhance the technical capacity in construction of Rural Road, Develop Appropriate Construction technology for Rural Road Maintenance

- Select the pilot site and appropriate construction technology in Dodoma and Iringa regions
- Prepare the construction methods, design, procurement, contract
- Procure set of LBT equipment for each of the five targeted regions and introduce the LBT equipment leasing system
- Support the study in Research Centre for the appropriate surfacing method
- Provide the study tour to the country which is familiar to the relevant technology (Ghana, Kenya, Ethiopia etc.)

Output 3:
Enhance the technical capacity in construction of Rural Road, Develop Appropriate Construction technology for Rural Road Maintenance

- Construct the demonstration rural road in Dodoma and Iringa (Implementation)
- Provide technical training during the construction including Equipment operation and management
- Provide technical Cost-Benefit analysis of each construction technology
- Support the policy dialog and standardization/regulation of appropriate technology to be utilized in the rural road maintenance.

Roadmap Schedule

Thanks for Listening

Achievement of Input (Human Resource allocation, Tanzanian side)

JPN Year		JPY2011	JFY2012											JFY2013											JFY2014											JFY2015										
Month		3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2
Prime Minister's Office (PMO-RALG)/Infrastructure Development Unit	Director	Eng. Elina Kayanda																																														
Prime Minister's Office (PMO-RALG)/Infrastructure Development Unit	Exective Engineer	Eng. Girbert Mfinanga																									Eng. Ezron C. Kilamhama											Eng. Nanai										
Dodoma Regional Office	Regional Secretariat Engineer (RSE)	Eng. Mkwata M. M.																																													
Iringa Regional Office	Regional Secretariat Engineer (RSE)	Eng. David Michael Mwakalaline																																													
Chamwino District Office/Department of Works	District Engineer	Eng.Godwin S. Mpinzile																																													
Iringa District Office/ Department of Works	District Engineer	Eng. Leopold Runji																																													
Kondoa District Office/ Department of Works	District Engineer	Eng. Richard Anyelwisye																																										Eng. Ayubu Myaule				
Mufindi District Office/ Department of Works	District Engineer	Eng. Peter Mawere Shirima																																													
																											Eng. Peter Johnson																						

Annex-8: RMSD Summary of Project Input (2012-2016 March)

Item		Unit	Tanzania	Japan	Total
1. Human Resources		MM	-	-	
-Principal Counterpart		MM	328.00	-	328.00
-Assistant for the Dissemination/ Monitoring		MM	33.00	-	33.00
-ATTI Consultation		MM	6.00	-	6.00
-Japanese Experts		MM	-	105.10	105.10
-JICA JOCV		MM		42.00	42.00
2. C/P training		Participants	-	-	348
-Technical Training in Tanzania		Participants	197	-	197
-AMTC (Annual Training and Monitoring Cycle)		Participants	100	39	139
-Training in Kenya & Uganda		Participants	11	1	12
-Training in Japan*		USD		14,608	14,608
3. Equipment		USD	-	-	
-JICA Procured		USD	-	243,427	243,427
-Project Procured		USD	-	5,851	5,851
-Maintenance		TSH	3,845,800	0.0	3,845,800
4. Pilot Project in Model DC		TSH	-	-	515,563,500
-Chamwino DC*		TSH	311,032,760	0.0	311,032,760
-Iringa DC*		TSH	285,492,500	0.0	285,492,500
5. RMSD Project Operational Cost in Local		USD		358,363	358,363
5-1	Human resources	USD		103,174	
5-2	Vehicle Related	USD		124,635	
5-3	Commodities	USD		7,767	
5-4	Transport	USD		44,124	
5-5	Communication	USD		4,271	
5-6	Cost for Meeting	USD		136,580	
5-7	Local Consultant	USD		11,260	
5-8	Others	USD		4,779	

* Contract Cost for the Pilot Project in Chamwino DC has revised because of the design was reviewed.
* The cost for Training in Japan exclude the flights and accommodation
* The exchange rate of USD = 122.74 JPN
* Pilot Project in Iringa in FY 2015/2016 is not yet confirmed