

Country Name	Project for Capacity Development for Maintenance Management of Bridges and Tunnels
Kyrgyz Republic	

### I. Project Outline

Background	Kyrgyzstan has the road network with the total length of 34,000 km approximately, and its traffic volume accounts up to 95% of the passenger and freight traffic. Most part of the road network in Kyrgyzstan was constructed during the Soviet era. After the country's full independence in 1991, road maintenance activities had not been carried out adequately because many Soviet technicians left Kyrgyzstan. The low level of budget allocation and execution for road repair and maintenance led to an annual loss of approximately 200 km of road surface, and the worsening of the road conditions hindered smooth trade with the neighboring countries as well as the passenger and freight traffic.												
Objectives of the Project	Through development of the database and capacity building of the Ministry of Transport and Communication (MOTC), the project aimed at improving MOTC's capacity on maintenance cost estimation of bridges and tunnels, thereby contributing to improvement of the maintenance status of bridges and tunnels.												
	<ol style="list-style-type: none"> <li>Overall Goal: Maintenance status of bridges and tunnels is improved in Kyrgyzstan</li> <li>Project Purpose: MOTC's capacity is improved for maintenance cost estimation of bridges and tunnels on the basis of inspection results.</li> </ol>												
Activities of the project	<ol style="list-style-type: none"> <li>Project site: Whole regions of Kyrgyzstan (all of about 1,100 bridges and 5 tunnels on the international and national roads)</li> <li>Main activities: Development of the database on bridges and tunnels, training of DEP* staff on regular maintenance, training of PLUAD*/UAD* staff on inspection and condition rating, training of staff of RMD*, PLUADs/UADs and DEPs on preparation of the maintenance management plan, etc. *Abbreviations: DEP: Local level Roads Management Unit, PLUAD: Oblast-level Roads Management Unit, UAD: Main Road Management Unit, RMD: Road Maintenance Department.</li> <li>Inputs (to carry out above activities) <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Japanese Side</td> <td style="width: 50%;">Kyrgyz Side</td> </tr> <tr> <td>1) Experts from Japan: 11 persons</td> <td>1) Staff allocated: 41 persons</td> </tr> <tr> <td>2) Training in Japan: 11 persons</td> <td>2) Land and facilities: Office space and training revenue.</td> </tr> <tr> <td>3) Equipment: Dynamic response intelligent monitoring system, Schmidt hammer, infrared camera, electric drill, test hammer, etc.</td> <td>3) Local cost: expenses for travel and equipment.</td> </tr> <tr> <td>4) Local cost: Cost for travel, project operation, etc.</td> <td></td> </tr> </table> </li> </ol>			Japanese Side	Kyrgyz Side	1) Experts from Japan: 11 persons	1) Staff allocated: 41 persons	2) Training in Japan: 11 persons	2) Land and facilities: Office space and training revenue.	3) Equipment: Dynamic response intelligent monitoring system, Schmidt hammer, infrared camera, electric drill, test hammer, etc.	3) Local cost: expenses for travel and equipment.	4) Local cost: Cost for travel, project operation, etc.	
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Project Period	June 2013 to January 2016	Project Cost	(ex-ante) 198 million yen, (actual) 221 million yen										
Implementing Agency	Ministry of Transport and Roads (MoTR) (Restructured from the Ministry of Transport and Communications (MOTC) in 2016)												
Cooperation Agency in Japan	CTI Engineering International Co., Ltd., Central Nippon Expressway Co., Ltd.												

### II. Result of the Evaluation

1 Relevance
<p>&lt;Consistency with the Development Policy of Kyrgyzstan at the time of ex-ante evaluation and project completion&gt;</p> <p>The transport and road sector was prioritized in the "Country Development Strategy" (2009-2011) for improvement of the quality of economic development. The "Road Sector Development Strategy 2015-2020" specifically aims at rehabilitation of international, national and local roads, improvement of the road management system and involvement of private sector in road maintenance. The target bridges and tunnels were located on these international and national roads. Thus, the project was consistent with the development policy of Kyrgyzstan at the time of both ex-ante evaluation and project completion.</p> <p>&lt;Consistency with the Development Needs of Kyrgyzstan at the time of ex-ante evaluation and project completion&gt;</p> <p>After the country's full independence in 1991, maintenance activities were not carried out adequately, and the low level of funding annually led to a loss of road surface. The project was consistent with MOTC's needs for effective and efficient maintenance management of bridges and tunnels which were located in the international and national roads at the time of both ex-ante evaluation and project completion.</p> <p>&lt;Consistency with Japan's ODA Policy at the time of ex-ante evaluation&gt;</p> <p>In the "Country Assistance Policy for the Kyrgyz Republic" (2012), one of the two priority areas was maintenance management of the transport infrastructure and correction of regional disparities, which included a support for capacity development of road maintenance management.</p> <p>&lt;Evaluation Result&gt;</p> <p>In light of the above, the relevance of the project is high.</p>
2 Effectiveness/Impact
<p>&lt;Status of Achievement for the Project Purpose at the time of Project Completion&gt;</p> <p>The Project Purpose was achieved by the project completion. Maintenance budget documents with breakdowns for both bridges and tunnels were prepared (Indicator 1). The database system was newly developed, and it was used for formulating maintenance budget for bridges and tunnels (Indicator 2).</p> <p>&lt;Continuation Status of Project Effects at the time of Ex-post Evaluation&gt;</p>

The project effects have continued since the project completion. The Ministry of Transport and Roads (MoTR) prepared the maintenance budget documents with breakdowns for bridges and tunnels for 2018 and 2019, and the budget document for 2020 was under preparation as of November 2019. The budget documents have been formulated on annual basis. MoTR has utilized the data from the developed database system for formulating maintenance budget for bridges and tunnels.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been partially achieved by the time of ex-post evaluation. The regular inspection has been conducted, and the data on routine maintenance of bridges and tunnels have been updated by RMD at least twice a year (Indicator 1). RMD prepared the short-term bridge maintenance plan for 2017-2018, but after that it has not developed any plan for maintenance of bridges and tunnels (Indicator 2). The budget plan has been developed, not based on the maintenance management plan (Indicator 3), but only on the actual needs and requests from RMD's structures such as UADs and the Regional Offices (ROs) as well as different authorities (parliament members, local authorities etc.). Among the bridges included in the maintenance management plans for 2014-2016 and 2017-2018, four bridges were repaired. Regarding tunnels, all of the existing five tunnels were repaired during the project period (Indicator 4). After the project completion, no tunnel has been repaired, because any has not needed to be repaired yet, which also leads to the non-existence of a new maintenance management plan.

<Other Impacts at the time of Ex-post Evaluation>

No positive or negative impacts were confirmed at the time of ex-post evaluation.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

#### Achievement of the Project Purpose and Overall Goal

Aim	Indicators	Results																																												
(Project Purpose) MOTC's capacity is improved for maintenance cost estimation of bridges and tunnels on the basis of inspection results.	1. Maintenance budget document with breakdowns for bridges and tunnels is prepared by [June 2015].	<u>Status of achievement: Achieved (Continued)</u> (Project Completion) - Maintenance budget documents with breakdowns for bridges (2015-2017) were prepared in November 2014. Maintenance budget documents with breakdowns for tunnels (2014-2016) were prepared in October 2013. (Ex-post Evaluation) - MoTR has prepared the maintenance budget document with breakdowns for bridges and tunnels for 2018 and 2019.																																												
	2. Data from the newly developed database system is utilized for formulating maintenance budget for bridges and tunnels.	<u>Status of achievement: Achieved (Continued)</u> (Project Completion) - Data from the newly developed database system is utilized for formulating maintenance budget for bridges and tunnels for 2016. (Ex-post Evaluation) - MoTR has utilized the data from the developed database system for formulating maintenance budget for bridges and tunnels.																																												
(Overall goal) Maintenance status of bridges and tunnels is improved in Kyrgyzstan.	1. Regularly reported and updated data on routine maintenance of bridges and tunnels.	<u>Status of achievement: Achieved</u> (Ex-post Evaluation) - Data on routine maintenance of bridges and tunnels have been updated at least twice a year by RMD.																																												
	2. Formulation of maintenance management plan for bridges and tunnels	<u>Status of achievement: Partially achieved</u> (Ex-post Evaluation) - After the project completion, RMD developed the new short-term plan for bridge maintenance for the period 2017-2018. - The maintenance management plan for tunnels has not been developed.																																												
	3. Preparation of budgetary allocation from the maintenance management plan for bridges and tunnels	<u>Status of achievement: Not achieved</u> (Ex-post Evaluation) - The budget has not been allocated for bridges and tunnels based on the maintenance management plan.																																												
	4. A bridge and a tunnel chosen by maintenance management plan based on the nation-wide management criteria which is prepared in the project are repaired/replaced.	<u>Status of achievement: Achieved</u> (Ex-post Evaluation) - Among the bridges prioritized for repair in the bridge maintenance management plans developed, one bridge was repaired during the project period, and three were repaired after the project.																																												
		<table border="1"> <thead> <tr> <th></th> <th>Repaired bridge</th> <th>Location</th> <th>Year</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>At Bashy-Lugovoe</td> <td>30+500 km</td> <td>2013</td> </tr> <tr> <td>2</td> <td>Tokmok-Don Aryk-Rot Front</td> <td>14+000 km</td> <td>2016</td> </tr> <tr> <td>3</td> <td>Sosnovka-Kara Bulak</td> <td>9 km</td> <td>2018</td> </tr> <tr> <td>4</td> <td>Myrzake-Kara Shoro</td> <td>40 km</td> <td>2017</td> </tr> </tbody> </table> <p>- Five tunnels underwent repair works during the project period.</p> <table border="1"> <thead> <tr> <th></th> <th>Repaired tunnel</th> <th>Location</th> <th>Year</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Tunnel #1</td> <td>313m, 409 km</td> <td>2014</td> </tr> <tr> <td>2</td> <td>Tunnel #2</td> <td>355m, 410 km</td> <td>2014</td> </tr> <tr> <td>3</td> <td>Tunnel #3</td> <td>694m, 427 km</td> <td>2014</td> </tr> <tr> <td>4</td> <td>Kolbaev tunnel</td> <td>130 km</td> <td>2015</td> </tr> <tr> <td>5</td> <td>Tashkomur tunnel</td> <td>260m, 455 km</td> <td>2015</td> </tr> </tbody> </table>		Repaired bridge	Location	Year	1	At Bashy-Lugovoe	30+500 km	2013	2	Tokmok-Don Aryk-Rot Front	14+000 km	2016	3	Sosnovka-Kara Bulak	9 km	2018	4	Myrzake-Kara Shoro	40 km	2017		Repaired tunnel	Location	Year	1	Tunnel #1	313m, 409 km	2014	2	Tunnel #2	355m, 410 km	2014	3	Tunnel #3	694m, 427 km	2014	4	Kolbaev tunnel	130 km	2015	5	Tashkomur tunnel	260m, 455 km	2015
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Source: Project Completion Report and information provided by RMD.

#### 3 Efficiency

Both the project cost and period exceeded the plan (ratios against the plan: 112% and 110%, respectively). Outputs were produced as planned. Therefore, the project efficiency is fair.

#### 4 Sustainability

##### <Policy Aspect>

One of the measures stated in the “Main Directions for Development of Road Sector for 2016-2025” is the introduction of system for maintenance of bridges and tunnels developed and recommended.

##### <Institutional Aspect>

The demarcation of responsibilities between MoTR and the Road Management Units under the Oblast-level has remained same, that is, MoTR Headquarters makes decisions on policy, regulation and budgeting, and RMD takes responsibility for the nationwide maintenance, database system for maintenance planning, and inspection and condition rating. The Project’s recommendation on the division of responsibilities for data management among RMD, UADs/ROs and DEUs has not been incorporated. There have been 44 staff assigned to RMD, and the number has been sufficient to carry out duties, according to RMD itself. Under the Oblast-level, ROs, UADs and DEUs have overseen data management of maintenance, five-year visual inspection, disaster countermeasures, cleaning, and so on. Out of the six interviewed ROs and UADs, four units answered that the number of staff has been sufficient. The network system has not been developed to connect data of RMD, UADs/ROs and DEUs, though it had been expected as a recommended action, because the software has been only installed at RMD by the project. RMD as well as UADs and ROs do not feel any inconvenience in transferring the relevant data by other means such as facsimile.

##### <Technical Aspect>

RMD answered that their staff have sustained sufficient skills, as they have utilized the database system manual developed by the project. As well, the interviewed ROs and UADs replied that their staff have sustained sufficient skills. However, any refresher training for existing staff or introductory training for newly joined staff have not been conducted at RMD, ROs, UADs and DEUs. The reason is that the staff is overloaded with road works and that the management is not willing to support their busy staff’s participation in the training. Out of 30 Master Trainers trained by the project, 21 have remained in MoTR.

Disbursed budget of MoTR for construction and maintenance (thousand KGS)

	2016	2017	2018	2019
Bridges	43,364.3	69,196.0	60,653.7	52,941.0 (plan)
Tunnels	NA	64,979.0	64,978.0	83,500.0 (plan)

##### <Financial Aspect>

The budget of MoTR for construction and maintenance of bridges increased much in 2017, but continuously decreased afterwards in 2018 and 2019, while the budget for tunnels have been on an increasing trend, as the table shows. MoTR did not provide a clear answer as to whether the budgets have been sufficient. Regarding ROs and UADs, all of the six interviewed offices answered that the budget allocation to their offices has not been sufficient for maintenance management of bridges or tunnels.

##### <Evaluation Result>

In light of the above, there have been problems in the institutional, technical and financial aspects. Therefore, the sustainability of the effects is fair.

#### 5 Summary of the Evaluation

The Project Purpose was achieved, and the project effects have continued. The Overall Goal has been partially achieved. In other words, MoTR has strengthened its capacity for maintenance cost estimation of bridges and tunnels on the basis of inspection results, but it has not formulated the maintenance management plan for preparing budget plans. As a result, maintenance works have been conducted not based of the plan but requests from the field. Regarding sustainability, absence of continuous training and insufficient budgets have been considered as problems. As for efficiency, both project period and cost exceeded the plan.

Considering all of the above points, this project is evaluated to be partially satisfactory.

### III. Recommendations & Lessons Learned

#### Recommendations for Implementing agency:

- MoTR is recommended to conduct refresher training for existing staff and introductory training for newly joined staff at RMD, ROs, UADs and DEUs in order to sustain their skills for maintenance management of bridges and tunnels, by coordinating their work to save time for capacity building. Applying for JICA Follow-up Cooperation Scheme could be considered.

#### Lessons Learned:

- In the project, it was expected that the budget should be allocated based on the maintenance management plan for bridges and tunnels. Actually, the maintenance management plan has been developed, but the budget plan has been formulated principally based on the needs and requests from the field level. The “appropriateness” of the budgeting process should be considered by examining the conditions surrounding the implementing agency such as the relationship with external organizations including local authorities or other force majeure such as natural disasters in the country context.



Bridge (Myrzake-Kara-Shoro) before repair.



Bridge (Myrzake-Kara-Shoro) repaired in 2016.