

Country Name	Project for the Capacity Building of Road Maintenance in the Kyrgyz Republic
Kyrgyz Republic	

I. Project Outline

Background	In the Kyrgyz Republic, 95% of the freight and passengers move by road, and the roads play a vital role not only in providing the transport linkage to other countries in Central Asia and Southwest Asia but also in supporting the livelihood of the local people. The total length of the road network in the republic is approximately 34,000km, and the public roads of 19,000km are managed by the Ministry of Transport and Communications (MOTC). However, the pavement ratio of the roads was only 40% in 2007, and the condition of the arterial roads connecting major cities, except for those rehabilitated with funds donated by the aid organizations, were not good. It was estimated that about 200km of the roads was losing their function each year, calling for an immediate action to improve the road maintenance capacity of MOTC.														
Objectives of the Project	Through the outputs such as the road inventory, manuals, training (lecture and OJT)/seminars, the project aimed at strengthening road maintenance capacity of MOTC, thereby contributing to proper road maintenance and improvement of economic activities and access to the public services. These objectives are set forth in PDM ver.2 (agreed in April 2009).														
	<ol style="list-style-type: none"> Overall Goal: Road network is properly maintained and economic activities and accessibility of public services are improved. Project Purpose: Road maintenance capacity (institution, management, technique) is improved. 														
Activities of the Project	<ol style="list-style-type: none"> Project site: All over the Kyrgyz Republic Main activities: 1) Elaboration of the road inventory (called "passport") by the project team, 2) Elaboration of the manuals on road design standard and on road maintenance by the project team, 3) Organization of the seminars for dissemination of the above manuals for MOTC, Production Line Road Management Units (PLUAD), Motor Road Maintenance Units (UAD) and Road Operation Enterprises (DEP), by the project team, 4) Implementation of the pilot projects as OJT on road maintenance, 5) Dissemination training on road maintenance for other areas than the pilot sites for the staff engaged in road maintenance, implemented by the project team and DEP, etc. 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: 10 persons</td> <td>1) Staff allocated: Over 20</td> </tr> <tr> <td>2) Training in Japan: 10 persons</td> <td>2) Land and facilities: Office space for Japanese experts, laboratory building, etc.</td> </tr> <tr> <td>3) Equipment: Laboratory test equipment, pavement test machines, computers, etc.</td> <td>3) Expenses: Cost for utilities in the experts' office.</td> </tr> <tr> <td>4) Local operation cost: 17 million yen for the local operation expenses.</td> <td></td> </tr> </table> 					Japanese Side	Kyrgyz Side	1) Experts: 10 persons	1) Staff allocated: Over 20	2) Training in Japan: 10 persons	2) Land and facilities: Office space for Japanese experts, laboratory building, etc.	3) Equipment: Laboratory test equipment, pavement test machines, computers, etc.	3) Expenses: Cost for utilities in the experts' office.	4) Local operation cost: 17 million yen for the local operation expenses.	
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Ex-Ante Evaluation	2007	Project Period	March 2008 to August 2011 (Extended period: March 2011 to August 2011)	Project Cost	(Ex-ante) 230 million yen (Actual) 207 million yen										
Implementing Agency	Ministry of Transport and Communications (MOTC)														
Cooperation Agency in Japan	Katahira & Engineers Inc.														

<Special perspectives considered in the ex-post evaluation>

- The Overall Goal is composed from two parts: (a) Proper maintenance of the road network and (b) improved economic activities and accessibility of public services. The latter part (b) was considered as a result of the first part (a). Therefore, the part (a) was verified as an Overall Goal of the project, and the part (b) was considered as an expected impact of the project.
- Indicators were not established to verify the latter part of the Overall Goal (b) "improvement of economic activities and accessibility to public services." At the ex-post evaluation, the following indicators were used: i) Increase of the commodity distribution, and ii) Increase of the number of the people who travel via maintained road for work or schools.

II. Result of the Evaluation

1 Relevance
<Consistency with the Development Policy of the Kyrgyz Republic at the time of ex-ante evaluation and project completion> The project has been consistent with the Kyrgyz development policies, as appropriate management of the transport infrastructure, improvement of domestic and international road networks were set forth in the "Country Development Strategies" (2007-2009) (2009-2011) and "Road Sector Development Study (2007-2010)."
<Consistency with the Development Needs of the Kyrgyz Republic at the time of ex-ante evaluation and project completion > Since the main roads in the county form a part of the Asian Highway, the international requirement for the improvement of road maintenance was significantly high. However, the road pavement ratio was low, and there were great needs for road improvement.
<Consistency with Japan's ODA Policy at the time of ex-ante evaluation> Based on the policy dialogues, there were four assistance priority areas, one of which was economic infrastructure. In the Country

Assistance Policy being prepared at the time of ex-ante evaluation, one of the priorities was development of the transport infrastructure for the economic development.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement for the Project Purpose at the time of Project Completion>

The project purpose was almost achieved. Manuals, road inventory¹ and handbook were elaborated for capacity building on road maintenance, and the training was conducted. As a result, MOTC mostly improved its capacity (for planning, information management, quality control, and monitoring) by the project completion, as shown in Table 4 below. Training for material testing and mixing design of asphalt, bitumen and gravel was conducted, but some participants could not exercise their learning because there were not laboratories in their work place.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

Since the project completion, most of the above-mentioned project outputs (manuals, training, etc.) have not continued. Regarding the non-use of the manuals, it is mostly because when the heads of PLUADs were changed, these outputs were not any longer shared with the newly assigned personnel. As for the road inventory, it was used only once in the year of the project completion when MOTC requested all PLUAD/UADs to collect the inventory data. However, it did not continue, because under the organizational changes in MOTC the responsibility for data collection was transferred from the General Directorate for Roads (counterpart section of the project) to another department (Road Maintenance Department) but the road inventory was not properly handed over to the new department². As a result, the data submission process from PLUAD/UADs to the central MOTC was not properly conducted and finally not continued³.

And, the training on the laboratory work has not continued, since MOTC did not establish any new laboratories due to the budget shortage. Only the monitoring system has remained for IRI (International Roughness Index) measurement with VIMS (Vehicle Intelligent Monitoring System), which has been updated by JICA's other support⁴.

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

The Overall Goal was achieved. First, the road network has been quite properly maintained as shown with IRI measurement. The condition of the monitored roads is better than planned, as the pothole patching has been done properly by DEPs. Second, the winter closure period has decreased. Although the exact data was not available, it can be supposed so, as the time for snow

removal and cleaning from avalanche decreased. This has been made possible with the procured equipment (multipurpose vehicles, wheel loaders, etc.) by the Project for Improvement of the Equipment for Road Maintenance in Issyk-Kul and Chui Oblasts.

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

The following positive impacts have been reported, although it is difficult to strictly verify the project's attribution. First, commodity distribution has slightly increased (Table 1), such as goods and clothes imported from China Road, coal produced at Kara-Keche sent to the northern part of the country, agricultural products (fruits and vegetables) from Bishkek to Naryn. Second, the traffic volume and the number of the people traveling via the maintained road has increased (Table 2, Table 3). There was a decrease in 2010 and 2011 due to the rehabilitation work along the section by other donors. Third, the residents living in Chui, Issyk-Kul and Naryn oblasts answered that the improved road has brought them a better access to the agricultural/livestock market, and they can now sell their products directly in the central market (not via the middle men) and earn more money. No negative impact by the project has been observed in terms of the environmental and social aspects.

<Evaluation Result>

Capacity development of MOTC (Project Purpose) was achieved by the project completion, and maintenance of the road network (Overall Goal) has been achieved, too. However, the project outputs such as the manuals and road inventory have not continued, and therefore it cannot be said that the achievement of the Overall Goal has been fully attributed to the project effects. Therefore, effectiveness/impact of the project is fair.

Table 1. Transportation of cargo by automobile cargo in Naryn (million tons)

	2008	2009	2010	2011	2012	2013	2014
Naryn	0.8	0.9	0.9	0.9	1.0	1.0	1.0

Source: BNT UAD.

Table 2. Annual Traffic Volume along BNT Road

	2008	2011	2014
Kuvaky Pass section (147km)	5,030	3,758	7,510
Tokmok Bypass section (53km)	2,896	7,004	10,040

Source: BNT UAD.

Note: Figures include truck, trailer, passenger car, minibus, buses.

going to Dordoi Bazaar via BNT (Bishkek Naryn Torugart)

Table 3. Transportation of passengers by road passenger transport in Naryn (million persons)

	2008	2009	2010	2011	2012	2013	2014
Bus	5.8	6.0	1.7	1.8	1.6	1.8	1.9
Trolleybus	0.1	0.3	0.1	0.1	0.1	0.1	0.1
Taxi	--	--	3.6	3.9	4.4	4.3	4.4
Total	5.9	6.3	5.4	5.8	6.1	6.2	6.4

Source: National Statistics Committee.

Table 4. Achievement of the Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) Road maintenance capacity (institution,	1. Planning technique is established for road maintenance and repair.	(Project Completion) Achieved . The manual was introduced and disseminated to representative such as Directors and Chief Engineers from all PLUADs/UADs through seminars and training courses. MOTC carried out

¹ The road inventory contains information on the name of road, length (km), AADT (Annual Average Daily Traffic), IRI (International Roughness Index), type of pavement, condition of surface, age of pavement etc.

² Even after the organizational changes at the central MOTC in 2010, the project counterpart section remained the same until the project completion, while the responsibility of management of PLUAD/UADs including data collection was officially transferred to a newly established section. Inappropriate hand over of the inventory resulted in discontinuity of the data collection with the inventory.

³ In April 2011, MOTC made an order to all PLUADs/UADs to collect Inventory Data by July 2011. However, according to the Report made by JICA's Road Administration Advisor as of December 2011 out of 9 PLUADs/UADs only 4 collected Inventory Data.

⁴ Project for Capacity Development for Maintenance Management of Bridges and Tunnels.

management, technique) is improved.		training courses in the second year (2010) and third year (2011) based on the manuals for road maintenance and road design standard in rural areas where materials and equipment would be limited. (Ex-post Evaluation) <u>Not continued</u> . The manual on road maintenance has not been used at the visited PLUADs and DEP.
	2. Information management is established for road maintenance.	(Project Completion) <u>Achieved</u> . MOTC disseminated the developed road inventory to all PLUAD/UADs. (Ex-post Evaluation) <u>Not continued</u> . The road inventory has not been used at MOTC and PLUAD/UADs.
	3. Quality control system is established for road maintenance and repair.	(Project Completion) <u>Mostly achieved</u> . The laboratory test handbook attached to the Road Design Standard Manual, and partial translation of ASSHTO (American Association of State Highway and Transportation Officials) standard were ready to use. Training was conducted on material test in laboratory and the handbook and manuals. (Ex-post Evaluation) <u>Not continued</u> . There was no training on the laboratory test.
	4. Monitoring system and evaluation method are established.	(Project Completion) <u>Achieved</u> . The pavement roughness monitoring system with the simple and inexpensive measuring device (VIMS) was introduced and applied for IRI (International Roughness Index) measurement. (Ex-post Evaluation) <u>Continued</u> . The road network has been monitored by MOTC and the Design Institute for IRI measurement with VIMS.
(Overall Goal) Road network is properly maintained and economic activities and accessibility of public infrastructure are improved.	1. National target of average Road Roughness Index is less than 6.	(Ex-post Evaluation) <u>Achieved</u> . IRI information by using VIMS (March 2015) was as follows: - Bishkek-Osh Road: 3mm/m. - Issyk-Kul Ring Road: 4.5 mm/m
	2. Highway is trafficable year-roundly.	(Ex-post Evaluation) <u>Achieved</u> . Time for cleaning from avalanche decreased compared to before the project (6 to 2 hours).

Source: Terminal Evaluation Report, interview with MOTC, PLUAD/UADs, DEPs, etc.

Note: There was one more indicator (Indicator 4) of the Project Purpose in PDM ver.2 which says “Necessary information is provided for contract-out of road maintenance works.” This was not used for the ex-post evaluation, since the project decided to abandon the activities related to this indicator due to its duplication with other donor’s activity and the change in the situation related to the contract-out of the road maintenance work

3 Efficiency

The project cost was within the plan (ratio against the plan: 90%). As for the project period, the 3rd year contract between JICA and the Japanese consultant was delayed so as to avoid the influence of the political instability in 2010. Even deducting this delay, the project period still exceeded the plan (ratio against the plan: 103%).

Therefore, efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

The transport sector is set as one of the prioritized areas in the “National Sustainable Development Strategy of the Kyrgyz Republic (2013-2017),” which focuses on improvement of domestic road network and ensuring of the country’s transport independence as well as on rehabilitation of international transport corridors. Also, improvement of the domestic and international network is supported in the draft of the Road Sector Development Strategy up to 2025 presented by MOTC⁵.

<Institutional Aspect>

Roles of MOTC, PLUAD/UADs and DEPs are the same as those before the project. During the project period, there were organizational changes within MOTC⁶. MOTC succeeded in avoiding its influence on activity implementation during the project period, but after the completion, it resulted in the bad transfer of the project outputs due to the personnel transfer and changes in responsibilities of some departments. The road sector reform has been discussed including the integration of PLUADs and DEPs into state enterprises⁷. However, as of the ex-post evaluation, it has not been realized and there is no definite plan yet. The Road Maintenance Department (RMD) which supervises PLUAD/UADs and DEPs has no staff who participated in the project, but the number of the personnel including those for operation of VIMS equipment is sufficient. However, the unbalanced age structure in MOTC is still an issue, as young staff does not remain at MOTC long due to its low salary. Regarding PLUAD/UADs, there are few staff who have worked since the project period, but the number of the staff is sufficient to continue maintenance work introduced by the project. At DEPs, too, the number of the personnel is sufficient except DEP955 where there has been a frequent turnover. The function of the laboratory in Kochkor has remained same, the

⁵ The draft is expected to get approval within 2015.

⁶ Before 2009, general management of PLUAD/UADs came under the General Directorate of Roads (main counterpart of the project). In 2009, the state enterprise named Kyrgyzavtozhodoru was created to bring PLUAD/UADs and DEPs under one umbrella. This was intended as a first step in the separation of the state-owned maintenance organization (as a supplier of road repair and maintenance services) from the Ministry (as a client). However, in 2010 the reform process stalled and Kyrgyzavtozhodoru was integrated into MOTC’s RMD (Road Maintenance Department), which today handles management of PLUAD/UADs and DEPs.

⁷ With pressure from the government and donors, MOTC is preparing the road sector reform. In the reform draft, tentatively it has been argued that MOTC would remain as it is, but the existing Road Maintenance Department will be independent as the Road Agency. PLUADs together with DEPs are being planned to be several state enterprises for road maintenance and construction under multi-year contracts with the Road Agency. The state-owned equipment are being planned to transfer to these state enterprises.

number of the staff is sufficient to conduct pavement quality control. The monitoring of the procured equipment has been conducted appropriately through reporting from PLUAD/UADs and supervision from RMD. From 2015, technical supervision of road maintenance done by PLUAD/UADs and DEPs will be conducted by contracted consultants.

<Technical Aspect>

RMD has sufficient techniques, as it is implementing JICA Project for Capacity Development for Maintenance Management of Bridges and Tunnels, as well as projects of other donors, by which they are strengthening skills related to the inventory⁸, budget planning and prioritizing. As well, PLUAD/UADs and DEPs have sufficient techniques for road management works through OJT in these donors' projects for road maintenance. As for the laboratory in Kochkor, the staff mostly has sufficient techniques for quality control work, and it is trying to obtain the national qualification as a state laboratory with use of the technologies obtained from the project. The procured equipment has been operated and maintained properly, although the manuals on the procured equipment are written in Japanese or English⁹. Although MOTC does not have a systematized training specific on road maintenance due to the budget shortage, PLUAD/UADs and DEPs send the new staff to the training on the topics including public procurement, working in quarry, emergency and civil defense, etc. Besides, technical exchange is conducted upon necessity among the staff of the target PLUAD/UADs and DEPs and those under the other projects¹⁰. Besides, the Central Repair Workshop (CRW) under PLUAD4 in Issyk-Kul is planning to organize training courses on operation and maintenance of road machineries and equipment in cooperation with a local vocational school¹¹. As described in the section of effectiveness/impact, the manuals and road inventory developed by the project have not been utilized. And, the training on the laboratory test has not been conducted.

<Financial Aspect>

The main budget source for road maintenance is the public budget from the Ministry Finance. Recently, the government has initiated fee collection from the trucks and buses for using roads, as a trial¹². DEPs have additional revenue through providing services to the third parties. The budget of MOTC for road maintenance has annually increased (1,349 million KGS in 2012, 1,638 million in 2013, 1,733 million in 2014 and 1,747 (planned) in 2015), which has been sufficient for operation of VIMS equipment, maintenance of the laboratory.¹³ Regarding the budget of PLUAD/UADs, it has been sufficient for road maintenance works but not for capacity building of the personnel.

<Evaluation Result>

Some problems have been observed in terms of the institutional, technical and financial aspects of the implementing agency. Therefore, sustainability of the project is fair.

5 Summary of the Evaluation

The Project Purpose was achieved by the project completion, but it has mostly not continued. In other words, MOTC mostly improved its capacity for road maintenance through the outputs such as the manuals, road inventory, and monitoring system. However, most of these outputs have not continued, mainly due to the personnel change. Therefore, although the Overall Goal has been achieved, as shown by IRI data and increase of cargo and traveling persons, it cannot be said that it has been fully attributed to the project effect. Regarding the sustainability, the change in the responsible section during the project period has affected negatively in the continuity of the project outputs (manuals, inventory, training, etc.). As MOTC currently implements technical cooperation projects with donors including JICA, MOTC, PLUADs and DEPs have sufficient techniques for road maintenance, although MOTC has not established a systematized training specific on road maintenance. Financially, MOTC has not secured sufficient budget for capacity building activities. As for the project efficiency, the project period was slightly longer the plan, because the 3rd year contract between JICA and the Japanese consultant was delayed so as to avoid the influence of the political instability in 2010.

In light of the above, this project is evaluated to be partially satisfactory.

III. Recommendations & Lessons Learned

<Recommendations for MOTC>

1. It is recommended to explore if other budget sources (such as collection of the toll fare) are available than the public budget, so that the sufficient budget for road maintenance could be continuously provided to PLUADs and DEPs.
2. It is desirable to develop its own standardized training system for PLUADs and DEPs personnel on road repair and maintenance of the procured equipment.

<Lessons Learned for JICA>

1. In the project, some of the project outputs (manuals, road inventory, etc.) have not been used since the project completion due to the organizational and personnel changes. Even though manuals, formats or other outputs are produced by the project, their continuous use would not be guaranteed unless they are authorized and approved by the responsible agency. In order to ensure the continuity of the project outputs after the project completion or after the personnel is changed, the process of authorization and approval should be covered within the project scope. And, an indicator to verify whether these authorization and approval of the project outputs are realized is necessary.
2. In the project, the manuals on the procured equipment were written in Japanese or English. In case the manuals on some procured equipment are written in foreign languages, they should be prepared also in the local language so that the staff in charge could refer to them whenever necessary. When a project plans to purchase equipment, JICA overseas office and experts need to carefully consider if the instruction and/or manual of the equipment in a local language should be included or not.

⁸ The inventory for bridges and tunnels was introduced by JICA Project for Capacity Development for Maintenance Management of Bridges and Tunnels, and the new road inventory was introduced by World Bank.

⁹ The staff of the laboratory is translating the manuals with support from JICA expert (Road Administration Advisor at MOTC).

¹⁰ For example, the staff of DEPs and asphalt plants in Chui and Issyk-Kul oblasts closely communicate with those in Naryn oblast where another grant aid project was implemented in 2007, when they need to solve similar issues related to the procured equipment. Also, DEPs under BNTUAD use the laboratory in Kochkor established by this project, when they check asphalt quality and composition of sold used for winter maintenance.

¹¹ At the time of the ex-post evaluation, the vocational school was in the process of getting licensed from the Ministry of Education to start the courses. It is expected that the theoretical part will be given by the school and the practical skills will be provided by CRW.

¹² This trial has been supported by the parliamentarians, but it still needs to be officially approved.

¹³ The laboratory itself has been functioning, but the staff desire an increase in their salary after the laboratory gets certified, when it could provide serviced on a paid base.



(Issyk-Kul Road after the pothole patchwork)



(Equipment procured in Kochkor Laboratory)