

Country Name	Project for Improvement of the Equipment for Road Maintenance in Issyk-Kul and Chui Oblasts
Kyrgyz Republic	

I. Project Outline

Background	In the Kyrgyz Republic, as more than 95% of the freight and passengers move by road, 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. 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 by donors, 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 road maintenance capacity of the Ministry of Transport and Communications (MOTC).				
Objectives of the Project	To stabilize the transport in the region and the access of the local people, by procuring necessary machinery and equipment and strengthening the system for road maintenance, in order to promote the human exchange and commodity distribution and activate the economic and social activities in the region.				
Outputs of the Project	<ol style="list-style-type: none"> 1. Project Site: Issyk-Kul and Chui Oblasts 2. Major Project Component: Procurement of machinery and equipment for road maintenance: Asphalt cutters, vibration compacters, hand breakers, air compressors, asphalt sprayers, etc. 3. Kyrgyz Side: Land securement and infrastructure preparation for the asphalt plants, payment the bank commission, tax exemption, personnel assignment for road maintenance, etc. 				
Ex-Ante Evaluation	2010	E/N Date	August 12, 2010	Completion Date	October 25, 2011
Project Cost	E/N Grant Limit: 974 million yen, Actual Grant Amount: 959 million yen				
Implementing Agency	Ministry of Transport and Communications (MOTC)				
Contracted Agencies	Katahira & Engineers International Itochu Corporation				

II. Result of the Evaluation

1 Relevance
<p><Consistency with the Development Policy of the Kyrgyz Republic at the time of ex-ante and ex-post evaluation></p> <p>The project has been consistent with the Kyrgyz development policies, as appropriate management of the transport infrastructure, improvement of domestic and international road networks are set forth in the “Country Development Strategy (2009-2011)” and “National Sustainable Development Strategy of the Kyrgyz Republic (2013-2017).”</p> <p><Consistency with the Development Needs of the Kyrgyz Republic at the time of ex-ante and ex-post evaluation></p> <p>Roads in Issyk-Kul and Chui Oblasts provide the linkage to other countries and play a vital role for the development of the tourism and economic sector, but the pavement ratio was low and the road condition was not good. There have been great needs for road maintenance.</p> <p><Consistency with Japan’s ODA Policy at the time of ex-ante evaluation></p> <p>The project was relevant with the “Country Assistance Program for the Kyrgyz Republic (2009),” in which the development of the transport infrastructure for the economic development was one of the priority issues.</p> <p><Evaluation Result></p> <p>In light of the above, the relevance of the project is high.</p>
2 Effectiveness/Impact
<p>The project aimed at stabilizing the transport in the region and the access of the local people, by procuring necessary machinery and equipment and strengthening the system for road maintenance, and thereby contributing to promotion of the human exchange and commodity distribution and activation of the economic and social activities in the region.</p> <p><Effectiveness></p> <p>By utilizing almost all the procured equipment, the project mostly produced the expected outcome in both Issyk-Kul and Chui oblasts. The target of road repair (overlay) was set forth as 10km/year, and more road than planned was annually repaired after 2012. In 2014, more roads were repaired in both of Issyk-Kul and Chui oblasts than targeted. As for the road patching, as the data on the repaired length (km/year) was not available, the comparison between the actual value and planned value is not possible. Comparing the repaired area (m²/year) in 2014 with that before the project (2009), more roads were repaired in Issyk-Kul but not Chui. The reason for the decrease in Chui is that the roads had been rehabilitated with the support of China in 2011-2012 and therefore there were not many potholes to be repaired in the target roads.</p> <p>As the qualitative effects, the procured equipment has contributed to the improved work efficiency, as the following examples show. First, by utilizing the procured hand breakers and air compressors, the work of pothole patching which used to take two days can be done for one day with less human powers. Second, the asphalt finishers have swelled the pavement amount from 100 tons to 200-300 tons per day. Third, due to the constructed asphalt plant and aggregate plant, the Road Operation Enterprises (DEPs) do not have to buy asphalt from the private companies or outsource the pavement work to the private companies, which reduced the work time and cost¹. Forth, with</p>

¹ In Chui Oblast, there was no asphalt plant or aggregate plant before the project. In 2014, the constructed asphalt plant produced 11,435 thousand tons and the aggregate plant produced 17,089 tons, respectively. In Issyk-Kul Oblast, the old asphalt plant and aggregate plant under PLUAD 4 used to produce 510 tons and 900 tons, respectively, before the project. The newly constructed plants can produce 11,170 tons and 15,000 tons, respectively.

the multipurpose vehicles and wheel loaders, time for snow removal has been reduced to one-second or one-third.

<Impact>

The expected impacts of the improved roads were (i) the increase of the human exchanges (Table 1), commodity distribution (mainly, agricultural products) (Table 2) and tourists (Table 3) and (ii) improvement of the livelihood in winter². There has been an increase in the number of the passengers transported by bus and taxi and transported cargo in both oblasts and the tourists in Issyk-Kul oblast³. However, it is difficult to strictly verify how much the improved roads have contributed to these increases⁴. Also, the nearby residents told that due to the improved roads, the living condition of the nearby residents has been improved all the year, such as less dust and noise from the roads, easier access to the agricultural and livestock market, improved traffic safety, and decreased expense for car maintenance. Besides these expected impact, DEPs and PLUAD (Production Line Road Management Unit) 1 have increased the gravel pavement with crushed stones from the new aggregate plant. As a result of the more efficient production of aggregate, gravel and asphalt, DEPs can repair more roads by their own rather than contract out to third parties. Thus, the salary of DEPs' workers increased and they have become more motivated than before, according to the interviewed PLUAD personnel. It is also noteworthy that the procured equipment (motor grader, multi-purpose vehicle, dump truck etc.) are used for emergency cases such as rock falls, avalanches and snow drifts. MOTC has contributed to disaster elimination in close coordination with the Ministry of Emergency Situations.

Table 1. Transportation of passengers by road passenger transport (million persons)

		2009	2010	2011	2012	2013	2014
Issyk-Kul	Bus	40.6	30.9	39.6	46.1	46.8	47.8
	Taxi	n.a.	1.3	1.3	1.3	1.7	1.7
Chui	Bus	104.5	108.7	112.5	114.1	115.7	116.6
	Taxi	n.a.	1.1	3.4	3.3	2.4	2.4

Source: National Statistics Committee.

Note: The figures for bus (2009) include those for taxi.

Table 2. Transportation of cargo by automobile cargo (million tons)

	2009	2010	2011	2012	2013	2014
Issyk-Kul	3.2	3.2	3.5	3.7	3.6	3.7
Chui	7.9	8.3	8.7	9.2	9.7	10.3

Source: National Statistics Committee.

Table 3. Tourists visiting Issyk-Kul Oblast (thousand persons)

	2009	2010	2011	2012	2013	2014
Tourists	487.3	333.8	493.2	783.6	691.2	817.9

Source: National Statistics Committee.

No negative impact on the natural environment has been observed. There was no land acquisition and no resettlement.

<Evaluation Result>

As described above, the roads have been repaired more than planned (overlay in both oblasts) and before (patching in Issyk-Kul) with the procured equipment, and the work efficiency has been much improved. Impacts have been brought by the improved roads, such as more active human exchanges and commodity distribution and improved living condition of the nearby residents. Thus, the project effectiveness/impact is high.

Quantitative effects

Indicator		2009 (before the project)	2014 (target year) Target value	2012 Actual value	2013 Actual value	2014 (target year) Actual value
Indicator 1: Length of the roads repaired (Overlay) (km/year)	Issyk-Kul	0	10	10.7	14.9	15.1
	Chui	0	10	15.6	13.6	18.7
Indicator 2: Length of the roads repaired (Patching) (km/year)	Issyk-Kul	126	300	n.a.	n.a.	n.a.
	Chui	84	150	n.a.	n.a.	n.a.
<Supplementary information> Area of the roads repaired (Patching) (m ² /year)	Issyk-Kul	22,256	-	21,571	20,881	30,873
	Chui	95,719	-	48,449	66,209	65,300

Note: Data on the road patching was only available in m², as the data is managed in m² not in km by MOTC.

Source: PLUAD 1 and PLUAD 4.

3 Efficiency

Outputs were produced as planned. Both the project cost and period were within the plan (ratio against the plan: 98% and 91%, respectively). Therefore, efficiency of the project is high.

4 Sustainability

<Institutional Aspect>

Road maintenance work is conducted by MOTC. PLUADs 1, 4 and BNT (Bishkek-Naryn-Torugart) UAD are responsible in planning and budget management, and DEPs⁵ under these PLUADs are in charge of road maintenance work and maintenance of the procured equipment. These responsibilities have been the same as before the project. The road sector reform has been discussed including the integration of PLUADs and DEPs into state enterprises⁶. However, as of the ex-post evaluation, it has not been realized and there is no definite plan yet, either. The number of the personnel at DEPs has increased since before the project except two PLUADs and one DEP (PLUAD1: 22→30, PLUAD4: 25→23, BNTUAD: 22→16, DEP40: 29→37, DEP954:29→39, DEP958:43→55, DEP3:10→32, DEP4: 16→38, DEP7: 16→47, DEP10: 7→27, DEP33: 13→32, DEP35: 24→42, DEP39: 58→32). Also, staff has been newly hired as planned,

² It is supposed that the decrease in transportation of passengers and tourists in 2010 might be attributed to the political instability in the country in that year.

³ Issyk-Kul is famous for its Lake and ski resorts. Karakol Ski Center is selected tenth in the ranking among the best visa-free zones for the Russians, according to the Tourism Annual Report 2013.

⁴ For the increase of the transported passengers and cargo, there may be other factors, such as people's motivation for finding jobs or buying cloths in other oblasts and the increase of privately owned cars, according to the residents nearby the roads.

⁵ It was supposed that the procured equipment would be distributed to 10 DEPs under 4 PLUADs, but actually the machineries have been distributed to 19 DEPs under these PLUADs to utilize them for the full in the most efficiency way.

⁶ With pressure from the government and donors, MOTC is preparing the road sector reform to strengthen its transparency, responsibility and accountability. 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.

and the interviewed PLUADs answer that it is sufficient for operation and maintenance of the procured equipment.

<Technical Aspect>

Since MOTC does not have a systematized training specific on road maintenance⁷ due to the budget shortage, PLUADs 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 has been conducted among the staff of the target PLUADs and DEPs and those under the other projects⁸. Also, training opportunities are given for MOTC, PLUADs and DEPs through JICA training courses (a few per year)⁹. The staff of 3 PLUADs consider that they have sufficient techniques for operation and maintenance of the procured equipment. The manuals on operation and maintenance of the procured equipment are available in all the PLUADs and DEPs visited during the ex-post evaluation survey. However, some are not much used, as they are written in English and Japanese. Some DEPs have translated some manuals into Russian by themselves.

<Financial Aspect>

The budget of MOTC for road maintenance has annually increased (1,013 million KGS in 2008 to 1,747 million KGS (planned) in 2015), including the sufficient budget for the fuel/oil and maintenance/repair of the procured equipment. PLUADs and DEPs receive the budget whenever they need it for maintenance of the equipment. Thus, PLUADs and DEPs have not faced any financial problem. However, there is a budget shortage at the central level of MOTC, thus MOTC considers that the Road Fund¹⁰ further needs to be more efficiently managed for generating more income.

<Current Status of Operation and Maintenance>

Almost all the procured equipment has been utilized and they are expected to function for the supposed durable years or even more. The equipment is maintained in a systematized way¹¹. An operator is assigned for each machinery, and he/she is responsible for its daily maintenance (cleaning, oil change, etc.). Twice per year, more detailed maintenance service is implemented. Also, the maintenance is done regularly at the asphalt and aggregate plants by PLUADs: sieve change once/twice per month, belt change twice per year, cone change once per year, and oil change upon necessity. PLUADs and DEPs can easily buy necessary spare parts from the local market^{12,13}, and repair the machinery by their own. If the durability of the spare parts available in the local market is low, MOTC buys them from manufactures in Japan. When the breakdown is serious, they outsource it to the third parties.

Road maintenance work is monitored by MOTC through the technical supervision done by the contracted consultants. As for the monitoring or the maintenance work, the Road Maintenance Department controls the equipment status based on the database of the equipment and inspection visits to PLUADs and DEPs.

<Evaluation Result>

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

5 Summary of the Evaluation

Through the project, the roads have been repaired more than planned (overlay) and before (patching) with the procured equipment, and the work efficiency has been much improved. Also, impacts have been brought by the improved roads, such as active human exchanges and commodity distribution and improved living condition of the nearby residents. Since the project completion, PLUADs and DEPs have sustained sufficient techniques for road repair and maintenance of the facility and equipment, although MOTC has not established a systematized training specific on road maintenance. The manuals for operation and maintenance of the procured equipment have been available in all PLUADs and DEPs, which need to be translated to Russian for more utilization. As for the financial aspect, PLUADs and DEPs have not faced any financial problem, regardless of the budget shortage at the central level.

In light of the above, this project is evaluated to be highly 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 budget from the central government, so that the sufficient budget for road maintenance could be continuously ensured for PLUADs and DEPs.
2. It is recommended 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. At the ex-ante evaluation, the effectiveness indicator related to road patching was set forth as “length of the repaired roads (km/year).” However, the implementing agency does not manage the patching achievement data with this indicator and therefore the comparison between the actual value and planned value was not possible. JICA overseas office needs to monitor the project effects after the completion of GA projects, through the annual monitoring meeting with the implementing agency. To make the monitoring successful,

⁷ 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 school. At the time of the ex-post evaluation, the school was in the process of getting licensed from the Ministry of Education to start the course. It is expected that the theoretical part will be given by the school and the practical skills will be provided by CRW.

⁸ The staff of DEPs and constructed 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 under the technical cooperation “Project for Capacity Building of Road Maintenance,” when they check asphalt quality and composition of salt and sand used for winter maintenance.

⁹ The Group and Region-focused training on road maintenance and management has been implemented (2008-2015).

¹⁰ The Law on Road Fund was initially accepted in 1998, amended in 2008 in which the Road Fund is presented as an income generating tool for the maintenance and development of the road network. However, since that time the Road Fund has not been fully operated.

¹¹ Operation and maintenance of PLUAD4 is exceptional. For more efficient use of the big machineries whose number is limited, CRW was established under PLUAD4 by MOTC, which provides services to all DEPs in Issyk-Kul upon necessity. Since DEPs are located along the Issyk-Kul Ring Road, they have an easy access to one place.

¹² DEPs do not have a stock of spare parts due to the public budgetary system ruled by the Ministry of Finance. MOTC, PLUADs and DEPs receive a necessary budget on a monthly basis upon the request list.

¹³ When a spare part costs more than 500,000 KGS, they need to do the procurement through on-line public procurement portal, which is a little difficult. The budget has been allocated without problems.

setting forth of appropriate indicators is indispensable at the ex-ante evaluation. Without appropriate indicators, it is impossible to verify the project effects correctly, and it takes much time and costs for JICA overseas office to conduct the ex-post evaluation.

2. It was found at the ex-post evaluation that some manuals have not been used because they are not written in the local language. Most of the operation manuals on the procured equipment are available in English and Japanese. However, they should be prepared also in the local language so that the staff in charge could refer to them whenever necessary. At the preparatory survey stage, JICA overseas office and the implementing agency should confirm that translation of the manuals be included in the terms of reference for the supplier.



(Road being rehabilitated with asphalt in Issyk-Kul Oblast)



(Aggregate Plant constructed in Chui oblast.)