ODA Loan Project Mid-Term Review 2007

Evaluator: Hajime Onishi (Mitsubishi UFJ Research & Consulting)
Field Survey: May 2008

Project Title: The Democratic Socialist Republic of Sri Lanka "Provincial Road Improvement Project" (L/A No. SL-P76)

[Loan Outline]

Loan Amount / Contract Approved Amount / Disbursed Amount	: 5,811 million yen / 851 million yen[1] / 3,067 million yen (as of the end of May 2008)
Loan Agreement	: March 2003 (5 years after L/A)
Original Completion Date	: September 2008
Revised Completion Date	: August 2009
Loan Expiry Date	: May 2011
Executing Agency	: Ministry of Home Affairs, Provincial Councils and Local Government (today's Ministry of Provincial Council and Local Government)
Selection Criteria for Mid-Term Review	: In order to support some of the NGO activities that will be implemented in the project areas, and thereby generate a synergetic effect with NGO activities, the government of Sri Lanka plans to set up NGO coordination funds (up to 10 million yen each) with grants by utilizing the consulting services funds.

[Project Objective]

To improve transport efficiency and stimulate the economy in Central and Sabaragamuwa provinces by repairing the rapidly deteriorating road surfaces and bridges and strengthening the road operation and maintenance system.

Consultant : Nippon Koei (Japan) / Halcrow Group Limited (UK) / Engineering Consultants Ltd., MG Consultants (Pvt) Ltd. (Sri Lanka)
Contractor : Local enterprises, etc.

[Mid-Term Review Result]

Item	Appraisal (January 2003)	Result of mid-term review and ex-post evaluation results as estimated at the time of the mid-term review
Relevance	(1) National policy level In June 2002, the government of Sri Lanka announced the final draft of the "Connecting to Growth: Sri Lanka's Poverty Reduction Strategy" as a national development strategy that places importance on poverty reduction. In this draft, as an important sector for promoting the participation of the poor in the economic growth process, the government indicated that along with the telecommunications sector, the government would stress the	(1) National policy level With regard to the PRSP (Poverty Reduction Strategy Paper) ・ Implementation of the Economic Reform Programme (ERP) is cited in the PRSP mentioned in the left column. Additionally, infrastructure development is set out as one of the action plans to be implemented under the ERP, and "building a road network" is stipulated as a concrete approach. ・ Building a modern road network, along with the immediate upgrading of existing roads, has been pointed out as a target of the concrete approach described above.

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	importance of the transportation sector. In particular, the government announced its plan to improve the flow of traffic from regional to urban areas through the construction of an expressway network, development of the existing expressway network, and improvement of bus and railroad services; thereby providing the environment necessary to facilitate (i) the reduction in the cost of accessing the market for the poor and (ii) the mobility of labor. On the policy level, in the National Road Policy, which was adopted in 1997, the government points out the need for well-planned road network development that will contribute to Sri Lanka's social and economic development, and specifies as its goals, among other things, reduction of travel time without compromising safety, improvement of transportation comfort, and responding to the demand for passenger and freight transportation today and in the days to come. Additionally, in the National Transport Policy, which was announced by the Ministry of Highways in 2000, the government cites four issues related to the road sector: (i) adoption of a systematic plan that takes into consideration the need for a development project; (ii) coordination of strategy and policy within the transportation sector; (iii) construction of a road network connecting the area around Colombo to the countryside; and (iv) strengthening of the operation and maintenance of roads. (2) Planning level The road network in Sri Lanka was developed during the British colonial days as a network for transporting crops grown on plantations. With a total length of about 100,000 km, the road density in Sri Lanka is about 1,600 km per 1,000 km^2, which	With regard to the Road Sector Master Plan (RSMP 2005) ・ As described above, in light of the importance given to infrastructure development in the traffic and transportation sectors in the PRSP, the Road Sector Master Plan (RSMP) 2005 was adopted as a higher-order guideline for preserving consistency among various traffic development plans that had been adopted up to then, as well as effectively implementing road development projects. ・ In the aforesaid master plan, for the 10 years since 2006 (2006–2015), there is a development project for building a core road linking the Colombo metropolitan area with eight economic development blocks scattered throughout the country. One of the eight economic development blocks is Kandy, the capital of Central Province, one of the target areas of this project. In light of the above description, on the national policy level, the relevance of this project has remained unchanged from the time of the ex-ante evaluation to the present, and is thus judged to be highly relevant. (2) Planning level ・ Sri Lanka's principal industries are mining, agriculture and fisheries. Road transportation accounts for 92% of all domestic transport, so rail and air transportation constitute only a fraction of the total domestic transport. ・ In Sri Lanka, there are 91,862 km of roads, 11,671 km of which are national roads

<table>
<tr><th>Item</th><th>Appraisal (January 2003)</th><th>Result of mid-term review and ex-post evaluation results
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<tr><td></td><td>makes Sri Lanka’s road density one of the highest in South-West Asia (as of the time of appraisal). Additionally, since road transportation accounts for about 90% of surface transportation (passenger and cargo) in Sri Lanka, the road sector plays an extremely important role in Sri Lanka’s social and economic activities.
Meanwhile, the rehabilitation of the existing road network is not progressing smoothly. This is evidenced by the fact that in the countryside there are many spots along the arterial road network connecting Sri Lanka’s principal cities where existing roads have been neither rehabilitated nor widened. The government is using its own resources and donor support to construct new roads or widen and improve existing roads. However, despite these efforts, the transportation efficiency of existing roads has continued to remain low for various reasons including: limitation on the scope and scale of engineering works due to budgetary constraints; and lack of sustained manifestation of project effects due to inadequate operation and maintenance, even in cases where repairs are made on existing roads and new roads are constructed.</td><td>(categories A and B), 15,532 km are provincial roads (categories C and D), and 64,659 km are local roads (as of 2006).
・ The traffic volume has increased dramatically since the 1990s, but because most of the existing roads were built some 50 years ago, and because of the lack of proper operation and maintenance as well as proper repairs, the roads in Sri Lanka have noticeably deteriorated; thus resulting in greater cost for road users, reduced road traffic safety, lower quality and less efficient distribution of goods. In addition to the above, in many regions, the lack of a road network has resulted in slower economic activity and more Sri Lankans falling into extreme poverty.
・ It is against this background that, as part of its road development implementation policy, the Ministry of Highways has declared that “It is necessary to build a domestic road network by immediately rehabilitating more than 19,000 km of roads.”

In light of the above description, on the planning level, this project is judged to be highly relevant.</td></tr>
<tr><td>Effectiveness
(Impact)</td><td>(1) Operation and effect indicators
(i) Quantitative effects
Average of the data collected from the 10 routes sampled
<table><tr><th>Name of indicator</th><th>Ex-ante evaluation (2000 actual)</th><th>Target value (2010, 2 years after completion)</th></tr><tr><td>Average daily traffic (No. of vehicles/12 hours)</td><td>677</td><td>1,002</td></tr><tr><td>Vehicle operation cost saving (million rupees/year)</td><td>-</td><td>10.9</td></tr><tr><td>Time saving (million rupees/year)</td><td>-</td><td>12.8</td></tr></table>
Internal rate of return: EIRR 27.2% (value related to the 10 routes</td><td>(1) Operation and effect indicators
(i) Quantitative effects
In this mid-term review, of the roads to be widened and improved (approx. 600 km), the 10 routes sampled to calculate the EIRR value at the time of appraisal were reviewed. The table below summarizes the present condition of the 10 routes.</td></tr>
</table>

Item	Appraisal (January 2003)	Result of mid-term review and ex-post evaluation results as estimated at the time of the mid-term review
	sampled, project life: 20 years)	

Table: Actual average daily traffic and state of construction in 10 sampled routes

Road code[1], road name and road length (km) (10 routes in the EIRR calculation sample)			Ex-ante evaluation (2000)	Present[2] (May 2008)	Target (2010)	Phase [3]	Status[3]
CP/KD/325	Nawayalatenna Jambugahapitiya	4.2	1,462	883	2,164	2-1	Under construction
CP/KD/344	Teldeniya Corbests Gap	14.0	733	276	1,086	3	Not yet started
CP/MT/042	Beligamuwa Nilagama Dewahuwa	17.1	418	220	619	1	Completed
CP/MT/060	Dambuila Kandalama Kumbukkadanwela	9.2	438	356	648	1	Completed
CP/NE/048	Barthford Valley Road	10.6	834	359	1,235	1	Under construction
SP/KG/078	Andiramada Narambedde Imbutgassdeniya	8.8	331	915	490	1	Completed
SB/KG/027	Morontota Arandara	N/A	451	N/A	667	3	Outside of project
SP/KG/035	Yatagoda Beligala Batuwatta	11.9	531	430	786	2-1	Under construction
SP/RP/032	Kahawatta Haupe Manandola	7.4	1,336	390	1,977	1	Under construction
SP/RP/052	Kaltota Right Bank Roads	15.9	236	198	349	1	Under construction
Average			677	402	1,002		

Note 1: The road-code acronym CP stands for Central Province. The acronym SP/SB stands for Sabaragamuwa Province.
Note 2: Based on the responses by PMU of the Development Bureau of the Ministry of Local Government and Provincial Councils (MLGPC) and the consultants (a traffic census was conducted from the beginning to the middle of May 2008).
Note 3: As a result of a review of existing F/S conducted by the consultants, it was decided that the road improvement should be carried out in three phases. The details of the three phases are based on the Monthly Progress Report No. 36 (March 2008) and hearings held at MLGPC and the consultants.
Note 4: Other data are those contained in appraisal material.

Present value of indicators and the outlook for the manifestation of quantitative effects

(The present value of the traffic volume shown in the above table is the daily traffic at a specific time and place in May 2008. Due to seasonal variations and other factors, there remains the problem of data reliability.) With regard to those routes where improvements are being made, there has not been any significant increase in traffic; in fact, traffic has decreased by between 20% and 70% on each route due to construction work. Traffic has both increased and decreased on routes where the construction work has been completed (e.g., the daily traffic on the Beligamuwa Nilagama Dewahuwa road in Central Province was only about 50% of the average daily traffic at the time of the ex-ante evaluation [or only 35% of the target value], while the daily traffic on the Andiramada Narambedde Imbutgassdeniya road in Sabaragamuwa Province increased significantly after the

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		construction work was completed and has already surpassed the target value). In the future, it is desirable to check the extent to which the quantitative effects are manifested by periodically confirming the traffic trends on each of the routes built or rehabilitated under this project and, at the same time, within the implementation period of the project, develop at an early stage a system for collecting data on traffic volume. As for those routes where the construction work has been completed, travel time has been reduced exponentially (the travelling speed on the three routes that were observed in the field survey was anywhere from 10−30 km/hr[2] before the roads were improved, but after the improvement, the travelling speed increased substantially to anywhere from 40−60 km/hr). With regard to the time saving effect of the project on each route, it is believed that the desired effect assumed prior to the completion of the construction work or an effect greater than that can be expected.[3] <u>Changes in target values</u> There is a need to change the target values. These changes will be detailed in the "Efficiency" column of this report. The lack of funds has forced a narrowing of the project scope (the initial prescribed length of 600 km was shortened to 300 km). Of the four project phases (Phase 1, Phase 2-1, Phase 2-2, Phase 3), the construction contract in Phase 1 and Phase 2-1 has been completed, but given the limited amount of funds presently available, there is a strong possibility that road improvement work will not be undertaken on target routes beyond these two phases. Consequently, it will be necessary to change the sample routes selected for calculating the target values of operation and effect indicators (selected at the time of appraisal for calculation of target values) in order to avoid the impact of the reduced scope. The details of the necessary changes are provided in the "Indicators set for use at time of ex-post evaluation" column described below.
	(ii) Qualitative effects ・ Improvement of transportation efficiency in the countryside	(ii) Qualitative effects As noted earlier, on routes where construction work has been completed, travelling time

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	・ Rejuvenation of the regional economy	has been significantly reduced (on some routes, the travelling time has been reduced by about 75%); thus resulting in improved transportation efficiency. Furthermore, in the case of improved provincial roads and arterial national roads that have been connected, local residents' access to agricultural markets and social facilities (schools, hospitals, etc.) has been greatly improved. In the vicinity of the Dambuila – Kandalama – Kumbukkadanwela road (CP/MT/060, road improvement work completed), which was a target of the field survey conducted under this review, there are many world heritages, including the Ancient City of Sigiriya, various tourist facilities and large hotels[4]. Thus, as a result of improved access to these sightseeing spots and facilities, it is believed that the road is contributing to an increase of income from tourism. Additionally, the Kahawatta – Haupe – Manandola road (SP/RP/032, currently being improved) goes through a precipitous area, and in its vicinity, there are large-scale natural rubber plantations, tea plantations and the like.[5] After the road improvement work is completed, among other benefits, it will be easier to transport agricultural products from these plantations and purchase agents will be able to access them more easily; thereby contributing to the rejuvenation of the regional economy.
	(2) Factors that may influence the effectiveness and impact (i) Coordination with NGO In order to support some of the NGO activities that will be implemented in the project areas, and thereby generate a synergetic effect with NGO activities, the government of Sri Lanka plans to set up NGO coordination funds (up to 10 million yen each) with grants by utilizing the consulting services funds. The selection, employment and activities of NGOs to be targeted will be decided after due consultation with the government.	(2) Factors that may influence the effectiveness and impact (i) Coordination with NGO NGO coordinated projects were implemented from 2005 to January 2008, and the work to improve the feeder roads[6] in Sabaragamuwa Province and Central Province was funded with grants drawn from part of the funds allocated to cover the consulting services expenses. The NGO coordinated projects were implemented as follows: ・ As a result of consultations with the executing agency and consultants, from the perspective of securing the coordination with this project, the theme "Improvement work on feeder roads by NGOs and CBOs (linking rural areas and quasi arterial roads)" was adopted as a NGO coordinated project.

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		・ NGOs and CBOs were publicly invited to participate in this NGO coordinated project. 21 groups submitted proposals. ・ Evaluations were made through a two-tiered selection process in accordance with the project's own evaluation criteria.[7] Two groups (CBOs) were selected. ・ After concluding contracts with the selected CBOs, road improvement work and construction of an assembly hall were carried out in the rural feeder road sections[8] of the Kegalle District of Sabaragamuwa Province and the Kandy District of Central Province, which are residential areas for the said CBO residents. Some 1.3 million rupees[9] and 1.9 million rupees have been spent for projects conducted in Sabaragamuwa Province and Central Province each, and in either case, the construction has already been completed. According to an interview with a leader of one of the two aforesaid CBOs (Sabaragamuwa Province), the project has had various positive impacts on the beneficiaries. These include (i) significantly reducing the time it takes children to commute to school; (ii) significantly reducing residents' commute time; (iii) making it possible to use vehicles to transport rice, the principal agricultural product; and (iv) enabling residents to possess motorcycles thanks to the improved road surface.[10] To maximize the effects of these NGO coordinated projects, in the future, in cooperation with the aforementioned CBOs, it is deemed necessary to consider the possibility of (i) implementing a similar project in other regions or (ii) undertaking other activities utilizing CBOs and NGOs.
	(ii) Coordination with grants and technical assistance None	(ii) Coordination with grants and technical assistance None
	(iii) Coordination with other donors <u>Coordination with ADB</u> While JBIC coordinates with ADB, its principal partner in Sri Lanka's road sector, and others, JBIC has adopted a policy of	(iii) Coordination with other donors <u>Coordination with ADB</u> This project and ADB's Road Sector Development Project are being actively coordinated.[11] In addition, according to Central Province's Road Development

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	providing support centered on hardware, including improvement of the existing road network, as well as support centered on software. The latter includes improvement of the operation and maintenance system based on institutional and organizational improvements as well as facilitation of implementation of residential relocation and implementation of traffic safety measures. In particular, with regard to the Road Sector Development Project, which ADB is currently implementing, JBIC is coordinating its activities with ADB as follows: ・ The Road Sector Development Project (i) provides support on the software front including making recommendations and offering guidance on improving the operation system within the road sector, and (ii) carries out road improvement work on local roads in the Western, North Western and Uva provinces. In particular, since component (ii) has many points in common with this project regarding the civil works and capacity building of the executing agency, JBIC will strive to facilitate the progress of the project and improve its effectiveness in close cooperation with ADB. ・ The Inter-Provincial Road Committee (established in December 2002), comprised of representatives of provincial governments and the Road Development Authority (RDA), needs to promote inter-provincial government cooperation to facilitate the progress of the project and improve its effectiveness by, among other things, promoting information exchange concerning ways to improve the project's operation and maintenance system. Since 1997, the World Bank has not provided support to the road sector.	Department, the construction and procurement methods used in ADB projects were referenced in undertaking civil works on routes targeted in this project. <u>Overall condition of Inter Provincial Road Committee Activities</u> The Inter-Provincial Road Committee (IPRC) is actively engaged in matters related to roads.[12] The main issues IPRC faces are: (i) budget allocation related to construction of provincial roads and their operation and maintenance; (ii) exchange of information related to the operation and maintenance system of roads; and (iii) a host of problems related to road administration. In particular, (i) appears to be at the center of discussion in IPRC. Three of the individuals involved in this project – the national project director of MLGPC's PMU and the director of the Road Development Department of Central Province and the director of the Road Development Department of Sabaragamuwa Province (both are also provincial project directors) – are also participating in IPRC activities. Incidentally, with regard to the exchange of information between provincial governments, since the National Project Steering Committee (NSPC) and the Provincial Project Steering Committee (PPSC), which are described below, are always in close communication, the significance of the activities of IPRC is limited in this project.

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	(iv) Environmental impact This project aims to rehabilitate the surface of existing roads and bridges, and as such, it is classified as Category B under JBIC's environmental guidelines. Moreover, even under Sri Lanka's Environment Law (enacted in 1980), EIA is not required. (v) Land acquisition and resident relocation No large-scale land acquisition is expected to be required. Likewise, resident relocation is not expected to be required. However, if such relocation turns out to be required as a result of detailed design, before the bidding procedure is commenced, the MLGPC is supposed to consult with JBIC and examine the pro and cons of targeting the relevant routes under this project.	(iv) Environmental impact EIA is not required, and impacts unexpected at the time of appraisal have not emerged. (v) Land acquisition and resident relocation No large-scale land acquisition has been required, and there have not been any resident relocation.
	(3) Factors influencing sustainability (i) Project implementation structure In this project, the Project Management Unit (PMU) set up in MLGPC's Development Bureau is responsible for inter organizational and inter provincial coordination, project planning and project monitoring and supervision, while the Project Implementation Units (PIU), which are set up in each province under PMU, are responsible for project monitoring and supervision on the provincial level, procurement related to civil works, etc. Additionally, a Project Steering Committee will be formed to monitor and supervise the progress of the project.	(3) Factors influencing sustainability (i) Project implementation structure PMU set up in MLGPC and the PIUs set up in the road development department in each province are properly monitoring and supervising the project. There seems to be no problems regarding the staff quality and size of both PMU and the PIUs. Additionally, consultations are held periodically by the National Project Steering Committee (NSPC) and the Provincial Project Steering Committee (PPSC) to ascertain the progress of the project, identify the problem areas, and so on (the NSPC holds a meeting once every three months; the PPSC, every month). Given that steering committees often become a mere façade in projects implemented in developing countries, it can be said that the implementation structure of this project is extremely solid.

<table>
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<tr><td></td><td>(ii) Operation and maintenance status
Operation and maintenance after the completion of road improvement work will be conducted by the civil works department of each provincial government.</td><td>(ii) Operation and maintenance status/system
The road development department of each province is responsible for all operation and maintenance activities undertaken after the completion of road improvement work. The operation and maintenance system of each province is shown in the table below.

Table: Operation and maintenance system of roads
in Central and Sabaragamuwa provinces
<table>
<tr><th>Item</th><th>Central</th><th>Sabaragamuwa</th></tr>
<tr><td>Staff involved in operation and maintenance (total)</td><td>59</td><td>75</td></tr>
<tr><td>Executive Engineer (managing staff)</td><td>9</td><td>10</td></tr>
<tr><td>Senior Technical Officer / Technical Officer</td><td>35</td><td>32</td></tr>
<tr><td>Other (supervisor, engineer, etc.)</td><td>15</td><td>33</td></tr>
<tr><td>Total length of provincial roads under jurisdiction (categories C, D)</td><td>Approx. 2,500 km</td><td>2,656 km</td></tr>
<tr><td>Length of roads per Executive Engineer</td><td>Approx. 278 km</td><td>Approx. 266 km</td></tr>
</table>
Source: Based on the hearings held at the road development departments of Central and Sabaragamuwa provinces
Note 1: The road categories (A, B, C, D, and E) are reviewed every year, and the budget allocation for operation and maintenance is changed in accordance with the category change. (Source: Sabaragamuwa Province’s Road Development Department)

In both provinces, the Executive Engineer is responsible for the overall management of the operation and maintenance activities of the roads and various activities. Each Executive Engineer has under his/her jurisdiction about 270 km of road, so additional personnel are desired.

(Reference: Sri Lanka’s road operation and maintenance system)
・ Long-distance transport roads that run between cities (category A) and main arterial roads that connect to category A roads (category B): Planning, designing, construction as well as operation and maintenance are under the jurisdiction of the Road Development Authority, which is under the Ministry of Highway.
・ Provincial roads (categories C, D): Under the management of the Provincial Road Development Department / Provincial Road Development Authority of each province.</td></tr>
</table>

Item	Appraisal (January 2003)	Result of mid-term review and ex-post evaluation results as estimated at the time of the mid-term review
		・ Other local roads (category E): Under the management of local governments and village councils.
	(iii) Technical capacity As part of the consulting services provided under this project, along the lines of an ADB project, capacity building for organization control, road operation and maintenance planning, operation and maintenance of equipment and materials, and procurement monitoring and supervision will be carried out.	(iii) Technical capacity As part of the consulting services provided under this project, training programs are prepared and conducted for personnel from three organizations: (i) provincial governments, (ii) central government (MLGPC's Development Bureau), and (iii) PMU and PIU. Training provided includes project management, financial control, procurement monitoring and supervision, core skills proficiency (PC, report writing, etc.). Up to now, capacity building efforts have been made through implementation of the aforesaid program, OJT, participation in overseas seminars and the like. Capacity building appears to have progressed to some extent through the aforesaid program, but continued efforts at capacity building need to be made as the project moves toward completion. As of March 2008, 90% of the capacity building component has been completed (Source: Monthly Progress Report No. 36 [March 2008]).
	(iv) Financial status At the time of appraisal, JBIC and the central government of Sri Lanka agreed to secure enough funds for the operation and maintenance of local roads in each of the two provinces targeted in this project including roads to be rehabilitated under the project.	(iv) Financial status At present, the statement in the left column is not well known to stakeholders including the executing agency The central government has given subsidies to Central Province and Sabaragamuwa Province for road operation and maintenance. The provincial government budget for road operation and maintenance, including the said subsidies, is as shown in the table below. The road development departments of both provinces state that "the budget for road operation and maintenance tends to be inadequate."

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Table: Road operation and maintenance budget in Central Province and Sabaragamuwa Province

Budget FY	Central	Sabaragamuwa
FY2007 actual	Unknown	105 million Rs
FY2008 actual (under implementation)	80 million Rs	150 million Rs
FY2009 plan	150 million Rs	Unknown
Total length of provincial roads under jurisdiction (C, D)	Approx. 2,500 km	2,656 km
O&M budget per 1 km of provincial roads[1)]	Approx. 32,000 Rs/km	Approx. 56,000 Rs/km

Source: Based on the hearings held at the road development departments of Central and Sabaragamuwa provinces
Note 1: Calculated on the basis of the actual performance in FY2008. The road categories (A, B, C, D, and E) are reviewed every year, and the budget allocation for operation and maintenance is changed in accordance with the category change, etc.

(v) Others (external factors which may influence the sustainability)

The table below shows the changes in the cost of improving 1 km of roads incurred by the MLGPC's Development Bureau. As is described later in the "Efficiency" column, the cost of construction materials (especially asphalt) and labor cost have risen sharply in recent years, and this has caused the cost of road improvement to rise every year at a breakneck speed. As of 2008, it is estimated that the cost of improving 1 km of road is to be 22 million rupees, which is indeed four times the cost (5.5 million rupees) on which the estimate made by the project's F/S is based.

The main cause of the high cost is an external factor that cannot be controlled by the executing agency. Thus, there is a need to monitor the unit cost of road improvement in a timely manner. As is described later, the construction contract in Phase 1 and Phase 2-1 has already been completed, and so there is a need to periodically check, through monitoring and supervision by the consultants, whether the section of the road where the contract has already signed is improved within the contract amount.

<table>
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<tr><td></td><td></td><td>Table: Changes in the unit cost of road improvement
<table>
<tr><th>Year</th><th>Project milestones</th><th>Road improvement cost (per 1 km, unit: rupees)</th></tr>
<tr><td>2001</td><td>Premises of estimate at F/S</td><td>5,500,000</td></tr>
<tr><td>2003</td><td>Assumption at project L/A</td><td>6,700,000</td></tr>
<tr><td>2005</td><td>Consultant's estimate (Engineer's estimate)</td><td>11,500,000</td></tr>
<tr><td>2005</td><td>At the Phase 1 construction contract</td><td>12,600,000</td></tr>
<tr><td>2007</td><td>At the Phase 2-1 construction contract</td><td>19,600,000</td></tr>
<tr><td>2008</td><td>Present assumed cost</td><td>22,000,000</td></tr>
<tr><td colspan="2">Pace of unit cost increase (2008/2001)</td><td>400%</td></tr>
</table>
Source: PMU of MLGPC's Development Bureau</td></tr>
<tr><td>Reference</td><td></td><td></td></tr>
<tr><td>Efficiency
(1) Output</td><td>(1) Output
(a) Civil works
・ Road improvement work (approx. 300 km in Central Province, approx. 300 km in Sabaragamuwa Province)
・ Repair work on bridges (bridges, culverts, etc.)
・ Purchase of equipment and materials (equipment and materials for emergency rehabilitation, trucks, computers, etc.)</td><td>(1) Output
(a) Civil works
<u>Road improvement work</u>
As a result of a review of existing F/S by the consultants, it was decided that the road improvement work should be carried out in three phases. Details are shown in the table below. Phase 2 is further divided into Phase 2-1 and Phase 2-2.

Table: Routes targeted for the project divided into phases and the progress situation
<table>
<tr><th colspan="4">Central Province</th><th colspan="4">Sabaragamuwa Province</th></tr>
<tr><th>Phase</th><th>No. of construction contracts</th><th>No. of routes</th><th>Total length (km)</th><th>Phase</th><th>No. of construction contracts</th><th>No. of routes</th><th>Total length (km)</th></tr>
<tr><td>1</td><td>6 + 2</td><td>14</td><td>101.7</td><td>1</td><td>6 + 2</td><td>16</td><td>100.7</td></tr>
<tr><td>2</td><td>6</td><td>11</td><td>108.1</td><td>2</td><td>5</td><td>9</td><td>100.1</td></tr>
<tr><td>3</td><td>5</td><td>8</td><td>96.6</td><td>3</td><td>6</td><td>14</td><td>110.1</td></tr>
<tr><td>Total</td><td>19</td><td>33</td><td>306.4</td><td>Total</td><td>19</td><td>39</td><td>310.9</td></tr>
<tr><td colspan="5">Overall project plan (no. of contracts, no. of routes, total length)</td><td>38</td><td>72</td><td>617.3</td></tr>
<tr><td>Progress to date</td><td>8</td><td>19</td><td>143.2</td><td>Progress to date</td><td>10</td><td>22</td><td>161.4</td></tr>
<tr><td colspan="5">No. of contracts, no. of routes, total length as of May 2008</td><td>18</td><td>41</td><td>304.6</td></tr>
</table>
Source: PMU of MLGPC's Development Bureau
Note: The additional number of contracts in Phase 1 (2 each in Central Province and Sabaragamuwa Province) are ad-on contracts brought about by the cancellation of construction contracts accompanying the contractors' poor performance.</td></tr>
</table>

<table>
<tr><th>Item</th><th>Appraisal (January 2003)</th><th>Result of mid-term review and ex-post evaluation results
as estimated at the time of the mid-term review</th></tr>
<tr><td></td><td></td><td>Of the four project phases (Phase 1, Phase 2-1, Phase 2-2, and Phase 3), the construction contracts in Phase 1 and Phase 2-1 have been completed. As is shown above, the total road length already signed to this date is about 300 km.
The scope of the project has been reduced due to lack of funds (from the originally planned 600 km to about 300 km).[13] The main cause of the lack of funds is the sharp increase in the cost of road improvement due to three factors that have appeared in recent years: (i) the steep rise in the price of construction materials (mainly asphalt, cement[14], aggregate, etc); (ii) the increase in fuel cost accompanying the steep rise in the price of oil; and (iii) the steep rise in domestic labor cost[15] (for details of road improvement cost, see “External factors which may influence the sustainability”).
The government of Sri Lanka is planning to infuse funds equivalent to about twice the amount originally planned for the local portion (3.6 billion rupees in total). However, it is judged that unless more funds are injected, it will not be possible to complete the project in its entirety.[16]

<u>Repair work on bridges</u>
Repair work is being conducted on bridges in conjunction with the aforesaid road improvement work.

<u>Purchase of equipment and materials</u>
After the launch of the project, the required equipment and materials were reviewed, and bidding was carried out for the procurement of the equipment and materials. As of end of March 2008, except for several motor graders, all required equipment and materials have been purchased.[17]</td></tr>
<tr><td></td><td>(b) Consulting services
<u>Consulting services M/M</u>
<table><tr><th>Consultant category</th><th>Planned M/M
(Based on Variation Order No.8)</th></tr><tr><td>Team Leader</td><td>52.0</td></tr><tr><td>Expatriate</td><td>59.18</td></tr></table></td><td>(b) Consulting services
<u>Consulting services M/M</u>
<table><tr><th>Consultant category</th><th>Achieved as of March 2008</th><th>Achievement ratio of planned M/M</th></tr><tr><td>Team Leader</td><td>35.02</td><td>67.3 %</td></tr><tr><td>Expatriate</td><td>58.77</td><td>99.3 %</td></tr></table></td></tr>
</table>

Item	Appraisal (January 2003)	Result of mid-term review and ex-post evaluation results as estimated at the time of the mid-term review
	Local Staff 144.18 Construction Monitoring and Supervisory Engineer, etc. 1,417.60 *Total (Reference) 1,672.96* Source: Prepared from Monthly Progress Report No.36 (March 2008) Note: Construction monitoring and supervisory engineers include resident engineers, material engineers, quantity surveyors and bridge engineers. <u>Details of consulting services</u> ・ F/S review ✓ Determination of routes to be targeted ✓ Review of civil design, structure design, pavement design and road design ・ Bidding assistance ・ Construction monitoring and supervision ・ Environmental measures ・ Capacity building ✓ Proposals and guidance on capacity building of the road development departments of Central and Sabaragamuwa provinces for organizational control, road operation and maintenance planning, and operation and maintenance of equipment and materials ✓ Proposal and guidance on capacity building of MLGPC's personnel for project management and procurement monitoring and supervision	Local Staff 142.16 98.6 % Construction Monitoring and Supervisory Engineer, etc. 1,078.12 76.1 % *Total (Reference) 1,314.07 78.5 %* Source: Prepared from Monthly Progress Report No.36 (March 2008) <u>Details of consulting services</u> ・ F/S review ✓ Determination of routes to be targeted → completed ✓ Review of civil design, structure design, pavement design and road design → completed ・ Bidding assistance → being implemented ・ Construction monitoring and supervision → being implemented ・ Environmental measures→ being implemented ・ Capacity building With regard to capacity building of personnel in government agencies (MLGPC's Development Bureau, Central Province's Road Development Department, and Sabaragamuwa Province's Road Development Department), it appears that the planned training programs have been implemented in a favorable manner. Capacity building is progressing without problems.
(2) Period	(2) Period: March 2003 − September 2008 (at the time of appraisal, 55 months)	(2) Period <u>Delay</u> According to PMU of MLGPC's Development Bureau, the project is expected to be completed in August 2009, with a delay of 11 months.[18] The delay is caused by the fact that construction has been significantly delayed in some road sections (Kaltota Right Bank Roads in Sabaragamuwa Province, etc.) because of

Item	Appraisal (January 2003)	Result of mid-term review and ex-post evaluation results as estimated at the time of the mid-term review
		poor performance of some of the contractors. As has been described, steps are being taken to minimize the delays by cancelling the contracts of contractors whose performance has been extremely poor or providing them with continuous guidance.[19] <u>Definition of project completion</u> According to PMU of MLGPC's Development Bureau, the project will be considered completed by when: (i) the improvement work is completed; (ii) the roads are inspected; (iii) everything pointed out in the inspection report is resolved; and (iv) the routes are handed over to the government. In other words, the completion of this project is defined as when the last route is handed over to the government. Contractors will be liable for one year for any defects found after the routes are handed over to the government. If the contractors are deemed have caused the defects, it will be their responsible to remedy them.
(3) Cost	(3) Cost Breakdown Foreign currency: 5,811 million yen (same as the agreed loan amount) Local currency: 1,859 million Sri Lankan rupees Total project cost: 7,748 million yen (at the time of appraisal)[20]	(3) Cost The financial plan to be carried out after the assumed reduction of the project scope (described in the above (a) civil works column) is implemented is as follows:[21] Foreign currency: 5,811 million yen Local currency: 3,600 million Sri Lankan rupees Total project cost: 9,447 million yen (1 rupee = 1.01 yen)
Lessons learned and Recommendations	[Lessons learned] ・ Since the steep rise in construction materials (asphalt, cement, aggregates, etc.) and labor cost in recent years are external factors that are out of control of the executing agency and consultants, the executing agency could not avoid reducing the scope of the project. The decision was made at a fairly early stage with a view to minimizing the various risks involved. This is an afterthought, but it is believed that the appropriate monitoring of the external factors in a timely fashion paved the way for the brave decision to reduce the scope of the project and minimize the risks involved. ・ The Vice Minister of MLGPC has been deeply involved in this project. He has contributed significantly to the progress of this project by, among other things, (i) attending the steering committee meetings of NPSC, PPSC, etc., (ii) periodically calling meetings of contractors, (iii) frequently inspecting local	

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	construction sites, and (iv) expediting disbursements to consultants and contractors. Such positive involvement in the project by the top management of the executing agency has been extremely effective in project monitoring and supervision (although such involvement by top management may not always be available because of different degrees of incentive among high officials of the government regarding the relevant project). ・ As for the long delays observed in some sections due to the poor performance of the contractors, efforts have been made to minimize the delays by cancelling the contracts of the contractors concerned and promptly inviting contractors to rebid. These steps taken to minimize the delays may be praised as a timely response by the executing agency and consultants. ・ To avoid commissioning low-performing contractors in the future, it is advisable, among other things, to build a database on domestic contractors as well as adopt a prequalification (PQ) system for bidding, and thereby prevent a recurrence of similar risks. [Recommendations] ・ It appears that both Central Province and Sabaragamuwa Province have secured the budget necessary for operation and maintenance of the completed roads. From the perspective of effective utilization of the budget, the two provinces should consider the possibility of adopting a performance-based contract,[22] which has been adopted in ADB's Road Sector Development Project. Many of the target routes are located in precipitous mountain areas, so the success or failure of operation and maintenance activities hold the key to the successful manifestation and secured sustainability of the project's effects. Consequently, the possibility of outsourcing the operation and maintenance of the roads should be considered in the hope that this will lead to a more careful execution of operation and maintenance. ・ The cost of carrying out the road improvement work is soaring. This is due to external factors that are outside the control of the executing agency, so the unit cost of improving roads needs to be monitored. Also, there is a need to periodically check, through monitoring and supervision by the consultants, whether the section of the road for which the contract has already been signed is improved within the contract amount. ・ With regard to NGO coordinated projects implemented as part of this project, until now, only two model projects have been implemented in cooperation with CBOs in Central and Sabaragamuwa provinces. Thus, the effect of NGO coordinated projects is still limited. The consultants contracted under this project have already achieved all of their Man/Month related to their coordination with NGOs. However, since the CBOs that implemented the model project have reported that the CBO coordination had some impact, the executing agency should begin examining the pros and cons of (i) transferring its project implementation skills to other NGOs and CBOs; (ii) implementing similar projects in other regions; or (iii) undertaking other activities that make use of CBOs and NGOs. (For example, with regard to the operation and maintenance of feeder roads that have been improved, it may be possible to transfer the relevant operation and maintenance skills [road cleanup activities, etc.] in cooperation with NGOs and CBOs in other regions.) ・ At present, operation and effect indicators (daily traffic volume) are collected through the consultants in an ad hoc manner, and so the executing agency's collection system is very weak. There is thus a need to strengthen the said system with an eye to conducting ex-post evaluation (details will be described later). As for the types of operation and effect indictors, the ones currently being used should continue to be used.	

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	・ Since there will be routes that will be excluded from the project targets accompanying the reduction in the project scope, it will be necessary to change the sample routes to be targeted for collecting the operation and effect indicators in order to avoid the impact of the reduced scope (details will be described later). ・ In light of the fact that ADB's Road Sector Development Project will be completed in June 2008, experts associated with the ADB project who were hired on a project basis should be considered as possible recruits for this project, which in many ways are similar to the ADB project. Should circumstances allow, these experts should be considered for participation in NPSC, PPSC, PMU, and PIU as advisers.	
Indicators set for use at time of ex-post evaluation	Indicators set for use at time of ex-post evaluation (1) Average daily traffic (2) Vehicle operation cost saving (3) Time saving	<u>Development of a system for collecting operation and effect indicators</u> At present, operation and effect indicators (daily traffic volume) are collected through the consultants in an ad hoc manner, and the executing agency's collection system is thus very weak. Going forward, it is desirable that a system be promptly developed in the executing agency for collecting traffic data.[23] <u>Target routes of operation and effect indicators (proposal)</u> There will be routes that will be excluded from the project targets accompanying the reduction in the project scope. Thus, it will be necessary to change the sample routes to be targeted for collecting the operation and effect indicators (selected at the time of appraisal for calculation of target values) in order to avoid the impact of the reduced scope. The target routes (proposal) are shown in the table below (the target route will be reduced from 10 to 8.) With regard to Kaltota Right Bank Roads in Sabaragamuwa Province (SP/RP/052), as has already been described, there have been significant construction delays. Therefore it is necessary to determine whether these roads should be included in the target routes by closely monitoring the progress of the construction work.

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Table: Target routes for operation and effect indicators (proposal)

Road code, road name and road length (km) (10 routes in the EIRR calculation sample)			Phase	Status	Target routes (proposal)
CP/KD/325	Nawayalatenna Jambugahapitiya	4.2	2-1	Under construction	○
CP/KD/344	Teldeniya Corbests Gap	14.0	3	Not yet started	×
CP/MT/042	Beligamuwa Nilagama Dewahuwa	17.1	1	Completed	○
CP/MT/060	Dambuila Kandalama Kumbukkadanwela	9.2	1	Completed	○
CP/NE/048	Barthford Valley Road	10.6	1	Under construction	○
SP/KG/078	Andiramada Narambedde Imbutgassdeniya	8.8	1	Completed	○
SB/KG/027	Morontota Arandara	N/A	3	Outside of project	×
SP/KG/035	Yatagoda Beligala Batuwatta	11.9	2-1	Under construction	○
SP/RP/032	Kahawatta Haupe Manandola	7.4	1	Under construction	○
SP/RP/052	Kaltota Right Bank Roads	15.9	1	Under construction	△

[1] In the case of civil works (which is one of the components of this project), since the loan is made according to a special account formula, the contract approved amount is less than the disbursed amount.
[2] Based on the hearings held at MLGPC and the consultants.
[3] In the present survey, it was not possible to obtain quantitative data on vehicle operation cost (VOC) and time saving effect. Thus no attempts were made to compute two of the operation and effect indicators, namely, (i) vehicle operation cost saving and (ii) time saving.
[4] Examples include the world famous Heritance Kandalama Hotel and Amaya Lake Hotel Dambulla. Particularly noteworthy is the fact that, since the Amaya Lake Hotel is located along the said road, it has become significantly easier to access the hotel from the historical city of Dambulla.
[5] Haupe Estate's plantation stretches out over this area.
[6] These feeder roads fall into Category E of the road category used in Sri Lanka. For the relationship between the road category and the responsible government agencies, see the "Factors influencing sustainability" column described below.
[7] The evaluation criteria include: (i) the years of experience of the CBOs and NGOs (number of years since establishment); (ii) the number of staff members; (iii) the ability to implement a project (number of projects implemented); (iv) the scale (value) of projects implemented; and (v) the number of beneficiaries of the feeder roads targeted in this project. Based on these criteria, the first tier of the two-tiered selection was made by conducting a documentary screening. Then after the consultants commissioned by this project conducted the visiting evaluation, in the end, two groups were selected (one is Panana Grameeya Samurdhi Society, with 3,000 resident participants; and the other is the Vishaka Rural Development Women Society).
[8] The targeted feeder road in the Kegalle District of Sabaragamuwa Province connects to the Colombo – Kandy road, the principal national road, via the Udukumbura – Othnapitiya road (SP/KG/034), which is a route targeted in this project. In addition, the targeted feeder road in the Kandy District of Central Province connects the Poojapitiya – Ankumbura road, which is also a route targeted in this project.
[9] Under the initial contract, a section about 1 km in length (contract amount: about 1.7 million rupees) was to be improved, but due to the rising cost of construction materials as described below, the length of the section to be improved was reduced to 600 m, and the cost was likewise reduced. (Source: Based on an interview with S.H.M. Jayaranthna, a CBO leader)
[10] Source: Based on an interview with the CBO leader S.H.M. Jayaranthna.
[11] For example, experts whose contract with the ADB project has expired are hired to work in this project, and contractors who performed well in the ADB project are selected and given contracts. Moreover, since the office of the ADB project is located in the same building as PMU of MLGPC's Development Bureau, staff members of the two offices were observed exchanging information with each other through their day-to-day operations. (Source: Based on the hearings held at the office of the ADB Road Sector Development Project, PMU of MLGPC, the consultants, and the Central Province's Road Development Department.)
[12] The committee meets about twice a year.
[13] Discussion on the reduction of the project scope by the parties concerned began in May 2006. (Source: PMU of MLGPC's Development Bureau)

[14] As a result of measures to limit the extraction of aggregate from rivers in Sri Lanka, the domestic price of cement has soared; thereby decreasing Sri Lanka's self-sufficiency rate in cement to 25–30%. At present, Sri Lanka is forced to rely on imports from India and other neighboring countries to meet its cement needs. However, this supply of foreign cement is unstable, which causes uncertainty as to whether the project can be properly implemented. (Source: Based on the hearings held at MLGPC's Development Bureau and the consultants)

[15] With regard to the factors of these steep price increases, in addition to the steep rise in the price of asphalt accompanying the sharp increase in the price of crude oil, the fact that the price of domestic construction materials soared in the process of undertaking the reconstruction work in the aftermath of the tsunami disaster is considered to be a remote cause. (Notably, prominent NGOs from Europe and the United States repeatedly procured materials and human resources at exorbitant prices, compelling some to point out that this caused the price of construction materials to rise precipitously.)

[16] To complete the entire project, it is estimated that about 7.5 billion yen in additional funds (including construction costs, consulting fees, contingencies) would have to be injected. (Source: PMU of MLGPC's Development Bureau)

[17] Source: Monthly Progress Report No. 36 (March 2008).

[18] The parties concerned in the National Project Steering Committee (NPSC) are already said to be in agreement regarding the expected delay of the project completion, and the JBIC has been notified of this agreement. (Source: PMU of MLGPC's Development Bureau)

[19] In the case of the Kaltota Right Bank Roads in Sabaragamuwa Province (Phase 1), the performance of the contractor was so poor that cancelling the contracts and rebidding were considered. However, since rebidding risked causing further delays, it was decided that the contractor concerned should be provided with continuous guidance. The Vice Minister of MLGPC is fully aware of this problem and is himself providing continuous guidance to the contractor concerned.

[20] Source: Appraisal document

[21] Source: PMU of MLGPC's Development Bureau

[22] The performance based contract is a type of contract under which orders for services related to the operation and maintenance of a road network are comprehensively placed, and the outcome of the services thus provided is determined by the performance requirement. A performance based contract, unlike contract methods that are based on inputs (labor cost, material cost, etc. for operation and maintenance), is concluded on the basis of a specification sheet that stipulates the level of achievement in terms of output (road pavement condition, etc.) or outcome (lower incidence of accidents, etc.). (Contract amount fluctuates in most output-type contracts, but is fixed in most outcome-type contracts.) Various countries began adopting the performance based contract on an experimental basis from the mid-1990s, and countries in Europe and Oceania and the United States have now adopted it as a component of road assessment management. It has been reported that the performance based contract is 10–40% less costly than the conventional contract methods. In recent years, some developing countries have also adopted this type of contract.

[23] The following two actions are possible concrete steps to take to strengthen the capacity for collecting operation and effect indicators: (i) consider transferring "indicator collection skills" from the consultant to the executing agency (addition of tasks such as "support for creating a system of collecting indicators" to the consultant TOR), or (ii) give NPSC and PPSC the duty to periodically check how the indicator collection is progressing. Additionally, since the executing agency does not have instruments to measure traffic volume, it is desirable to begin examining the pros and cons of introducing such instruments.