Ex-Post Project Evaluation 2015: Package IV-10 (Sri Lanka)

December 2016

JAPAN INTERNATIONAL COOPERATION AGENCY

OPMAC Corporation

International Development Associates, Ltd.

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Democratic Socialist Republic of Sri Lanka

FY2015 Ex-Post Evaluation of Japanese ODA Loan Project[1]

"Southern Highway Construction Project (I) (II)"

External Evaluator: Keishi Miyazaki, OPMAC Corporation

0. Summary

The objective of this project was to facilitate a smooth traffic flow between the Colombo region and Matara in the southern region by constructing a high-standard expressway (total length of 125km with 4 lanes), thereby contributing to the alleviation of traffic congestion in the Colombo region, improvements in traffic safety and to the economic development of the southern part of Sri Lanka. The objective is highly relevant to the Sri Lankan development plan and development needs, as well as to Japan's ODA policy. Therefore the relevance of the project is high. The project realized a reduction in the travel time between the Colombo region and the southern region and an improvement in the smooth flow of traffic between the two regions. The project also brought about the positive impacts such as improvements in traffic safety and comfort as a result of improvements in the traveling experience as well as a promotion of the economic development of the southern region. The traffic volume in some parts of the Southern Expressway, however, did not meet the target due to the following external factors: (i) the chronic congestion of ordinary roads between central Colombo and the Kottawa Interchange, the starting point of the Southern Expressway, and (ii) the benefits of integrated metropolitan expressway networks not being fully materialized as other expressways near central Colombo connecting to the Southern Expressway are still under construction. In addition, it was revealed that traffic congestion in the Colombo region could not be alleviated solely by the project. The objective of facilitating a smooth traffic flow between Colombo and the southern region, nonetheless, mostly materialized through this project as expected. Therefore, the effectiveness and impact of the project are high. Meanwhile, both the project cost and project period significantly exceeded the plan. Therefore, the efficiency of the project is low. No major problems were observed in the institutional, technical and financial aspects of the operation and maintenance system. Therefore the sustainability of the project effects is high. In light of above, this project is evaluated to be satisfactory.

[1] This ex-post evaluation was carried out by referring to opinions on the Project's activities of a Sri Lankan academic expert. The selection of the expert was carried out by the external evaluator, and agreed by JICA.

1. Project Description

Project Site

Southern Expressway
near the Kottawa Interchange

1.1 Background

The southern part of Sri Lanka is one of the least developed areas of the country. One of the main reasons for this was poor infrastructure development. At the time of the project appraisal (2000), the railway and national road A2 were the existing means of access from Colombo to the southern region. The railroad, however, had many problems including poor traveling performance and an unreliable service schedule as the railway was a single track and its maintenance was insufficient. The south-bound national road A2 that ran along the coast, meanwhile, had extremely poor alignment, and a limited road width. Basically the A2 road was a 2-lane road, but its road shoulder was not paved, which impeded the smooth flow of traffic as both pedestrians and low-speed vehicles occupied the carriage way. In addition, realignment and widening of the A2 road were not feasible as this option would involve the major resettlement of residents who lived along the road. Under these circumstances, there was a growing need for a new high-standard expressway connecting Greater Colombo and the southern region.

Based on these needs, The ODA loan project, "Southern Highway Construction Project (E/S: Engineering Service)" (Signing of loan agreement: 1999) was implemented in order to support the preparation of basic and detailed designs for construction of the high-standard expressway.

1.2 Project Outline

The project aimed at facilitating a smooth traffic flow between the Colombo region[2] and Matara in the southern region by constructing a high-standard expressway (total length of 125km), thereby contributing to the alleviation of traffic congestion in the Colombo region,

[2] This report refers to both the "Colombo region" and "Greater Colombo". In general, "Greater Colombo" consists of Colombo district including Colombo city, Gampaha district, and Kalutara district. It coincides almost entirely with the western province of the country. The "Colombo region" on the other hand does not have an official definition. In this report, it is used to refer to "Colombo city and its suburbs". Kottawa, the starting point of the Southern Highway, is located in Maharagama (Colombo district), which is a suburb of Colombo.

improvements in traffic safety and to the economic development of the southern part of Sri Lanka[3].

This project was co-financed by the Asian Development Bank (ADB). The target section of this project was the northern 67km of the expressway between Kottawa and Kurundugahahetekma out of entire stretch of 125km expressway. The southern 58km of the expressway between Kurundugahahetekma and Matara was to be financed by ADB.

Phase	Phase I	Phase II
Loan Approved Amount/ Disbursed Amount	18,770 million yen / 18,768 million yen	17,499 million yen / 17,412 million yen
Exchange of Notes Date/Loan Agreement Signing Date	November 2000 / March 2001	June 2008 / July 2008
Terms and Conditions	Interest Rate: - 2.20% (main contract) - 0.75% (consultant) Payment Period: - 30 years (Grace period: 10years) (main contract) - 40 years (Grace period: 10 years) (consultant) Condition for Procurement: Combined (Main contract: General untied, Consultant: Bilateral tied)	Interest rate: - 1.40% (main contract) - 0.01% (consultant) Payment period: - 30 years (Grace period: 10years) Condition for procurement: - General untied
Borrower/Executing Agency(ies)	The Government of the Democratic Socialist Republic of Sri Lanka / Road Development Authority (RDA)	
Final Disbursement Date	May 2009	December 2013
Main Contractor (Over 1 billion yen)	• China Harbour Engineering Company Limited (China) • Taisei Corporation (Japan)	
Main Consultant (Over 100 million yen)	• Joint Venture: Japan Bridge & Structure Institute, Inc. (Japan) / Pacific Consultants International (Japan) / Resources Development Consultants Ltd. (Sri Lanka)	
Feasibility Studies, etc.	• ADB “Feasibility Study” (February 1999)	

[3] At the time of appraisal, the objectives of this project were set as "the facilitation of a smooth traffic flow between the Colombo region and the southern region" and "the alleviation of traffic congestion in the Colombo region." As a result of analysis of the causal relationship of "input-output-outcome" of this project, it was concluded that the latter seemed to be an indirect effect (i.e. impact) of the project rather than a direct effect. Therefore, this ex-post evaluation reexamined and modified the project outline as mentioned.

Related Projects	• JICA Technical Assisetance Project related to ODA Loan "Expressway Administration Project" (2009-2012) • JICA Training related to ODA Loan on Expressway Administration (2012) • Japanese ODA Loan "Southern Highway Construction Project (E/S)" (Signing of loan agreement: 1999) • Japanese Grant Aid "The Project for the Development of Intelligent Transport System for Expressways in Sri Lanka" (2013-2015) • ADB "Southern Transport Development Project" (2001-2013)

2. Outline of the Evaluation Study

2.1 External Evaluator

Keishi Miyazaki (OPMAC Corporation)

2.2 Duration of Evaluation Study

This ex-post evaluation study was conducted as follows:

Duration of the Study: December 2015 – December 2016

Duration of the Field Survey: January 31 – February 17, 2016, May 15 – May 21, 2016

3. Results of the Evaluation (Overall Rating: B[4])

3.1 Relevance (Rating: ③[5])

3.1.1 Relevance to the Development Plan of Sri Lanka

At the time of the appraisal (2000), in the *Five Year Development Plan (1997-2001)*, importance was placed on the road sector as the transportation sector occupied 20% (approximately 70 billion rupees) of the total investment specified in the plan. Of this, 58% was allocated for the road development. Also, *the National Road Policy (1997)* identified the following objectives for road network development: (i) to promote economic development activities, (ii) to realize shorter travel time and mobility improvement in a way that also takes account of safety, and (iii) to make adequate arrangements to accommodate the current and future volume of passenger and freight traffic.

The National Transportation Policy prepared by the Ministry of Transportation[6] in 2000 further identified the following challenges of road transportation: (i) systematic planning in consideration with the needs of development projects, (ii) coordination of strategies and policies in the transportation sector, (iii) development of the road network between Colombo and other regions, (iv) alleviation of traffic congestion in the Colombo region and the finding

[4] A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory.
[5] ③: High, ②:Fair, ①:Low
[6] Current Ministry of Higher Education and Highways. Road Development Authority, the executing agency of this project, is under this Ministry.

of countermeasures against air pollution caused by exhaust gas, and (v) strengthening of the institutional structure for maintenance.

The Public Investment Plan (1999-2001) was conceived based on these government policies. As such, it clearly stated road network development for mobility improvement as one of the investment goals of road sector, in which priority was given to the development of the Colombo-Katunayake Expressway[7], the Southern Expressway, the Outer Circular Highway (OCH) in Colombo, and the Colombo-Kandy Expressway.

At the time of the ex-post evaluation, *the Ten-Year Development Plan (2006-2016)* (Mahinda Chintana) aimed at doubling per-capita income, and road infrastructure development was set as animportant development agenda for achievement of this goal. Also, *the National Road Sector Master Plan (2007-2017)* stresses the strengthening of the road sector as an important factor in contributing to the elimination of regional disparities in entire Sri Lanka, and, hence, a more equitable national development.

Furthermore, the new Prime Minister, after a change of the government in 2015, presented *the Economic Policy Statement* (the essential feature of the Medium-term policy under the new government[8]) (November 5, 2015). This specially mentioned the development and improvement of infrastructure including transportation and accommodation to promote domestic and foreign tourism. The new government has continued to prioritize the development of the expressway network (approximately 800km in total) that connects the major cities of the country for improvement in the mobility. The following expressways were already open, under development or planned at the time of ex-post evaluation (Table 1, Figure1).

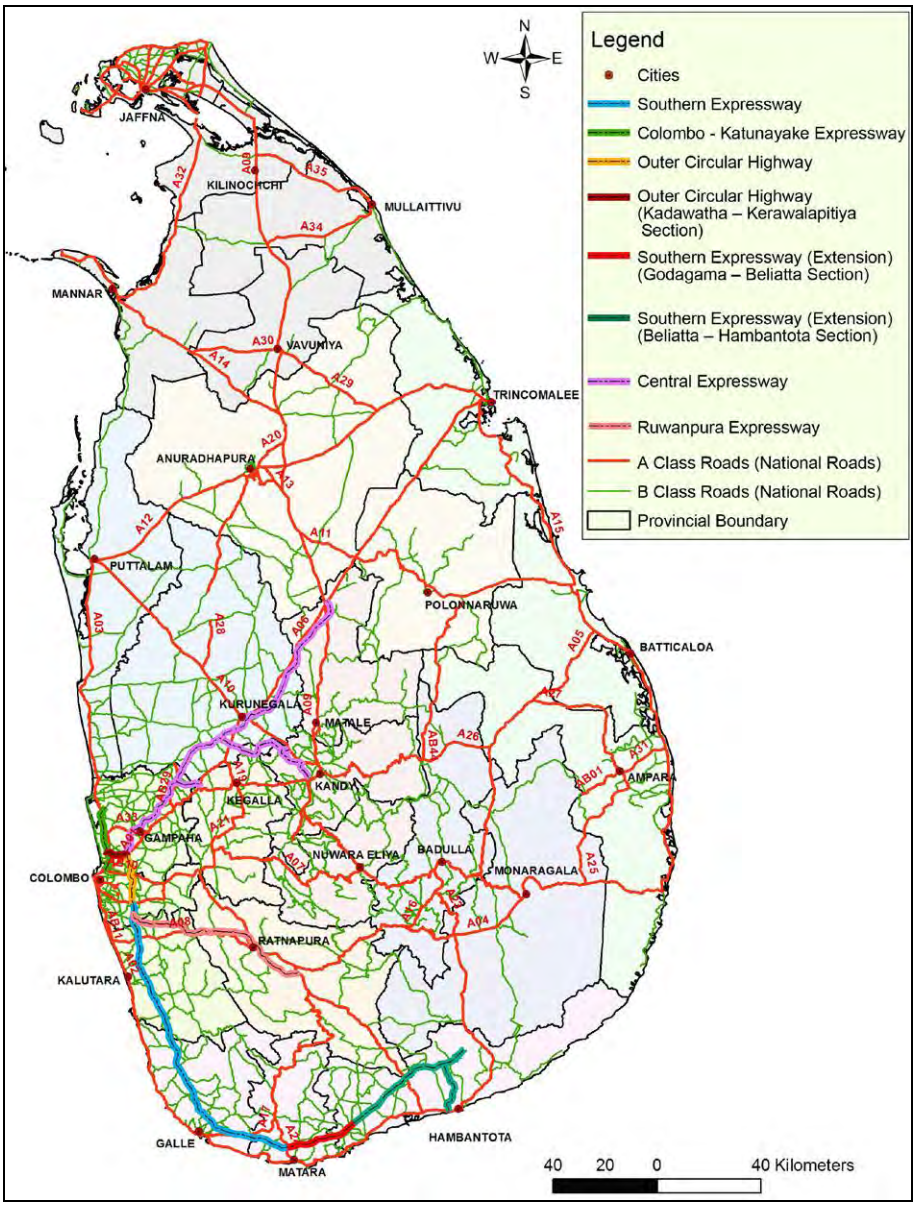
Table 1: Status of Development of Expressway Networks in Sri Lanka (As of May 2016)

Expressway	Section	km	Status
Colombo - Katunayake Expressway (CKE)	Colombo - Katunayake	25.8	In operation since October 2013
Southern Expressway	Kottawa – Kurundugahahetekma (this project)	67.6	In operation since November 2011
	Kurundugahahethekma - Pinnaduwa (Galle)	27.7	In operation since November 2011
	Pinnaduwa (Galle) - Godagama (Matra)	31.7	In operation since March 2014
Southern Expressway (Extension)	Godagama (Matra) - Hambantota	96	Civil works for Godagama – Beliatta section (26km) has been commenced.
Outer Circular Highway (OCH)	Kottawa - Kaduwela	9.9	In operation since March 2014
	Kaduwela - Kadawatha	9.4	In operation since September 2015
	Kadawatha - Kerawalapitiya	9.6	Expected to be completed in June 2019
Central Expressway	Kadawatha - Kurunegala - Dambulla	137	Under environmental impact assessment and feasibility study
	Pothuhera - Katugastota (Kandy) (Colombo-Kandy Expressway)	48	
Ruwanpura Expressway	Kahathuduwa - Ratnapura	52.5	Under feasibility study

Source: RDA

[7] Highway and general road that connect central Colombo and Colombo International Airport (Bandaranaike International Airport).

[8] The new development plan from 2016 is being formulated by the new government.



Source: RDA
Note: OCH was constructed by the Japanese ODA loan projects “Greater Colombo Urban Transport Development Project (I)(II)”.

Figure 1: Expressway Development Plan of Sri Lanka

3.1.2 Relevance to the Development Needs of Sri Lanka

The development needs behind this project at the time of appraisal have already been explained in "1.1 Background". As traffic demand was ever increasing between the Colombo region, local cities and the southern region, there has been a growing demand for a new corridor as well as improvements in the transportation capacity between the Colombo region and the southern region helping to facilitate the smooth flow of traffic between the two regions and the alleviation of traffic congestion in the Colombo region.

At the time of the ex-post evaluation, the Southern Expressway was the only expressway connecting the Colombo region and the southern region, and it has continued to be an important part of the transportation infrastructure of the regions. Also, the promotion of logistics between the Colombo region and the poorer South Province is also important from the point of view of economic development and poverty alleviation in the southern region. The expressway is currently being extended (96km) from the terminal point of the Southern Expressway, Godagama (Matara), to the southern main port city of Hambantota (completion expected in July 2019). It is also planned that the missing link (9.6km) between Colombo - Katunayake Expressway and OCH will be connected (completion expected in June 2019). Once the construction of the two missing links is completed, there will be a comprehensive expressway network which directly connects Colombo International Airport (Bandaranaike International Airport) and Hambantota. In this future picture, too, the Southern Expressway, including the extension, is expected to play an important role as the main transportation and logistics route between the Colombo region and the southern part of the country.

3.1.3 Relevance to Japan’s ODA Policy

At the time of appraisal, Japan's country assistant program for Sri Lanka (2000) specified the following as focus areas for assistance: (i) the development and improvement of the economic infrastructure, (ii) development of the mining and manufacturing industries, (iii) development of agriculture, forestry and fishery, (iv) development of human resources, and (v) improvement of the health and medical system. This project was aimed at improving the traffic flow between Colombo and the southern regions by constructing a high-standard expressway between suburban Colombo and the southern city of Matara. That is, the project was a key economic infrastructure development project in terms of development of expressway. Therefore, this project fell under focus (i) of the above, "the development and improvement of the economic infrastructure".

In the light of above, this project has been highly relevant with Sri Lankan development plan, development needs, as well as Japan’s ODA policy; therefore its relevance is high.

3.2 Efficiency (Rating: ①)

3.2.1 Project Outputs

The outputs of this project are shown in Table 2 below. The first phase of the appraisal identified the construction of a 4-lane expressway between Kottawa and Dodangoda (35km) in the north as Package 1, and the construction of a 2-lane expressway between Dodangoda and Kurundugahahethekma (32km) in the south as Package 2 in the target section of this ODA loan project between Kottawa and Kurundugahahethekma (approximately 67km). The initial project cost estimated in the first appraisal, however, turned out to be insufficient to a large extent due to following reasons: (i) increase in project costs due to the high demand for reconstruction after the 2004 Indian Ocean Tsunami disaster as well as the steep increase in the price of construction material globally which became a problem due to a prolonged project period caused by delays in land acquisition, (ii) additional costs for civil works on soft ground identified after the inception of the project, and (iii) additional costs for additional works and measures for flood protection incurred after start of civil works. The traffic demand forecast of 2006, meanwhile, revealed the need for 4 lanes in the entire length of the Southern Expressway. In addition, the official decision by the Sri Lankan government in February 2007, to charge user fees on the Southern Expressway, made it necessary to develop both the infrastructure and capacity development aspects of the toll collection system. Bearing in mind the above reasons, the second phase of the project was implemented and the following additional scope was added: (i) adjustment of the cost overrun of Package 1, (ii) adjustment of the cost overrun of Package 2, (iii) the widening of lanes from 2 to 4 in the project target section of Package 2 (Package 3), (iv) construction and procurement of operation and maintenance (O&M) facilities including the installation of toll gates (Package 4), and (v) technical assistance for O&M (consulting service).

Table 2: Planned and Actual Project Outputs

Item	Plan	Actual
(1) Civil Works	High-standard expressway (total length: 67 km with 4 lanes) Package 1 • Kottawa- Dodangoda: 35km (4 lanes) Package 2 • Dodangoda- Kurundugahahetekma: 31.6km with 2 lanes) Package 3 (*) • expansion from 2 lanes into 4 lanes for the section of Package 2	Same as planned
(2) Works and Procurement related to Operation and Maintenance (O&M) facilities and equipment (including ADB section) (*)	Package 4 • Operation and maintenance center office: 2 locations	Same as planned
	• Toll gate office: 9 locations (including ADB section)	8 locations
	• Toll gate: 11 locations (including ADB section)	8 locations
	• Procurement of O&M equipment: Towing cars, ambulances, fire engines, etc.	Same as planned (but a part of O&M equipment was procured by ADB)
(3) Consulting Services (Supervision of Civil Works)	(Work contents) • Review of detailed design • Assistance of tender and construction supervision • Environmental monitoring	Same as planned
	(Work volume) • International consultant: 533.5 M/M • Local consultant: 5,988 M/M (including supporting staff)	(Work volume) • International consultant: 395 M/M • Local consultant: 2,858 M/M (excluding supporting staff)
(4) Consulting Services (Technical Assistance of O&M) (*)	(Work contents) • Assistance in planning and coordination with stakeholders regarding O&M of the project including toll system • Assistance in procurement for outsourcing of O&M to private entities • Assistance in procurement and supervision related to O&M equipment • Assistance in capacity development of the Expressway Authority	• Same as planned (but the ETC system was not introduced) • Outside the project scope (implemented by ADB) • Same as planned • Outside the project scope (implemented by ADB) (but the Expressway Authority was not established)
	(Work volume) • International consultant: 36 M/M • Local consultant: 87 M/M	(Work volume) • International consultant: 15 M/M • Local consultant: 66 M/M

Source: JICA internal documents, RDA
Note: The items with (*) are the additional project scope at the time of Phase II appraisal.

Civil works were implemented according to the plan. Though there were some changes made in the construction and procurement of O&M facilities as well as in the technical assistance for O&M (consulting services), the outputs were completed mostly as planned. In the original plan, ADB was to finance the southern part of the Southern Expressway (59.4km) between Kurundugahahethekma (Galle) and Godagama (Matara). ADB, however, reduced its target section down to the 27.7km between Kurundugahahethekma and Pinnaduwa (Galle) as a result of steep increases in construction costs. The remaining length between Pinnaduwa and Godagama (31.7km) was financed by the Export-Import Bank of

China and its opening to traffic was delayed until March, 2014 after this project's completion. As a result, the target for the construction and procurement of O&M facilities was limited to the section between Kottawa and Pinnaduwa. The number of toll gates as well as the number of toll gate offices to be constructed was reduced accordingly[9]. Some O&M equipment, such as fire engines and mowers, was provided by ADB, and therefore these were excluded from the project.

As part of technical assistance for O&M (consulting services), it was proposed that an Electronic Toll Collection system (ETC system) be introduced. However, an agreement on whether to adopt the Japanese or European ETC system could not be reached in time. Consequently, it was decided that there would be the introduction of a manual toll collection system on the Southern Expressway for a certain period of time. The design of the toll gates, nonetheless, allowed for the introduction of an ETC system in the future[10]. As ADB gave the responsibility for assistance in procurement for outsourcing of O&M to private entities and assistance in capacity development to the Expressway Authority, these activities were excluded from the project scope.

In addition, it was foreseen in the original plan that the Expressway Authority would be newly set up as an operation and maintenance body of the Southern Expressway. However, this had not taken place by the completion of this project due to a delay in legislative discussion on the Expressway Authority Bill in the Sri Lankan parliament. For this reason, as a temporary measure, the Expressway Operation Maintenance and Management Division (EOM & M Division) was created within the Road Development Authority.

Although the actual work volume for consulting services was smaller than the planned work volume, it is considered that this did not negatively affect the realization of the project effects.

[9] One toll gate office and three toll gates in the section between Pinnaduwa and Godagama which were not implemented by this project were constructed with the assistance of the Export-Import Bank of China after completion of the project.

[10] In conjunction with the review of the toll collection system for the Colombo-Katunayak Highway and the Outer Circular Highway (OCH), the introduction of an integrative ETC system that would correspond to the local needs is currently being considered by the Road Development Authority.

The Main Facilities and Equipment Constructed and Procured by the Project

Main Road
(Dodangoda-Welipenna section)

Kottawa Toll Gate

Kahathuduwa Toll Gate

Toll Gate Office
(Kottawa)

Service Area

Operation and Maintenance
Vehicles

3.2.2 Project Inputs

3.2.2.1 Project Cost

The actual project cost was 63,460 million yen, which exceeded the planned project budget of 51,344 million yen (125% against the plan) (Table 3). The main reason for the cost overrun was the increase in the costs of civil work as a result of unforeseen additional works. In addition, increases in the costs for land acquisition, the resettlement of people and tax and duties were also factors.

Another way to calculate the planned project cost is to add the cost identified for the additional scope in the second appraisal (i.e. Package 3, Package 4 and consulting services regarding technical assistance for O&M) to the planned project cost identified in the first appraisal (25,026 million yen), which would make the total planned cost of the project 30,573 million yen. If the comparison is made based on the planned project cost as calculated above, the actual project cost of 63,460 million yen would amount to 207% against the planned project cost, which largely exceeded the plan. This ex-post evaluation used the latter result (i.e. 207% against the planned budget) for the assessment of project cost.

Table 3: Planned and Actual Project Cost

Item	Plan (Phase II Appraisal in 2008)			Actual (2013)			
	Foreign Currency	Local Currency	Total	Foreign Currency		Local Currency	Total
	(Mill. Yen)	(Mill. Yen)	(Mill. Yen)	(Mill. Yen)	(Mill. USD)	(Mill. Rp.)	(Mill. Yen)
Civil Works							
Package 1	9,955	4,266	14,221	4,260	67.59	10,415	21,948
Package 2	8,712	3,320	12,032	14,042	0	4,776	18,909
Package 3	1,618	693	2,311				
Package 4	1,998	1,167	3,165	0	0	1,300	1,325
Price Escalation	223	339	562	0	0	0	0
Contingency	1,125	490	1,615	0	0	0	0
Consulting Service	1,395	974	2,369	1,240	0	703	1,956
Land Acquisition and Resettlement	0	2,819	2,819	0	0	3,623	3,692
Administration	0	1,814	1,814	0	0	823	839
Tax and Duties	0	9,063	9,063	0	0	13,791	14,055
Interest during Construction	1,247	0	1,247	0	0	690	703
Commitment Charge	126	0	126	0	0	32	33
Total	26,399	24,945	51,344	19,542	67.59	36,153	63,460

Source: JICA internal documents and RDA internal documents.
Note 1: The planned project cost at the time of Phase II project in 2008 was the sum of the project costs for Phase I and Phase II projects.
Note 2: The exchange rate used: (a) LKR 1 = JPY 0.786 (December 2009) for the planned project cost of Phase I; (b) LKR 1 = JPY 1.05 (September 2007) for the planned project cost for Phase II; and (c) LKR 1 = JPY 1.019 (average between 2000 and 2013), USD 1 = JPY 104.64 (average between 2000 and 2013) for the actual project cost.

3.2.2.2 Project Period

The planned project period was identified as 58 months (from March 2001 to December 2005) in the first appraisal, and 128 months (from March 2001 to October 2011) in the second appraisal. Meanwhile, the actual project period was 151 months (from March 2001 to September 2013), which was 260% of the first plan and 125% of the second plan (Table 4). Applying the ratio of planned project cost of Phase I and Phase II to the total project cost (48% for Phase I and 52% for Phase II) for calculating the weighted average actual period, it would be 188% against the plan. In any rate, the actual project period significantly exceeded the planned period.

The main reasons for the prolongation of the project are following: (i) delay in the bidding for the main contractor and the start of civil works by 30 months, as a result of a delays in land acquisition and the resettlement of people in the target area, an increase in the affected population by the route change, and litigation by some opposition groups claiming injunctions against the construction work, (ii) the impact of the prolonged land acquisition and resettlement process on the construction period as a whole, and (iii) additional time needed for the foundation work for soft ground, ground improvement, and the widening of carriageway from 2 lanes to 4 lanes[11].

[11] The analysis of delay is based on the planned project period specified in the first appraisal.

Table 4: Planned and Actual Project Period

Item	Plan		Actual
	At the time of Phase I Appraisal	At the time of Phase II Appraisal	
1. Signing of Loan Agreement			
(1) Phase I (SL-P70)	Mar. 2001	—	Mar. 2001
(2) Phase II (SL-P92)	—	Jul. 2008	Jul. 2008
2. Procurement of Consultants			
(1) Consulting Service (Construction Supervision)	Nov. 2000 – Dec. 2001 (14 months)	—	Nov. 2000 – Sep. 2002 (23 months)
(2) Consulting Service (Technical Assistance for O&M)	—	Mar. 2008 – Dec. 2008 (10 months)	Mar. 2008 – Dec. 2008 (10 months)
3. Implementation of Consulting Service			
(1) Consulting Service (Construction Supervision)	Apr. 2002 – Dec. 2005 (45 months)	Apr. 2002 – Oct. 2011 (115 months)	Sep. 2002 – Feb. 2013 (126 months)
(2) Consulting Service (Technical Assistance for O&M)	—	Jan. 2009 – Oct. 2011 (34 months)	Nov. 2009 - Jan. 2013 (39 months)
4. Procurement for Main Contractors and O&M Facilities and Equipment			
(1) Package 1	Oct. 2001 – Mar. 2002 (18 months)	—	May 2002 – Sep. 2005 (41 months)
(2) Package 2	Oct. 2001 – Mar. 2002 (18 months)	—	May 2002 – March 2006 (47 months)
(3) Package 3	—	Nov. 2007 – Dec. 2008 (14 months)	Nov. 2007 – Aug. 2008 (10 months)
(4) Package 4	—	May 2008 – Jun. 2009 (14 months)	May 2008 – Jun. 2009 (14 months)
5. Civil Works and Installation of Main Contracts and O&M Facilities and Equipment			
(1) Package 1	Apr. 2003 – Dec. 2005 (33 months)	Apr. 2003 – Sep. 2010 (90 months)	Sep. 2005 – Nov. 2011 (75 months)
(2) Package 2	Apr. 2003 - Dec. 2005 (33 months)	Apr. 2003 – Sep. 2010 (90 months)	Mar. 2006 – Nov. 2011 (69 months)
(3) Package 3	—	Jan. 2009 - Sep. 2010 (21 months)	Aug. 2008 – Aug. 2011 (37 months)
(4) Package 4	—	Jun. 2009 – Sep. 2010 (16 months)	Oct. 2009 – May 2010 (8 months)
6. Land Acquisition and Resettlement	Jul. 2000 – Mar. 2001 (21 months)	Jul. 2000 – Jun. 2008 (96 months)	Jul. 2000 – Dec. 2012 (145 months)
7. Project Completion (Note)	Dec. 2005	Oct. 2011	Sep. 2013
8. Entire Project Period	March 30, 2001 – Dec. 2005 (57 months)	March 30, 2001 – Oct. 2011 (127 months)	March 30, 2001 – Sep. 2013 (151 months)

Source: JICA internal documents and response to the questionnaire by RDA.
Note: The definition of project completion is the completion of consulting services.

3.2.3 Results of Calculations of Internal Rates of Return (Reference only)

The Economic Internal Rate of Return (EIRR) of this project was 12.0% at the first appraisal and 13.3% at the second appraisal[12]. The assumptions set when this project was planned were as follows. It was difficult to recalculate the EIRR for this ex-post evaluation as it was not possible to obtain the necessary detailed data. The recalculation of the Financial Internal Rate of Return (FIRR) was also not conducted as FIRR was not examined at project planning. As a reference, the result of the recalculation of EIRR for the entire length of the Southern Expressway Project (total length: 125km) stated in the Project Completion Report[13] prepared by ADB was 16.9%. This ADB's result of the recalculation of EIRR seems to be close to the result of the recalculation of EIRR of this project.

	At the time of Phase I Appraisal	**At the time of Phase II Appraisal**
Economic Internal Rate of Return (EIRR)	12.0% (including the ADB target section)	13.3% (including the ADB target section)
Cost	Construction cost, land acquisition and resettlement cost, operation and maintenance cost.	Project cost (excluding land acquisition and tax and duties), operation and maintenance cost
Benefit	Reduction of transport cost, reduction of accident cost	Saving of vehicle operating cost (VOC), saving of travel time, reduction of accident
Project life	23 years	20 years

Source: JICA internal documents.

In the light of above, both the project cost and project period significantly exceeded the plan. Therefore, efficiency of the project is low.

3.3 Effectiveness[14] (Rating: ③)

3.3.1 Quantitative Effect (Operation and Effect Indicators)

The Operation and Effect Indicators of this project are shown in the Table 5 below.

[12] The calculation of EIRR at the second appraisal was made based on the result of the EIRR calculation by ADB.
[13] Completion Report, Sri Lanka: Southern Transport Development Project (August 2014), ADB.
[14] Sub-rating for Effectiveness is to be put with consideration of Impact.

Table 5: Operation and Effect Indicators

	Baseline	Target	Actual			
	2001	2015	2012	2013	2014	2015
	Appraisal	2 years after completion		Completion year (Note 1)	1 year after completion	2 years after completion
1. Travel time from Kottawa to Kurundgahahetekma (hours)	3 hours (Note2)	N.A.	One hour or less	same	same	same
2. Annual Average Daily Traffic (AADT) (Vehicle/day)						
a) Kottawa - Kahathuduwa	N.A.	27,279	6,559	7,494	13,054	16,311
b) Kahathuduwa - Gelanigama	N.A.	34,294	6,979	7,968	13,175	16,041
c) Gelanigama - Dodangoda	N.A.	21,925	6,761	7,065	11,105	13,226
d) Dodangoda - Welipenna	N.A.	8,387	6,008	6,075	9,566	11,568
e) Welipenna - Kurundgahahetekma	N.A.	7,922	5,545	5,526	9,029	10,563
3. Number of traffic accidents (Number/year)	N.A.	N.A.	496	471	603	851
4. Traffic accident incidence (Annual amount of traffic accident/million vehicle-km)	N.A.	N.A.	2.47	1.93	1.54	1.57

Source: JICA internal documents and RDA internal documents.
Note 1: The project completion year of the project was 2013 when the consulting service ended. The Kottawa-Pinnaduwa (Galle) section started its operation in November 2011. The operation of Pinnaduwa (Galle) and Godagama section was open in March 2014.
Note 2: The travel time in Kottawa to the Kurundgahahetekma section before the project implementation, which was three hours, was an estimated travel time assuming the travel route from Colombo city center to Kurundgahahetekma via the A2 road.
Note 3: The data for the number of traffic accidents and traffic accident incidence are for the entire stretch of the Southern Expressway from Kottawa to Godagama (Matara).

(1) Travel Time

The travel time between Kottawa and Kurundugahahethekma (67km), the target section of this project, was reduced from 3 hours when the A2 road was used, to one hour or less when the Southern Expressway (Figure 2) was used. According to the executing agency of the project, the travel time between Kottawa and Godagama (Matara) (125km), the entire length of the Southern Expressway, was reduced from 4 to 5 hours before the project[15] to 1.5 hours after the project.

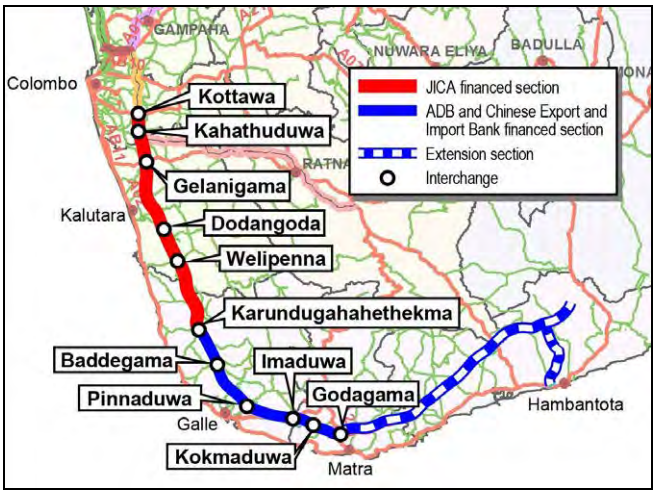


Figure 2: Project Site

[15] The travel time before this project (4-5 hours) adopted the travel time between Kottawa and Galle using National Route A2.

(2) Annual Average Daily Traffic

The project divided the target section into 5 sections and set target values for Annual Average Daily Traffic (AADT) for each section (the target year was 2 years after the project completion). Sections d) Dodangoda - Welippana and e) Welipenna - Kurundugahahethekma already reached their targets in 2014, a year before the target year in 2015 (the level of achievement in 2015 was 138% and 133% respectively).

On the other hand, the remaining three sections, a) Kottawa - Kahathuduwa, b) Kahathuduwa - Gelanigama, and c) Gelanigama - Dodangoda did not reach their targets (the levels of achievement in 2015 was 60%, 47%, and 60% respectively). Regarding the types of vehicles using the expressway, passenger vehicles (category 1) accounted for 90% of the vehicles running on the expressway, followed by medium-sized buses and trucks (category 3) at approximately 7%. Large-sized trucks and container trucks are rarely seen on the expressway.

According to the executing agency, when setting the target traffic volume, it was assumed that all three expressways in and around the Colombo region (the Southern Expressway, the Colombo-Katunayake Expressway, and the Outer Circular Highway) would have been completed and interlinked with each other, providing a new expressway network. However, although the Southern Expressway and the Outer Circular Highway were connected in September 2015, the Colombo-Katunayake Expressway and the Outer Circular Highway are still not connected, with a remaining nine kilometers under construction. As the assumed preconditions are still not met, the expressway network in the Colombo region has not demonstrated its potential convenience even after the completion of this project.

In addition, the existing national road between the starting point of the Southern Expressway, Kottawa (suburban Colombo), and Colombo city center has been chronically congested, making the average travel time between Kottawa and Colombo city center about one hour. For users located relatively near Colombo city and its surroundings (i.e. those who are located along the Kottawa-Dodangoda section – approximately 35km), there is little difference in travel time to Colombo city center whether use is made of the Southern Expressway or the existing A2 road. Therefore, the benefit of using the tolled expressway is not necessarily felt.

The two issues mentioned above are considered to have been the major factors that led to the insufficient achievement of the traffic volume target.

The Sri Lankan Government considers Hambantota as an important industrial base in the southern region, and is considering the establishment of special economic zones in Hambantota, Galle, and Matara. As stated in the section "3.1.2 Relevance to developmental needs", the traffic volume, including that of large-sized container trucks, is expected to increase significantly when the expressway network is developed, providing these southern

cities with direct access to Colombo International Airport (Bandaranaike International Airport). To promote use of the expressway by heavy cargo vehicles that use the expressway less at present, the Road Development Authority is considering a 10-20% discount toll fee for large vehicles.

(3) Number or traffic accidents and the accident incidence rate

The annual number of traffic accidents in the Southern Expressway (entire route) has been increasing year by year as it increased by 180% from 471 accidents/year in 2013 to 851 accidents/year in 2015.

Table 6: Breakdown of Traffic Accidents

	Fatal	Grievous	Non Grievous	Property Damage	Total
2012	4	26	20	446	496
2013	5	18	26	422	471
2014	2	14	53	539	603
2015	3	23	50	775	851

Source: RDA

The primary factor behind the increase in number of traffic accidents is an increase in damage to property (Table 6). The biggest cause of accidents between 2012 and 2015 was weather (22%), followed by driving manners and excess speed (20%), collisions with animals (17%), vehicle breakdowns (12%), and driver fatigue (11%)[16]. The number of accidents by traveler kilometer (annual incidence rate by total vehicle travel), on the other hand, decreased from 1.93/million vehicle-km in 2013 to 1.57/million vehicle-km in 2015. The Road Development Authority has been conducting awareness raising campaigns and public relations activities on expressway traffic safety through different media.

According to the ADB project completion report, their survey revealed that the traffic volume on the A2 road decreased in area between Moratuwa (Angulana)[17] and Galle (Magara) as drivers were beginning to take a detour to the Southern Expressway in order to shorten travel time. As a result of this, it is confirmed that the number of fatal accidents (annual) per million vehicles on the A2 road decreased from 25 accidents/million vehicles in 2010 to 16 accidents/million vehicles in 2013. This shows the effect of the construction of the Southern Expressway on the reduction of fatal accidents on the A2 road.

3.3.2 Qualitative Effects

(1) Degree of satisfaction of local residents and local businesses

The ex-post evaluation conducted a beneficiary survey with local residents and businesses located along the Kottawa - Godagama (Matara) section of the Southern Expressway. The total sample size was 113 (local residents 63, local businesses 50), and these samples were selected by the stratified random sampling method.[18]. 97% of the local residents gave the

[16] Information material provided by the road development agency.
[17] A suburban city 18km away from Colombo city center.
[18] The sites for the survey were selected from cities, town and villages near 8 Interchanges in the section mentioned above. The survey excluded 3 Interchanges near Colombo (Kottawa IC, Kahatuduwa IC, Geranigama IC). The

rating of "satisfied" or better (very satisfied: 51%, satisfied: 46%), while 96% of the local businesses gave the rating of "satisfied" or better (very satisfied: 80%, satisfied: 16%). As a whole, 96% of the total respondents gave the rating of "satisfied" or better (Table 7). It is, therefore, concluded that the level of satisfaction with this project among local residents and businesses is very high. This is an indication of a high level of local backing for the project.

Table 7: Satisfaction of the Project

Item	Local Residents		Local Business		Total	
	No. of response	%	No. of response	%	No. of response	%
Very much Satisfied	32	50.8	40	80.0	72	63.7
Satisfied to some extent	29	46.0	8	16.0	37	32.7
Not much satisfied	1	1.6	1	2.0	2	1.8
Not satisfied at all	0	0.0	0	0.0	0	0.0
Do not know	1	1.6	1	2.0	2	1.8
Total	63	100	50	100	113	100

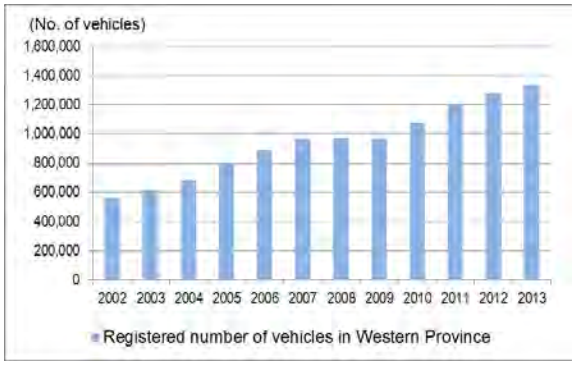
Source: The beneficiary survey result.

3.4 Impacts

3.4.1 Intended Impacts

(1) Alleviation of the traffic congestion in Colombo city

The Southern Expressway is acting as a bypass road for the A2 road between Colombo region and the southern region. However, it has not been confirmed that this function has contributed to the alleviation of the traffic congestion in Colombo city. The causes are follows[19].



Source: The Central Bank of Sri Lanka.
Note: The 2013 data is estimation.

Figure 3: Registered Number of Vehicles in Western Province

(a) Increase in the number of registered vehicles: The total number of registered vehicles in the Western Province was 1,336,564 in 2013, which was 38% of the total registered vehicles in the country. There was a 2.4-fold growth in the 11 years between 2002 and 2013 (Figure 3). In other words, the annual average growth rate was 8.2%. This was higher than the annual average growth rate of population during the same period which was 0.7%.

(b) Poor development of public transport services: The existing route network of public transportation such as railways and buses is underdeveloped. The transport capacity is also limited.

gender ratio was 64% male against 36% female. The ownership rate of either private or company vehicles among the respondents was 84%.

[19] Information from the final report (2014) of the Urban Transport System Development Project for Colombo Metropolitan Region and Suburbs (ComTrans city traffic master plan).

(c) Insufficient road network: Regarding traffic demand in Colombo, most of the roads have reached their full capacity. Furthermore, the traffic volume at some points during peak hours is already beyond capacity. It is worth mentioning that the route that connects Colombo city center with the eastern suburbs is underdeveloped. The road network resembles a "fish bone" configuration, with excessive traffic from all small roads flowing into one major arterial road. This causes bottlenecks on major intersections in the suburbs. The chronic congestion between the starting point of the Southern Expressway, Kottawa (south east of Colombo city center), and Colombo city mentioned previously, is caused by the same reason.

The Road Development Authority is currently working on *a Road Master Plan (2017-2027)* which takes into consideration railways, bus transportation and the megalopolis plan, as well as transportation development policies. The latter includes the rural road development plans of the provincial governments. It is expected that the congestion in Colombo city be dealt with within the framework of this holistic road development plan. Current efforts to improve the traffic flow in Colombo city include the rehabilitation of Kelani Bridge[20], the construction of flyovers at points of chronic congestion, and the widening of road lanes.

(2) Improvement of safety and comfort as a result of better travelling performance

The ex-post evaluation conducted interviews with business groups and local economic organizations such as the private bus owners' association, the Galle Chambers of Commerce and Industry and the Ceylon Chambers of Commerce and Industry. All participants confirmed that the safety and comfort level had been improved as a result of the better traveling performance realized by this project. In association with this project, the Japanese Grant Aid "Project for the Development of Intelligent Transport System for Expressways in Sri Lanka (2013-2015)" (Grant amount: 940 million yen) was carried out to develop traffic information systems for the Southern Expressway. Under the latter project, equipment was provided such as traffic information collection equipment (e.g. traffic counter), a set of information processing equipment (e.g. management servers and control monitors), information provision equipment (variable message signboards). The above road traffic information system monitors the operation of the expressway 24 hours a day and provides expressway users with useful information such as that on traffic congestion, lane regulations and road closures caused by traffic accidents or weather conditions. This system has been indispensable in ensuring the safety and convenience of the expressway. The executing agency, therefore, considers that this grant aid project has contributed to improving the

[20] ODA Loan "New Bridge Construction Project over the Kelani River" (Signing of loan agreement: March 2014, Loan amount: 35.02 billion yen).

safety of the expressway.

In addition, the results of the beneficiary survey with local residents and businesses are as follows. 81% of local residents responded that the frequency by which they travel out-of-region has either "increased" or "somewhat increased" with the use of the Southern Expressway. The main purposes of these journeys were business, and visiting hospitals, friends or relatives. Meanwhile, 74% of local companies responded that the frequency by which they travel out-of-region either "increased" or "somewhat increased" with the use of the Southern Expressway. 95% of these journeys were for business purposes. Putting local residents and companies together, 78% confirmed that journeys out-of-region had either "increased" or "somewhat increased" (Table 8). They also recognized the impact of the project in areas such as "improvement in the smoothness of inter-regional traffic (99%)", "improvement in the safety of travel/driving (96%)", "improvement in the comfort of travel/driving (96%)", and "improvement in connectivity to the existing road network (85%)" (Table 9).

Table 8: Frequency of Utilizing the Southern Expressway

Item	Local residents		Local businesses		Total	
	No. of response	%	No. of response	%	No. of response	%
Increased	29	46	29	58	58	51
Somewhat increased	22	35	8	16	30	27
Somewhat decreased	0	0	0	0	0	0
Decreased	0	0	0	0	0	0
No change	12	19	11	22	23	20
No answer/cannot say	0	0	2	4	2	2
Total	63	100	50	100	113	100

Source: The beneficiary survey result.

Table 9: Impacts on Safety, Comfortability, etc.

Item	Improved		Remained Same		Deteriorated		No idea/ No answer		Total	
	No. of response	%	No. of response	%	No. of response	%	No. of response	%	No. of response	%
Smoothness of inter-regional traffic	112	99	0	0	0	0	1	1	113	100
Safety of Travel/ driving	108	96	1	1	3	2	1	1	113	100
Comfort of Travel/ Driving	108	96	4	4	0	0	1	1	113	100
Connectivity to the existing road network	96	85	14	12	0	0	3	3	113	100

Source: The beneficiary survey result.

In summary, the impacts of this project such as the improvement of safety and comfort as a result of better traveling performance, smoother inter-regional traffic, and better connections with the existing road network, were confirmed.

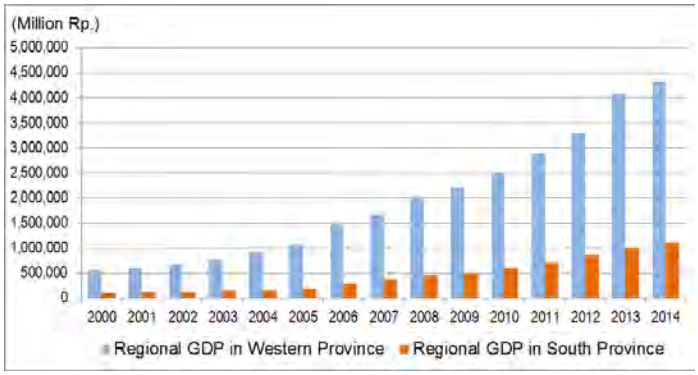
Meanwhile, the interviews with the private bus owners' association, the Galle Chamber of Commerce and Industries, and the Ceylon Chambers of Commerce and Industry revealed the issues detailed in Table 10 below.

Table 10: Issues regarding the Operation and Maintenance of the Southern Expressway from the User's Perspective

Issues	Problems	Response and Views of the Executing Agency
Animals on the driving lane	Due to the absence of fences on the both sides of the road, animals and birds can easily get on to the road, causing collisions.	There are fences around interchanges. It is costly to install fences on the entire length of the road.
Safety of travel including at night	The driving lanes and the shoulders of the road are not wide enough.	The current spec of the 4-lane Southern Expressway is 1.75m shoulders and 3.5m driving lanes. In future, however, if the expressway is expanded to 6 lanes, the shoulders, driving lanes and expressway median will be widened to 2.5m, 3.7m and 2.5m respectively. Planting in the center dividers will also then be considered.
	During the night, the headlights of oncoming vehicles are very bright as the expressway median is narrow and without plants and vegetation.	
	Reflectors are installed on the guardrails, but they are insufficient, making the intervals too large. It has also been noticed that damaged reflectors are often unrepaired, resulting in a lack of reflectors.	Possible to respond.
	The installation of street lights is limited to the interchanges. Other parts of the road can be almost completely dark at night. It is necessary to have the street lights installed at least at certain intervals.	It is difficult to install street lights on the entire length of the expressway straight away considering the cost, electricity shortage in the country, and the current traffic volume.
Information sign boards	Some parts are known for strong wind. It is necessary that alerts are provided in advance for drivers using the electric information boards	Possible to respond.
	It will be useful to have the names of the major towns and cities at the interchanges in addition to the name of the inter changes themselves.	At Pinnaduwa Interchage, for example, Galle, a name of popular tourist city near the interchange, is also mentioned on the exit information board in addition to Pinnaduwa.

(3) Promotion of the economic development of the southern region

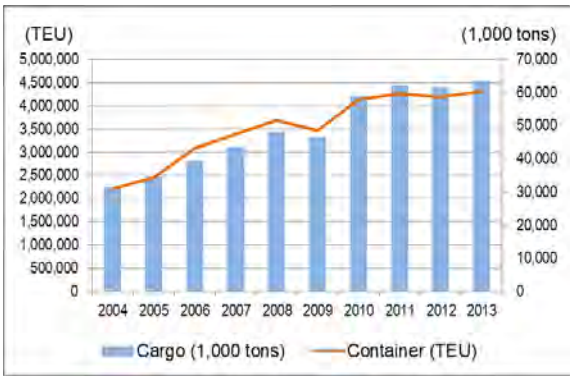
The regional GDP of the Southern Province since the opening of the Southern Expressway in 2011 grew from 718,768 million rupees to 1,112 billion rupees in 2014. The average annual growth rate (nominal) during this period was 15.7%. This annual average growth rate is considered high even in



Source: The Central Bank of Sri Lanka.
Note: The 2014 data is estimation.

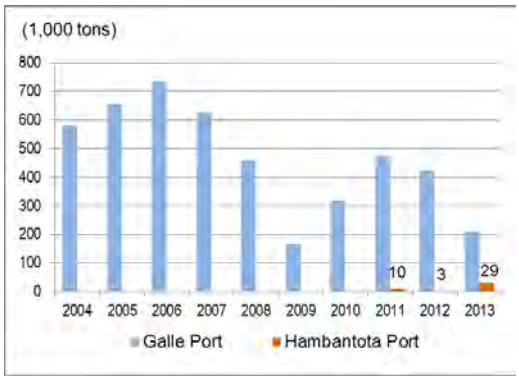
Figure 4: Regional GDP in Western Province and Southern Province

comparison with the growth rate of the regional GDP of the Western Province in the same period (14.3%) (Figure 4). Both the cargo and container volume handled in Colombo port also showed a steady increase since 2011. Cargo volume increased from 4,262 million tons in 2011 to 4,306 million tons in 2013, while container volume grew from 62,016 TEU in 2011 to 63,482 TEU in 2013 steadily (Figure 5). The cargo volume of Galle port varies from year to year, but that of the Hambantota port, which opened in 2011, has been slowly growing (Figure 6).



Source: The Central Bank of Sri Lanka.
Note: The 2013 data is an estimation.

Figure 5: Volume of Cargo and Container Handled in Colombo Port



Source: The Central Bank of Sri Lanka.
Note: The 2013 data is an estimation.

Figure 6: Volume of Cargo Handled in Galle Port and Hambantota Port

Table 11 shows the number of approved investment projects in the Southern Province since 2012. There have been 15 to 25 investment projects each year. It is noticeable that there are growing investments in the manufacturing industry and tourist industry. At present, there are 3 industrial estates in the Southern Province. Many companies have expanded their business in these industrial estates since the opening of the Southern Expressway in 2011 (Table 12). Many of these companies are engaged in the processing of special local products such as tea and cinnamon, or in the garment industry. The Galle Regional Office, Ministry of Industry and Commerce, has acknowledged that the opening of the Southern Expressway has been one of the contributing factors in the arrival of new companies in the industrial estates since 2011. They acknowledge that the number of companies showing interest in the industrial estates in the Southern Province has been increasing since 2011. Also, there has been a growing demand from local industries for the development of new industrial estates near the Southern Expressway. The opinion of the Galle Regional Office was that the Southern Expressway has been beneficial to the industrial development of the southern region.

Table 11: Number of Approved Investment Projects in the Southern Province

Sector	2012	2013	2014	2015
Agriculture	0	0	0	0
Apparel	1	0	2	1
Infrastructure	1	3	6	1
Knowledge service (e.g. IT software development, etc.)	0	0	0	1
Manufacturing	6	5	4	3
Services	4	1	3	0
Tourism	3	9	7	7
Utilities	1	4	3	2
Total	16	22	25	15

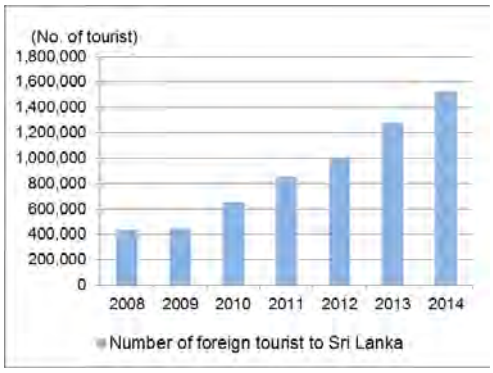
Source: The Board of Investment, Sri Lanka.

Table 12: Industrial Estates in the Southern Province

Name	Year of establishment	No. of lot	No. of tenant	Remarks
Karandeniya Industrial Estate	1993	36	13	Five tenants came to this industrial estate since 2011 Also, three companies have been on the waiting list for approval.
Udukawa Industrial Estate	1995	4	3	One tenant came to this industrial estate after 2011
Batatatha Industrial Estate	2008	13	12	Ten tenants came to this industrial estate after 2011

Source: Galle Regional Office, Ministry of Industry and Commerce.
Note: The Batatatha Industrial Estate was originally opened in 2011 to specialize in the leather industry. However, the estate was reopened in 2008 as an ordinary industrial estate as it failed to attract the leather industry as expected.

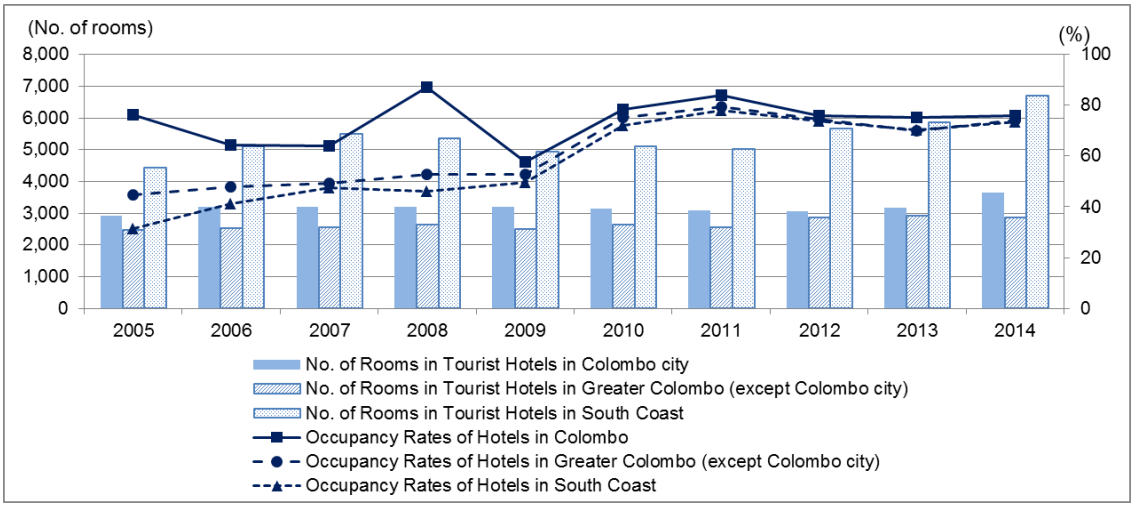
A positive impact of this project on promotion of the tourism industry in the southern region has been observed. The number of foreign tourists has been growing rapidly since the end of the civil war in 2009 with an average annual growth rate of 22.7% (Figure 7). The number of rooms in tourist hotels in Colombo and in other cities in the Greater Colombo and the southern coastal region have also been increasing in accordance with the growth in demand. The average occupancy rate of hotels in the southern coastal region since 2011 has been as high as 74% (Figure 8).



Source: Sri Lanka Tourism Development Authority

Figure 7 Number of Foreign Tourist to Sri Lanka

According to the Galle Chambers of Commerce and Industry, the shortening of the travel time between Colombo and Galle by approximately 2.5 hours after opening of the Southern Expressway can be considered to have had a large, positive impact on the tourism industry in Galle. After the opening of the Southern Expressway, not only has the number of foreign tourists increased, but also the number of the domestic tourists. Day travelers from Colombo have especially increased. A considerable number of local restaurants and other parts of the tourism industry have also expanded their business and sales.



Source: Sri Lanka Tourism Development Authority
Note: The south coast region is a belt-like zone covering the main cities in the southern coastal areas such as Galle, Matara, Hambantota (Southern Province), and Kataragama (Uva Province).

Figure 8: Accommodation Capacity (Rooms) and Occupancy Rates in Tourist Hotels

The results of the beneficiary survey did not reveal a significant socioeconomic impact on the local residents. Approximately 30% of the respondents acknowledged an "increase in income or revenue" (33%) or an "increase in business opportunity" (33%), but the majority did not acknowledge any change in "employment opportunity", "education opportunity", "agricultural activities", "relationship with relatives" or "village security" before and after the project implementation (Table 13).

On the other hand, local companies were more aware of positive socioeconomic impacts such as "increase in income or revenue" (74%), "increase in number of clients" (62%), "increase in business opportunity" (66%), "increase in quantity of service or products" (56%), "improvement in quality of service and products" (48%) (Table 14). The survey results demonstrated that the positive socioeconomic impacts were felt more strongly among local businesses so far.

Table 13: Socioeconomic Impact on Local Residents

Item	Increased/Improved		Remained Same		Reduced/deteriorated	
	No. of responses	%	No. of responses	%	No. of responses	%
Income/Revenue	21	33	32	51	10	16
Employment Opportunity	9	14	54	86	0	0
Business Opportunity	21	33	38	61	4	6
Education Opportunity	14	22	48	76	1	2
Agricultural Activities	3	5	49	78	11	17
Relationships with Relatives	7	11	53	84	3	5
Village Security	12	19	47	75	4	6
Other	0	0	0	0	0	0

Source: The beneficiary survey result.

Table 14: Socioeconomic Impact on Local Businesses

Item	Increased/Improved		Remained Same		Reduced/deteriorated	
	No. of responses	%	No. of responses	%	No. of responses	%
Income/Revenue	37	74	9	18	2	4
Number of Clients	31	62	12	24	2	4
Business Opportunities	34	68	11	22	1	2
Business Hours	14	28	21	42	1	2
Quantity of Service/Product	28	56	15	30	1	2
Quality of Service/Product	24	48	21	42	0	0
Other	0	0	0	0	0	0

Source: The beneficiary survey result.

In summary, the opening of the Southern Expressway resulted in an increase in investment projects and companies operating in the region, as well as in an expansion of the tourism industry including hotels and restaurants corresponding to the growing number of tourists. Perceived positive socioeconomic impacts among local companies were high in the areas of "increase in income and revenue", "increase in number of clients", and "increase in business opportunity". It is considered, therefore, that this project had a positive impact on the promotion of economic development in the southern region.

3.4.2 Other Impacts

(1) Impacts on the Natural Environment

This project involved the construction of a large-scale road, and was given Category A based on the "JBIC Guidelines for Confirmation of Environmental and Social Considerations" (1999, 2002). The Environment Impact Assessment (EIA) was conducted according to the procedures specified in the Environmental Law of Sri Lanka (1980), and approval for the project was given by the Project Approval Authority (PAA) and Central Environment Authority (CEA) in July 1999 [21, 22]. After the final decision was made regarding the route, the Environment Management Plan (EMP) was made. The project contractors followed the plan to implement construction, took environmental measures, and submitted environmental monitoring reports (quarterly, biannually, and annually). The above activities were further monitored by the environmental and social team of the Project Management Unit (PMU) as well as by the consultants in charge of construction supervision. In addition, independent environmental monitoring was conducted by external experts commissioned by ADB[23].

[21] As EIA was approved by CEA, conditions were added such as: a) mitigation measures must be taken against flooding and drainage defects in the upper river and the impact on the downstream wetland, b) the final route must be one that maximizes the developmental opportunity of the Southern region, but at the same time, that causes least resettlement of residents.

[22] A civil organization filed litigation to express a formal objection to the content and the process of the EIA in October 1999. The court dismissed this case in February 2001 stating that; a) EIA of this project followed legal procedures, and b) the court was not in a position to judge the relevance of the alternative proposal (a railway).

[23] Independent monitoring was recommended by the Compliance Review Panel (CRP) of ADB after some residents

This ex-post evaluation reviewed the environment monitoring reports prepared by the consultant and confirmed that monitoring during the implementation period was conducted according to EMP and CEA guidelines, and that necessary measures had been taken to mitigate the environmental impact associated with the civil works, and that there was no noticeable negative impact reported. Also, there is an Environment and Social Development Division in the Road Development Authority, but its function is limited to the review of environmental and social assessment and database management. They have not implemented environmental monitoring since project completion. Based on the interviews conducted with the Road Development Authority, the Galle Regional Office of the Ministry of Industry and Commerce, and the Galle Chamber of Commerce and Industry, it has been concluded that there was no known problem of air pollution, noise pollution, etc., caused by the project. The beneficiary survey revealed, however, that local residents along the Expressway have experienced negative impacts to a certain extent including "a deterioration in noise, vibration, dust and garbage associated with the increase of traffic volume", "a rise in temperature caused by the cutting of trees", and "an increase in floods in the rainy season". The increase of garbage in the Interchanges was pointed out as being a particularly big problem.

In addition, there were fatal accidents involving the staff of contractors and local residents living near the construction sites during the construction works for the target section of this project. In response to this, further strengthening of safety measures was implemented by the project such as reinforcement of personnel of contractors in charge of safety management including assignment of additional safety management staff, implementation of seminars on safety measures by the experts, strict implementation of periodic inspection and examination of equipment, and strengthening of preventive measures to regulate the third parties entering into the construction sites.

(2) Land Acquisition and Resettlement

An outline of the land acquisition and resettlement in this project is shown in Table 15 below. In the project target area, 600 households were affected, of which 229 households were relocated to the resettlement sites prepared by the project. The remaining 371 households moved to the other locations of their own choice rather than going to the resettlement sites. In general, the resettlement sites were constructed in the vicinity of the original residence (within approximately 2km radius).

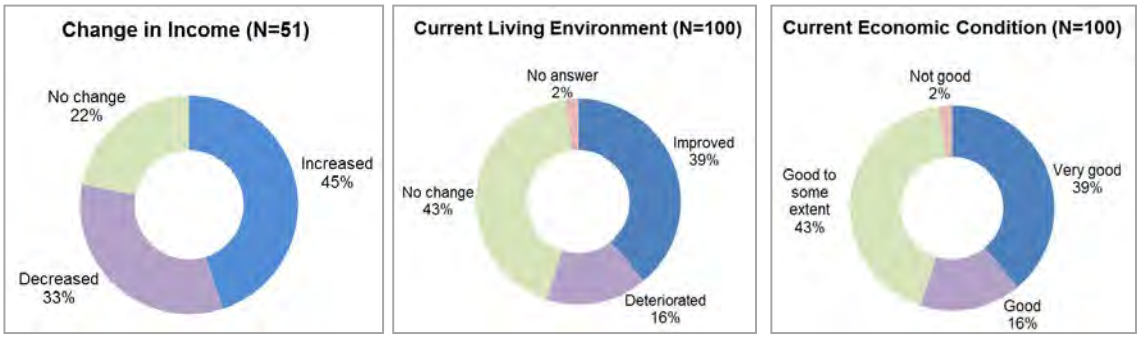
(concerning areas covered by both ADB and JICA) filed a complaint against this project.

Table 15: Outline of Land Acquisition and Resettlement of People
(for JICA target section only)

	Target	Remarks
Land Acquisition	574.4 ha	Land for road construction including the right-of-way (ROW).
	19.9 ha	Land for construction of resettlement sites
Resettlement of People	600 households	Affected households
	229 households	Affected households who moved to the resettlement sites in 12 locations.
	371 households	Affected households who moved to other locations of their own choice

Source: Road Development Authority.

Land acquisition and resettlement were implemented based on the Resettlement Implementation Plan (RIP) (2002), and various measures were put in place to support the resettled households. The sample survey (sample size 100) conducted in this ex-post evaluation revealed that the income, living environment and economic conditions of resettled households had been restored to a certain extent, or even improved, after resettlement through compensation for the resettled households and other mitigation measures (Figure 9). The academic expert mentioned, however, that issues to be resolved remained in some resettlement sites such as access to potable water, other community infrastructure, or the relationship between the resettled households and local communities. An outline of the resettlement, the results of the sample survey and comments by the academic expert are detailed in the "Column: Income Restoration Status of Resettled Households" and "Column: Comments by Sri Lankan Academic Expert" in the appendix.



Source: The sampling survey result with the resettled households.

Figure 9: Sampling Survey Result for the Resettled Households.

In summary, the travel time between the Colombo region and the southern region was reduced, and the smooth flow of traffic between the two regions was improved as a result of this project. The level of satisfaction among the local residents and businesses along the Southern Expressway was high. Some positive impacts were observed such as improvements in the safety and comfort level of the expressway as a result of better travel performance. Economic development seems to have been promoted in the southern region as well. On the other hand, some sections of the Southern Expressway have not reached their target traffic volume. This is

due to the external factors such as the non-completion of the expressway network in the Colombo region, which consists of 3 expressways, including this project, and the chronic congestion of ordinary roads between Kottawa Interchange and Colombo city center. In addition, it has become evident that this project alone has had a limited effect on the alleviation of traffic congestion in Colombo. Issues such as an increase in the number of registered vehicles, the lack of development of the public transportation service, and an insufficient road network must be addressed in order to achieve this goal. Other objectives of this project, such as an improvement of the smooth flow of traffic between Colombo and the southern regions, and the promotion of economic development in the southern region have, nonetheless, been met. It has also been confirmed that the income, the living environment and the economic conditions of resettled households have been to a certain extent restored, or even improved after resettlement.

It is concluded that the expected effects of this project have been mostly realized as planned. Therefore, the effectiveness and the impact of this project are high.

3.5 Sustainability (Rating: ③)

3.5.1 Institutional Aspects of Operation and Maintenance

The Expressway Operation Maintenance and Management Division (EOM & M Division) of the Road Development Authority is responsible for the operation and maintenance (O&M) of the project facilities. The EOM & M Division is a new organization established in RDA set up as a temporary O&M organization until the establishment of the Expressway Authority, based on a recommendation of the JICA technical cooperation project, "Expressway Administration Project" (2009-2012). The EOM & M Division is currently responsible for not only the Southern Expressway, but also for the Colombo-Katunayake Expressway, and the Outer Circular Highway. Its main tasks are traffic control, inspection and maintenance, asset management, and toll collection for the expressways. All these tasks are directly implemented by the EOM & M Division with the exception of works for damage repair after accidents and mowing. The possibility of a performance based contract for O&M on certain parts of the expressways is being considered for the future in the EOM & M Division.

Table 16: Section-wise Staff Allocation in EOM & M Division

Section	No. of staff
User Fees	489
Traffic Management	156
Maintenance	214
Asset Management	2
Electrical Maintenance	21
IT & Telecommunication System Maintenance	10
Mechanical	18
Administration	53
Finance	12
Procurement	6
Total	981

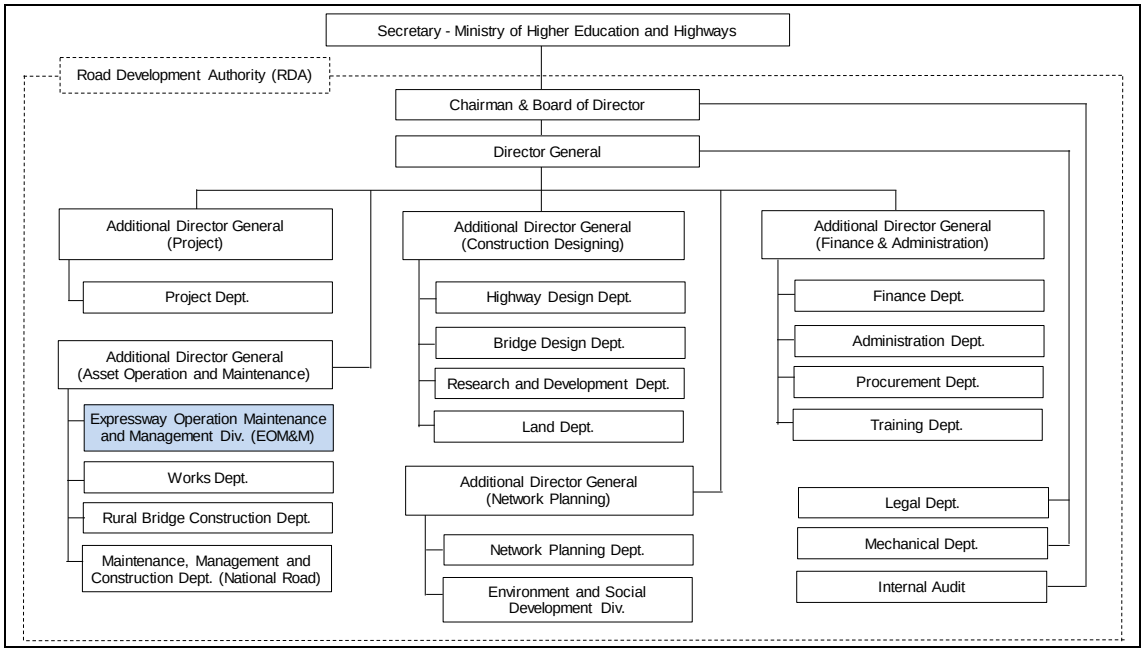
Source: Road Development Authority

As of February 2016, there were 981 staff members in the EOM & M Division. An insufficient number of staff was identified in the Asset Management Section, the Electronical

Maintenance Section, and the IT & Telecommunication System Maintenance Section. Existing staff are, nonetheless, maintaining a good level of performance and there have been no major issues in the O&M of the project facilities. All the other sections have a sufficient number of staff members (Table 16).

The Expressway Authority Bill was still under deliberation in the Sri Lankan Parliament, and there was no clear prospect of a specific timing of the establishment at the time of the ex-post evaluation. It is understood by the EOM & M Division that its functions and staff members will become those of the new authority once the Expressway Authority is created. The organizational chart of the Road Development Authority is shown in Figure 10.

Therefore, no major issues have been observed in terms of the institutional aspect of operation and maintenance.



Source: Road Development Authority (RDA)

Figure 10: Organizational Chart of the Road Development Authority

3.5.2 Technical Aspects of Operation and Maintenance

The Southern Expressway is the first expressway to have been constructed in Sri Lanka, and therefore the Road Development Authority did not possess the relevant experience of expressway operation and maintenance. It was for this reason that the JICA technical assistance project related to the ODA loan, "Expressway Administration Project" (2009-2012) (actual project cost: 165 million yen) was implemented. Its objectives were: (i) the establishment of an organizational system for traffic management, inspection, maintenance, and toll collection, (ii) capacity development of staff members in the fields of traffic management, inspection, maintenance, and toll collection, and (iii) support during the

operation phase for the proper implementation of the above mentioned functions. Also, "Expressway Operation and Management Training" (2012) was conducted by JICA. In addition, ADB provided technical assistance for the operation and maintenance of road facilities.

All staff members of the EOM & M Division, except for a few cadre staff, were newly employed to perform the new functions. The above mentioned JICA technical assistance project played a pivotal role in the capacity development of the newly employed staff as, at the beginning, the project provided training and guidance for toll collection and traffic management. Among the 6 staff members who participated to the training program in Japan, three are still working as staff responsible for the offices of each section in the EOM & M Division and the knowledge and skills acquired through training in Japan have been disseminated. In the EOM & M Division, training is conducted at least annually on toll collection, traffic management, vehicle weighing methods, traffic safety, finance and procurement. In addition, a variety of manuals such as a toll manual, an inspection and maintenance manual, and a traffic management manual, all of which were developed under the JICA technical assistance project, are well used in daily operations. Five years after the inauguration in 2011, no specific problems caused by a lack of technical skills and capacity have been reported in operation and maintenance.

Major maintenance is necessary every 7-8 years after completion including overlay, which is due in the next 3-5 years. In preparation for this, the EOM & M Division is conducting an inspection and evaluation of the condition of the road surface throughout the Southern Expressway. The EOM & M Division is to lead the planning of a major maintenance plan including overlay, the preparation of detailed design and procurement and construction supervision with support from the related sections of the Road Development Authority such as the Highway Design Department and the Bridge Design Department. The preparation for the above works is underway.

Therefore, no issues have been observed in terms of the technical aspect of operation and maintenance.

3.5.3 Financial Aspects of Operation and Maintenance

There has been a constant increase in both the annual budget and the actual spending for the operation and maintenance of the Southern Expressway (Table 17). Toll revenue is managed by a separate account under the Ministry of Finance, to be used exclusively for the operation and maintenance of the Expressway (Table 18). Currently, toll revenue is sufficient to cover the maintenance costs for the Southern Expressway as their maintenance activities are mainly for daily maintenance and minor repairs. A surplus is saved as a financial resource for future maintenance.

Table 17: Operation and Maintenance Budget for Southern Expressway

Unit: 1,000 Rupees

	2012		2013		2014		2015	
	Plan	**Actual**	**Plan**	**Actual**	**Plan**	**Actual**	**Plan**	**Actual**
Maintenance Cost	70,375	63,179	145,144	120,877	390,150	134,174	340,213	172,286
Operation Cost	491,487	440,450	692,879	568,459	841,474	793,103	928,391	832,211
Total	561,862	503,629	838,023	689,336	1,231,624	927,277	1,268,604	1,004,497

Source: The Road Development Authority.

Table 18: Revenue from Southern Expressway

Unit: 1,000 Rupees

	2012	2013	2014	2015
Toll Fee	1,019,133	1,259,027	2,153,265	3,121,545
Towing Charge	4,398	5,547	7,742	9,962
Charge for response to Accidents	23,879	26,421	38,507	53,428
Total	1,047,409	1,290,995	2,199,514	3,184,935

Source: The Road Development Authority.

Major investment is necessary for major maintenance such as overlay, and toll revenue alone will not be sufficient to cover this cost. The government will therefore have to provide additional budgetary support. The new government that came to power in 2015 is preparing for the planning of the new national development plan after 2016. The sector development plan and investment plan are due to be developed in line with this new national development plan. According to the executing agency, budgetary provision for major maintenance will be considered in this new framework.

Therefore, no issues have been observed in terms of the financial aspect of operation and maintenance.

3.5.4 Current Status of Operation and Maintenance

The EOM & M Division takes care of the daily, periodic and preventive maintenance of road pavements, bridges and related facilities of the expressway. Since the warrantee period (i.e. the defect liability period) of the contractors continued to 2014, defects and malfunctions of the project facilities were dealt with and fixed by the contractors till that date. Due to this, the Southern Expressway and related facilities were well maintained at the time of the ex-post evaluation. The maintenance equipment and vehicles are all running normally, as well. There are no constrains in procurement of spare parts.

Therefore, no issues have been observed in terms of the current status of operation and maintenance.

In the light of above, no major problems have been observed in the institutional, technical and financial aspects of the operation and maintenance system. Therefore the sustainability of the project effects is high.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

The objective of this project was to facilitate a smooth traffic flow between the Colombo region and Matara in the southern region by constructing a high-standard expressway (total length of 125km with 4 lanes), thereby contributing to the alleviation of traffic congestion in the Colombo region, the improvement of traffic safety and of economic development in the southern part of Sri Lanka. The objective has been highly relevant to the Sri Lankan development plan and its development needs, as well as to Japan's ODA policy. Therefore the relevance of the project is high. Through the project a reduction in the travel time between the Colombo region and the southern region has been realized and there has been an improvement in the smooth flow of traffic between the two regions. The project has also brought about positive impacts such as improvements in traffic safety and comfort as a result of improvements in traveling performance and promotion of the economic development of the southern region. The traffic volume in some parts of the Southern Expressway, however, has not met the target due to external factors such as (i) the chronic congestion of the ordinary roads between central Colombo and the Kottawa Interchange, the starting point of the Southern Expressway, and (ii) the benefits of an integrated metropolitan expressway network has not been fully seen as other expressways near central Colombo connecting to the Southern Expressway are still under construction. In addition, it has been understood that traffic congestion in the Colombo region could not be alleviated solely by the project. The objective to facilitate a smooth traffic flow between Colombo and the southern region, nonetheless, was mostly achieved through the project as expected. Therefore, the effectiveness and impact of the project are high. Meanwhile, both the project cost and project period significantly exceeded the plan. Therefore, the efficiency of the project is low. No major problems have been observed in the institutional, technical and financial aspects of the operation and maintenance system. Therefore sustainability of the project effects is high. In light of above, this project is evaluated to be satisfactory.

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

(1) Improvement of safety and convenience on the Expressway

- Collision with animals is the third biggest cause of traffic accidents. It is recommended that measures should be put in place urgently to prevent animal invasion.
- It is recommended that reflectors on the guardrail at some accident sites which remain dysfunctional should be rapidly repaired.

- It is recommended that information and alerts for drivers on those parts of the expressway where there is a strong wind by should be provided using electrical information boards.
- It is recommended that the names of major cities and towns nearby the interchanges should be added on exit signs for the convenience of drivers.
- The dumping of garbage by the drivers near the interchanges is becoming a big issue for residents living in the neighborhood. From the point of view of environment and landscape preservation of the expressway, it is recommended that garbage control should be begun at the interchanges, together with activities for awareness raising, cleaning activities and driver education.

(2) Operation and Maintenance of the Expressway

- It is expected that the major maintenance, including overlay, will be necessary in the next 3-5 years. It is recommended that the Road Development Authority should provide the EOM & M Division with necessary support for planning, technical transfer, and budgetary provision.

(3) Alleviation of traffic congestion between Colombo city center and Kottawa Interchange

- The existing national roads between Colombo city center and Kottawa Interchange are chronically congested. As it takes about an hour to get to the Interchange, the benefit of taking the expressway to shorten the travel time is compromised. It is recommended that the Road Development Authority should continue to work on the improvement of the road network in and around Colombo city to improve the access to Kottawa Interchange.

4.2.2 Recommendations to JICA

None

4.3 Lessons Learned

(1) Capacity development of the operation and maintenance agency for ensuring the project effects and sustainability

This project was implemented in conjunction with the grant aid project "The Project for the Development of Intelligent Transport Systems for Expressways in Sri Lanka" and the technical assistance project related to ODA loan "Expressway Administration Project". Together, the project provided comprehensive support covering the establishment of an expressway operation system and capacity development for the executing agency that included not only the construction of an expressway, but also the establishment of traffic information systems and

human resource development for toll collection and traffic management. It is worth mentioning that the Southern Expressway is the first expressway developed in Sri Lanka and that the operation and maintenance agency was newly established together with construction. From the point of view of project effectiveness and sustainability, it was imperative that support for both infrastructure and capacity development aspects be provided, including the capacity development of the operation and maintenance agency.

(2) Project objective setting based on the causal relationship

At the time of the appraisal, the objectives of this project were set as the "facilitation of a smooth flow of traffic between the Colombo region and southern region" and an "alleviation of traffic congestion in the Colombo region". As a result of analysis of the causal relationship of "input-output-outcome" of this project, it has been concluded that the latter seems to be an indirect effect (i.e. impact) of the project rather than a direct effect. Therefore, this ex-post evaluation reexamined and modified the project outline as mentioned.

In future project formulation, appropriate objectives and impacts should be set after careful examination of the following points: (i) a causal analysis of the project scope and outcome with its direct effect and the indirect effect (i.e. impact), (ii) the prerequisite conditions and external factors.

End

Comparison of the Original and Actual Scope of the Project

Item	Plan	Actual
1. Project Outputs (1) Civil Works	High-standard expressway (total length: 67 km with 4 lanes) <u>Package 1</u> • Kottawa- Dodangoda: 35km (4 lanes) <u>Package 2</u> • Dodangoda- Kurundugahahetekma: 31.6km with 2 lanes) <u>Package 3 (*)</u> • expansion from 2 lanes into 4 lanes for the section of Package 2	Same as planned
(2) Works and Procurement related to Operation and Maintenance (O&M) (including ADB section) (*)	<u>Package 4</u> • Operation and maintenance center office: 2 locations • Toll gate office: 9 locations (including ADB section) • Toll gate: 11 locations (including ADB section) • Procurement of O&M equipment: Towing cars, ambulances, fire engines, etc.	Same as planned 8 locations 8 locations Same as planned (but a part of O&M equipment was procured by ADB)
(3) Consulting Services (Supervision of Civil Works)	(Work contents) • Review of detailed design • Assistance for tender and construction supervision • Environmental monitoring (Work volume) • International consultant: 533.5 M/M • Local consultant: 5,988 M/M (including supporting staff)	Same as planned (Work volume) • International consultant: 395 M/M • Local consultant: 2,858 M/M (excluding supporting staff)
(4) Consulting Services (Technical Assistance of O&M)	(Work contents) • Assistance in planning and coordination with stakeholders regarding O&M of the project including toll system • Assistance in procumbent for outsourcing O&M to private entity • Assistance in procurement and supervision related O&M equipment • Assistance in capacity development of Expressway Authority (Work volume) • International consultant: 36 M/M • Local consultant: 87 M/M	(Work contents) • Same as planned (but ETC system was not introduced) • Outside the project scope (implemented by ADB) • Same as planned • Outside the project scope (implemented by ADB) (but Expressway Authority was not established) (Work volume) • International consultant: 15 M/M • Local consultant: 66 M/M
2. Project Period (At the time of Phase I appraisal) (At the time of Phase II appraisal)	March 30, 2001 – December 2005 (57 months) March 30, 2001 – October 2011 (127 months)	March 30, 2001 – September 2013 (151 months)
3. Project Cost Amount Paid in Foreign Currency Amount Paid in Local Currency Total Japanese ODA Loan Portion Exchange Rate	26,399 million yen 24,945 million yen 51,344 million yen 36,269 million yen 1 Rupee = 1.05 yen (As of September 2007)	27,307 million yen 36,153 million yen 63,460 million yen 36,180 million yen 1 Rupee = 1.019 yen 1 US dollar＝104.64 yen (Average between 2000 and 2013)

JICA Evaluation Department

On the Views of an Expert

In addition to performing an evaluation based on the five DAC evaluation criteria by the external evaluator, this ex-post evaluation incorporated the views of a Sri Lankan academic expert in order to reflect more specialized and diverse views. The external evaluator selected the expert, and gained her cooperation. Dr. Ramanie Jayatiaka is a former associate professor and current visiting lecturer of the Sociology Department, Colombo University,

Dr. Jayatiaka is a sociologist specializing in rural sociology and gender study, who taught at Colombo University for more than 40 years from 1973 until March 2015 when she retired. At the same time, Dr. Jayatiaka has supported activities for many years to alleviate povertyand empower women as a board member of local NGOs such as the Centre for Women's Research and the Sri Lanka Centre for Development Facilitation. For this reason, Dr. Jayatiaka provided advice on the design, implementation and analysis of the survey with resettled people in order to find out their income restoration status after resettlement. In addition, Dr. Jayatiaka worked on implementing the focus group discussion with the resettled people and summarizing its results as well as extracting lessons learned based on the survey results.

The summary of the survey results prepared by the External Evaluator and the analytical results of focus group discussion made by Dr. Jayatiaka (titled Column: Comments by a Sri Lankan Academic Expert) are appended to the evaluation report as attachments.

End

Column: Income Restoration Status of Resettled Households

(1) Overview of Resettled Households and Resettled Area

The total number of resettled households of this project was 600. Out of 600, 229 households were relocated to the resettlement sites constructed by the project, which were situated near to their original homes. The remaining 371 households moved to other locations of their own choice. Basically, those who were relocated to the 12 resettlements were resettled within approximately 2 km of their original homes. The number of households in each resettlement site was between 8 and 40.

Resettlement sites

Sawsiri Uyana Resettlement Site

Rusiri Sewana Resettlement Site 1

Rusiri Sewana Resettlement Site 2

(2) Compensation Package with the Resettled People

Compensation for land and the resettlement of people was made according to conventional Sri Lankan domestic law (i.e. Land Acquisition Law 1950/1956) and was mainly based on the valuation of property lost. In general, the value of property such as land and houses/buildings were valuated based on the market price and the compensation was made based on the valuated price. However, in addition to the above practice, this project adopted the idea of "replacement cost" for compensation for the first time in Sri Lanka, based on the Resettlement Implementation Program (RIP) (2002), which allowed compensation for relocation costs including a temporary rent allowance during a relocation period, loss of agriculture products and trees, loss of auxiliary structures of houses/ buildings such as gates, wells, electricity lines, loss of income and business operations, etc. In addition, the non-title land owners who did not have a property rights to land were allowed to receive compensation for relocation costs and loss of auxiliary structures of houses/ buildings.

Also, the project established the LARC (Land Acquisition and Resettlement Committee) (Note 1) as a mechanism to reflect the opinions of the people affected as well as to promote their participation in the compensation process. Firstly negotiation for compensation with affected people was undertaken through LARC at the divisional secretariat level. In cases where negotiations were not settled at the district level, the final consensus building, agreement and decision were made through Super LARC organized at the ministry government level.

This new system/model adopted by the project was compliance with international standards, and it was the first case where it had been applied for a development project and public works in Sri Lanka. While ADB was a key donor who assisted the executing agency and the project related agencies in the introduction and implementation of this new system/model through a series of technical assistance, JICA also supported and coordinated with the executing agency for the smooth implementation of land acquisition and the resettlement of people in collaboration with ADB. Based on the experience of this project, the Government of Sri Lanka revised the Land Acquisition Law in 2008, and regulations on compensation by "replacement cost" and expansion of compensation for non-tilted land owners were formally stipulated in the amended Law.

(Note 1) LARC was established in accordance with the Resettlement Implementation Program (RIP) (2002), and its primary roles were (i) to decide on the replacement value for land and assets acquired, (ii) to act as a forum for consultation and negotiation between the people affected and government officials, and (iii) to facilitate a more equitable and participatory process in involuntary resettlement. It was expected that the introduction of the LARC mechanism would promote a smooth implementation of land acquisition as well as avoid critical complaints from people affected that may develop into court cases. The LARC consisted of representatives from the Divisional Secretary, the STDP Regional Office, the Survey Department of the Ministry of Land, the Valuation Department of the Ministry of Finance, and land owners.

(3) Mitigation Program for Resettlement of Households

The following mitigation programs for resettled households including construction of resettlement sites with basic infrastructure and assistance for income restoration were implemented according to the Resettlement Implementation Program (RIP) prepared in 2002.

Mitigation Measures Based on RIP

No	Mitigation Program	Contents
1	Resettlement Site Development Program	Construction of resettlement sites with basic infrastructure such as access roads, electricity, water supply/wells, and drainage systems.
2	Housing Society Development Program	Assistance for the establishment of community organizations/ associations by the resettled households in the resettlement sites (training and guidance for the operation and management of society), financial support for the construction of community halls.
3	Income Restoration Program	Provision of vocational training (computer operation, needlework), support for starting new businesses (provision of manufacturing machines to cottage industries), support for agriculture activities.
4	Home Garden Program	Assistance for cultivating coconuts, fruits, and vegetables in home gardens (provision of seeds and seedlings, guidance for cultivation).
5	Grievance Redness Program	Response to complaints and requests from the local people in the target areas including the resettled households.

The income restoration program was undertaken in 2006-2008 by subcontracting to SEEDS (Savodaya Economic Enterprise Development Service Ltd), a local NGO, however, the project could not obtain a satisfactory result due to the limited capacity of SEEDS. Therefore, the executing agency further identified 22 poor resettled households who needed contiguous support (they were all people affected in the JICA target section) in 2008, and the income restoration program continued for these people until the project completion.

(4) Impacts on Resettled Households

This ex-post evaluation conducted a sample survey with resettled households in the JICA target section. The total number of samples was 100, of which 86 samples were selected from households in the resentment sites constructed by the project (8 sites). The other 14 samples were selected from households who were living in other locations (4 locations). The sample survey was conducted by face-to-face interviews using structured interview sheets. 12 survey points were selected taking into account a geographical balance, and samples (i.e. interviewed households) were chosen randomly at each survey point in the resettled sites. The sampling number of 100 represents 16.7% of the total number of resettled households, and 36.7% of resettled households who live in the resettlement sites.

Allocation of Number of Samples at Each Site

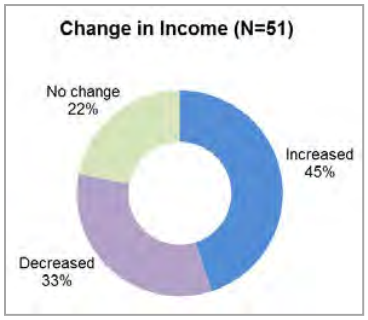
No	Resettlement Scheme	Nearest Town/Community	No. of Samples
<Resettled households who live in the resettlement sites constructed by the project>			
1	Sathutu Uyana	Dodangoda/Kaluthara	12
2	Rusiri Sewana	Kaluthara	19
3	Atakohota Kanda	Elpitiya/ Galle	10
4	Wasana Uyana	Galle	3
5	Shanthi Uyana	Molaboda	6
6	Sawsiri Uyana	Diyagama	17
7	Annasigalawatta	Kaluthara	8
8	Miriswatta	Welipenna	11
Sub-total			86
<Resettled households who live in their own resettled sites>			
1	Dodangoda		2
2	Gelanigama		8
3	Kahathuduwa		1
4	Pinnaduwa		3
Sub-total			14
Total			100

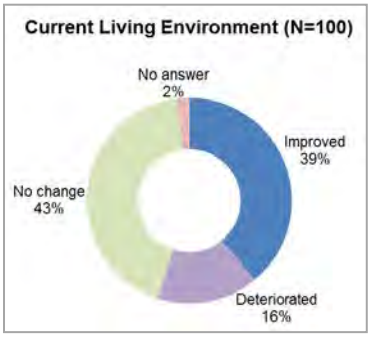
The resettled households living in the above eight sites except Sawsiri Uyana scheme came from homes located within an area approximately 1.5 km from each site, and most of them remained in the same community. Meanwhile, the resettled households in the Sawsiri Uyana scheme came from different locations/communities. Some came from near the site, within a 0.5-1 km area, some moved from 25-30 km away from the site by their own special request.

In this survey, Dr. Ramanie Jayatiaka, who was a former associate professor and current visiting lecturer of the Sociology Department, Colombo University, was invited as an academic. Dr. Jayatiaka provided technical advice and guidance for the entire process of the sampling survey including survey design, implementation, and analysis.

(a) Economic and Social Impacts associated with Resettlement

Regarding the change in household income before and after resettlement, 45% of the 51 households who responded to this question (23 households) answered "increase", 33% (17 households) replied "decrease", and 22% (11 households) said "no change". 11 out of 23 households who answered "increase in income" recognized the causal relationship with the project, and they gave reasons such as new business opportunities in the new places, starting new businesses using compensation money (e.g. transport services by three wheelers, agriculture using the newly purchased land), and employment, etc. Meanwhile, 14 out of 17 households who answered "decrease of income" recognized the causal relationship with the project, giving reasons such as loss of land for cultivation, loss of space for rearing livestock, leaving jobs due to the distance from their new homes to work places, loss of established clients, etc. In particular, those who used to cultivate many varieties of vegetables and fruits in their home garden suffered from an increase in their cost of living



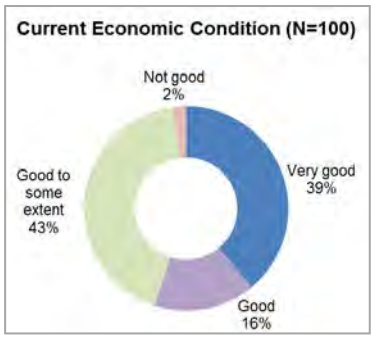


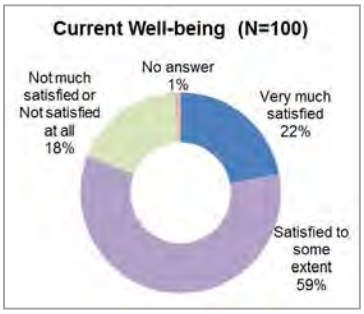
because the gardens in their new homes were limited in space and they were obliged to buy vegetables. Also, some new land did not have enough water and suitable soil for cultivation, all of which that made it difficult to maintain a home garden in the same manner as before. On the other hand, 72% of total households (72 households) did not change their occupation after resettlement.

Regarding current accessibility to various services, approximately 50% of respondents said that access to market/shopping, health/medical services, school/education services, public transport, and access roads had improved in comparison to the locations they were in before resettlement. For accessibility to drinking water, 36% of respondents said that it had "improved", on the other hand, 22% replied it had "deteriorated". It was revealed that most households converted from firewood to gas for cooking after resettlement. Regarding the living environment, 39% responded that it had "improved", while 16% answered that it had "deteriorated", 43% said "no change" and the remaining 2% did not respond.

(b) Satisfaction with the Compensation Package and the Current Status of Income Restoration

21% of households interviewed were on the income restoration program. Out of these, 33% of respondents said that the income restoration program had helped them to recover their livelihood.





Regarding satisfaction with the compensation package, 67% of households said they were "satisfied to some extent" or more ("Very much satisfied":10%, "satisfied to some extent": 57%), while 33% of households answered that they were "not much satisfied" or "not satisfied at all". The majority of respondents who were satisfied with the compensation package were living in poor housing conditions and had less family income before resettlement. However, with the compensation, all were able to construct new houses on their own land with titles and some were able to invest in new businesses. This implies that the income from the compensation package, the provision of titled land with basic infrastructure, and a series of mitigation measures helped to improve the economic and living conditions of families who were economically disadvantaged before resettlement. On the other hand, the respondents with low satisfaction included many households who in their previous locations had lived as big families with parents and children's families together. They felt that the compensation payment per one household was relatively small as, unlike other individual households, they had to share the compensation payment among their family members when their parents received it. Also, some households used to receive extra income from their home gardens, but this source of income was lost after resettlement as they were not able to maintain the same size of home garden in the resettlement sites. The above mentioned reasons for high and low satisfaction with the compensation package partly share the reasons for changes in income.

Lastly, when asked about the current economic condition of the family, 81% of households responded "good to some extent" or more ("very good": 1%, "good": 37%, "good to some extent": 43%), while 19% of households answered "not good". Regarding satisfaction with the current well-being of the family, 81% of households answered "satisfied

to some extent" or more ("very much satisfied": 22%, "satisfied to some extent": 59%), while 18% of households replied "not much satisfied" or "not satisfied at all". The remaining 1% did not respond.

Focus Group Discussion with Women

Sawsiri Uyana Resettlement Site

Rusiri Sewana Resentment Site

(c) Focus Group Discussions with Women

In addition to the above sample survey, Dr. Ramanie Jayatiaka, a Sri Lankan academic, conducted focus group discussions with the women in the selected four resettlement sites (Sawsiri Uyana, Rusiri Sewana, Atakohota Kanda, Sathutu Uyana). The survey team invited women at home (all were members of housing societies) and 10-15 women participated in the sessions at each site (total 40-60 participants). Based on the group discussion, the following common findings and issues were revealed.

- Not all of the housing plots allocated to the resettled people are necessarily occupied. Some plots remained vacant, and some were being resold. For example, about half of the Sawsiri Uyana site and half of the Atakohota Kanda site remained vacant.
- The land price of the resettlement sites has been rising. The price of some sites increased by about 10 times in comparison with the price during resettlement.
- The level of activity of housing societies is different according to the resettlement site. While housing societies on some sites are active at present, some have stayed dormant. It is thought that the composition and background of the residents in the site may influence this. For instance, most of people on the Sawsiri Uyana site came from different locations and localities, while people on the Rusiri Sewana site, the Atakohota Kanda site, and Sathutu Uyana were moved from almost the same communities so people knew each other and community relationships were already established. The housing society in the former case is not operational, but the one in the latter has continued its activities.
- The level of satisfaction regarding access roads and drainage facilities is low. People want to have an asphalt paved access road that is trafficable during rain rather than the gravel roads constructed by the project. Also, there is demand that the drainage facilities on both side of the access roads are made of concrete as the road floods during the rainy season and is difficult to use.
- Problems with drinking water were observed on the Sawsiri Uyana site and the Atakohota Kanda site. The project provided common and individual wells on the Sawsiri Uyana site as no public water supply was available. However, over time and due to the influence of development projects near the site, the water volume has been reduced and water quality has worsened. On the Atakohota Kanda site, the access to water to those who live in the hill area without individual wells is a major issue. Issues related water were also observed on the Sathutu Uyana site and the Shanthi Uyana site during the sample survey with the resettled households.

Column: Comments by a Sri Lankan Academic Expert

Dr. Ramanie Jayatilaka
Former associate professor (current visiting lecturer) of Sociology Department, Colombo University

According to qualitative analysis based on the results of the focus group discussion with the resettled households, the general perception of the settlers was that they were better off than they had been prior to relocation. Today they have a legal right to their land though previously many had joint ownership. However, in some families conflicts had emerged when the compensation package was distributed among family members. In comparison to settlers relocated in new locations, the settlers relocated close to their original place of residence were able to adjust better, as they were able to continue with their livelihoods, access the same services as they had prior to resettlement and maintain social relationships without hindrance. However, the settlers who came from faraway places mentioned that they had a feeling that they were new comers to the community and still tried to maintain relationships with their native village.

Providing basic needs such as safe water is a requirement in any re-settlement programme. However, settlers on the Sawsiri Uyana and the Atakohota Kanda resettlement sites were deprived of access to safe water. This has resulted in many hardships to settlers, especially to vulnerable groups such as women, children and the sick. The author considered that this water issue was one of the main factors that has led to some land recipients not settling in the re-settlement sites.

Through the interviews with people resettled, the author had the impression that leaving the responsibility of unfinished tasks, such as constructing proper drains with concrete, upgrading community roads from soil and gravel roads to asphalt paved roads, constructing unrealized community halls in some sites, etc. to the settlers had created bad feelings against the RDA. According to the resettled people interviewed, when they went to Pradeshiya Sabha[24] (Village Council) with their requests for the construction/maintenance of proper drains, paved community roads, community halls etc., they were turned down and told that they should go to the RDA as they were "RDA settlers". Since the resettlement sites were newly developed areas by the project and some of the settlers who came from far away were the new for the host communities, the link between the settlers and the Pradeshiya Sabhas seems to be weak and therefore they face problems in getting their demands met.

At the initial stage of land acquisition and resettlement process, there were certain communication gaps regarding the government compensation package between the settlers and the government. Therefore, some settlers feel that they could have received a better compensation package. If they had had better knowledge about the given package and they could have demanded more. It is thought that this communication gap might be related not only to people's limited capacity to understand the compensation procedure, but also to unfamiliarity on the part of the Sri Lankan government about the new compensation scheme of the project at the initial stage.

Also, the project established a framework of LARC in which the participatory approach for compensation negotiation and resettlement procedures was adopted. On the other hand,

[24] The local government administrative system of Sri Lanka is made up of a parallel system of two different lines: (i) an administrative system under the control of central movements based on District, and (ii) an administrative system under the Provincial Council and the other local councils. The local councils under the Provincial Council are Urban Councils in the urban areas, Municipal Councils in the semi-urban areas, and Pradeshiya Sabha in the rural areas. The local councils are mainly responsible for the provision of environmental and social services such as public health, sanitation, water supply, garbage disposal, sewage, etc.

the monitoring of living condition of people resettled was mainly handled by RDA and the involvement of the people and local governments was limited in this monitoring process. In order to encourage resettled people to recover their living conditions through their own ownership as well as with the cooperation with local governments, the monitoring in the post-resettlement period should have been conducted with the involvement of local governments and the people resettled.

<Lessons Learned>

Based on the above findings, the following lessons learned are proposed, to be shared with JICA, RDA and for the Sri Lankan government.

- As far as possible resettlement sites should be close to the settlers' original place of living.
- Resettlement sites should be carefully selected where all amenities, especially those for basic needs can be provided. A proper assessment of the resettlement sites covering all areas needed for habitation should be undertaken and approved by all parties prior to implementing the resettlement programme.
- A better exit strategy for the post-project period needs to be worked out by the RDA prior to the completion of the resettlement programme so that settlers can integrate into the new settlement well. It is necessary to remove the label 'RDA settlers', so that they are not seen as such by different service providers, host communities and the settlers themselves, thus avoiding social exclusion and helping integration into society.
- A better mechanism with the participation of different stakeholders including settlers, RDA, and local governments should be established from the planning phase of any resettlement programme until the monitoring phase. The monitoring should continue for at least five years after completion of the programme in order to deal with the remaining issues that could not be settled during the project implementation period, and funds should be allocated for this purpose.

Democratic Socialist Republic of Sri Lanka

FY 2015 Ex-Post Evaluation of Japanese ODA Loan Project in Japanese[1]

"Rural Road Development Project (Eastern Province)"

External Evaluator: Takako Haraguchi, International Development Associates, Ltd.

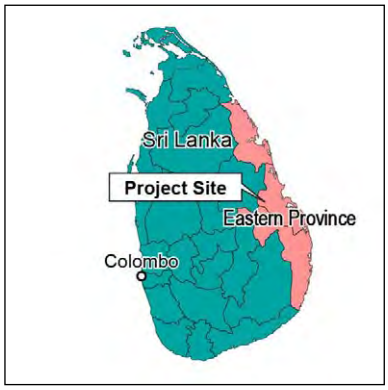
0. Summary

The objective of this project was to improve access to economic and social services among residents, who had been long kept in a stage of underdevelopment, by rehabilitating and improving deteriorated rural roads in Eastern Province, thereby contributing to the reconstruction and development of the conflict-affected area. The relevance of the project is high, as the objective was consistent with Sri Lanka's development policies and development needs as well as with Japanese aid policies. The effectiveness and impact are evaluated to be high. The selection of the community roads that received concrete pavement works in this project—a total of approximately 380km in 330 locations—took into consideration Eastern Province's distinctive and diverse ethnic background. The road enhancement has resulted in better accommodation of the traffic that grew rapidly after the end of the civil war and significantly improved the residents' access to schools, hospitals, markets, etc., subsequently contributing to positive changes in their lives and economy. The project's efficiency is also evaluated to be high as the project cost and project period were both mostly within the plan. On the other hand, the sustainability of the project's effects is evaluated to be fair. Maintenance expected for the rehabilitated roads was yet to be conducted due to the lack of information sharing between the Provincial Road Development Department (that implemented this project) and the local authorities (that are responsible for the maintenance of the targeted roads) as well as the lack of necessary budget. Although the condition of the targeted roads is mostly good at the time of the ex-post evaluation, there is, thus, a concern about the long-term sustainability.

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

[1] This ex-post evaluation was carried out by referring to opinions regarding the Project's activities from non-profit organizations of Japan and Sri Lanka. Selection of the experts was done by the external evaluator, and agreed by JICA.

1. Project Description



Project Location


Harvested rice is carried to the market through the improved road

1.1 Background

The road sector in Sri Lanka accounts for approximately 90% of the country's land transportation (as of 2008) and thus plays an important role in social and economic activities. The highly deteriorated conditions of rural roads, caused by inadequate maintenance, made it difficult for residents to access social services and widened the disparity of the rural areas from Greater Colombo. In particular, Eastern Province (population: approx. 1,460,000 in 2009), which was in the process of recovering from the influence of more than 25 years of the civil war, needed revitalization of the local economy and improvement of life of people not only in the normal context of development but also from a perspective of stabilization of peace. Rehabilitation of rural roads (total length: 8,300 km), which would lead directly to better access to social and economic services, was therefore of vital importance.

Japan International Cooperation Agency (JICA) was working in collaboration with the World Bank and the Asian Development Bank (ADB) to assist Sri Lanka in improving the road network. For Eastern Province, JICA was to assist the improvement of rural roads, while the World Bank and ADB were to assist the improvement of provincial roads. This project constituted the rural road portion of such assistance.

1.2 Project Outline

The objective of this project was to improve access to economic and social services among residents by rehabilitating and improving deteriorated rural roads in Eastern Province, thereby contributing to the mitigation of regional inequality and the reconstruction of the conflict-affected area.

Loan Approved Amount/ Disbursed Amount	3,965 million yen / 3,956 million yen	
Exchange of Notes Date/ Loan Agreement Signing Date	March, 2010 / March, 2010	
Terms and Conditions	Interest Rate	0.65% (0.01% for Consulting Services)
	Repayment Period (Grace Period)	40 years (10 years)
	Conditions for Procurement:	Untied
Borrower / Executing Agency(ies)	The Government of the Democratic Socialist Republic of Sri Lanka / Ministry of National Policy and Economic Affairs	
Final Disbursement Date	December, 2013	
Main Contractor (Over 1 billion yen)	-	
Main Consultant (Over 100 million yen)	-	
Feasibility Studies, etc.	• ADB, Subgroup II (N): Final Report (Feasibility), Road Project Preparatory Facility, Consulting Services for Feasibility Study and Detailed Engineering Design of Provincial Roads (2008). • Katahira & Engineers International, JICA Special Assistance for Project Implementation (SAPI) for Eastern Province Water Supply Development Project and Provincial/Rural Road Development Project in Sri Lanka: Final Report (2010).	
Related Projects	• Eastern and North Central Provincial Road Project (ADB, 2009-2014) • Provincial Roads Project (World Bank, 2009-2015)	

The executing agency of this project was the National Planning Department of the Ministry of National Policy and Economic Affairs (during the time of project implementation: National Planning Department of the Ministry of Finance and Planning). The project was implemented by the Project Implementation Units (PIUs) established within the District Engineer's Offices (Trincomalee District, Batticaloa District and Ampara District) of the Provincial Road Development Department (PRDD), under the supervision of the Project Management Unit created in the National Planning Department.

2. Outline of the Evaluation Study

2.1 External Evaluator

Takako Haraguchi, International Development Associates, Ltd.

2.2 Duration of Evaluation Study

This ex-post evaluation study was conducted in the following schedule.

Duration of the Study: December 2015 – December 2016

Duration of the Field Study: January 31 – February 16, 2015 and May 15 –20, 2016

3. Results of the Evaluation (Overall Rating: A[2])

3.1 Relevance (Rating: ③[3])

3.1.1 Relevance to the Development Plan of Sri Lanka

Rehabilitation and improvement of existing local roads matched the development policies at the time of both appraisal and ex-post evaluation of this project. The Ten-Year National Development Plan (2006-2016), which was based on the Mahinda Chinthana Development Program, the fundamental policy of the government at the time of the appraisal, argued that the development of the road network was essential for sustaining regionally-balanced economic growth, designating the improvement of deteriorated existing roads in rural areas as an urgent issue.

Since the change of government in January 2015, the Mahinda Chinthana Development Program itself has not continued, and the national development plan of the new government has not been announced yet (it was under preparation at the time of the ex-post evaluation). Nevertheless, many of the public investment projects listed in the aforementioned Ten-Year Plan have continued to be planned and implemented. Also, the Economic Policy Statement by the Prime Minister (presented on November 5, 2015), one of the policy statements published during the timeframe of the ex-post evaluation, mentioned rural roads as part of the rural infrastructure facilities targeted for development[4].

Regarding provincial-level development policies, the road sector development policy of the Eastern Development Plan (2012-2016) designated the road sector as an important component of housing and infrastructure development and aimed to rehabilitate/improve several types of roads including rural roads for enhanced connectivity.

[2] A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

[3] ③: High, ②: Fair, ①: Low

[4] According to the executing agency, the public investment plan would be released by the end of 2016.

3.1.2 Relevance to the Development Needs of Sri Lanka

At the time of the appraisal, deterioration of rural roads as mentioned in "1.1 Background" above was hindering the improvement of the residents' living conditions, economic activities, and reconstruction.

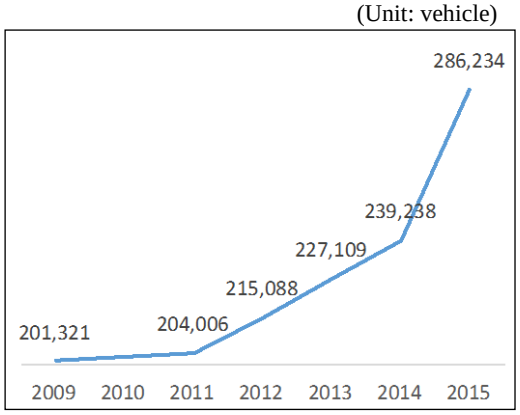
At the time of the ex-post evaluation, the post-conflict reconstruction and development process is underway. As shown in Table 1 and Figure 1, both the population and the number of registered vehicles are increasing. Also, according to the executing agency and the Eastern Provincial Council, the ending of the civil war enabled people's mobility. These developments attest to the necessity of rural roads that people use in all facets of their lives. As agriculture and fishery constitute the major economic bases of the project area, rural roads are important not only for providing access to social services but also for enabling the selling of produce.

Table 1 Statistics of Eastern Province (Relevance)

	At appraisal (2009)	At ex-post evaluation (2015)
Population (person)	(2007) 1,461,009	(2012) 1,551,381
Tamil	589,441 (40%)	617,295 (40%)
Muslim	549,246 (38%)	569,182 (37%)
Sinhalese	316,101 (22%)	359,136 (23%)
Others	6,221 (0%)	5,768 (0%)
Road length (km)		
National (A, B)	1,148	1,171
Provincial (C, D)	1,098	1,098
Others	No data	17,961

Sources: Documents provided by JICA; responses to questionnaire by the executing agency; statistics from Eastern Provincial Council; Central Bank of Sri Lanka; Department of Census and Statistics.
Note: Rural roads are classified as "others." According to PRDD, the length of rural roads has been around 8,300km since the time of appraisal.

(Unit: vehicle)



Source: Prepared based on the data provided by the Department of Motor Traffic, Eastern Provincial Council.
Note: Including motorcycles.

Figure 1 Number of vehicles registered in Eastern Province

3.1.3 Relevance to Japan's ODA Policy

At the time of the appraisal, this project was consistent with both of the two pillars of the Country Assistance Program for Sri Lanka (Fiscal Year 2004), namely, "assistance for the consolidation of peace and the reconstruction process" and "assistance that is in line with the country's long-term vision for development." JICA's Strategy for Economic Cooperation for Sri Lanka (2009) confirmed this key policy. For Eastern Province in particular, the Strategy planned to assist reconstruction of the conflict-affected areas from the standpoint of promotion of consolidation of peace through rehabilitation of local community infrastructures (e.g., rural roads, rural water supply facilities, and small ports) and the road network.

In this way, this project has been highly relevant to Sri Lanka's development plan and development needs, as well as Japan's ODA policy. Therefore, its relevance is high.

Box 1 Issues for development of Eastern Province after the civil war and from a perspective of its ethnic characteristics

In Sri Lanka, where Sinhalese accounts for 70% of the total population, Eastern Province is an area with the widest variety of ethnic and religious background, comprising three groups, namely, Sinhalese, Tamils, and Muslims. The Liberation Tiger of Tamil Eelam (LTTE), claiming the northern and eastern Sri Lanka as a Tamil Homeland, had held control of part of Eastern Province and had repeatedly engaged with the Sri Lankan government forces since the 1980s in battles that involved civilians. After the cease-fire agreement in 2002, the international aid for Eastern Province began, and emergency and reconstruction assistance efforts further increased after the Indian Ocean Tsunami in 2004. However, another full-scale fighting between the government forces and LTTE in Trincomalee District in 2006 resulted in a large number of displaced people not only among Tamils but among other ethnic groups. After the government forces seized control of Eastern Province in 2007, the reconstruction and development assistance was intensified again. The offensive by the government forces continued, and the civil war came to an end with the defeat of LTTE in 2009.

According to the Eastern Provincial Council, although most of the displaced people had returned to their original places of residence by the end of 2009, there were economic disparities between Eastern Province and other regions caused by deteriorated infrastructures and underdeveloped industry, as the prolonged civil war had kept the entire province in a state of underdevelopment despite that only limited regions suffered property damage from the battle. The assistance for reconstruction and development of Eastern Province needed to consider the presence of diverse ethnic groups among whom tense relations had existed until just recently.

3.2 Efficiency (Rating:③)

3.2.1 Project Outputs

(1) Civil works

The civil works had been implemented according to the plan at the time of the appraisal and consisted of concrete paving of rural roads (average width: 4m) and construction or rehabilitation of drainage facilities for some subprojects. The works were contracted to a total of 70 local contractors through domestic competitive bidding.

Table 2 shows the breakdown of the targeted roads (i.e., subprojects). The plan at the time

of the appraisal was to rehabilitate/improve approximately 300km of rural roads in Eastern Province. Subprojects were planned to be selected in order of priority from a long list (580 subprojects were listed) prepared by the executing agency. In doing so, it was noted that "the total length of the targeted roads can vary according to flexible readjustment of candidates for the targeted roads in case factors contributing to conflicts, such as ethnically or regionally biased selection of roads, are foreseen through regular holding of project steering committee meetings inviting stakeholders from the perspective of conflict sensitivity" (documents provided by JICA).

After the launch of the project, confirmation of the appropriateness of the selection and a baseline survey were conducted for 313 priority subprojects (total length: 356.11km) in the Special Assistance for Project Implementation[5]. At a later stage of project implementation, additional subprojects were added to the selection from the above-mentioned long list by utilizing the remaining funds of the ODA loan, in order to best address the high needs for road rehabilitation and improvement. Consequently, the final output consisted of a total of 330 subprojects (total length: 376.68km or 126% of the plan at appraisal)[6]. It was confirmed that there were no ethnic or regional biases in the selection of subprojects (see "3.4.2 Other Impacts.")

Based on reports from the executing agency and the on-site examinations of 30 subprojects[7], the degree of completion of the outputs is considered to be generally high. Problems that occurred during the period between the project completion and the ex-post evaluation are described in "3.5.4 Current Status of Operation and Maintenance" below.

[5] Special Assistance for Project Implementation (SAPI) for Eastern Province Water Supply Development Project and Provincial/Rural Road Development Project in Sri Lanka (2010).

[6] The 313 subprojects with a total length of 356.11km (consisting of 98 subprojects with 116.50km in Trincomalee District, 151 subprojects with 136.00km in Batticaloa District, and 64 subprojects with 124.18km in Ampara District) targeted in the SAPI study mentioned above were all implemented, but one of them in Trincomalee District was implemented with funding from the local authority of the location and thus excluded from the scope of this project.

[7] The 30 subprojects (sites) for site visits were selected for confirmation of completion of the outputs and the beneficiary survey according to the following criteria: (1) the site distribution should be more or less proportional to the distribution of the ethnic groups and subprojects in each district; and (2) the sites should include subprojects of all three phases in terms of the period of civil works during the project implementation. The number of sites (30) chosen for evaluation was determined based on the time period allocated for this ex-post evaluation and with reference to the baseline survey that had selected 30 subprojects (however, the subject of the baseline survey had been confined to those subprojects implemented during the first phase; therefore, these 30 subprojects were not identical to the subprojects selected for this ex-post evaluation). Information on the subprojects not visited for this ex-post evaluation relies on reports and other documents provided by the executing agency and PRDD. No significant issues were found on such information as the contents of the different documents were clear and consistent with each other. See Table 7 and Box 2 under "3.3.2 Qualitative Effects" below for more information such as the breakdown of the visited sites.

Table 2 Breakdown of the subprojects

	Plan (at appraisal)		Actual	
	Number of subprojects	Length (km)	Number of subprojects	Length (km)
Trincomalee District	-	-	97	116.50
Batticaloa District	-	-	161	136.00
Ampara District	-	-	72	124.18
Total	(To be selected from 580 subprojects)	Approx. 300	330	376.68

Sources: Documents provided by JICA and the executing agency.

(2) Procurement of equipment

Small-scale testing equipment (rebound hammer, reinforcement checking instrument[8], soil density gauge, etc.) were procured for quality control of subprojects by the District Engineer's Offices of PRDD.

(3) Consulting services

Both work volume and contents of the consulting services were mostly as planned: works such as assistance in the selection of candidate roads, detailed design, tender assistance, construction supervision (including environmental monitoring), and technical transfer on operation and maintenance were carried out by the Sri Lankan consultant.

3.2.2 Project Inputs

3.2.2.1 Project Cost

The actual total project cost was 4,631 million yen (of which 3,956 million yen was sourced from the ODA loan) and this was lower than planned (99% of the plan) (Table 3). Despite achieving greater outputs than originally planned, the project managed to keep the cost under control by reallocating the funds from those set aside for price contingencies (price escalation) and physical contingencies to civil works.

[8] A rebound hammer and a reinforcement checking instrument are both used for testing compressive strength of concrete.

Table 3 Planned and actual project costs

(Unit: million yen)

	Plan (appraisal)						Actual					
	Foreign currency		Local currency		Total		Foreign currency		Local currency		Total	
		ODA Loan		ODA Loan		ODA Loan		ODA Loan		ODA Loan		ODA Loan
Civil works and equipment	0	0	2,797	2,797	2,797	2,797	0	0	3,865	3,865	3,865	3,865
Consulting services	0	0	90	90	90	90	0	0	55	55	55	55
Price escalation	0	0	654	654	654	654	0	0	0	0	0	0
Physical contingencies	0	0	345	345	345	345	0	0	0	0	0	0
Interest during construction	63	63	0	0	63	63	29	29	0	0	29	29
Commitment charge	16	16	0	0	16	16	7	7	0	0	7	7
Administration cost	0	0	233	0	233	0	0	0	148	0	148	0
Taxes	0	0	466	0	466	0	0	0	527	0	527	0
Total	79	79	4,585	3,886	4,664	3,965	36	36	4,595	3,920	4,631	3,956

Sources: Documents provided by JICA and the executing agency.
Note: Planned exchange rate: 1 rupee = 0.786 yen (December 2009); actual exchange rate: 1 rupee = 0.738 yen (the average during the period between 2010 and 2014).

3.2.2.2 Project Period

The actual project period was longer than planned (ratio against the plan: 124%), but it was proportional to the increase in the length of the targeted roads, i.e., outputs, from planned 300km (approximate) at the appraisal to actual 376.68km (ratio against the plan: 126%)[9]. Contributing factors behind the longer project period other than the increase in the outputs included, a delay in mobilizing the Special Assistance for Project Implementation by JICA and the interruptions of part of the construction works by the flooding in October 2010 – February 2011 and December 2012 – March 2013. Nevertheless, a delay exceeding the schedule that was revised due to the increase in the outputs was avoided by controlling the implementation schedule.

Table 4 Planned and actual project periods

	Plan (appraisal)	Actual
Signing of the Loan Agreement	March 2010	March 2010
Selection of the consultant	February 2010 – June 2010	May 2010 – August 2010
Consulting services	July 2010 – May 2013	September 2010 – July 2013
Selection of the contractors	July 2010 – November 2011	September 2010 – January 2012
Civil works; procurement of equipment	December 2010 – March 2013	February 2011 – December 2013
Project completion (duration)	March 2013 (37 months)	December 2013 (46 months)

Sources: Documents provided by JICA and the executing agency.

[9] According to reports from the executing agency, the civil works were implemented in three phases, which were completed in June 2012 (Phase 1, approx. 104km), November 2012 (Phase 2, approx. 112km), and December 2013 (Phase 3, approx. 161km), respectively. From this, it can be said that the length that exceeded the originally planned "approximately 300km" fall under the scope of the Phase 3 although which subprojects would be in the "original plan" and "additional plan" had not been clarified at the time of appraisal. This ex-post evaluation determines that the project was efficiently implemented because a comparison between the actual/plan ratio of the total road length and that of the total duration of project implementation indicates that the increase in outputs was larger than the increase in the duration.

3.2.3 Results of Calculations of Internal Rates of Return (Reference only)

In the appraisal, the economic internal rate of return (EIRR) of this project was estimated at 17.2% on average among the three districts. The cost component included the project cost and the operation and maintenance cost, and the benefit component included the vehicle operation cost saving and the travel time cost saving, both due to the improvement of the road surface.

The ex-post evaluation, which assigned the actual values to the project cost, road lengths and traffic volume to the same economic analysis model as the one used for the appraisal, recalculated the EIRR to be 37.4% on average among the three districts. The recalculated EIRR was much larger than the value projected at the time of the appraisal presumably due to the larger increase in traffic than originally anticipated (the impacts of variation in project cost and road lengths were found small[10]).

Financial internal rate of return (FIRR) is not applicable to this project, which did not produce income.

In this way, the project cost and project period were mostly as planned. Therefore, the efficiency of the project is high.

3.3 Effectiveness[11] (Rating: ③)

The operation and effect indicators exceeded expectations, indicating a significant increase in the usage of the improved rural roads as well as decreases in losses of cost and travel time. From the qualitative perspective, it is obvious that the targeted rural roads became easier to travel, and improved access to schools, hospitals, markets, etc. was observed. Therefore, it is reasonable to say that the project achieved its objective of improving access to economic and social services.

3.3.1 Quantitative Effects (Operation and Effect Indicators)

As shown in Table 5, the quantitative effects greatly exceeded the plan.

[10] The EIRR values with actual data assigned only to the project cost (in US dollar, following the calculation in the appraisal) and the road length, respectively, were not much different with the planned value. All calculations assumed the project life of 20 years.

[11] Sub-rating for Effectiveness is to be put with consideration of Impact.

Table 5 Operation and effect indicators

	Baseline	Baseline	Target	Actual	Actual
	2009	2010	2015	2013	February, 2016
	Baseline Year	Year of Project Commence-ment	2 Years After Completion	Completion Year	Around 2 Years After Completion
<Operation Indicator> Indicator 1: annual average daily traffic (AADT) (vehicle/12 hours) (1)					
(1) Excluding motorcycles and bicycles	58	91(2)	-	-	482
(2) Including motorcycles and bicycles	-	197(2)	294	-	1,582
<Effect Indicator> Indicator 2: vehicle operation cost saving (thousand rupee/year) (3)	-	-	550	-	18,670
<Effect Indicator> Indicator 3: travel time cost saving (thousand rupee/year) (3)	-	-	260	-	1,520
<Supplementary Information> Total number of households directly benefitting from the targeted roads (4)	-	-	-	446,800	519,689

Sources: Documents provided by JICA (baseline and target values); calculated based on data provided by PRDD (actual values for Indicators 1 to 3); documents provided by the executing agency (actual values for Supplementary Information in 2013); calculated based on the site survey results (actual values for Supplementary Information in 2016).

Notes: (1) Average per subproject. The appraisal documents did not mention the target value but stated that it would be set in the baseline survey. Therefore, the target value shown in the table is the average of the target values of the 30 subprojects in the three districts proposed based on the baseline survey as part of the SAPI. The actual values are the averages of the measured values in the 15 subprojects that were randomly selected in the three districts.

(2) The appraisal documents did not mention the baseline value including the number of motorcycles and bicycles that was comparable with values measured in the baseline survey of the SAPI. Therefore, the average of the measurements in 2010 based on the baseline survey was used.

(3) Average per subproject. As the appraisal documents did not mention the target value, a value calculated in the same way as (1) above was used. The actual value in 2016 is a theoretical value calculated by multiplying the unit price per km (calculated for the EIRR calculation in the appraisal as a function of type of vehicle, travel speed, International Roughness Index (IRI), etc.) by the actual values of the AADT and road lengths. The figures include motorcycles (but not bicycles).

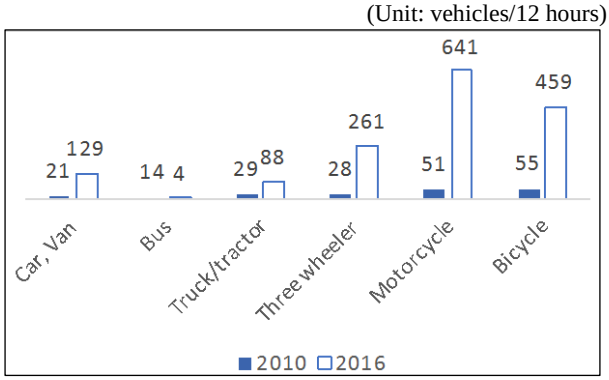
(4) As the targeted roads are residential roads that are not used exclusively for vehicles, the number of households using the roads was used as supplementary information. The actual value in 2013 is based on a report from the executing agency, while details such as the basis for calculation are not clear. The actual value in 2016 was estimated based on the interviews in the 30 subprojects conducted in the ex-post evaluation.

The Indicator 1 “annual average daily traffic (AADT)” was classified as an operation indicator. Although the comparison was not very precise due to non-equivalent conditions of measurement between before and after the project, the AADT increased around eight times (when including motorcycles and bicycles) or five times (when excluding motorcycles and bicycles). While the increase in motorcycles and bicycles was significant, there also was a large growth in passenger cars (cars and vans), trucks, and three-wheelers (Figure 2). The average growth rate of the AADT was 31% per year, and it was much higher than the growth rate of the number of vehicles registered (calculated to be 6% per year based on Figure 1), indicating a significant increase in the usage of the roads that were rehabilitated/improved by this project. This trend is consistent with the findings from the site observation and the responses obtained in the beneficiary survey described below. Also, as Table 6 shows, the

traffic volumes of specific roads for which comparable data were available have steadily been increasing.

Having been implemented during the period when economic and social activities were being revitalized in Eastern Province following the end of the civil war, this project well responded to the rapidly increasing traffic.

(Unit: vehicles/12 hours)



Sources: Prepared based on documents provided by JICA and data provided by PRDD.
Note: Each figure is an average per subproject based on the sample survey (30 sites in 2010 and 15 sites in 2016).

Figure 2 AADT by type of vehicle on the targeted roads of this project

Table 6 AADT of selected roads (examples)

(Unit: vehicles/12 hours)

	2010 Actual	2015 Target	2016 Actual
Trincomalee District 95 Hospital Road	164	208	1,248
Batticaloa District Amarasingam Road	239	457	1,084
Ampara District 21 Colony Road	249	463	853

Sources: Documents provided by JICA; PRDD.
Note: Including motorcycles and bicycles.

The Indicator 2 “vehicle operation cost saving” and Indicator 3 “travel time cost saving” were classified as effect indicators. Although only theoretical values based on the assumptions for the EIRR calculation were available for these indicators, both of them greatly exceeded the projected values. As is the case with the EIRR, this achievement could be an outcome of the increase in traffic volume[12].

3.3.2 Qualitative Effects

At the time of project completion, the results of a household survey conducted by the project consultant (for a total of 690 households in the three districts) already showed that a large number of the respondents had positive opinions on the improvement of access.

For the ex-post evaluation, the implementation of a similar scale of household survey to the one conducted upon project completion was deemed difficult within the limitations of time and budget. Instead, the evaluator conducted a qualitative beneficiary survey by means of semi-structured interviews and focus group discussions upon visit to the 30 project sites for observation. The sites were selected with consideration of the distributions of ethnic groups and subprojects in each district. The survey respondents included a total of 286

[12] The results of the beneficiary survey showed that the time to reach the main road was shortened by 21 minutes on average (based on all responses on travel time including different modes of transportation such as on foot, by three-wheeler taxi and by bicycle).

residents who were found around the project sites during the visit to the 30 locations in the three districts (see Table 7 and Box 2).

Table 7 The number of subprojects visited for observation at the time of ex-post evaluation

(number of subprojects visited / total number of subprojects)

	Tamils	Muslims	Sinhalese	Total
Trincomalee District	5/33	3/30	3/34	11/97
Batticaloa District	10/101	1/60	0/0	11/161
Ampara District	2/15	3/35	3/22	8/72
Total	**17/149**	**7/125**	**6/56**	**30/330**

Source: beneficiary survey

Box 2 Outline of the beneficiary survey

- Dates: about 2 weeks in February 2016
- Respondents: total 286 individuals, consisting of 133 female and 153 male with age ranging from 10's to 70's, found around the sites visited (sampled purposively)
- Survey methods: focus group discussions for a total of 215 individuals in 14 locations, consisting of 9 Tamil, 3 Muslim and 2 Sinhalese communities; semi-structured interviews for a total of 71 individuals in smaller groups such as families

The key findings of the beneficiary survey were quite positive as shown below. Also, the enhancement in the convenience and access was obvious from the way people were using the targeted roads during the site observation.

(1) Frequency and purposes of use of the targeted roads

All respondents answered that they used the targeted rural roads frequently for all aspects of their life. Many of them reported that after the project, brokers and vendors came to the villages by trucks or motorcycles. Residents in rice-producing areas were using the targeted roads for drying paddy rice on them as well. They commented that the paddy dries well on the flat and hot concrete surface.

(2) Year-round availability of the targeted roads

All respondents answered yes to a question whether the targeted roads became available all year around.

(3) Improved access to hospitals, schools, and markets

All respondents answered yes to a question whether the access to hospitals, schools, and markets improved. Individual comments included the followings:

- Hospitals: Sick people are conveyed to hospitals more promptly and safely; ambulances now come to the front of their houses.
- Schools: Walking to school is easier; children can wear shoes to go to school (before the project, some of them used to walk barefoot during the rainy season in order not to have their shoes covered in mud); teachers can commute to schools more easily (most of them live outside of the villages).

- Markets: Transporting produce by cars or motorcycles is easier; brokers and vendors now come to the villages.

One of the targeted roads before (left) and after (right) the improvement
(pictures provided by the executing agency)

A focus group discussion with residents

Students can come to school more easily

Use of a targeted road for agriculture work (drying paddy)

This project constituted a part of the assistance in the improvement of road networks in Sri Lanka in coordination with the World Bank and ADB. In Eastern Province, the coordination was arranged in a way that ADB (Trincomalee District and Batticaloa District) and the World Bank (Ampara District) would provide assistance for provincial roads and JICA for rural roads in the three districts. At the time of the ex-post evaluation, it was found that the project did not intentionally select its subprojects to be combined with other road projects, while it avoided duplication with them[13]. On the other hand, some subproject roads were connected to provincial roads that were rehabilitated/improved by the ADB's or the World Bank's provincial road improvement projects or to rural roads rehabilitated/improved by the Sri Lankan government or NGOs (including those under Japan's Grant Assistance for Grassroots Human Security Projects), both at around the same time as this project. Since the difference in condition is obvious between the provincial roads that were improved and those that were not, the rural roads under this project that are connected to improved provincial roads are considered to have enhanced mobility, although the impact on wider-area traffic was not quantitatively verified.

[13] One of the criteria of selecting roads for this project was that a targeted road must be connecting to a national road or a provincial road regardless of the conditions of such national or provincial road.

3.4 Impacts[14]

3.4.1 Intended Impacts

The intended impact, namely, "contributing to the mitigation of regional inequality and the reconstruction of conflict-affected areas" was observed. Having been implemented during the period when the post-war stabilization of the society and economy began, this project contributed to the consolidation of peace by promoting the socio-economic development-driven reconstruction and enhancing the people's lives.

Table 8 Statistics on Easter Province (Impact)

	Appraisal (2009)	Ex-post evaluation	
Population (person)	1,539,000	(2012)	1,551,381
Poverty headcount (person)	223,056	(2012)	170,000
Poverty headcount rate (%)	14%	(2012)	11%
Unemployment rate (%)	7.7%	(2014)	4.9%
Regional GDP in current prices (million rupee)	279,363	(2013)	542,205
National average			
Poverty headcount rate (%)	*8.9%*	*(2012)*	*6.7%*
Unemployment rate (%)	*5.8%*	*(2014)*	*4.3%*
Regional GDP in current prices (billion rupee)	*4,913*	*(2013)*	*8,674*

Soucres: Answer to the questionnaire by the executing agency; Eastern Provincial Council; Central Bank of Sri Lanka; Department of Census and Statistics.

Table 9 Statistics on Eastern Province (Education)

	2011	2014	2015
Primary education retention rate (%)	70%	71.3%	71.9%
Male	67%	-	68.3%
Female	72%	-	75.5%
Passing rate for GCE-O Level (%)	(2013) 60.72%	61.85%	-

Source: Ministry of Education of Eastern Province

Note: "GCE-O Level" refers to the Examination of General Certificate of Education Ordinary Level, the examination given at the end of the senior secondary level.

(1) Trend of macro indicators (reference information)

In accordance with the assumptions at the time of the appraisal[15], this evaluation collected statistics such as gross domestic product (GDP) of the region, population under poverty, and unemployment rate. As shown in Table 8, the data all indicated improvements before and after the project, and while the degree varied among different indicators, the gaps from the national average were narrowing. This project enhanced people's access to economic and

[14] This project gave considerations to the following issues based on the result of a peacebuilding needs and impact assessment on Eastern Province (2008, documents provided by JICA). These were incorporated in this ex-post evaluation in ways that (1) the first issue was confirmed under "3.4.1 Intended Impacts" as to whether the project contributed to "the mitigation of regional inequality and reconstruction of the conflict-affected area" as expected, and (2) the second issue was confirmed under "3.4.2 Other Impacts" as to whether there were no negative impacts.

(1) Instability factors should be reduced or eliminated through project implementation (positive impacts should be enhanced).

(2) Project implementation should not promote instability factors (negative impacts should be avoided).

(Reference: JICA, "Handbook for Considerations for Conflict Prevention and Peace Promotion," 2014; documents provided by JICA)

Among the qualitative effects, namely, "improved access to economic and social services such as health and educational facilities and markets; increased income of the targeted population; etc." that were envisaged at the time of the appraisal, "increased income of the targeted population" is analyzed in this section.

[15] A document provided by JICA states that "While the assessment of poverty reduction effects would basically use qualitative methods, JICA and the executing agencies agreed to monitor regional GDP and poverty headcounts as auxiliary measurement in order to incorporate a quantitative perspective. However, since these statistics are affected by other factors than road improvement, they would not be regarded as operation and effect indicators but only as additional reference information."

social services as already mentioned under "3.3 Effectiveness." In particular, respondents to the beneficiary survey frequently pointed out a decrease in transportation cost of agricultural and fishery produce that are principal products of the area. Although it is difficult to assess the degree of this project's contribution to such changes, it can be considered that the rural roads are an important factor influencing quantitative indicators since they are indispensable for economic and social activities of the people.

(2) Number of shops within a village and sales at the shops

In 17 sites out of the 30 sites visited, the respondents to the beneficiary survey said that retail shops increased within their villages. The respondents in the villages where there were no new shops said that vendors of food and household goods started to visit from outside. The amount of sales at shops was not available.

(3) Major sources of income and size of income

The communities' main sources of income have been agriculture and fishery, and no changes were found before and after the project. Individuals in all of the subprojects visited expressed such opinions as: transportation cost was significantly reduced; fare for three-wheeler taxis became cheaper (meaning that the fare became more negotiable as the road conditions became better) after the rehabilitation/improvement of the roads.

(4) Security

In all of the subprojects visited, residents mentioned that security improved as more police officers come by after the roads became easier to pass.

(5) Education

As shown in Table 9, the retention rate in primary education increased after the implementation of this project. According to the provincial Ministry of Education, contribution of the rehabilitation/improvement of rural roads in particular was regarded to have helped reduce dropouts in rural areas (for example, while dropouts generally tended to be higher in rural areas than urban areas, it decreased as the safety of walking to school increased compared to the past when there had been a higher risk of encountering wild animals on unmaintained or unimproved rural roads). Comments also pointed to an improvement in the quality of teaching as it became easier for teachers to commute to school, which contributed to the increase in the passing rate of the General Certificate of Education Ordinary Level (GCE-O Level) administered at the end of the senior secondary level.

A primary school teacher in the beneficiary survey commented that while there was no change in school attendance before and after the project, it became easier for students to

come to school as the road surface became flat and walking became much easier without flooding and mud on the road during the rainy season after the project.

(6) Health

As described in "3.3.2 Qualitative Effects," the respondents to the beneficiary survey agreed on the improved access to hospitals, although the way it impacted people's health status could not be identified.

(7) Reduction of burden on women

The following comments were heard from women surveyed at the project sites: shopping became easier as access to markets became better and vendors started to come to the village; women do not have to walk with their children in their arms as it became easier for small children to walk themselves on the roads; and the frequency of laundry decreased as clothes (especially all white uniforms for elementary school) are no longer splashed with mud on the concrete-paved roads.

3.4.2 Other Impacts

Other positive impacts were observed, and no negative impacts were seen.

(1) Avoidance of factors contributing to conflicts

For this project, measures to avoid factors contributing to conflicts were incorporated in the plan such as preventing a sense of unfairness among residents by selecting the targeted roads with consideration for ethnic balance, and appropriate handling of grievances during the project implementation (e.g., holding the steering committee meetings by stakeholders, development of a grievance handling mechanism, careful selection of languages to be used).

The measures actually taken include the followings. There were no conflict-contributing factors as a result of implementation of this project.

- The road selection committee was formed to select subprojects in a fair manner. Headed by the Chief Minister of Eastern Province and comprised of political leaders from all three communities as members, the committee reviewed requests for subprojects from local authorities and selected the targeted subprojects.
- During the construction work, the local authority of each project site communicated project information to the local residents and responded to questions and concerns. The regular steering committee meetings were held monthly by the local authorities and PIUs. According to PRDD, voices from the local residents were mainly in forms of requests for design such as the road width and complaints about dusts during the construction work, and there were no grievances about the distribution of subprojects

among communities and the selection of roads. These requests and complaints from the local residents were handled through the respective local authorities or PIUs.

- The documents for internal use for project implementation were prepared in English, while notifications to local residents were made in Sinhalese and Tamil.

Table 10 shows a comparison between the ethnic distribution of the population and the distribution of subprojects. As a result of the above-mentioned measures, the subprojects were distributed more or less in line with the distribution of ethnic groups, leading to the conclusion that the selection process did not trigger a sense of unfairness (although this report omits detailed data, it was confirmed that the population distribution by ethnic groups and the subproject distribution are mostly consistent in each divisional secretary's division (DS division))[16]. Also, the Sri Lankan and Japanese NGOs with long experience in Eastern Province commented in the ex-post evaluation interviews that the roads targeted under this project were all located in the areas that were most underdeveloped or most severely affected by the civil war, validating that the subprojects were selected in accordance with the development needs. Detailed comments from these NGOs are presented in the attachment.

Table 10 Distributions of population by ethnic groups and of subprojects

	Trincomalee District		**Batticaloa District**		**Ampara District**	
	% of population of each ethnic group (2012)	% of subprojects in the area of each ethnic group	% of population of each ethnic group (2012)	% of subprojects in the area of each ethnic group	% of population of each ethnic group (2012)	% of subprojects in the area of each ethnic group
Tamils	32%	34%	54%	63%	17%	21%
Muslims	40%	31%	25%	37%	44%	49%
Sinhalese	27%	35%	1%	0%	39%	31%
Others	0%	0%	20%	0%	0%	0%

Sources: Data from the Department of Census and Statistics and documents provided by the executing agency.
Note: Due to rounding, the total may not be 100%.

(2) Environmental impacts

At the time of the appraisal, this project was not categorized as a project in a sensitive sector (i.e., liable to cause adverse environmental impact) with a sensitive characteristic, nor located in or near sensitive areas according to the Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Considerations (April 2002), and therefore judged not likely to have significant adverse impact on the environment. At the time of the ex-post evaluation, negative environmental impacts were not observed. The environmental measures such as noise control and preservation of roadside trees and explanatory meetings for the communities were implemented as planned. According to the

[16] In a few locations out of the 30 sites visited at the time of the ex-post evaluation, there were communities that had been internally displaced due to the civil war or the tsunami, and had been back to the original places of residence by 2009.

executing agency, there were complaints from local residents about dust during construction, which were handled by local authorities that acted as liaisons for the residents[17]. In the beneficiary survey, the respondents expressed that there were no particular environmental problems such as noise.

There was no land acquisition and involuntary resettlement for this project, while cases were found in which land for widening the road was voluntarily donated by residents in some subprojects.

(3) Other impacts

The local contractors employed the residents in the project sites in some subprojects.

In addition, the local contractors gained experience and knowledge by engaging in the project implementation and receiving training from the consultant under this project. According to the executing agency and the local authorities interviewed in the project sites, such an involvement led to the scaling up of the companies, some of which were upgraded from C8 or C9 (for district level contract) before the project to C2 or C3 (for national level contract) after the project in the grading of the Construction Industry Development Authority of Sri Lanka.

As stated above, this project has largely achieved its objectives. Therefore, the effectiveness and impact of the project are high.

3.5 Sustainability (Rating: ②)

3.5.1 Institutional Aspects of Operation and Maintenance

After the project completion, local authorities became responsible for the operation and maintenance of the targeted roads within their jurisdictions, while different levels of local authorities, namely, Municipal Councils, Urban Councils, and Pradeshiya Sabha, took charge of the operation and maintenance of subprojects located in urban areas, semi-urban areas and rural areas, respectively. All local authorities are placed under the Commissioner of Local Government (CLG). The organizational structure is more or less common among local authorities in each level. The number of staff is around 80 for a Municipal Council and around 20 for a Pradeshiya Sabha.

This structure has remained the same since before the project implementation, and the owner of each targeted road has always been the local authority. Therefore, there was no handover process of the roads from PRDD—the implementing agency of this project—to the local authorities. One of the Municipal Councils, however, commented in an interview that

[17] Regarding environmental monitoring before, during, and after the construction and handover, the executing agency answered that although monitoring was conducted, the results of formal and periodic measurement and reporting have not been preserved.

the absence of the handover process had made it difficult for them to operate and maintain roads. PRDD and CLG also acknowledged that in some subprojects, information on the project or specification of the roads might not have been fully shared with the local authorities on the ground.

3.5.2 Technical Aspects of Operation and Maintenance

One to two road administrators/engineers and around a dozen of skilled road labors are allocated to each local authority. Regular technical training is provided by Eastern Provincial Council. According to the two local authorities (Pradeshiya Sabha) from which some information was obtained, they own equipment such as roller, concrete mixer, and backhoe that they can operate without issues. Although approximately 80% of the roads including rural roads under the purview of local authorities are gravel or unpaved roads according to a document provided by CLG, there also seems to be no significant issues in local authorities' capacity to handle concrete roads, as indicated by the steady progress of concrete paving works.

3.5.3 Financial Aspects of Operation and Maintenance

The maintenance budget for the targeted roads is supposed to be funded from the local authority budget, although it has not been actually expended so far with the view that the targeted roads have been completed just recently and thus need no maintenance budget yet.

The budget size varies among different local authorities. For example, the total actual expenditures (consisting of recurrent expenditures and capital expenditures) for the fiscal year 2015 of two Urban Councils and 11 Pradeshiya Sabha among the 14 local authorities in Batticaloa District (on which the data was provided from CLG) range from approximately 30 million rupees (approx. 21 million yen) to 288 million rupees (approx. 202 million yen) with a median of 84 million rupees[18]. Among the total budget, 1 to 12 million rupees (with a median of 2 million rupees) is allocated to infrastructure maintenance (no breakdown figures for roads were available).

Table 11 shows the annual maintenance cost requirements according to the PRDD's standard for the roads rehabilitated/improved under this project, together with the road maintenance budget data provided by several local authorities. The two local authorities featured in the table both said that the budget was increasing, but the amount was very small compared to the required amount for the targeted roads. In addition, a higher priority was given to the repairing of gravel roads, while spending for maintenance of concrete roads such as the ones improved by this project received a lower priority.

[18] No differences were found in budget size between Urban Councils and Pradeshiya Sabha. As for the Batticaloa Municipal Council, the revenue for the same fiscal year, which was the only available data, was approximately 437 million rupees (approx. 306 million yen).

The budget allocated from the province was in a form of grants (that account for approximately half of local authorities' revenues). Further, the road maintenance budget of the province was all spent for the maintenance of provincial roads, and the amount was insufficient to cover the cost of maintaining rural roads.

Table 11 Cost requirements for maintenance of rural roads rehabilitated/improved under this project

(Unit: rupee)

	Frequency	Cost per work (per km)	Annual cost (per km)	(For reference) Required and actually-allocated budget of selected local authorities (FY2015)
Periodic maintenance (patching and sand sealing)	Once in 8 years	600,000	75,000	<Thampalagamam Pradeshiya Sabha in Trincomalee District> • Total length of the targeted roads is 11.6km. Therefore, annual maintenance requirement for these roads is calculated at approx. 3.2 million rupees based on the information in the left columns. • Total actual road maintenance budget of the Pradeshiya Sabha was 0.6 million rupees (accounting for approx. 0.7% of the total budget). <Eravur Pattu Pradeshiya Sabha in Batticaloa District> • Total length of the targeted roads is 6.4km. Therefore, annual maintenance requirement is calculated at approx. 1.8 million rupees based on the information in the left columns. • Total actual road maintenance budget of the Pradeshiya Sabha was 1.6 million rupees (accounting for approx. 2% of the total budget).
Routine maintenance (patching, drainage cleaning, shoulder correction)	Annually	200,000	200,000	
Total			275,000	

Sources: PRDD; local authorities.

3.5.4 Current Status of Operation and Maintenance

The condition of the concrete surface was mostly good in the 30 subprojects visited. In terms of the overall conditions of these roads including shoulders, none of them showed serious issues at the time of the ex-post evaluation, although the following problems were found in some locations. In conjunction with the fact that maintenance works such as the ones mentioned in the table above have not been carried out yet, there is a concern on the long-term continuity of the positive effects of these roads, which are said to last for more than 20 years if maintained properly.

- The surface was partly delaminated. The state of pavement might have changed due to traffic and axle load. As Table 5 shows, the AADT increased from 197 vehicles (2010) to 1,582 vehicles (2016). PRDD explained that the damage was due to an increase in heavy vehicle traffic after the project. It was also heard that in one location, the Pradeshiya Sabha put a signboard saying vehicles heavier than 8 tons would be prohibited to pass the targeted road, but it did not produce desired results. It might be

possible to attribute this problem to the institutional setting that cannot effectively regulate the road use, but in reality, such a situation may be unavoidable.

- In several roads, the soil on shoulders was eroded partly exposing the sides of concrete. According to the executing agency, the civil works of this project did not encompass shoulders (except the subprojects where drainage facilities were constructed) in order to maximize the number of roads to improve under this project. Although the executing agency considered that shoulders should be taken care of by respective local authorities, that might be difficult in the current situation where a higher budget priority is given to the maintenance of gravel roads as mentioned above.

All targeted roads are cleaned by the local residents. In addition, cleaning and grass cutting on the roads that run along irrigation canals (found in several locations among those visited) are carried out by the Department of Irrigation of the province as part of its canal maintenance work.

Overall, some minor problems have been observed in terms of the institutional and financial aspects of the operation and maintenance. Therefore, the sustainability of the project effects is rated to be fair.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

The objective of this project was to improve access to economic and social services among residents, who had been long kept in the underdeveloped condition of the area, by rehabilitating and improving deteriorated rural roads in Eastern Province, thereby contributing to the reconstruction and development of the conflict-affected area. The relevance of the project is high, as the objective was consistent with Sri Lanka's development policies and development needs as well as with Japanese aid policies. The effectiveness and impact are evaluated to be high. The selection of the community roads that received concrete pavement works in this project—a total of approximately 380km in 330 locations—took into consideration Eastern Province's distinctive and diverse ethnic background. The road enhancement has resulted in better accommodation of the traffic that grew rapidly after the end of the civil war and significantly improved the residents' access to schools, hospitals, markets, etc., subsequently contributing to positive changes in their lives and economy. The project's efficiency is also evaluated to be high as the project cost and project period were both mostly within the plan. On the other hand, the sustainability of the project's effects is evaluated to be fair. Maintenance expected for the rehabilitated roads was yet to be conducted due to the lack of information sharing between the Provincial Road Development Department (that implemented this project)

and the local authorities (that are responsible for the maintenance of the targeted roads) as well as the lack of necessary budget. Although the condition of the targeted roads is mostly good at the time of the ex-post evaluation, there is, thus, a concern about the long-term sustainability.

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

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

For smooth operation and maintenance of the targeted roads by local authorities, PRDD and CLG are recommended to carry out follow-up efforts such as a proper undertaking of the handover of the road and the provisioning of details on the civil works (e.g., as-built drawings and construction methods) when requested by the local authorities.

4.2.2 Recommendations to JICA

None.

4.3 Lessons Learned

Sharing the recognition of the necessity of and prospect for operation and maintenance

There is a concern as to whether the rural roads rehabilitated/improved by this project will be properly operated and maintained in the future due to a lack of information sharing among PRDD, the implementer of the project, and the local authorities on the ground, the operation and maintenance agencies, as well as a lack of budget in the local authorities. Therefore, the executing agency in similar projects in the future should make efforts at the time of project planning to secure agreements with the local authorities that are supposed to actually maintain the targeted infrastructures with regards to their road operation and maintenance responsibilities after the project completion. In doing so, it is important to grasp the financial capacity of each local authority to bear maintenance cost and to have a vision on what will be the assumed status of operation and maintenance after project completion and how such capacity will affect the long-term sustainability of the project effects.

Comparison of the Original and Actual Scope of the Project

Item	Plan	Actual
1.Project Outputs (1) Civil works	Rehabilitation/improvement of approx. 300km of rural roads (concrete pavement, etc.)	Rehabilitation/improvement of total 376.68km of rural roads in 330 locations (type of work is same as plan)
(2) Procurement of equipment	(No information)	Total 18 items of 9 kinds of small equipment for road quality testing
(3) Consulting services	Total 243 person months of Sri Lankan consultants	Total 241.1 person months of Sri Lankan consultants
2.Project Period	March 2010 – March 2013 (37 months)	March 2010 – December 2013 (46 months)
3.Project Cost Amount paid in Foreign currency	79 million yen	36 million yen
Amount paid in Local currency	4,585 million yen (5,833 million rupee)	4,595 million yen (6,226 million rupee)
Total	4,664 million yen	4,631 million yen
Japanese ODA loan portion	3,965 million yen	3,956 million yen
Exchange rate	1 rupee = 0.786 yen (As of December 2009)	1 rupee = 0.738 yen (Average between 2010 and 2014)

JICA Evaluation Department

On Views of Experts

In addition to performing an evaluation based on the DAC five evaluation criteria, this ex-post evaluation incorporated the views of experts (NGOs) in order to reflect more specialized and diverse views. The external evaluator selected experts, and gained cooperation from two experts: Ms. Reiko Inoue, the Representative Director of the PARCIC[19] and Mr. Sairajan, District Coordinator – Batticaloa and Trincomalee, Sevalanka Foundation.

Ms. Inoue has engaged in various projects to assist reconstruction and peace building efforts in Northern Province and Eastern Province since during and after the civil war in Sri Lanka up to the present. For this ex-post evaluation, Ms. Inoue provided advices on the perspective and methods of the study based on the characteristic and dynamics of the ethnical distribution in Eastern Province. In addition, she offered an analysis of the impacts of this project specifically from the viewpoint of peace consolidation by reviewing the results of the field survey provided by the external evaluator.

Mr. Sairajan has been engaging with civil society assistance activities in Eastern Province as the Field Coordinator of Sevalanka Foundation, a local NGO in civil society support in the whole Sri Lanka. He wrote comments based on his first-hand observation and experience in the communities where he has been providing assistance since before the start of this project up to the present.

The essays of Ms. Inoue and Mr. Sairajan are appended to the evaluation report as attachments.

End

[19] Pacific Asia Resource Center Interpeople's Cooperation.

Experts' Views on the Ex-post Evaluation of the Rural Road Development Project (Eastern Province)

Significance of Rural Road Development in the Context of Reconstruction and Peacebuilding in Eastern Province

Reiko Inoue, Representative Director of the PARC Inter People's Cooperation (PARCIC)

June 22, 2016

Even after September 2009 when the civil war in Sri Lanka that had lasted for more than 20 years ended, 263,526 individuals were still held in the Internally Displaced Person (IDP) camps in districts such as Vavuniya, Jaffna and Trincomalee. In addition, an unknown number of people took refuge in India and other countries during the early years of the civil war. While the return of displaced people began after the armed conflict in Eastern Province ended in 2007, there were some people who had to remain in camps as they were involved in the battle in Northern Province and thus could not return to Eastern Province. It was September 2012 when the returning and resettlement were almost completed and the camps were closed.

This project was implemented from February 2011 to December 2013, at the very time when Eastern Province was experiencing a lot of confusion following the end of the civil war as well as when reconstruction efforts were underway. The rehabilitation of rural roads (total around 380km) in all three districts in Eastern Province during this period was quite timely and responsive to the needs. The significance of project could also be confirmed by the rapid increase in traffic in each subproject. In the northern part of Trincomalee District, which was affected by the civil war for a particularly long period of time, the road construction works might have faced a number of hardships due to the limited access even after the civil war. It was for this reason, however, that the construction of rural roads was an especially important step forward towards peacebuilding as it connected the people in that area to other areas.

This ex-post evaluation showed that the construction of rural roads improved access of small-scale producers to the market and increased the inflow of materials and goods to the communities. Such changes might have contributed to reconstruction and peacebuilding by resolving and reducing the disconnection among and isolation of communities caused by the prolonged civil war.

It is fortunate that the ethnic group makeup of the villages covered by the subprojects under this project was more or less in line with the ratio of ethnic groups in the country, and therefore, the location of the subprojects did not result in exacerbating instability factors such as dissatisfaction among Tamils with the Sinhalese-led government in Eastern Province at the conclusion of the civil war. In all districts, the number of subprojects in Tamil areas is larger than it would have been if adhered to the proportion of Tamils to the population. This distribution is reasonable considering that the destruction of infrastructures at the end of the civil war was particularly prominent in Tamil areas. A greater number of subprojects in Sinhalese communities than proportional to the population distribution in Padawi Sri Pura Divisional Secretary's Division (DS Division) and Gomarankadawela DS Division in the northern part of Trincomalee District would be reasonable and unavoidable given that Sinhalese had been resettled to those areas during the civil war.

Serving as the battlefield in the more than 20 years of the Sri Lankan civil war, Northern Province and Eastern Province have been left out of the country's economic development, and the poverty rates are also still high. The construction of rural roads under this project therefore has contributed to the fulfillment of the basic needs of the local

residents. Now that the current President Sirisena is aiming at creating a nation to meet necessities of all people of Sri Lanka, cooperation in people-centered regional economic development in Northern and Eastern Provinces is expected, so that it will further contribute to the consolidation of peace in Sri Lanka.

* PARCIC has been engaged in activities such as support for recovery from civil war, support to displaced people, and support for school reconstruction in Northern and Eastern Provinces since 2004.

Experts' Views on the Ex-post Evaluation of the Rural Road Development Project (Eastern Province)

Impact of Eastern Rural Road Development on Villages
Sairajan, District Coordinator – Batticaloa and Trincomalee, Sevalanka Foundation

July 13, 2016

Eastern Province was highly affected by war since the 1980s to till the end 2009. Except the townships in the three districts of Eastern Province, all other areas are rural areas. The people are mainly relying on agriculture, fishing and animal farming. In general, all the road networks including the national, provincial and the rural roads were far poor in condition during the war period. Rural roads were completely neglected and not even paved till the end of the war. During this period, the locals and the travelers in the province faced numerous troubles in education, transport, and livelihood and in the economic activities. School children couldn't access the roads in a comfortable manner. There were many dropouts of the school children.

However, after the end of the war the road development/renovation projects implemented by the Government and other NGOs have brought a great impact. As the district coordinator of a national level NGO, I have my own experience in accessing to the interior villages in the province for the aid and development projects. It was the same situation to the other development corporations, NGOs and the Government agencies. After the rehabilitation of the national roads, provincial roads and the identified major rural roads, the situation has much improved in terms of the ease of transportation, improvements in the education and local economic activities. However, according to my experience only 10% of the rural roads have been rehabilitated. There are many other rural roads networks to be improved in the near future as the economic development in Eastern Province is booming up.

I thank the Government of Sri Lanka and Japan Internal Cooperation Agency for initiating and completing the major rural road networks in the mostly conflict affected villages in the province.

* Sevalanka Foundation has assisted civil society development targeting villages and communities that are difficult to provide support (such as remote areas) and that were affected by disasters and conflicts. In Eastern Province, as well, the Foundation continuously provide multifaceted assistance for development of civil society.