

Ex-Ante Evaluation (for Japanese ODA Loan)

1. Name of the Project

Country: The Democratic Socialist Republic of Sri Lanka

Project: New Bridge Construction Project over the Kelani River

Loan Agreement: March 28th, 2014

Loan Amount: 35,020 million yen

Borrower: The Government of the Democratic Socialist Republic of Sri Lanka

2. Background and Necessity of the Project

(1) Current State and Issues of the Transportation Sector in Sri Lanka

Road transportation represents more than 90% of the domestic passenger and cargo transport in Sri Lanka, playing a highly important role in the nation's social and economic activities. In recent years, its steady economic growth has boosted the number of registered vehicles and rapidly worsened traffic congestion in Colombo city, especially in the morning and evening peak hours. As most of the outbound traffic to the north-east concentrates on three bridges across the Kelani River running through the north of the city, they have become bottlenecks of transportation. In particular, the New Kelani Bridge has always been heavily congested since it is a crossroads connecting four major routes: A01 Road leading to the country's second largest city Kandy, A03 Road to the international airport, Port Access Road, and Baseline Road running through Colombo city. The congestion is becoming even worse after connecting the bridge to Colombo Katunayaka Expressway (CKE) that links Colombo city and the international airport in November 2013. Therefore, it is urgent to make traffic flow around the New Kelani Bridge more smoothly by constructing a new bridge.

(2) Development Policies for the Transportation Sector in Sri Lanka and the Priority of the Project

Sri Lanka's national development plan, "Mahinda Chintana" (2010-2016), aims at achieving an annual average real GDP growth of 8% over the six years and becoming one of the middle income countries by 2016. The plan particularly focuses on the improvement and enhancement of road networks as a basic infrastructure for achieving these aims.

The New Bridge Construction Project over the Kelani River (hereinafter, referred to as "the Project"), which is intended to mitigate and disperse chronic traffic congestion around the Kelani River by constructing a new bridge and an elevated access road over the river, is consistent with the nation's development plan.

### (3) Japan and JICA's Policy and Operations in the Transportation Sector

Japan's Country Assistance Program for Sri Lanka (June 2012) highlights the "promotion of economic growth" as one of its priority areas and indicates an intention to support the improvement of transportation infrastructure which contributes to economic development. Meanwhile, JICA Country Analysis Paper for Sri Lanka (October 2012) analyses that the improvement of urban transportation networks in the Greater Colombo Area is an important issue which should be dealt with as part of the "improvement of transportation network program." The Project is in line with this policy and analysis.

In the transportation sector in the Greater Colombo Area, JICA has supported the improvement of road networks through yen loan projects: Baseline Road Project (I), (II) (L/A signed in FY 1993 and FY 1997), Sri Lanka-Japan Friendship Bridge Widening Project (L/A signed in FY 1993), and Greater Colombo Urban Transport Development Project (I), (II) (L/A signed in FY 2006, FY 2008, and FY 2010), among others. Through a grant aid project, Victoria Bridge Rebuilding Plan (1988-1991), Japan also supported the construction of the Sri Lanka-Japan Friendship Bridge, which serves as a traffic artery. Moreover, technical cooperation projects such as Urban Transport System Development Project for Colombo Metropolitan Region and Suburbs (development study-type technical cooperation, 2012-2014) have been carried out.

### (4) Other Donors' Activity

The Asian Development Bank (ADB) is implementing feasibility study (F/S) for the construction of the elevated expressway network in Colombo city. Developing a future plan to extend the road beyond the Project's proposed site, this study is not overlapped with the Project but is expected to generate synergy effects in the future.

### (5) Necessity of the Project

The Project aims to mitigate and disperse chronic traffic congestion in Colombo city by constructing a new bridge and an elevated access road over the Kelani River which has become a traffic bottleneck. The Project is in line with the development plan of the Government of Sri Lanka as well as the cooperation policies of the Government of Japan and JICA. Therefore, JICA's support for the Project is highly necessary and relevant.

<h2>3. Project Description</h2>
---------------------------------

### (1) Project Objective

The objective of the Project is to mitigate and disperse chronic traffic congestion in Colombo city by constructing a new bridge and an elevated access road over the Kelani River running through the north of the city, thereby contributing to the

improvement of road transportation networks and the promotion of economic development.

(2) Project Site/Target Area: Colombo city

(3) Project Components (including the Procurement Method)

- 1) Preparatory works: relocation of the existing structure, placement of transmission lines underground (local competitive bidding)
- 2) Main civil works: construction of the main bridge (380 meters), elevated road (1,050 meters), etc. (international competitive bidding)
- 3) Consulting services: detailed design, tender assistance, construction supervision, etc. (short list selection)

(4) Estimated Project Cost (Loan Amount)

41,429 million yen (Loan Amount: 35,020 million yen)

(5) Schedule

Planned from January 2014 to November 2020 (total: 83 months); the Project shall be completed upon the beginning of facility provided for use.

(6) Project Implementation Structure

- 1) Borrower: the Government of the Democratic Socialist Republic of Sri Lanka
- 2) Executing Agency: Ministry of Highways, Ports and Shipping
- 3) Operation and Maintenance System: Road Development Authority (RDA)

(7) Environmental and Social Consideration/Poverty Reduction/Social Development

1) Environmental and Social Consideration

- ① Category: A
- ② Reason for Categorization: It is because the Project has sensitive characteristics under the JICA Guidelines for Environmental and Social Considerations (April 2010).
- ③ Environmental Permit: The Environmental Impact Assessment (EIA) Report of the Project was approved by the Central Environmental Authority of the Government of Sri Lanka on October 30, 2013.
- ④ Anti-Pollution Measures: During construction, dust and noise may be generated by construction machinery; therefore, preventive measures will be taken such as water sprinkling, covering of vehicles, installation of silencers on the construction equipment, and restrictions on hours of noisy operations near residential areas. With regard to water pollution, the bridge will not have a negative impact on the environment since it is designed in a way that none

of its piers will stand in the river. In addition, muddy water from the construction site will be prevented from flowing into the river by taking such measures as setting up an oil trap in the vehicle maintenance garage. All soil excavated in the Project (approximately 91,000 cubic meters) will be used for the embankment.

- ⑤ Natural Environment: The Project site is not located in or around sensitive areas such as national parks, and adverse impact on the natural environment is assumed to be minimal.
  - ⑥ Social Environment: The Project will involve land acquisition of approximately 1.6 hectares and involuntary resettlement of 395 households and 54 business proprietors (a total of 1,797 people), both of which will be carried out in accordance with the nation's domestic procedures and the resettlement action program (RAP). In the process of preparing the RAP, discussions with local residents were held to explain the outline of the Project, compensation and assistance measures, and the grievance mechanism. The discussions led to questions regarding the affected area and schedule of the Project as well as requests to provide unauthorized residents with land for resettlement (alternative houses). Throughout the discussions, no objection was heard against the Project.
  - ⑦ Other / Monitoring: The relocation process of local residents and their life after resettlement will be monitored by external experts as well as by the executing agency. The environment will be monitored by the executing agency for air, noise, water pollution while the construction is underway and after the service starts (when there is a complaint).
- 2) Promotion of Poverty Reduction: None in particular.
  - 3) Promotion of Social Development (e.g. Gender Perspective, Measure for Infectious Diseases Including HIV/AIDS, Participatory Development, Consideration for the handicapped, etc.): The Project will involve HIV/AIDS prevention activities for construction workers. These activities will be specified as a requirement in the tender documentation and carried out by constructors.
- (8) Collaboration with Other Schemes and Donors: The maintenance capacity of the RDA will be enhanced through The Project for Capacity Development on Bridge Management
- (9) Other Important Issues: The Project is expected to transfer Japanese technologies such as speedy construction without disturbing the existing traffic, operations in small areas, and extradosed bridge construction methods.

#### 4. Targeted Outcomes

##### (1) Quantitative Effects

###### 1) Performance Indicators (Operation and Effect Indicator)

Indicator	Targeted Area	Baseline (Actual Value in 2013)	Target (2021) (Expected value 2 years after project completion)
Annual average daily traffic (number of vehicles per day)	Existing New Kelani Bridge	92,700	67,900
	New bridge over the Kelani River *	-	58,100
	Baseline Road	86,400	113,400
Reduction in transportation time (minutes)	A01 Road – Orugodawatte intersection (approx. 2km)	7.7	4.0
Average speed (km per hour)	Existing New Kelani Bridge	18	40
	New bridge over the Kelani River *	-	40
	Baseline Road	13.6	20

\* The new bridge constructed by the Project

###### 2) Internal Rate of Return

Based on the conditions indicated below, the Economic Internal Rate of Return (EIRR) of the Project is calculated to be 13.4%.

Cost: Project costs (excluding taxes), operation and maintenance costs

Benefit: Reduction in transportation costs and time and traffic accidents

Project Life: 16 years after the service commences

The Financial Internal Rate of Return (FIRR) is not calculated since no income is derived directly from the Project.

##### (2) Qualitative Effects

Enhancement of convenience for the whole nation by ensuring smooth traffic flow, promotion of product distribution

#### 5. External Factors and Risk Control

Delay in the Project due to natural disasters such as floods

#### 6. Results of Evaluations and Lessons Learned from Past Projects

##### (1) Results of Evaluation of Similar Past Projects

The ex-post evaluation of Sri Lanka-Japan Friendship Bridge Widening Project indicated that the maintenance work of the project bridges and roads had not necessarily reached a perfect level and drew lessons that it was necessary to perform more carefully thought-out maintenance work. Another lesson learned from previous similar projects was the importance of smooth resettlement of local residents through proper compensation. In terms of safety, it was recommended that project executing agencies should be supported with their safety management capacity development.

(2) Lessons for the Project

The Project plans to enhance the maintenance system of the executing agency, which is crucial for maintaining the new bridge and elevated road constructed in the Project, through a technical cooperation project that is aimed to develop technical capacity of the executing agency for bridge maintenance and formulate a long-term maintenance plan. For relocated residents, sufficient compensation and land for resettlement will be provided in accordance with the RAP. Furthermore, a safety management system will be established based on the safety management system checklist of JICA.

7. Plan for Future Evaluation
-------------------------------

(1) Indicators to be Used

- 1) Annual average daily traffic (number of vehicles per day)
- 2) Reduction in transportation time (minutes)
- 3) Average speed (km per hour)
- 4) EIRR (%)

(2) Timing of Next Evaluation

Two years after project completion

END