

Ex-Ante Evaluation (for Japanese ODA Loan)

1. Name of the Project

Country: The Democratic Socialist Republic of Sri Lanka

Project: Landslide Disaster Protection Project of the National Road Network

Loan Agreement: March 14, 2013

Loan Amount: 7,619 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 Disaster Management Sector in Sri Lanka**

Due to its geographic conditions and the effect of climatic change, Sri Lanka has experienced various natural disasters including large floods caused by torrential rain. Resulting a loss of life and economic losses such as damage to basic infrastructure have hindered the nation's development. Looking at the record of natural disasters in the past, floods caused by heavy rains and landslide disasters have been major natural disasters in the country. In the Central Highlands, where rapid cultivation and development are taking place, frequently experiences the collapse of steeply sloping land, avalanches and other types of landslides due to the area's vulnerable geological characteristics and steep landforms.. Notably in seven districts across Central, Uva, Sabaragamuwa and Western Provinces, more than 700 landslides occurred between January 2007 and July, 2012, damaging 2,200 houses and affecting about 34,000 local people.

Frequent landslide disasters have caused tremendous damage to basic infrastructure, including the road network that bears 90 percent of the domestic passenger and cargo transportation, and had much impact on the national economy. The rising number of landslide disasters occurring on roads in the highlands is due to ground vulnerabilities that are amplified by unstable excavation on slopes during road widening and extension, and inadequate measures to prevent disasters on the road network such as a lack of facilities for draining underground water.

In these circumstances, the National Building Research Organization (NBRO) under the Ministry of Disaster Management has strengthened measures against landslide disasters including the implementation of a development project survey in the 10 districts designated as landslide-prone areas. Under the guidelines of NBRO, the Road Development Authority (RDA) has taken necessary measures to prevent landslides and enhance the safety for securing the safety of the national road network. RDA however, has implemented only limited measures based on limited expertise. Many financial, technical and organizational challenges should be addressed to achieve more effective measures.

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

After the Sumatra earthquake and tsunami, the Sri Lanka Government enacted the Disaster Management Act in 2005 to enhance the national disaster preventive measures and is now designing the National Disaster Management Plan. The Act regards landslide disasters as one of the major disasters and requires the agencies concerned to implement necessary measures for resilience against disaster and the mitigation of damage. The national development plan called "Mahinda Chintana" (2010-2016) also requires that the safety of the national road network be improved.

(3) Japan and JICA's Policy and Operations in the Disaster Management Sector

Japan's "Country Assistance Policy for Sri Lanka" (June, 2012) sets a policy of cooperation for the establishment of an effective disaster management structure and the introduction of disaster management measures in the development challenge of "Social infrastructure development to mitigate vulnerability."

According to the policy, “JICA Country Analytical Work” positions “Climate Change and Disaster Management” as one of the key areas and says that it is important to improve the capacity to cope with disasters through the enhancement of disaster control and prevention. The purpose of this project is to enhance the country’s capacity to control landslide disasters on major national roads that are major basic infrastructure and that are vulnerable to disasters. This purpose aligns with the assistance policies of Japan and JICA for the country. In the same sector, JICA has also implemented a technical cooperation project for development planning, namely the “Comprehensive Study on Disaster Management in Sri Lanka” (2006-2009) and a technical cooperation project called the “Disaster Management Capacity Enhancement Project Adaptable to Climatic Change” (2010-2013), contributing to enhance landslide management measures mainly by the capacity development of NBRO as well as to improve the capacity of disaster management agencies and strengthen the structure of disaster management.

(4) Other Donors’ Activities

In the disaster management sector, UNDP has implemented support for the design of the National Disaster Management Plan, while the World Bank has conducted a flood control and water resource management project.

(5) Necessity of the Project

Landslides along with floods are major disasters in Sri Lanka, and it is an urgent issue to develop the capacity of coping with landslides for ensuring the stable development of the country. This project, which is to ensure the safety of national roads and enhance disaster management measures in the Central Highlands by implementing countermeasures for slopes and other measures, is in accordance with the development policies of the Sri Lanka Government as well as the assistance policies of Japan and JICA. It is highly necessary and relevant for JICA, therefore, to support the implementation of this project.

3. Project Description

(1) Project Objective

The objective of this project is to alleviate the risk of landslide on national roads with a high risk of landslide disasters in 7 landslide-prone districts by implementing countermeasures for slopes along major national roads, which are basic infrastructure,, thus contributing to the economic and social development of the country through the enhancement of the safety of the road network and lives of nearby residents.

(2) Project Site/Target Area

Central (Nuwara Eliya, Matale and Kandy Districts), Uva (Badulla District), Sabaragamuwa (Kegalle and Ratnapura Districts) and Western (Kalutara District) Provinces

* Total population in the target area : 6,502,277

(3) Project Components

- 1) Countermeasures for Road Disaster Management Model Areas (anchor method, etc.): 6 sites (procurement method: international competitive bidding)
- 2) Countermeasures for High Priority Areas of National Roads for Disaster Management: 10 sites (procurement method: domestic competitive bidding)
- 3) Procurement of Early Warning System equipment: 30 sites (procurement method: domestic competitive bidding)
- 4) Consulting service (geological survey, detailed design, tender assistance, construction supervision, etc.) (Consultants will be short listed)

(4) Estimated Project Cost (Loan Amount)

9,590 million yen (including the agreed loan amount: 7,619 million yen)

(5) Schedule

Planned for March, 2013 to December, 2018 (a total of 70 months); the project will be completed when the use of all the countermeasures and equipment begins (December, 2017).

(6) Project Implementation Structure

- 1) Borrower: The Government of the Democratic Socialist Republic of Sri Lanka
- 2) Executing Agency: Ministry of Ports and Highways
- 3) Operation/Maintenance/Management: RDA and NBRO

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

- 1) Environmental and Social Considerations
 - a) Category: B
 - b) Reason for the Categorization: Since this Project does not involve any sectors or characteristics that are liable to cause adverse environmental impact nor sensitive areas specified in the “JICA Guidelines for Environmental and Social Considerations” (published in April, 2010), it is unlikely that the project will have severe negative impact on the environment.
 - c) Environmental Permit: The domestic laws of Sri Lanka do not mandate the preparation of the Environmental Impact Assessment (EIA) report for this project.
 - d) Anti-Pollution Measures: Air and water quality, noise and vibration generated during the project works are expected to meet the domestic standards by the proper operation and maintenance of equipment and machinery and pollution control measures to be taken.
 - e) Natural Environment: The areas affected by the project are not designated as or near national park or other sensitive areas, and the level of undesirable impact to natural environments is expected to be minimal. .
 - f) Social Environment: This project requires the acquisition of land of 1.2ha and the relocation of up to 3 residents per project site. The relocation and compensation procedures will be taken according to the domestic laws of Sri Lanka and the “JICA Guidelines for Environmental and Social Considerations”.
 - g) Other Aspects/Monitoring: RDA will monitor air and water quality, noise and vibration, groundwater and waste matter during the construction and after starting the operation.
- 2) Promotion of Poverty Reduction: None in particular
- 3) Promotion of Social Development: None in particular

(8) Collaboration with Other Schemes and Donors

An associated Technical Cooperation Project on the enhancement of landslide management will be launched aiming for the enhancement of risk analysis, the improvement of countermeasures and the development of related guidelines together with NBRO personnel who were the target of capacity development under the JICA technical cooperation project called the “Disaster Management Capacity Enhancement Project Adaptable to Climatic Change” (2010-13).

(9) Other Important Issues

None in particular

4. Targeted Outcomes

(1) Quantitative Effects

1) Performance Indicators

Indicators	Baseline (Average value in 1993-2012)	Target (2019) (Expected value 2 years after project completion)
Reduction of the traffic interruption in 16 locations (days/year)	1.75	0
Decrease in the cost of the road restoration after rock falls, slope failure and landslides in 16 locations (million rupees/year)	0.9	0

2) Internal Rate of Return

Based on the conditions below, the economic internal rate of return (EIRR) of this project will be 8.1% (which applies to six model works only).

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

Benefit: Shorter travel time cost and reduced vehicle operating cost all compared to detours taken during disasters; reduced human and physical damage, reduced cost of recovery from disasters, reduced road repair cost; and reduced mental stress

Project life: 50 years

(2) Qualitative Effects

Improved safety of national road transportation and nearby residents on the roads; and improved capacity of RDA and NBRO to cope with landslide disasters on national roads

5. External Factors and Risk Control

Climatic conditions (floods, torrential rains and resulting landslide disasters).

6. Lessons Learned from Past Projects

(1) Results of Evaluation of Similar Past Projects

The ex-post evaluation of the “Baseline Road Project (I) and (II)” implemented in Sri Lanka states that the operation and maintenance manuals prepared were not used because it was not user-friendly. The evaluation recommends that instructions of the manuals should be concrete and specific with photographs and illustrations.

The evaluation at the completion of a Technical Cooperation Project called the “Disaster Management Capacity Enhancement Project Adaptable to Climatic Change” notes the necessity for careful project implementation that takes the level of implementing agency’s capability and the situation of underdeveloped national disaster management policies into account.

(2) Lessons for The Project

To strengthen the structure of the project implementation and operation, maintenance and management in this project, it is planned to provide systematic support to RDA and NBRO for the design of an operation/maintenance/management plan including the preparation of user-friendly work instruction manuals through an associated Technical Cooperation Project and capacity development by the soft components of this project.

7. Plan for Future Evaluation

(1) Indicators to be Used

- 1) Reduction of the traffic interruption in 16 locations (days/year)
- 2) Decrease in the cost of the road restoration after rock falls, slope failure and landslides in 16

locations (million rupees/year)

3) Economic internal rate of return (EIRR) (%)

(2) Time of Nest Evaluation

Two years after project completion