

## Ex-Ante Evaluation (for Japanese ODA Loan)

### 1. Basic Information

Country: Republic of Rwanda

Project: Ngoma-Ramiro Road Upgrading Project

Loan Agreement: March 22, 2018

### 2. Background and Necessity of the Project

#### (1) Current State and Issues of the Transportation Sector in Rwanda

The Republic of Rwanda (hereinafter referred to as "Rwanda") is an inland country that has two main overland routes to the ocean, namely the Northern Corridor of East Africa (Approximately 1,700 km) that extends to the Mombasa Port in Kenya through Uganda and the Central Corridor (Approximately 1,400 km) that extends to the Dar es Salaam Port in Tanzania. This is why Vision 2020, Rwanda's long-term national development plan, states the importance of extending and improving roads to ensure safe and reliable transport services. In addition, the Second Economic Development and Poverty Reduction Strategy (EDPRS-2), the country's mid-term national development plan, also gives high priority to the removal of tariff barriers on international corridors and the development of national roads. Furthermore, the country functions as a transport and logistics hub are connecting coastal countries, such as Kenya, Tanzania and the Democratic Republic of the Congo, and inland countries, including Uganda and Burundi.

Rwanda has a total extension of 14,000 km of roads, which are classified into three categories: national roads, Class 1 district roads and Class 2 district roads. Although there has been some progress in the improvement of national roads in Rwanda, about 55% remain unpaved. National Road 6 is a key part of the logistics network in Rwanda that extends from Kayonza in the east to Nyanza in the south and connects the country to Burundi and the Democratic Republic of the Congo through the Central Corridor. However, it is still mostly unpaved and becomes difficult to drive on when the road surface condition worsens, particularly during the rainy season, in which the road surface is eroded, causing drivers to take longer to travel. Furthermore, restricted traffic can force drivers to take a detour, resulting in reduced transport efficiency and other negative impacts on economic activities. Moreover, the road also has several other problems, such as being too narrow for large trucks to travel

safely.

Under such circumstances, vehicles bound for the capital city of Kigali, Burundi or the Democratic Republic of the Congo via the Northern Corridor of East Africa or the Central Corridor tend to find National Road 6 unstable and thus opt to travel on National Road 4, which extends from Kayonza to Kigali, using the route that goes southwards from Kigali on National Road 5 and leads to the road between Ramiro and Kibugabuga, which is financed by the World Bank (hereinafter referred to as "WB") at the moment, via Ramiro situated on the western end of the target road of the Project (Ngoma-Ramiro). However, National Road 4, which starts from Kigali, is subject to chronic traffic congestion, and can be cut off in the case of a natural disaster or other troubles, resulting in the two corridors becoming unusable. This is the reason that the Government of Rwanda aims to establish a more robust road network by improving and widening the target road of the Project, which is meant to be a way to achieve Vision 2020 and EDPRS-2.

Furthermore, the volume of traffic bound for Rwanda via the Central Corridor increased from 67 vehicles/day in 2009 to about 1,800 vehicles/day in 2014, as a result of the construction of the new bridge and One Stop Border Post facilities (hereinafter referred to as "OSBP facilities") for more efficient border procedures in Rusumo on the Rwanda-Tanzania border, which is part of the Central Corridor, implemented through the Project for Construction of Rusumo International Bridge and One Stop Border Post Facilities (completed in December 2014), a grant aid project by the Japanese Government. For Rwanda, the Central Corridor has advantages over the Northern Corridor of East Africa in terms of the number of borders to cross and distance to travel before reaching the ocean. As such, it is expected that the volume of traffic bound for Rwanda via the Central Corridor will continue to rise in the future (predicted to reach about 3,000 vehicles/day by 2019).

## (2) Japan and JICA's Cooperation Policy towards the Transportation Sector in Rwanda and the Priority of the Project

Japan's Country Assistance Policy for the Republic of Rwanda (July 2017) identifies "economic infrastructure development" as one of the priority areas, and programs for the transportation sector as "transportation and trade facilitation programs." Moreover, according to JICA's Country Analysis Paper for the Republic of Rwanda (May 2015), it is important to develop and improve highways, bridges and other structures leading to international corridors, such

as the Central Corridor that extends to Rwanda via Tanzania, and the Northern Corridor of East Africa that extends to Rwanda via Kenya and Uganda. The Project is in line with the above policy and analysis.

In the transportation sector, Japan has already implemented the Project for Construction of Rusumo International Bridge and One Stop Border Post Facilities (completed in December 2014), a grant aid project for the construction of an international bridge and OSBP facilities on the Rwanda-Tanzania border that is adjacent to the target road of the Project.

### (3) Other Donors' Activity

Major development partners in the Rwandan transportation sector include the WB, African Development Bank and European Union and they are providing support for the development and improvement of highways and OSBP facilities. Besides the above Kibugabuga-Nyanza road improvement project, the WB also established the Kigali-Musanze road rehabilitation plan (2010–2014) to improve and widen national roads, as well as to enhance road maintenance abilities. The African Development Bank and European Union have also been jointly working on the improvement and widening of national roads through the Kagitumba-Kayonza-Rusumo road rehabilitation project (2016–2019).

## **3. Project Description**

### (1) Project Objective

The Project is to support the paving and widening of the unpaved Ngoma-Ramiro road in the Eastern Province of Rwanda, thereby establishing an efficient transport route and increasing transport capacity of the target area to stimulate the transport of goods in Rwanda and nearby countries.

### (2) Project Site/Target Area

Eastern Province of Rwanda (Population: About 2.6 million people)

### (3) Project Components

- 1) Paving and widening of the Ngoma-Ramiro road interval (approx. 53 km) (including improvement of incidental facilities, such as drainage channels) and reconstruction of a bridge (approx. 15 m in length) (domestic competitive bidding)
- 2) Consulting services (detailed design work, construction supervision, etc.) (Short-listing)

(4) Estimated Project Cost (Loan Amount)

Total Project Cost: 10,265 million yen (Loan Amount: 7,670 million yen)

(5) Schedule

February 2018 to July 2023 (67 months in total). The project completion is defined as the commencement of the service (December 2021).

(6) Project Implementation Structure

- 1) Borrower: The Government of the Republic of Rwanda
- 2) Guarantor: None
- 3) Executing Agency: Rwanda Transport Development Agency (hereinafter referred to as "RTDA")
- 4) Operation and Maintenance Agency: RTDA

(7) Collaboration and Division of Work with Other Projects, Donors, Etc.

1) Japan's Activity

Japan's ODA loan project, "Rusumo-Kayonza Road Improvement Project," aims to rehabilitate part of the Central Corridor, namely from Rusumo on the Rwanda-Tanzania border to Kayonza in the Eastern Province, while the Project on Capacity Development for International Trade Facilitation in the Eastern African Region, a technical cooperation project, provides support for the proper operation of OSBP facilities on the Rusumo border that have been developed through Japan's grant aid program. These projects have resulted in the enhanced transportation capacity of the Central Corridor. In combination with this, the Project is expected to create synergy to stimulate the transport of goods in Rwanda and nearby countries through the Central Corridor by providing easier access to Burundi and the Democratic Republic of the Congo.

2) Other Donors' Activity

The Project is to be implemented through co-financing with the WB, which will finance the Kibugabuga-Nyanza road improvement project (approx. 66 km), targeted at the section connected to the target area of the Project on National Road 6.

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

1) Environmental and Social Considerations

- (i). Category: B
- (ii). Reason for Categorization

The Project is classified as Category B because it does not correspond to a large-scale project of the road sector as set out in the JICA Guidelines for Environmental and Social Considerations (published in April 2010, and hereinafter referred to as "JICA Guidelines"), and it is therefore judged that the adverse impact on the environment will not be serious. In addition, the project site is not likely to cause, or located in a region likely to suffer from, such impact as set out in the JICA Guidelines.

(iii). Environmental Permit

An Environmental and Social Impact Assessment (ESIA) report related to the Project was approved by the Rwanda Development Board (RDB) in August 2017.

(iv). Anti-Pollution Measures

During the construction, measures are to be taken to minimize adverse impacts on the quality of air and water, noise level, waste, etc., by sprinkling water, properly maintaining equipment, planting trees to prevent soil runoff, treating effluents from construction sites and workers' camps, using low-noise equipment, appropriately disposing of waste arising from construction sites and workers' camps, and so on. Anti-pollution measures will also be taken after the commencement of the service, by planting trees around the edges of the road site, limiting the speed of vehicles, and so on.

(v). Natural Environment

The project site is not located in or around sensitive areas such as national parks. While there are lakes, marshes, etc., around the target area, necessary bridges, culverts and drainage channels are to be set up and waste will be properly collected and disposed of. Therefore, the Project is likely to have minimal adverse impact on the natural environment.

(vi). Social Environment

The Project will require land acquisition of about 9 ha and resettlement of 38 people in six households. The land acquisition and resident relocation will be implemented as per the Resettlement Action Plan to be developed in accordance with the Rwandan procedures and the JICA Guidelines. None of the affected residents opposed the Project at a meeting with local residents.

(vii). Other/Monitoring

During the construction period, the contractor and the RTDA will monitor the quality of air and water, waste, level of noise, etc. After the commencement of the service, the RTDA and the contract maintenance

company will monitor the quality of air, etc. Moreover, the RTDA and other relevant organizations will monitor the resettlement process and its impact on the livelihood of local people before, during, and after the construction period.

2) Cross-Cutting Issues: None in particular

3) Gender Categorization: Gender Informed (Significant)

<Activity Content and Reason for Classification>

The Project is classified as GI (S) because it aims to employ affected local residents (women constitute more than one-third) and there are plans to implement activities to raise public awareness in relation to the provision of proper sanitation facilities for employees, equal pay for men and women and other considerations.

(9) Other Important Issues

None in particular

#### 4. Targeted Outcomes

(1) Quantitative Effects

1) Outcomes (Operation and Effect Indicators)

Indicators	Baseline (Actual value in 2015)	Target (2023) [Expected value two years after project completion]
Average daily traffic on the Ngoma-Ramiro Road (vehicles/day) *1	593	1,821
Travel time between Ngoma and Ramiro (hours) *2	1.88	1.25

\*1: Based on a survey of the actual condition conducted on Ngoma and Ramiro intersections (September 2016)

\*2: Measured between 9:00 and 17:00

(2) Qualitative Effects

The Project is expected to promote regional economic integration, improve traffic safety, boost trade, stimulate the economy of the region around the target road of the Project, reduce transportation cost, reduce congestion in the city of Kigali, and increase the number of passengers and amount of cargo travelling on the target road section.

### (3) Internal Rate of Return (IRR)

Based on the conditions below, the economic internal rate of return (EIRR) of the Project is 22.9%. Since the Project will construct a road that will not collect tolls, the financial internal rate of return (FIRR) is not calculated.

[EIRR]

- Cost: Project cost (excluding tax) and road maintenance cost  
(Difference from the current amount of road maintenance cost)
- Benefit: Reduced travel cost, travel time required, etc.
- Project Life: 20 years

## **5. Preconditions and External Factors**

(1) Precondition: Land acquisition and resident relocation shall be implemented as planned.

(2) External Factor: The project financed by the WB shall be implemented as planned.

## **6. Lessons Learned from Past Projects**

### (1) Lessons Learned from Past Projects

The ex-post evaluation (2005) of Japan's ODA loan to Peru in the Rural Highway Rehabilitation and Improvement Project (approved in 1996) pointed out that appropriate attention was paid to the operation and maintenance of the project and surface deterioration caused by overloading was dealt with by repairing pavement surface early and setting up weight inspection stations. One of the lessons learned is that measures against overloading should be taken in similar road improvement projects as well.

### (2) Application of the Lessons Learned to the Project

While greater emphasis is now being placed on measures against overloading as a nationwide policy, it is highly likely that the target road of the Project will also be used by overloaded vehicles. It has been confirmed that mobile axle load scales, set up and owned by the RTDA, will be used to ensure proper operation and maintenance.

## **7. Evaluation Result**

The Project is consistent not only with the development themes and policies of the Government of Rwanda, but also with the assistance policies of Japan

and JICA, as well as the results of their analyses. Moreover, it can be deemed as highly necessary and relevant for JICA to support this Project given the potential contribution that the Project can make to the economic and social development of Rwanda, as well as to Sustainable Development Goal (SDG) 9, by stimulating the transport of goods to Rwanda, Burundi and the Democratic Republic of the Congo via the Central Corridor and promoting the development of a more effective transport network in the Eastern Province of Rwanda.

#### **8. Plan for Future Evaluation**

(1) Indicators to be Used

Same as in 4. (1) to (3)

(2) Timing

Two years after the completion of the Project