

Republic of Burundi

Ex-Post Evaluation of Japanese Grant Aid Project  
'The Project for Rehabilitation of Public Transportation'

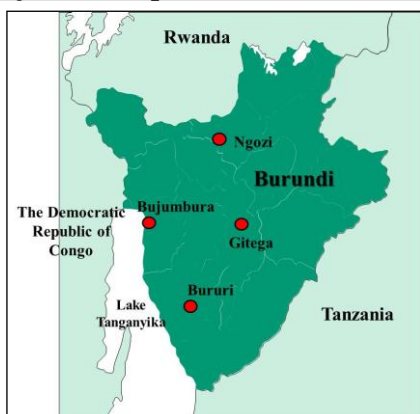
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## 0. Summary

In this project, public buses and necessary equipment were procured to restore international and domestic public transportation capacities to the conditions of the pre-civil war period. Relevance of this project was high as the project was consistent with the development plan and needs of Burundi and was also consistent with one of the priority areas of Japan's ODA policy. With regard to the project effects, the number of operating routes and the operating distance etc. increased substantially and all the indicators expected at the time of planning generally achieved their targets. In addition, indirect effects of the project were observed in that movements of people and goods were promoted and the people were feeling it safer to move around. Therefore, the effectiveness and impact of the project was also high. The efficiency of the project was fair as the project period exceeded the plan due to the delays in customs clearance and in the construction of the foundation to install vehicle maintenance equipment while the project cost was within the plan. In respect of operation and maintenance, there was a concern on whether the implementing agency would be able to conduct adequate repairs all the time, implement large-scale maintenance of the engines smoothly, procure spare parts promptly to carry out proper repair work as the buses become older. Therefore, the sustainability of the project was judged to be fair.

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

## 1. Project Description



Project Location (Nationwide)



Buses Provided under the Project

## 1.1 Background

In Burundi, the economy collapsed due to the civil war that had lasted for more than 10 years since 1993, and infrastructure development and its maintenance was not conducted sufficiently. After the end of the civil war, economic and social revitalization was commenced and the development of rural areas where 90% of the population resided was required. Buses were the major means of transport connecting the capital city of Bujumbura and rural areas, and most of the operations were undertaken by the Office des Transports en Commun (hereinafter referred to as OTRACO).

OTRACO used to have over 100 buses before the civil war and was providing bus services throughout Burundi. However, the operating rates had declined as the buses were not adequately maintained due to the civil war and the vehicles were becoming older. While OTRACO started purchasing new vehicles with its own funds around the end of the civil war, it had only 51 buses at the time of project planning and was providing only low-frequency services between the capital and major cities. Moreover, vehicle maintenance equipment and the facilities had also been deteriorated.

Under these circumstances, public buses and necessary equipment were procured in this project to restore OTRACO's operating routes to the pre-civil war conditions.

## 1.2 Project Outline

The objective of this project was to improve public transportation capacities within the country and also to neighbouring countries by providing public buses and necessary equipment.

Grant Limit / Actual Grant Amount	1,104 million yen / 902 million yen
Exchange of Notes Date / Grant Agreement Date	July, 2009 / July, 2009
Implementing Agency	Office des Transports en Commun: OTRACO
Project Completion Date	January, 2011
Main Contractor	LOT1: Itochu Corporation LOT2: Ogawa Seiki Co., Ltd.
Main Consultant	Eight-Japan Engineering Consultants Inc. (LOT1 and LOT2)
Basic Design	July, 2009
Detailed Design	October, 2009
Related Projects	[Technical Cooperation]

	<p>The Rehabilitation of Public Transportation Project (2009-2012) [Grant Aid]</p> <p>Public Transportation Reinforcement Project 1981, 1983, 1987)</p> <p>The construction of the bus garage<sup>1</sup> (1985-1986)</p> <p>Project for the construction of the bus garage in Gitega<sup>2</sup> (1989-1990)</p>
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## 2. Outline of the Evaluation Study

### 2.1 External Evaluator

Keisuke Nishikawa, Japan Economic Research Institute Inc.

### 2.2 Duration of Evaluation Study

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

Duration of the Study: August 2013 – September 2014

Duration of the Field Study: January 23 – February 9, 2014 and April 12 – 18, 2014

## 3. Results of the Evaluation (Overall Rating: B<sup>3</sup>)

### 3.1 Relevance (Rating: ③<sup>4</sup>)

#### 3.1.1 Relevance to the Development Plan of Burundi

##### Consistency with the National Development Policy

The Poverty Reduction Strategic Paper (hereinafter referred to as “PRSP”) that was formulated in 2006 served as the upper-level development policy of Burundi at the time of project planning. One of the focal goals in the PRSP is to “promote sustainable and equitable economic growth.” Recovery of infrastructure (including transport infrastructure) that assists production activities was a specific goal within it.

Later in 2011, a long-term plan named “Vision 2025” was formulated. It also aims to improve infrastructure to promote production activities and clearly states improvement of transport infrastructure. In 2012, PRSP was revised as PRSP 2 in which improvement of transportation network is regarded as the key to improvement of access between rural areas and markets, enhancement of competitiveness of production activities and promotion of regional integration.

<sup>1</sup> Translated from the Japanese project name. The official name in French is ‘La construction du garage pour autobus’.

<sup>2</sup> Translated from the Japanese project name. The official name in French is ‘Projet pour la construction du garage des autobus à Gitega et d’aménagement de trois stations de bus à Bujumbura’.

<sup>3</sup> A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

<sup>4</sup> ③: High, ②: Fair, ①: Low

### Consistency with the Sector Policy

When the project was planned, improvement of people's accessibility at the national level was one of the achievement goals by 2010, stated in the Policy Document for the Ministry of Transport, Post and Telecommunications 2006-2010 (April 2006), which was transport sector policy. One of the specific efforts in the policy document was the resumption of OTRACO bus service operations in order to "improve the public transport for population mobility in the country."

When the ex-post evaluation was carried out, in the transport sector's "Sector Policy 2011-2025" which was formulated in November 2013, a major goal was to promote economic activities and the objective was to improve people's domestic mobility at inexpensive rates. As specific means of transportation, establishment of bus stops and increases in OTRACO buses are mentioned.

As described above, the national development policy and transport sector policy show that Burundi has aimed to facilitate population mobility by improving domestic transport infrastructure. This project, with an aim to improve the transport capacity, is highly relevant to these policies.

#### 3.1.2 Relevance to the Development Needs of Burundi

Transport infrastructure was heavily damaged due to the civil war that lasted for more than 10 years after 1993, which hindered economic growth. During the project planning, there was no railway in Burundi, and buses were the major means of transportation for the general public without any other own means of transportation. The national bus company OTRACO and some private bus companies were providing services. However, the services by the latter were available only in and between urban areas and major cities for its profitability. People in the rural areas had no other choice but to depend on OTRACO bus services. As 90% of the population resided in rural areas, improvement of OTRACO bus operations was important. However, the vehicles and facilities of OTRACO that had provided services across the country before the civil war became older, and the operation rate was deteriorating.

Although the nation's economy grew after the civil war was over, the lack of infrastructure that assists production activities has been a consistent problem and one of the structural weaknesses of the national economy. In terms of land transport infrastructure, degradation has been seen in most parts of paved roads and unpaved roads have not been maintained systematically. The bus services are not operated in accordance with the timetable or sometimes canceled particularly in the rainy season which inconveniences

access. Transporting costs of goods are also high, resulting in the isolation of some areas.

As for public transportation services, transportation services between major cities improved thanks to the entry of private bus companies. However, people in rural areas still depend on OTRACO's bus services. Although OTRACO has more buses than before the project implementation, with some provided by the project and others purchased by OTRACO, the number of buses it owns is still insufficient. During the field survey, many residents in rural areas voiced their requests for an increase in the number of bus services.

As described above, OTRACO's bus services have been a critically important means of transportation for people in rural areas since the time of the project planning until the ex-post evaluation. The transport infrastructure remains insufficient, roads need to be maintained properly, and there is much need for further improvement of accessibility through increases in the bus operation frequency.

### 3.1.3 Relevance to Japan's ODA Policy

Following the 2005 election process for democratization, the governments of Japan and Burundi held economic cooperation policy talks in 2006 and agreed to gradually resume full-scale grant aid and technical cooperation projects. Japan decided the "consolidation of peace" and "improving the basic living environment" as two pillars of support to Burundi to assist national recovery after the civil war and focus on assisting "infrastructure rehabilitation" and "human resources development." As efforts for improving the basic living environment, Japan decided assistance on public transport and infrastructure as the key areas of an economic infrastructure development program.

The improvement of public transportation is part of infrastructure rehabilitation for Burundi that took the first step toward democratization departing from the civil war and the Project is consistent with it. Thus, it is highly consistent with Japan's aid policy. As Japan also conducted human resources development as a related technical cooperation project, 'The Rehabilitation of Public Transportation Project' to enhance the project effectiveness, the two projects are a combination to specifically promote Japan's assistance policy of that time.

The project has been consistent with the direction of Burundi's development policy that is to improve transport infrastructure and facilitate people's mobility in line with the needs for improvement of transport accessibility and infrastructure development since the time of project planning until the ex-post evaluation. The project was to assist infrastructure rehabilitation and improvement of public transportation of Burundi and thus it was in conformity with Japan's assistance policy at the time of planning.

In light of the above, this project has been highly relevant to Burundi's development plan

and development needs, as well as to Japan's ODA policy; therefore, its relevance is high.

### 3.2 Effectiveness<sup>5</sup> (Rating:③)

#### 3.2.1 Quantitative Effects (Operation and Effect Indicators)

##### 3.2.1.1 Operation and Effect Indicators Assumed at the Time of Project Planning

When the project was planned, the number of buses in operation, operating routes and distance, route coverage rate, and bus passengers (beneficiaries) were estimated to increase through the provision of buses and equipment. Table 1 shows the targets and actual results of those indicators.

Table 1: Trend of Quantitative Indicators of Bus Operation

Indicator	2008	2009	2010*	2011 (year of completion)		2012	2013
	Base year	Actual	Actual	Target	Actual	Actual	Actual
Number of buses in operation	51**	37	123	127	108	101	98
Number of operating route	41	40	82	107	88	90	93
Annual operating distance (1,000km)	804	1,544	1,243	1,960	2,237	2,269	2,415
Route coverage rate (%)***	23 (29/122 communes)	23 (29/122 communes)	65 (85/129 communes)	Data not available	69 (90/129 communes)	69 (90/129 communes)	79 (103/129 communes)
Number of bus passenger (beneficiary, 10,000)	470	470	550	700	570	570	670

Source: Questionnaire response

\*Although the project was completed in January 2011, all buses were delivered by November 30, 2010.

\*\*Number of buses possessed. Two were planned to be abandoned and 16 were seriously broken down and 33 were available for operation.

\*\*\*The figures below the route coverage rate indicate the number of communes with bus routes / number of all communes)

<sup>5</sup> Sub-rating for Effectiveness is to be put with consideration of Impact.

The details of the number of buses in operation are shown in the table below.

Table 2: Details of Buses in Operation

		2010	2011 (year of completion)	2012	2013
Large bus	Existing bus*	3	3	3	3
	Project bus**	22	22	21	21
Medium-sized bus	Existing bus	3	3	3	3
	Project bus	28	28	28	28
Medium-to-small-sized bus	Existing bus	20	7	2	0
Small bus	Existing bus	7	7	4	4
	Project bus	36	34	33	32
	Technical cooperation project bus***	4	4	4	4
	New bus****	0	0	3	3
Total		123	108	101	98

Source: Questionnaire response

\*Existing bus: buses already possessed by OTRACO before the Project implementation

\*\*Project bus: buses provided in the project

\*\*\* Technical cooperation project bus: buses purchased in the Rehabilitation of Public Transportation Project, implemented from 2009 until 2012

\*\*\*\*New bus: buses independently purchased by OTRACO after the project

There were 108 buses in operation and 88 routes, both achieving 85% and 82% of the target, respectively, in the year of completion (2011). The major cause of the figure below the plan is that OTRACO decided to dispose of seriously broken buses (16 of 51) that had been planned to be repaired for operation because the maintenance cost was estimated to be high. Later, it also disposed of already-existing buses gradually due to high maintenance cost, resulting in a drop from 33 buses in 2008 to 10 buses in 2013. Another reason for the decline of the total number of buses in operation is that five buses provided in the project were also disposed of or became unusable for operation – four met in traffic accidents and one was burnt down by a rebel attack – before the ex-post evaluation.

On the other hand, OTRACO has been purchasing new buses independently – three and two small buses in 2012 and May 2014, respectively.

As described above, although the number of buses in operation decreased due to the disposal of already-existing buses and traffic accidents after the project implementation, the number of operating routes and distance grew gradually after 2011 and there was no specific problem when compared with the project plan. The annual operating distance declined in 2010 because the project had yet to bring about substantial effects as the buses were provided in November of that year. In 2011, when the bus services were operated throughout the year for the first time, the number of routes, route coverage rate and the

number of beneficiaries<sup>6</sup> increased significantly.

### 3.2.1.2 Other Operation Indicators

Although the target figure was not established at the time of project planning, operation of international routes as well as the number of passengers on some of the major routes in the country as reference were studied in the ex-post evaluation as part of the purpose of the project was to improve the public transportation capacity to neighboring nations.

Table 3: International Route Operation

Bus Operation Section	Year of service launched	Number of service/week	Average number of passengers
Bujumbura -- Dar es Salaam (Tanzania)	2012	2	40
Bujumbura -- Kampala (Rwanda, Uganda)	2013	3	100
Bujumbura -- Mwanza (Tanzania)	2013	2	80

Source: Questionnaire response

Table 4: Passenger Volume on Major Domestic Routes

(Unit: 1,000 passengers)

Destination	2009	2010	2011	2012	2013
Ngozi (north)	10.4	9.3	27.0	24.1	24.9
Gitega (central)	60.0	52.8	153.5	136.8	141.5
Bururi (south)	9.4	8.5	24.6	21.9	22.6
Chankuzo (east)	40.8	35.8	109.4	93.1	96.2

Source: Questionnaire response

Although the international route services had been discontinued due to the civil war, they were resumed in 2012 using the large buses provided in the project. There were two routes to Tanzania and one route to Rwanda and Uganda at the time of ex-post evaluation. There is a plan to begin the service to the Democratic Republic of the Congo by which Burundi is bordered on the west. This showed that the public transportation capacity has improved through the Project. As for the domestic routes, the number of passengers from the nation's capital, Bujumbura, to major cities increased significantly from the previous year, 2011, and service improvement is also shown in data.

With no specific data on the travel time between cities being available, the change of required travel time from the places of departure to arrival was studied with passengers in the beneficiary survey<sup>7</sup>. It was found that the travel time was shortened by 36% on average.

<sup>6</sup> The number of beneficiaries is the total of population of communes where the bus route exists, not indicating the actual bus passengers. The total population of Burundi is 8,575,000 (2011, UN estimate).

<sup>7</sup> The survey was conducted in the interview style with a total of 100 passengers – 60 in the capital of Bujumbura, 20 each in Ngozi, Gitega and Bururi where branch offices are located – on the satisfaction of travel time, improvement of accessibility, service frequency, punctuality, fares and services.



As for punctuality, 71% of passengers responded in the survey that the bus operation was on time whereas 29% responded that it was not on time (delay). The results of the required travel time and punctuality were mostly positive mainly because the bus operation became smooth and bus breakdowns on the road became close to zero. However, there were many rural areas with bad road conditions and the operation became behind the schedule due to such weather conditions as torrential rains, according to the survey results. A certain level of effects in terms of shorter travel time and punctuality emerged in general.

### 3.2.2 Qualitative Effects

#### 3.2.2.1 Shortening of Maintenance Time

As a qualitative effect, the provision of vehicle maintenance equipment in the project was expected to improve the safety inspections and shorten the maintenance time. Although it was difficult to find out the concrete time required for maintenance in the ex-post evaluation, the provision of such equipment improved the efficiency in operation and maintenance activities, according to the implementing agency. For example, provision of garage jacks led to shorter time of lifting up multiple vehicles and provision of tyre exchangers led to safe and efficient tyre removal and attachment. When the workshop was visited, it was observed that tyre and oil replacement work was performed smoothly with the equipment provided in the project.

Although the number of buses possessed by OTRACO increased remarkably, there was no delay of maintenance work that would hinder bus operation. The provision of such equipment seems to be one of the main reasons for more efficient and steady maintenance and various kinds of work.

### 3.3 Impact

#### 3.3.1 Intended Impacts

The impacts by the implementation of the project expected at the time of planning, and the results of interviews in the beneficiary survey after the implementation are shown in the table below.

Table 5: Expected Impacts and Beneficiary Survey Results

	Expected impacts (planning phase)	Beneficiary survey results (at ex-post evaluation)
1	<ul style="list-style-type: none"> <li>Recovery of bus routes to the state that they were before the civil war would contribute to improvement of living environment of local residents as</li> </ul>	<ul style="list-style-type: none"> <li>Beneficiaries were asked if they found improvement of access to other places (communes), all passengers responded yes. 71% of respondents said that they were satisfied with the service frequency while the remaining 29%</li> </ul>

	a result of improvement of access to hospitals and clinics, schools and other public facilities and market, etc.	was not, requesting more frequent services.
2	<ul style="list-style-type: none"> <li>Improvement of transport capacity would help energize local economy in the capital and rural areas.</li> </ul>	<ul style="list-style-type: none"> <li>Although there was no major change (e.g. opening of major shopping centers, etc.) as a result of resumption of route operation after the provision of buses, 90% of respondents said that they felt some economic changes. Particularly in rural areas, many respondents said that they became able to conduct such commercial activities as selling produce from rural areas to the city and go to the city to buy commodities and sell them at markets in the rural areas.</li> </ul>
3	<ul style="list-style-type: none"> <li>Promotion of domestic and international mobility of human and material capital would contribute to consolidation of peace as “dividends of peace” would permeate across the country.</li> </ul>	<ul style="list-style-type: none"> <li>97% of respondents of the beneficiary survey said that bus services became active to enable them to travel safely after the end of the civil war.</li> </ul>

Source: Preparatory Survey Report and Beneficiary Survey Results

Passengers felt the improvement of accessibility as a result of increases in the routes and service frequency. Although some people in rural areas voiced their expectations of further increase in service frequency, 71% of respondents were satisfied, according to the survey results. OTRACO operates school buses in addition to regular bus routes.

Although major economic impacts by the improvement of accessibility were not found out in the ex-post evaluation, transport of goods between cities and rural areas were observed and bus passengers for business were also seen occasionally in the field survey. 90% of respondents said that they felt economic changes after the improvement of bus operation. This shows emergence of certain impacts. In addition, 97% of respondents said that they felt they can travel safely. This shows that travel of people and goods by OTRACO bus was promoted after the end of the civil war and people generally felt that they were in a peaceful environment. Thus, it is fair to say that the Project has contributed to the consolidation of peace.



Photo 1: Bus terminal in southern Bujumbura



Photo 2: A scene on the bus in operation

### 3.3.2 Other Impacts

#### 3.3.2.1 Impacts on the Natural Environment

It was judged that the project would not have any negative environmental impact in comparison to the pre-project period.

No specific negative impact on the natural environment was observed at the time of ex-post evaluation. According to data on fuel consumption per kilometer provided by the implementing agency, positive impacts were observed by contrast, as the fuel consumption of large, medium-sized and small buses provided in the project improved by 7%, 17% and 36 %, respectively, when compared with already existing buses.

#### 3.3.2.2 Land Acquisition and Resettlement

The project was to provide buses and equipment, and the latter was placed on existing premises. As a result, it did not involve any land acquisition or resettlement of local residents and thus there was no problem related to them.

#### 3.3.2.3 Other Impacts

A sticker of national flags of Japan and Burundi, ODA logo, and texts ‘Japan-Burundi cooperation in 2010’ is placed on the buses provided in the Project (see the photo). When a question was asked to the people whether they knew that the buses were provided through an aid project from Japan in the beneficiary survey, 62% responded “Yes” and 38% said “No”. Although “Yes” was not so high, it is still fair to say that the Project had some impacts in terms of Japan’s ODA publicity.



Photo 3: Sticker on the bus

When the project was evaluated in terms of capacity improvement as public transportation, indicators of quantitative effects expected at the time of planning grew significantly after its implementation and the target figure (80% or more) was mostly achieved. Domestic and international accessibility also improved remarkably. Although there was no such effect as construction of major facilities as vitalization of economic activities, such impacts as increase in travel of people and goods and the achievement of safe travel were observed.

This project has largely achieved its objectives. Therefore, its effectiveness and impact is high.

### 3.4 Efficiency (Rating:②)

#### 3.4.1 Project Outputs

The table below shows the comparison of planned and actual outputs of the project.

Table 6: Planned and Actual Outputs

Item	Plan	Actual	
		LOT1	LOT2
Large bus (60 passengers)	23	22	—
Medium-sized bus (45 passengers)	29	28	—
Small bus (29 passengers)	36	—	36
Spare parts	1 set per bus	1 set per bus	1 set per bus
Equipment for maintenance workshop	1 set	—	1 set

Source: Preparatory Survey Report and questionnaire response

Note: This project was divided into two lots. Large and medium-sized buses and spare parts were procured in LOT1 and small buses, spare parts and equipment for the maintenance workshop were procured in LOT2.

When the project was planned, it was judged that low-floor and rear-engined buses that were common in Japan were unsuitable due to the local road conditions, and the production cost and period would be high and long if ordered to Japan for large and mid-sized buses as it would be a custom order. Therefore, it was decided to take a knockdown production system in which the lower body would be imported from Japan and the upper body would be built and installed in Kenya. The ex-post evaluation confirmed that the planned procedures were taken and there was no specific quality problem related to the body. Meanwhile, as OTRACO had had experiences of quality problems of small bus bodies it purchased from Kenya, Burundi strongly requested the procurement of buses with high quality. Thus, it was not decided at the time of project planning whether to import finished buses from Japan or take the knockdown production

system. After all, the priority was given to bus quality and endurance, then it was decided that finished buses would be imported from Japan. As the same type of bus was relatively common in Burundi and there were maker-dealers in the country, it was determined that there would be little concern about procurement of parts, which was another major reason for the decision to import them from Japan.

With regard to the difference between the planned and actual number of buses, there was one less large and medium-sized bus each than the plan as shown in Table 6. The reduction of one large and one medium-sized buses in LOT1 was because it was found out during the detailed design of the planning stage that one additional bus for each size was posted when the calculation method to generate needed vehicle numbers was reviewed in consideration of non-operation vehicle rate. Therefore, in the actual procurement, they were reduced by one based on the recalculation. As for the equipment for vehicle maintenance, the number of garage jacks, wheel dollies, and tool sets were added and rigid racks were newly added to the original plan, while acoustimeters and electric chain saws at the Gitega Branch<sup>8</sup> were removed as it was judged that they could be reused. The review had not led to any specific problem and it was a reasonable change.

Burundi was planned to undertake responsibilities for banking fees, installation of equipment, drawing-in of electric distribution related to installation of vehicle maintenance equipment, disposal of remaining equipment, and securing the budget and personnel necessary for the project implementation and sustainability, and effective use of operation and maintenance system of bus equipment. Although the foundation work of maintenance equipment in the garage was behind the schedule as described later, the contents were carried out mostly as planned.

Large and medium-sized buses provided in the project are equipped with a certain size of luggage space in the lower part and they were used by ordinary passengers with large luggage. However, because small buses procured from Japan, mostly in accordance with specifications, had little luggage storage space, large luggage including hemp bags were put on the aisle. Small buses also had a problem in their seat material being not so durable and easily getting dirty. It was confirmed in the field survey that OTRACO began replacing the seat cover with a more durable one in order to improve their durability.

It seems to have been more desirable that the specifications of luggage space and seat quality of small buses be more suitable for the local conditions that they transport much

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<sup>8</sup> The Gitega branch facility was used as a rehabilitation training facility for more than 6,500 discharged soldiers when the preparatory survey was conducted and it was impossible to check the conditions of workshop and other facilities. It became possible to check the usability of possessed equipment in the detailed design stage.

luggage and there were many unpaved roads.

### 3.4.2 Project Inputs

#### 3.4.2.1 Project Cost

The following table shows the comparison of planned and actual project cost.

Table 7: Comparison of Planned and Actual Project Costs

(Unit: one million yen)

Item	Plan	Actual	
23 large buses	401	1,073	873.5
29 mid-sized buses	331		
36 small buses	263		
Equipment for vehicle maintenance	78	242.4	
Implementation design and procurement supervision, etc.	31	28.7	
Total	1,104	902.2	

Source: Preparatory Survey Report and completion report

As described in “3.4.1 Project Outputs”, as a result of the review of equipment, (reduction of buses, addition and reduction of items and volume of some equipment) in the detailed design, it was reasonable to reduce 28 million yen from the limit of the Exchange of Note (E/N) as the total equipment cost as the planned cost, and it was decided that the evaluation of the project would be judged on whether the project cost was within 1,076 million yen or not. The tendering of the project was carried out in two lots (LOT1 and LOT2), and the both lots were tendered below the planned bidding price. The total project cost including the implementation design and procurement supervision, etc. was 902 million yen, within the revised plan of 1,076 million yen. The Burundi side injected 87.7 million Burundi francs (approx. 6.14 million yen) for the part it was responsible, which was also below the planned amount of 93.9 million Burundi francs (approx. 7.51 million yen). Thus, the actual project cost borne by both Japan and Burundi sides were 908 million yen in total, which is 87 % of the planned 1,083 million yen in consideration of the reduction as a result of equipment review<sup>9</sup>.

#### 3.4.2.2 Project Period

The project duration was planned to be 14 months including the tender document production and tender periods. The procurement period was intended to be shortened by

<sup>9</sup> It was 82 percent of the originally planned value of 1,111 million yen.

procuring large and medium-sized buses (LOT1) and small buses and repair work equipment for maintenance (LOT2) concurrently as separate lots.

The procurement was actually divided into two lots to make the actual project period for 15.5 months from September 2009 to January 2011 (LOT1 was until November 2010 and LOT2 was until January 2011). There were delays in both lots for the following reasons that resulted in the actual project period longer than the plan by 11%.

- LOT1: It took 10.5 months, one month longer than the schedule, because of delay in customs clearance of parts sent from Japan at the Mombasa Port in Kenya.
- LOT2: It delayed for various reasons which include; Burundi side's delay in the selection of construction company for workshop construction including the foundation work to install vehicle maintenance equipment, delay in various construction arrangements due to the time required for the appointment of new OTRACO director general after the arrest of the former director general for corruption, delay in the commencement of construction due to the delay of removal of government vehicles other than the ones of the supervising ministry left at the construction site, delay of construction due to the rainy season, and redoing of foundation work for installation of equipment. As a result, it took 11.5 months, 3.0 months longer than the original 8.5-month schedule.

The project cost was slightly lower as a result of review of equipment at the detailed design stage, with the actual cost 84% of the plan. However, the project period was 111% of the plan due to the delay of customs clearance of buses in Kenya and foundation work for vehicle maintenance equipment. Based on the above, although the project cost was within the plan, the project period exceeded the plan. Therefore, the efficiency of the project is fair.

### **3.5 Sustainability (Rating:②)**

#### **3.5.1 Institutional Aspects of Operation and Maintenance**

OTRACO, the executing agency of the project, is a public corporation under the supervision of the Ministry of Transport, Public Works and Equipment, and there were 226 employees at the time of ex-post evaluation (as of January 2014). In the O&M section at the Head Office in the capital of Bujumbura, 43 employees in the Technical Service Department (director, 18 employees in maintenance and inspection group, 16 in heavy repairs group and 8 in the third-party vehicle inspection group) are responsible for vehicle maintenance. The Operation Service Department with 90 employees including drivers is responsible for bus operations. Its head office in Bujumbura has a vehicle inspection

facility and the income from the inspections is part of valuable source of income, as described later. The Gitega branch (30 employees) and Bururi branch (8 employees) were reopened in November 2010 and March 2012, respectively<sup>10</sup>. The Ngozi branch (18 employees) was opened in 2008 before the project implementation and the head office and three branches cover the nationwide bus network. Gitega, Ngozi and Bururi branches have 13, 7, and 4 buses, respectively, and the Gitega branch is also equipped with a workshop. Bujumbura Head Office and two branches perform regular inspections and simple repair work. However, due to insufficient equipment, major complex repair work is performed at the workshop in Bujumbura.

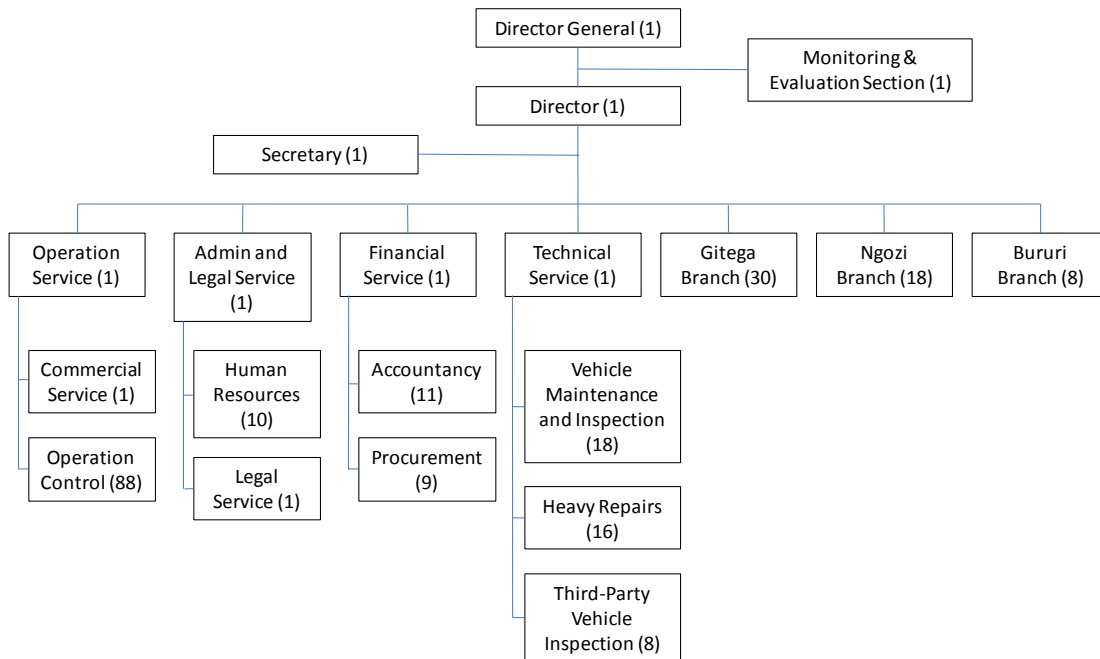
The bus procurement under the project was considered to require a total of 132 additional employees – 59 drivers, 59 conductors, 7 employees in the Gitega branch, 5 in Bururi and 2 in Ngozi. In reality, a total of 83 employees were newly hired – 69 drivers in Bujumbura, 7 employees in the Gitega branch, 5 in Bururi and 2 in Ngozi. Conductors were outsourced, not being hired officially, due to OTRACO's budget shortage. A total of 21 mechanics who perform bus maintenance work were also hired. Each section and branch offices were interviewed in the ex-post evaluation and it was found out that there was no specific shortage of manpower for performing routine operation. Although conductors are outsourced to contractors, there was no problem related to ticket sales and management.

According to the implementing agency, there were discussions recently held within the government on the privatization of OTRACO that competes with private bus companies on some routes. It was concluded that it would not be privatized, valuing its public nature of providing bus services also in rural areas. Contrary to the discussions, the government budget has been allocated and preparation for opening a branch in Cankuzo Province in the eastern part of the country is underway in order to expand the network and improve the vehicle inspection service described later.

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<sup>10</sup> The Gitega branch was used as a disarmament facility and the Bururi branch was used as a specialized occupational training facility for discharged soldiers. Because of delay of handover of the facility, the operation as branches resumed later than planned.





Source: Compiled based on materials provided by the implementing agency

Note: Figures in the parentheses are the number of employees.

Figure 1: OTRACO Organization (as of February 2014)

### 3.5.2 Technical Aspects of Operation and Maintenance

Although some employees with long working experiences were equipped with maintenance skills at the time of project planning, mechanics' capacity was believed to be insufficient in general because of the influence of the civil war. In the preparatory survey (2009), it was determined that OTRACO mechanics had difficulties in practical maintenance work although they had technical knowledge on it and they had few opportunities of receiving technical training. There was no accumulated data on the number of passengers of each route and it was believed that technical instructions on operation plan and management needed to be provided.

A technical cooperation project, "The Rehabilitation of Public Transportation Project" 2009 to 2012, was implemented to improve the insufficient technical capacities in tandem with this project. Through the technical cooperation project, efforts were made to revise and implement bus operation management plans, revise and implement maintenance plans, instruct vehicle maintenance, establish the statistics section to systematize operation data entry, and improve budget execution management and financial management. These efforts helped to improve capacities of bus operation, data management and vehicle maintenance, according to the terminal evaluation survey of the technical cooperation project, and it was confirmed at the time of ex-post evaluation that they had been steadily performed. The maintenance manual was also improved in the project and it was also confirmed that maintenance work was performed in accordance with it. However, there has been no

specific training since the project was completed in June 2012. Although their technical capacities at the time of ex-post evaluation did not hinder routine inspections or repair work, some concerns still remained over their capacity to smoothly perform proper repair work constantly or major maintenance work of engines when many buses get older concurrently. It is considered that there is need to provide continuing training to the technical staff so that they will be fully equipped with capacities to perform repair work in order to handle such situations.

### 3.5.3 Financial Aspects of Operation and Maintenance

The project focused on the recovery of public transportation services that was part of basic living for repatriated refugees and other impoverished people as well as rural residents and thus its low profitability was expected from the time of project planning. Thus, an average of 30% of income from bus operation had been injected as the government subsidies every year and it was believed that 20% to 30% of the income from bus operation would be managed with the government subsidies every year after 2009.

Table 8: OTRACO's Financial Conditions

(Unit: million Burundi franc)

	2009	2010	2011	2012	2013
Sales (income from bus operation)	903.5	910.0	2,595.9	3,048.4	3,340.2
Cost of sales	-1,082.8	-1,096.6	-2,037.8	-2,257.6	-3,317.5
Gross margin	-179.3	-186.6	558.1	790.8	22.7
Sales and general administrative expenses	-541.6	-1,280.8	-4,060.7	-4,135.4	-3,562.5
Operating profit	-720.9	-1,467.5	-3,502.6	-3,344.6	-3,539.8
Non-operating income	764.0	1,602.7	3,994.9	3,873.5	3,634.5
Non-operating cost	-17.6	-55.3	-354.0	-253.7	43.3
Current profit	25.5	79.9	138.3	275.2	138.1
Pretax profit	25.5	79.9	138.3	275.2	138.1
Taxes	-8.9	-28.0	-48.4	-96.3	-41.4
Current income	16.6	52.0	90.0	178.9	96.7

Source: Compiled based on materials provided by the executing agency

The income from bus operation grew significantly from 2011 onwards, in line with the project implementation. It grew at a rate higher than expenditure increases (cost of sales) in 2011 and 2012, leading to the improvement of operation balance. The gross margin decreased in 2013 because of increase in cost of sales, affected by a factor such as a rise in fuel cost. The buses provided in the project were posted as non-operating income as an income item and that was depreciated in the sales and general administrative expenses. Thus, the figures account for a large portion. However, because they are depreciated in four

years after the provision, they are not to be posted after 2015. Non-operating income also includes income from vehicle inspection services and government subsidies, and these items play a crucial role in securing current profit. The income from vehicle inspection services increased from 203 million Burundi franc in 2010 to 386 million Burundi franc and 326 million Burundi franc in 2011 and 2012, respectively, after the project implementation.

However, there emerged the need to pay part of the income from vehicle inspection services to the government coffer and the ratio was also raised from 2011 to the current 50% of the profit. As Figure 2 shows, the government subsidy has been on a declining trend and there is some uncertainty of further improvement of financial conditions.

It was confirmed at the time of ex-post evaluation that OTRACO was renting bus terminal sites to private business operators as a parking lot and to establish kiosk sites, in order to diversify income sources to reduce uncertainty risks.

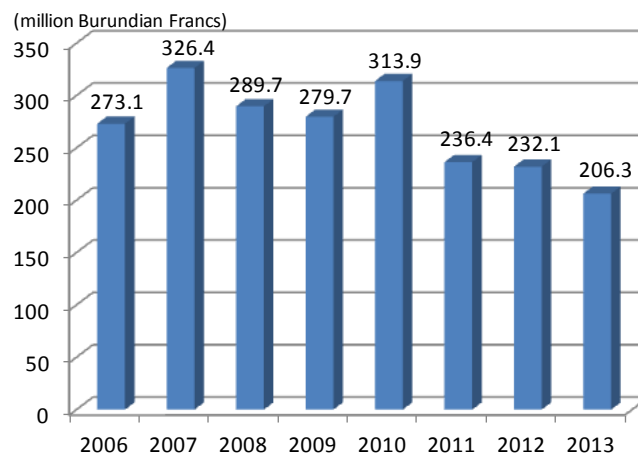


Figure 2: Trend of Government Subsidy

The maintenance budget increased as the number of buses increased because of the project implementation. However, as shown in Table 9, the ratio to the budget declined from approx. 64% before the project implementation to 45~48% and actual expenditures and the ratio to the budget were both lower than the expected maintenance cost in 2011. Because a set of spare parts were also provided together with the buses in the project and because buses were new, this helped curve the maintenance cost spending to contribute to the improvement of financial conditions.

Table 9: Maintenance Budget

(Unit: million Burundi franc)

	2007	2008	2009	2010	2011		2012
	Actual	Actual	Actual	Actual	Plan	Actual	Actual
O&M cost*	958.3	1,007.1	911.1	867.3	1,653.5	1,470.7	1,637.5
Overall budget	1,816.4 (actual income)	1,900.0	1,421.4	1,358.4	3,405.1	3,254.4	3,445.4
Ratio to budget	52.4%	53.0%	64.1%	63.8%	48.5%	45.2%	47.5%

Source: Preparatory Survey Report and materials provided by the executing agency

\*Fuel cost included

There had been no stock of some spare parts at the time of ex-post evaluation and there is need to purchase them in a planned manner. However, as described later, no sufficient procurement scheme is established and there is not sufficient budget to purchase parts although the overall financial figure is in black. Against the backdrop, there is a need to further improve the financial conditions for smooth part procurement.

All buses provided in the project will require major maintenance in several years. Although OTRACO has been making efforts to purchase additional new vehicles in 2012 and 2014, as described above, to increase the number of buses it possesses, it is also necessary to gradually accumulate the budget for major maintenance by diversifying the income sources in order to maintain all buses in good conditions.

OTRACO's bus fares that greatly affect sales fluctuations are lower than those of private bus companies from the viewpoint of public nature. Although the fares are lower than those of private bus companies in general, OTRACO has no authority to decide the fares at its own discretion and they are decided by the Ministry of Transport, Public Works and Equipment that supervises OTRACO. Bus fares were raised in September 2013 in response to the sharp fuel cost increase (e.g.: 320 franc to 345 franc in Bujumbura, 4,500 franc to 5,000 franc for a one way ticket between Bujumbura and Bururi). Charter fees were also raised from 45 franc to 50 franc per kilometer per passenger. In the beneficiary survey, 80% of the respondents said that the fares were reasonable and of the remaining 20%, 10 percent each, said that they were too high or too low.

OTRACO's financial conditions improved in general as a result of increases in the operation income after the project implementation and efforts are made to diversify the income sources. However, it may still become difficult to secure surplus in the future for such reasons as the declining government subsidies, uncertain handling of income from vehicle inspection and no authority to decide bus fares without a large amount of surplus. The need for spare part procurement in large quantities and major maintenance work is also forecast, which can be another factor of surplus decline as buses provided in the project get older. Thus, the government subsidies would need to be continued in addition to the efforts to diversify the income of OTRACO on its own as it provides transportation service also in

rural areas as provision of public transportation service where profitability is low.

### 3.5.4 Current Status of Operation and Maintenance

In the ex-post evaluation, bus maintenance conditions, operation of maintenance equipment, procurement of spare parts, and whether there was a maintenance plan or not, were checked to examine if the effects of the project would be highly sustainable.

#### 3.5.4.1 Maintenance of Provided Equipment

There was a maintenance plan that provides such inspection rules that small buses and other buses need to have engine oil replaced every 3,000 kilometers and every 5,000 kilometers, respectively, and maintenance work was performed in accordance with it. It was confirmed that a spare part replacement record was also kept. The bus maintenance equipment procured for the workshop at Bujumbura Head Office was in good operation in general and maintenance work was performed smoothly.

All branch offices were visited in the field survey to understand the bus operation and maintenance. Although the Gitega branch workshop and Ngozi branch facility were all used, their equipment was not sufficient and there was some broken equipment (brake tester, for example) that was procured in past grant aid project (1989 to 1990) at the Gitega branch. The Bururi branch did not have sufficient maintenance equipment including basics. As Bururi and Ngozi branches performed only simple inspections and repair work and had to send buses to Bujumbura Head Office for others, this led to inefficient bus utilization<sup>11</sup>. It is important to improve the equipment at these branches and reduce the degree of dependence on Bujumbura Head Office for efficient bus operation.

#### 3.5.4.2 Concerns Specific to Large and Medium-sized Buses

Because the body of large and medium-sized buses was built in Kenya, there was concern over rusting based on experiences in other projects. However, operation instructions were provided for mechanics and drivers by Kenyan business operators at OTRACO and in Kenya smoothly and there were no problems of welding or antirust treatment for the buses provided in the project.

#### 3.5.4.3 Spare Part Procurement

Because large and medium-sized buses are not common in Burundi and there is no direct agent in the country, spare parts cannot be procured domestically and orders need

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<sup>11</sup> When a bus based at a branch office is sent to Bujumbura Head Office for repair work, it causes additional one to two days of suspension of the operation.

to be placed abroad including Kenya<sup>12</sup>. However, due to the insufficient budget, they cannot have a large amount of stock of consumables. It requires a lot of time from order placement to arrival. At the time of field survey, there were actually some buses that were left parked unable to be operated due to the delay in procurement of tyres that became out of stock frequently<sup>13</sup>.

It is important to formulate and implement a procurement plan and allocate budget in order to improve the constant delay of spare part procurement. They have a problem of spare part procurement of large and medium-sized buses not going smoothly in general, not just for tires. Another reason for it is that sufficient procurement route from the Kenyan business operators is not established, and there is urgent need to create an international route to enable quick spare part procurement.

#### 3.5.4.4 Improvement of Road Conditions

Roads in Burundi are mostly unpaved except for main routes and road surface conditions are not so good in many sections. As OTRACO operates many rural routes where the road surface conditions are not good, suspension leaf springs and shock absorbers of their buses are more likely to be damaged and the lower body becomes dirty. This causes major negative impacts on bus maintenance. In the beneficiary survey, 43% of respondents said that road conditions were acceptable, only 4% responded they were good and 53% said that they needed to be improved as they were not good.

As described above, road surface conditions are not good in terms of bus maintenance and comfort of passengers. Although road improvement work is not within the scope of duties of OTRACO, it needs to be requested to the Government of Burundi.

No problem related to the O&M structure was found and the financial conditions were improving in line with the increase in bus operation after the project implementation. However, there remains slight concern over the future increase in maintenance cost when all spare parts provided in the project are used up and major maintenance work is needed later as well as over uncertainties of handling of income from vehicle inspection and the trend of decreasing government subsidies. It was also observed that there has been a delay of procurement because the budget for spare part purchase was not secured sufficiently in advance. Although there were no problems related to the technique of daily O&M, there is still concern whether spare parts can be procured promptly and whether the mechanics are fully equipped with skills to perform repair work properly when buses get older, under the current circumstances of no systematic training after the completion of the technical

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<sup>12</sup> There is an agent of small buses in Burundi and parts can be procured relatively easily.

<sup>13</sup> Operation resumed two to three weeks later after tire replacement.

cooperation project.

In light of the above, some problems have been observed in terms of technical aspects, financial aspects and the operation and maintenance status. Therefore, the sustainability of the project effect is fair.

## **4. Conclusion, Lessons Learned and Recommendations**

### **4.1 Conclusion**

In this project, public buses and necessary equipment were procured to restore international and domestic public transportation capacities to the conditions of the pre-civil war period. Relevance of this project was high as the project was consistent with the development plan and needs of Burundi and was also consistent with one of the priority areas of Japan's ODA policy. With regard to the project effects, the number of operating routes and the operating distance etc. increased substantially and all the indicators expected at the time of planning generally achieved their targets. In addition, indirect effects of the project were observed in that movements of people and goods were promoted and the people were feeling it safer to move around. Therefore, the effectiveness and impact of the project was also high. The efficiency of the project was fair as the project period exceeded the plan due to the delays in customs clearance and in the construction of the foundation to install vehicle maintenance equipment while the project cost was within the plan. In respect of operation and maintenance, there was a concern on whether the implementing agency would be able to conduct adequate repairs all the time, implement large-scale maintenance of the engines smoothly, procure spare parts promptly to carry out proper repair work as the buses become older. Therefore, the sustainability of the project was judged to be fair.

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

### **4.2 Recommendations**

#### **4.2.1 Recommendations to the Implementing Agency**

##### **4.2.1.1 Establishment of Procurement Mechanism of Spare Parts**

Under the gradual improvement in financial conditions with increases in operational revenues, it is important to procure frequently-replaced spare parts such as tyres in advance so that all buses will be utilised without a hitch, while the treatment of revenues from vehicle inspection services and the prospect for government subsidies remain uncertain. With a constraint in mind that there are many spare parts difficult to procure inside Burundi, it is considered necessary to establish a mechanism on scheduled international procurement.

#### 4.2.1.2 Continuation of Government Subsidies

OTRACO provides bus services even in the rural area where private bus companies do not operate due to low profitability. Although the government subsidies for operations in rural areas are gradually reduced, OTRACO cannot set the bus fare at its own discretion and some of the revenues from vehicle inspection services are required to be paid to the government. In order to ensure financial soundness of OTRACO and to enable stable provision of public transportation services in the rural area, it will be necessary to receive a certain level of subsidies from the Ministry of Transport, Public Works and Equipment. Alternatively, if the subsidies will be reduced further, it is considered to be an option to authorize OTRACO to set the bus fare flexibly.

#### 4.2.2 Recommendations to JICA

None

### **4.3 Lessons Learned**

#### 4.3.1 Specification Settings based on the Local Situation

It seems to have been necessary to allocate sufficient storage space on all buses as a lot of luggage is transported on the medium to long distance bus routes particularly in rural areas. It was also desirable that the seat materials of some buses were easy to clean and had higher durability since the majority of the road was a dirt road. While these measures had been taken on large and medium-sized buses, small buses procured from Japan had issues in the storage space and seat materials. It is important to take the local usage environment into consideration and take necessary measures when similar projects are planned and implemented.

(End)