Ex-Post Project Evaluation 2020 :
Package Ⅱ-1
(Uganda, Tanzania, Democratic Republic of the Congo)

November 2021

JAPAN INTERNATIONAL COOPERATION AGENCY

Foundation for Advanced Studies on International Development (FASID)

GLOBAL GROUP21 JAPAN, INC.

EV
JR
21-26

Disclaimer

This report compiles the result of the ex-post evaluations. These are conducted by external evaluators to ensure objectivity, and the views and recommendations herein do not necessarily reflect the official views and opinions of JICA. JICA is not responsible for the accuracy of the English translation, and the Japanese version shall prevail in the event of any inconsistency with the English version.

Minor amendments may be made when the contents of this report is posted on JICA's website.

Comments by JICA and/or the Counterpart Agencies may be added at the end of the evaluation report when the views held by them differ from those of the external evaluator.

Republic of Uganda

FY2020 Ex-Post Evaluation Report of Japanese ODA Loan

"Upgrading of Atiak-Nimule Road Project"

External Evaluator: Ruiko Hino

Foundation for Advanced Studies on International Development

0. Summary

This project aimed to enhance the transportation capacity of the target area by upgrading the existing road from Atiak to Nimule on the border with South Sudan in the northern part of Uganda, thereby contributing to promoting the economic integration with the neighbouring countries, revitalizing economic activities, improving the livelihoods of local people living along the road, and reducing poverty.

As these objectives were consistent with Uganda's development plan and development needs as well as Japan's ODA policy, the relevance was high. Although the project cost was within the plan[1], the project period exceeded the plan. Therefore, the efficiency was fair. After implementing this project, the number of vehicles traveling on the target section increased significantly. In addition, travel time was shortened and average speed increased, but the target values set at the time of the appraisal were not achieved. Confirmed impacts include the improvement of access to medical and educational facilities, revitalization of trade and agricultural activities, and improvement of locals' livelihoods. This project achieved its objectives to some extent; however, two operational indicators did not achieve target values. Therefore, the effectiveness and impacts of the project were fair. Although a minor financial constraint was confirmed regarding operation and maintenance, it did not impair the sustainability of the effects of this project. There were no major issues with institutional/organizational aspects, technical aspects, or the status of operations and maintenance. Therefore, sustainability is high.

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

[1] Within this report, "the plan" means "the original plan".

1. Project Description

Project Location

Road section developed by the project (Atiak–Nimule)

Note: Photos were taken by the local assistant in April 2021.

1.1 Background

The target area of the project, Amuru District, is located 330 km north of the capital city, Kampala, and borders of the neighbouring country, South Sudan. This area was affected by armed conflict involving a rebel group (the Lord's Resistance Army), which generated a great number of internally displaced persons (IDPs). Because of the long-standing civil war in the area, the development of production, living, and social infrastructure lagged behind. In addition, the road section developed by this project is a part of the national highway that forms part of the transportation route from the port of Mombasa in Kenya to Juba, the capital of South Sudan via Kampala, the capital of Uganda and Gulu. The targeted road section was important in order to secure this transportation route. South Sudan is blessed with mineral resources such as crude oil and fertile cultivated land. However, being landlocked is a bottleneck for logistics, and high transportation costs have been a hindering factor for the regional economic growth. The development of wide-area infrastructure was positioned as a support for regional economic development and poverty reduction with a view to not only the growth of northern Uganda, but also the growth of South Sudan, and was important for maintaining the stability and peace of the region.

1.2 Project Outline

The objective of this project was to enhance transportation capacity by upgrading the existing road between Atiak in northern Uganda and Nimule on the border with South Sudan, thereby contributing to promoting the economic integration with the neighbouring countries, revitalizing economic activities, improving the livelihoods of local people living along the road, and reducing poverty.

<ODA Loan Project>

Loan Approved Amount/ Disbursed Amount	3,395 million yen/3,099 million yen	
Exchange of Notes Date/ Loan Agreement Signing Date	March 2010/March 2010	
Terms and Conditions	Interest Rate	0.01%
	Repayment Period (Grace Period	40 years 10 years)
	Conditions for Procurement	General, untied
Borrower/ Executing Agency	Ministry of Finance, Planning and Economic Development/Uganda National Roads Authority (UNRA)	
Project Completion	May 2016	
Target Area	Amuru District, Uganda	
Main Contractor (Over 1 billion yen)	China Railway Wuju (Group) Corporation (People's Republic of China)	
Main Consultant (Over 100 million yen)	Lea Associates South Asia Pvt. Ltd. (Republic of India)	
Related Studies (Feasibility Studies, etc.)	Consultancy Services for Detailed Design of the Upgrading to Paved (Bitumen) Standards of Gulu-Atiak-Nimule Road Feasibility Study Report (2009) (Feasibility study conducted by the consultant hired by UNRA with a World Bank loan; hereinafter referred to as "F/S")	
Related Projects	Technical Cooperation for Development Planning: "Project for Rural Road Network Planning in Northern Uganda (2009 - 2013)" and "Project for	

	Community Development for Promoting Return and Resettlement of IDP in Northern Uganda (2009 - 2012)" Technical Cooperation Projects: "Northern Uganda Farmers' Livelihood Improvement Project (2015 - 2021)" and "Project for Capacity Development of Local Government for Strengthening Community Resilience in Acholi and West Nile Sub-Regions (2016 - 2020)"

2. Outline of the Evaluation Study

2.1 External Evaluator

Ruiko Hino, Foundation for Advanced Studies on International Development (FASID)

2.2 Duration of Evaluation Study

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

Duration of Study: November 2020 - November 2021

Field survey: Conducted remotely by utilizing a local assistant

Duration of remote survey: December 2020 - October 2021

2.3 Constraints during the Evaluation Study

(Conducting the remote field survey utilizing a local assistant)

In this survey, due to the impact of the spread of the COVID-19 pandemic, the external evaluator was unable to conduct a field survey. The external evaluator utilized a local assistant to conduct on-site inspections, information/data collection, interview surveys with related personnel, and scrutinized the obtained information for evaluation analysis and judgement.

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

3.1 Relevance (Rating: ③[3])

3.1.1 Consistency with the Development Plan of Uganda

At the time of appraisal, *the Poverty Eradication Action Plan (2004 - 2007)*,[4] Uganda's comprehensive national development policy, positioned economic management and enhancing production and its competitiveness, and income as priority areas. Economic and social infrastructure development, including the road sector, is essential to achieving those goals. In

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

[3] ③: High, ②: Fair, ①: Low

[4] The budget cycle in Uganda begins in July and ends in June, so the exact fiscal years can be described as 2004/2005 through 2007/2008. When referring to Ugandan financial years in this report, only the first year will be stated.

addition, this project was positioned as a priority project in *the National Transport Master Plan (2008)*, which presented the medium-term development framework for the transport sector.

At the time of ex-post evaluation, the national strategy, *the Third National Development Plan (2020 - 2024)*, sets consolidating and increasing the stock and quality of productive infrastructure including roads as one of five strategic objectives. The pavement rate of national roads was set as a development indicator in this area. Uganda's 2024 target value for paved roads is 36%.

In this way, road sector development has been consistently positioned as the basis of the national policies of Uganda at the time of appraisal and upon ex-post evaluation. This project was consistent with the national development policy of Uganda.

3.1.2 Consistency with the Development Needs of Uganda

At the time of appraisal, the pavement rate of national roads in Uganda was as low as 27%. On the other hand, the number of registered vehicles in the country more than doubled between 2001 and 2008, and the traffic volume of vehicles increased by approximately 10% annually.

The target area of this project was affected by civil war for many years[5], and a large number of IDPs emerged. The development of wide-area infrastructure was positioned as a support for regional economic development and poverty reduction. This was done with a view to not only the growth of northern Uganda, but also the growth of the neighbouring country, South Sudan, and was important for maintaining the stability and peace of the region.

The pavement rate of national roads in Uganda at the time of ex-post evaluation was 24% (2018),[6] which still remains low. Although the increase in the number of new vehicle registrations has slowed in recent years, the number continues to grow.[7] The scale of the trade between Uganda and South Sudan is expanding as described below.

From the above, the need to pave national roads has been consistently high at the time of appraisal and the ex-post evaluation. The target area is a geostrategic point of trade with neighbouring South Sudan, which is also an important location for maintaining stability and peace. Therefore, this project is consistent with the development needs in Uganda.

3.1.3 Consistency with Japan's ODA Policy

At the time of the appraisal, *the Rolling Plan (Republic of Uganda) (2009)* stipulated basic economic infrastructure development, human resources development, improvement of basic life, and agricultural development as priority areas for assistance. This project was considered to

[5] The ceasefire agreement was made in August 2006.
[6] Questionnaire responses from executing agency.
[7] Numbers of new vehicle registrations every three years are as follows: 49,641 (2004 – 2006), 96,302 (2007 – 2009), 115,017 (2010 – 2012), 122,890 (2013 – 2015) and 119,595 (2016 – 2018). Source: Uganda Revenue Authority

be in line with the Basic Economic Infrastructure Development assistance policy.

This project has been highly relevant to Uganda's development plan and development needs, as well as Japan's ODA policy. Therefore, its relevance is high.

3.2 Efficiency (Rating: ②)

3.2.1 Project Outputs

The table below shows the plan outline and the actual achievement for each project component.

Table 1: Comparison of Planned and Actual Project Scope

		Planned	Actual
1) Civil Works			
Target section		St.67.350k-St.102.075 (34.725 km)	St.67.350 km-St.102.571 (35.221 km, extended 0.496 km)
Pavement structure	Surface course	20 mm	As planned
	Binder course	10 mm	
	Road base	Base course (crushed stones, CRR) 200 mm Subbase course (natural gravel, G45) 200 mm	Base course (crushed stones, CRR) 225 mm Subbase course (natural gravel, G45) 275 mm
		Subgrade (natural gravel, G15)150 mm Subgrade (natural gravel, G7) 150 mm	As planned
Road width		(Standard width) roadway:3.25 m x 2、shoulder:1.5 m × 2	(Standard width) roadway:3.25 m x 2、shoulder: 2 m × 2 The width of shoulder with guardrails installed is 3.1 m (only on the installed side), and the shoulder width of the trading zone is 3.25 m.
Road drainage facilities		Road-crossing culverts (600 mm diameter, 38 locations)	Road-crossing culverts (900 mm diameter, 62 locations) Access culverts (600 mm diameter, 42 locations)[8]
Ancillary Road Structures		Concrete safety fences, kerbs, road signs, road markings, rumble strips,[9] road humps, guardrails	Concrete safety fences, kerbs, road signs, road markings, rumble strips, road humps, guardrails, pedestrian access slabs (10 locations)
Others			Raising the road surface in the section where the existing road was lower than the ground surface on one or both sides of the road
2) Consulting Services			
Consulting services		Design review and construction management	As planned

Source: Document provided by executing agency and interview with executing agency.
Underlined parts show differences between planned and actual achievement.

[8] Access culverts were not described in the design at the time of appraisal. Source: document provided by executing agency (design review).
[9] Traffic safety support device for the purpose of alerting drivers or suppressing driving speed. A wavy surface is intentionally created on the road surface in the centre of the road or on the shoulder of the road, and sound and vibration are emitted when a vehicle drives over it.

The reasons for the difference between the planned and actual achievements on key components are described below.

Installed guardrail and road sign

Note: Photo was taken by the local assistant in April 2021.

1) Target section: The target section was extended by 0.496 km after a design review conducted by the consultant in 2013. At the time of appraisal, it was agreed that the end point of the target section would be set at a location about 500 m closer to Atiak from Unyama Bridge near the border, in consideration of the construction site of the bridge. However, the latest situation was reconfirmed at the time of the design review. Afterwards, the target section was extended to the vicinity of the bridge.

2) Pavement structure: The base course was changed from 200 mm to 225 mm, and the subbase course was changed from 200 mm to 275 mm. In the design at the time of appraisal, the pavement thickness was determined based on 2009 traffic volume survey data. However, an increase in traffic volume was confirmed during the traffic volume survey at the time of the design review. As a result, the pavement thickness was updated based on the Uganda Road Design Manual.[10]

3) Road width: At the time of the design review, the standard width was changed from 9.5 m to 10.5 m, reflecting the regulations of the Uganda Road Design Manual. In addition, a customs office was established in 2012 at Elegu near the end of the section improved by this project.[11] In response to this change, updates were made such as installing parking lanes and expanding the road width. Furthermore, it became necessary to relocate houses in the area.

4) Road drainage facilities: At the time of design review, the diameter of crossing culverts was changed from 600 mm to 900 mm, reflecting the regulations of the Uganda Road Design Manual.

5) Raising the road surface: Some existing road sections were low compared to the ground surface on one or both sides of the road. At the time of the design review, it was deemed necessary to raise the road surface to secure its drainage function.

Regarding design changes 4 and 5, the design review found that hydraulic analysis had not been performed for the section from Bibia to Nimule at the time of F/S. The consultant conducted hydraulic analysis during the design review and design changes.

Additionally, for changes 2 - 5, it was confirmed that the design at the time of F/S was not compliant with the Uganda Road Design Manual. Therefore, it is highly probable that the technical aspects in accordance with the manual were not sufficiently scrutinized in the design at the time of F/S.

Of the above five changes, 2 and 4 were changed in the same way for the road section

[10] Uganda Road Design Manual (2005)

[11] At the time of appraisal, the Uganda's customs office was located at Bibia which is from 13 km from the border.

that the World Bank (hereinafter referred to as "WB") improved (Gulu-Atiak) and for 3, its design was the same as this project.[12]

3.2.2 Project Inputs

3.2.2.1 Project Cost

The planned project cost at the time of appraisal of this project was 3,492 million yen (of which the ODA loan portion was 3,395 million yen). The actual project cost was 3,213 million yen (of which the ODA loan portion was 3,099 million yen), and it was within the plan (92% of planned project cost, ODA loan portion was 91%). The planned project cost on the Uganda side was 97 million yen, whereas the actual amount was 114 million yen.[13] By component, the consulting services cost 216 million yen (212 million yen in foreign currency, 4 million yen in local currency), and civil work cost 2,882 million yen (852 million yen in foreign currency, 2,030 million yen in local currency).

The main reason for the decrease in project costs is that the original contract amounts for consulting services and civil works were far below the estimated amounts at the time of appraisal. Stiff competition occurred when selecting a consultant and a contractor, and the bid prices were kept significantly lower than the scheduled prices. Especially for the civil works, there was a significant price cut by a Chinese company. The civil works contractor reassigned personnel between projects and carried out projects simultaneously. As a result, the start of the project was delayed. Nevertheless, it was confirmed that it didn't affect the quality of the output.[14]

For both the consulting services and civil works, the actual amounts increased from originally contracted amounts due to the design changes and accompanying contract period extensions. However, the original contract amounts were far below the scheduled prices at the time of appraisal, so the actual amounts were within the scheduled amounts.[15] The background to this is that stiff competition occurred when selecting a contractor and consultant, and the bid prices were kept significantly lower than the scheduled prices.[16]

3.2.2.2 Project Period

The project period planned at the time of appraisal was 35 months, from March 2010 (loan agreement (hereinafter referred to as "L/A") signing date) to January 2013. The actual period was 63 months, from March 2010 to May 2016. This significantly exceeded the plan (180% of the plan). Details are shown in Table 2.

---

[12] Source: document provided by executing agency.
[13] Source: document provided by JICA.
[14] Source: Interview with JICA staff who was in charge of the project.
[15] In the original contracts, consulting services accounted for about 147 million yen, and civil works about 1,939 million yen. Source: Calculated from the information of documents provided by executing agency and JICA.
[16] In particular, for the civil works, there was a significant price cut by the Chinese company. The Chinese company significantly reduced cost by utilizing existing heavy equipment in Uganda and relocating personnel. It was difficult to foresee this situation at the time of appraisal. (Source: Interview with JICA staff who was in charge of the project)

Table 2　Comparison of planned and actual project periods

Planned	Actual	Percentage of planned period
Consulting Services		
Selection of consultant: March 2010 - October 2010 (8 months) Service provision: January 2011 - January 2014 (37 months)	Selection of consultant: May 2010 - April 2013 (36 months)[17] Service provision: July 2013 - October 2017 (52 months)[18]	450% 140%
Civil Works		
Selection of contractor: March 2010 - January 2011 (11 months) Civil works: February 2011 - January 2013 (24 months)	Selection of contractor: May 2010 - January 2013 (33 months)[19] Civil works: July 2013 - May 2016 (35 months)	300% 145%
Total Project Period		
March 2010 (LA signing date) to January 2013 (35 months)	March 2010 - May 2016 (63 months)	180%

Note: Total project period is the period from the signing of L/A to project completion (time at which the project road section started to be used).

The following points are the main reasons why the project period exceeded the planned period at the time of appraisal.

1)　Consultant and contractor selection process

This process took additional time due to the procedural delays on the part of the executing agency and the need to confirm the eligibility for bidding.

2）Consulting services and civil works provision

The design review[20] conducted by the consultant increased construction requirements by about 45%, and the contract periods for civil works and consulting services were extended accordingly.

3.2.2.3 Results of Calculations for Internal Rates of Return (Reference only)

At the time of ex-post evaluation, the financial internal rate of return (FIRR) was not recalculated because the rate had not been calculated at the time of appraisal. As for the economic

[17] The request for proposal (RFP) prepared by UNRA was accepted by JICA in November 2010. The distribution of RFP to the short-listed bidders and the proposal technology evaluation was completed in October 2011 and April 2012 respectively, meaning that it took UNRA 6 months to complete the consultant procurement process. Thus, delays were observed from the initial process of the selection of consultant. In addition, after the selection process, a whistle blower complaint was filed regarding the poor performance of the best evaluated bidder. The process to investigate and confirm these allegations led the further procurement delays.　(Source: Documents provided by JICA)

[18] Including the liability period.

[19] UNRA announced pre-screening of bid participation qualifications (P/Q) on August 10, 2010, and then submitted the revised P/Q evaluation report to JICA on April 27, 2011 and requested for approval. In November 2011, JICA agreed with the conditions (strict application of contractor P/Q criteria, correction of discrepancies between initially submitted version and amended version of P/Q evaluation report, and strict adherence of the principle of one bidder, one bid). Thus, there were delays from the initial civil works contractor selection stage. Of the six companies that passed the P/Q, two were subsidiaries of the same company, so JICA requested UNRA to adhere to the principle of one bidder, one bid. (Source: Documents provided by JICA)

[20] Report submitted in August 2013.

internal rate of return (EIRR) at the time of ex-post evaluation, the result was 20.07% by setting the project life as 20 years[21] from the signing date of the loan agreement in accordance with the appraisal document, calculating the cost and the benefit. The cost includes the project cost (excluding tax), the operation cost and the maintenance cost; the benefit includes the reduction of travel time, the decrease in driving and maintenance cost, and the increase of agricultural production. The WB program (HDM-4) was used for the calculation of EIRR in the F/S at the time of appraisal by setting the project life as 25 years and the EIRR was calculated as 17.3%. At the time of the ex-post evaluation, the EIRR at the time of appraisal was recalculated as 6.71%, applying the same cost and benefit at the time of the ex-post evaluation, as well as the project life of 20 years. The EIRR at the time of ex-post evaluation was increased compared to the time of appraisal. It was because benefit includes reduction of travel time and the decrease in driving and maintenance cost were relatively more than expected and also, the project cost was lower than planned.

Although the project cost was within the plan, the project period exceeded the plan. Therefore, efficiency of the project is fair.

3.3 Effectiveness and Impacts[22] (Rating: ②)

3.3.1 Effectiveness

3.3.1.1 Quantitative Effects (Operation Indicators)

Regarding the quantitative effects, average daily traffic (Indicator 1), travel time (Indicator 2), vehicle operation cost (Indicator 3) and average speed (Indicator 4) were set as operational indicators. Details are shown in Table 3.

Indicator 1 achieved the target (158%). Indicator 2 was drastically reduced compared to the baseline; however, the target value was partially achieved (75%). As for Indicator 4, the time was significantly shortened, but the target value was also partially achieved (79%). Regarding Indicator 3, it was not enabled to get actual values. Additionally, interviews with 38 local residents and road users were conducted and they were asked about the travel time for the section improved by this project: 89% of the respondents (34 respondents) answered that it shortened travel time significantly.

As for Indicator 1, the actual value substantially exceeded the target value. Looking at the changes in the quantity of vehicle traffic by vehicle type, the rate of increase in normal vehicles (sedans and 4WDs) and motorcycles was higher than the rate of increase in trucks and trailers for transport.[23] It can be considered that normal vehicles and motorcycles are likely to be used mostly by residents living in the vicinity. In general, the main exogenous variables in future traffic

[21] The project life shown in the appraisal document is 20 years. However, in the F/S, on the EIRR calculation, the analysis period was set to 25 years (i.e., the project life was 25 years).
[22] Sub-rating for Effectiveness is to be put with consideration of Impacts.
[23] It was increased 161% for medium and large trucks, 232% for trailers, 553% for sedans, 510% for 4WDs, and 363% for motorcycles.

demand estimates are population and GDP. At the time of appraisal, the average annual growth rate of the population of Amuru District was estimated at 2.88%,[24] but at the time of the ex-post evaluation, it was slightly lower at 2.6%.[25] Therefore, it can be considered that the contribution to the increase in traffic volume due to population growth was within the assumption at the time of appraisal, and although it is inferred from limited information, the economic development in the area around the target road section was more than expected at the time of appraisal. It may have contributed to the increase in traffic volume.

The causes of not achieving the target values in Indicator 2 and 4 are described below.

First, the major reason for the failure to reach the target value is that the driving speed of vehicles is significantly restricted due to the traffic congestion in the section near the border of Elegu (about 1.3 km), where the customs office is currently located. If this section is excluded, the average speed in the actual measurement at the time of ex-post evaluation is about 84 km/h, which has achieved the target value. At the time of appraisal, the customs office was located at Bibia, but the traffic volume at Bibia was also measured in F/S, and it can be inferred that the target value was set to reflect the result of the traffic volume survey.[26] In addition, the travel time is about 27 minutes when driving that section with the average speed 80 km/h, and compared to the target value of Indicator 2 (28 minutes) at the time of appraisal, there is about 1 minute difference. Therefore, it can be considered that the vehicle congestion was supposed to some extent.[27] However, considering Indicator 1 significantly exceeded the target value, it can be said that the increase in traffic volume was more than expected at the time of appraisal. Therefore, the traffic congestion situation is also considered to be more serious than expected at the time of appraisal.

Additionally, the area near the Elegu border is a trading zone, and the road width had been expanded after the design review and parking lanes (3.25 m width) were installed. Therefore, it is designed in consideration of the congestion of vehicles to a certain extent. However, the parking lanes were installed only for the purpose of temporarily parking vehicles, and considering the current traffic congestion situation, the parking space may not be sufficient.

Furthermore, according to UNRA, transport trucks prefer to travel with 4-5 convoys for security reasons and tend to stay near the Elegu border for some time after customs clearance. In addition, since Elegu is a trading zone, informal shops targeting transport truck drivers are lined up on the shoulder of the road, which causes congestion.

From the above, it can be considered that the traffic congestion near the Elegu border is caused by the multiple factors: (1) an increase in traffic volume that exceeds expectations at the

[24] Average annual growth rate from 2009 to 2017. (Source: F/S)
[25] Average annual growth rate from 2015 to 2021. (Source: Uganda Bureau of Statistics, https://www.ubos.org/wp-content/uploads/statistics/Population-projections-by-district-2015-2021.xlsx, accessed 28 September, 2021)
[26] The details of the calculation method of the target value at the time of F/S could not be confirmed.
[27] Even when the customs office was located at Bibia, vehicle congestion was observed around the area of the customs office. (Source: Interview with UNRA Gulu Station)

time of appraisal, (2) a shortage of parking space for vehicles that carry out customs clearance, (3) congestion due to informal shop operations, and (4) security issues related to transport trucks.

Table 3 Operation Indicators

Indicators	Baseline (2003/2009) *1	Target (2018) 2 Years After Completion	Actual (2018/2021) *2
Indicator 1: Average daily traffic (number of vehicles) on Atiak-Nimule	480	868 *3	1,372
Indicator 2: Travel time (minutes)	45	28.4 *4	34.0 *5
Indicator 3: Vehicle operation costs per vehicle/km (US$)	0.352	0.224	-
Indicator 4: Average speed (km/h)	50	80	63.4 *5

Source: Document provided by the executing agency (actual value for 2018); the measured values obtained during the field survey (actual values for 2021).
Note:
*1: The baseline year of Indicators 1, 2, and 4 is 2009, and for Indicator 3, it is 2003.
*2: Indicator 1 is the actual value for 2018, and Indicator 2 and Indicator 4 are the actual values for 2021.
*3: The target value for 2018 was recalculated, with the annual increased rate of traffic volume as 6.8%.[28]
*4: At the time of the ex-ante evaluation, it was set as 28 minutes, but the total length of the road section was extended by about 500 m compared to the time of appraisal. Therefore, it is 28.4 minutes when 0.4 minutes (i.e., when travelling 500 m at 80 km/h) is added.
*5: The average value of the total six values that were measured on the outbound and inbound routes during peak/off-peak hours on weekdays and weekends.[29] The medians are 33.3 minutes and 63.3 km/h, respectively. When the executing agency actually measured 34 km of the 35.221 km of the target section of this project (from Atiak to about 1.2 km before the end point of Elegu), the average travel time was 28.3 minutes and the average running speed was 72 km/h.

Congestion around the border at Elegu

Note: Left aerial photograph (taken in May 2021) was obtained from Google Earth Pro on September 28, 2021. Right photo was taken by the local assistant in April 2021.

[28] The target value for 2015 was set in the ex-ante evaluation sheet.
[29] The actual measured results are as follow. The travel times from Atiak to Nimule are 34 minutes at weekday peak hours, 33.6 minutes at weekday off-peak hours, and 33.0 minutes on weekends. The travel times from Nimule to Atiak are 32.3 minutes at weekday peak hours, 33.0 minutes at weekday off-peak hours, and 38.0 minutes on weekends. The average speeds from Atiak to Nimule are 62.0 km/h at weekday peak hours, 62.7 km/h at weekday off-peak hours, and 63.9 km/h on weekends. The average speeds from Nimule to Atiak are 65.3 km/h at weekday peak hours, 64.0 km/h at weekday off-peak hours, and 55.12km/h on weekends.

3.3.1.2 Qualitative Effects (Other Effects)

(1) Reduction of access time to medical/educational facilities

The road users were interviewed about whether this project contributed to reducing access time to medical and educational facilities; 87% (33 respondents) and 61% (23 respondents) of the respondents stated the project significantly contributed to the reduction of access time to medical and educational facilities, respectively. Most medical facilities are located near the national road, but many educational facilities are located far from the national road, so it can be considered that the effect of reducing access time to educational facilities was limited, compared to that of medical facilities.

(2) Complementary and synergy effects between this project and the project implemented by the WB

This project was co-financed project by the WB (parallel), and the WB has carried out the improvement of an approximately 68 km section of road between Gulu and Atiak.[30] The WB loan project began in February 2012 and it was completed in August 2015. The pavement of the above road section was completed before the completion of this project, and it became possible to drive through 104 km of paved road connecting Gulu, Atiak and Elegu, which includes the section improved by this project. The Gulu-Atiak-Elegu road section is maintained and managed by UNRA Gulu Station,[31] and drivers could use it without any problem at the time of the ex-post evaluation. The pavement of the JICA and WB loan sections was completed almost at the same time; therefore, it was possible for vehicles to travel smoothly toward the border of South Sudan. In addition, USAID completed the road improvement between Nimule and Juba (South Sudan) in 2012, and the completion of this project enabled smooth driving for 296 km between Gulu and Juba. The fact that the road between Uganda and South Sudan was paved for nearly 300 km and enabled smooth driving led to the occurrence of the impact shown in Section 3.3.2, and it can be said that a synergy effect occurred in that respect.

3.3.2 Impacts

3.3.2.1 Intended Impacts

（1） Revitalization of trade and economy by improving logistics functions

The change in the number of transport trucks that have a significant role in trade with neighbouring South Sudan was confirmed by interviewing road users[32] at the time of ex-post evaluation[33]; 68% (26 respondents) of respondents said it had significantly increased.[34] In addition, regarding the average daily traffic in the target section of the project as of 2009, the

[30] At the time of appraisal, it was expected that the completion date would be August 2014.
[31] The institutional/organizational aspect of operation and maintenance is described in Section of 3.4. Sustainability.
[32] The total number of respondents was 38 (27 vehicle drivers, which included 12 truck drivers, 10 taxi drivers and four other drivers). Eleven respondents were residents living near the target road section, which included nine females (in their 20s and 40s) and two males (in their 40s and 50s).
[33] Questions were asked on a 5-point scale: (1) *largely increased*, (2) *slightly increased*, (3) *decreased*, (4) *no change*, and (5) *don't now*. Statistical data could not be obtained.
[34] Eleven respondents (truck drivers) answered that they did not know.

average for medium and large trucks was 74, and the average for trailers was 129. However, as of 2018, the averages were 172 and 299, respectively, which was an increase of more than double. It can be considered that the traffic volume of large transport vehicles was increased.[35] In addition, it is estimated that the number of large transport vehicles in operation has increased.

Subsequently, the changes in the import/export values with neighbouring South Sudan are described. Imports from South Sudan to Uganda increased significantly: from 0.8 million USD in 2015 to 2.5 million USD in 2016 and 5.6 million USD in 2017. As for 2018, it was 3.2 million USD, which was a decline from the previous year. However, it has increased compared to FY2016. Regarding the exports from Uganda to South Sudan, it was worth 265 million USD in 2015, 239 million USD in 2016, 299 million USD in 2017 and 355 million USD in 2018. Overall, the figure has been constantly increased.[36] By export items, vegetables and food account for the highest proportion. Exports of vegetables in 2018 increased by 166%, and foods increased by 108% compared to 2015. Additionally, the road users were asked about whether import/export had increased between Uganda and South Sudan at the time of ex-post evaluation: 63% (24 respondents) of respondents said it had significantly increased.[37]

From the above, it can be inferred that the number of transport trucks operating between Uganda and South Sudan increased, although it is based on the results of the statistical data and the interviews with the limited number of beneficiaries. In addition, although it is not possible to clearly discuss the causal relationship with this project, it was confirmed that trade between Uganda and South Sudan is on the rise, and exports of vegetables and food are remarkable.

(2) Revitalization of agricultural activities as the major industry of the target area

The cultivated area of the Atiak sub-county[38] in the Amuru District, which is located around the road section that the project improved, has expanded in recent years, as shown in table 4. The total production in 2020 decreased from the year 2015; however, this was due to the poor harvest of cassava, accounting for the highest proportion among the total production. The total production in 2020 increased compared to that of 2010, and it can be said that there was an increasing trend. Furthermore, both for cultivated areas and agricultural production, the proportion of cash crops tends to increase. The production of maize, rice and sweet potato in 2020 increased by 129%, 200% and 140%, respectively, compared to the production in 2010.

[35] Source: Documents provided by JICA and questionnaire responses from executing agency.
[36] Source: https://wits.worldbank.org/CountryProfile/en/Country/UGA/StartYear/1994/EndYear/2018/TradeFlow/Export/Partner/ALL/Indicator/XPRT-TRD-VL# (accessed on April 7, 2021)
[37] Fourteen respondents (12 truck drivers and two residents) answered that they did not know.
[38] It is a public administrative organization under the district. Amuru District has four sub-counties. Atiak sub-county accounts for 25% of the total land of Amuru District (i.e., 1,052.6 km^2).

Table 4 Cultivated area and agricultural production in Atiak sub-county of Amuru District

Cultivated area			
	2010	2015	2020
Total	12,214	13,091	15,622
Maize	816	1,020	1,122
Rice	337	561	841
Sweet potato	197	246	370
Proportion of cash crops[39]	25%	30%	30%
Agricultural production			
	2010	2015	2020
Total	127,700	156,637	143,697
Maize	652	765	841
Rice	674	1,122	1,345
Sweet potato	2,364	2,460	3,330
Proportion of cash crops	4%	4%	6%

(Source: Interview with Amuru District Production Officer and Agricultural Officer)
Note: Unit of cultivated area: hectare; unit of agricultural production: ton

At the time of ex-post evaluation, ten farmers were asked whether the project had contributed to an increase in agricultural production: 8 farmers stated that it contributed greatly. The reasons raised were as follows: the number of vehicles transporting agricultural products increased because the road was improved by this project; thus, transportation to the markets along the road and to South Sudan became easier. In addition, the scale of the neighbouring towns increased after the road was improved.

From the above, it was confirmed that the cultivated land around the target area (Atiak sub-county in Amuru District) expanded compared to before the project implementation and that production was on the rise as well. From the results of interviews with the farmers, it can be said that it was confirmed that the project contributed to the expansion of commercial agricultural production within the scope of the survey conducted in this evaluation.

(3) Improvement of local residents' livelihoods due to improvement of logistics

As shown in the above, the cultivated area and production of cash crops such as rice, maize and sweet potato are increasing around the target area, and it can be confirmed that commercial agriculture is expanding.

At the time of ex-post evaluation, road users were asked whether the project contributed to the increase of employment opportunities: 79% (30 respondents) of respondents answered that it contributed greatly, and 18% (7 respondents) answered that it slightly contributed. The implementation of this project has made it easier to move and transport people and goods, which has stimulated the movement and transportation of goods. As a result, new business operators and shops have emerged along the road. In Atiak, a large sugar factory (Atiak Sugar Factory[40]) was

[39] Rice, maize, sweet potato, soybeans, ground nuts, banana (food) and coffee.
[40] Partially funded by a government development finance institution, the Uganda Development Corporation.

built 17 km away from the national road, which is in commercial production and employing roughly 2,000 workers. The sugar cane processed at the factory is procured from a wide range of areas including Amuru District. Small-scale farmers in Atiak sub-county sell the produced sugar cane to the factory, and it is expected that the production of sugar cane by small-scale farmers and sales to the factory will be expanded to neighbouring sub-counties in the future.[41]

At the time of ex-post evaluation, road users were asked whether the quality of life had improved after the project: 74% of the respondents (28 respondents) answered that it had significantly improved and 24% (9 respondents) answered that it slightly improved.

From the above, it was confirmed that the production of cash crops in the target area (Atiak sub-county in Amuru District) increased, and from the interviews with the road users, it is considered that the project has contributed to the expansion of employment opportunities. In addition, it was confirmed that the large sugar factory was established in the suburbs, contributing to the expansion of employment opportunities as well as the expansion of commercial agriculture of small-scale farmers, although it was limited.

(4) Promotion of the return and settlement of IDPs

As for the impact expected at the time of appraisal, the promotion of return and settlement IDPs in the target area was completed before the implementation of this project (in 2009 and 2010).[42]

3.3.2.2 Other Positive and Negative Impacts

(1) Impacts on the Natural Environment

This project was classified as Category A under the "Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Considerations" (enacted in April 2002).

An Environmental Impact Assessment (EIA) was prepared by the civil works contractor, including the construction of the quarry and stone quarry, which were not covered by the ODA loan. During the project implementation period, no negative environmental impacts (air pollution, water quality, noise or ecological impacts) were identified.[43] During the ex-post evaluation, no negative impact on the natural environment was identified.[44]

---

[41] Source: Interviews with Amuru District Production Officer and Agricultural Officer.

[42] Source: Questionnaire responses from the Office of the Prime Minister and National Planning Authority, and interviews with Amuru District Production Officer and Agricultural Officer. According to the Mid-term Review Report on Reconstruction Assistance Programme in Northern Uganda (JICA, 2014), IDPs returned to Acholi region in northern Uganda beginning in 2007, and by August 2009, about 80% of them had returned. In 2014, the return was almost completed.

[43] Source: Documents provide by JICA.

[44] Source: Interviews with the executing agency and the road users. However, the environmental monitoring report prepared by the executing agency did not show any monitoring evidence regarding air pollution, noise, water quality, etc., and the basis for judgement that there was no impact on the natural environment was not clear.

(2) Resettlement and Land Acquisition

The number of households to be affected (hereinafter referred to as "PAP"[45]) by the land acquisition and resettlement totalled 201[46], and 85 ha of land was acquired.[47] The land acquisition and resettlement consultation meeting occurred in July 2009 before the project began, and the resettlement and land acquisition implementation team was formed. The Resettlement Action Plan (hereinafter referred to as "RAP") was prepared included this project and the relevant section of WB loan. Compensation payments based on the RAP began in March 2012.[48]

At the time of this evaluation survey, 99.25% of compensation payments made under the project and the WB loan section were complete.[49] However, as for 84 PAPs, it had not been completed the payment of compensation. It was unable to confirm how many of these PAPs are to be compensated under the project. However, under this evaluation survey, it was confirmed that there were some cases, compensation was not paid even though the land disputes, which are the subject of compensation for this project, had been resolved.[50] The three land use rights holders stated that past land use disputes had been resolved, but they had received no compensation. According to the executing agency, the unpaid compensation is currently deposited with the Register High Court. When the disputes are settled and the person to be compensated and the amount of compensation are determined, the executing agency will file a request with the Register High Court to pay the compensation.[51] The evaluator reported the names and contact information of the three persons to UNRA. According to UNRA, a request will be made to the Register High Court by November 30, 2021 for the payment of compensation for cases where disputes have been resolved.

At the time of appraisal, it was recognized that the land ownership in the target area was traditional tenure system, and there was no registration of right to land or the areas subject to such rights.[52] However, due to the impact of the civil war that lasted from the 1980s to 2007, many rights holders were absent from their land, leading to many land disputes. This made it even more difficult to authenticate and identify the rights holders of the subjected sites.[53] However, no

[45] People affected by the project.
[46] 68 permanent housing units and 163 semi-permanent housing units. Semi-permanent housing refers to housing where the roof and walls are not completely covered with impermeable material.
[47] Source: Documents provided by JICA.
[48] Source: Documents provided by JICA. The targeted sections were Gulu–Atiak (WB financing) and Atiak–Nimule (the project financing).
[49] Source: Documents provided by the executing agency. In total, 2,027 PAPs were eligible for compensation. According to the PCR submitted by the executing agency at the time of project completion, as of August 2017, 92.9% of all compensation payments for the project and WB-financed sections had been completed. In addition, according to documents provided by the implementing agencies, delays also occurred in the acquisition of land for both sections, which hindered the smooth implementation of civil works.
[50] The local assistant met with and verified the three land use rights holders and the chairman of the village council in the community where the subject parcels are located.
[51] Source: Information provided by the executing agency.
[52] Source: F/S. According to documents provided by JICA, the executing agency conducted the project's F/S with WB support by hiring a consultant from a South African company, and the project appraisal was based on the F/S results.
[53] Source: Information provided by the JICA staff who was in charge of the project and the consultant in charge of implementing the project, "Northern Uganda Farmers' Livelihood Improvement Project".

special consideration[54] was given to this issue at the time of appraisal.[55] The UNRA Land Acquisition Office stated that this point should have been considered. Greater cooperation from community leaders was also needed during the early stages of land acquisition. Appropriate coordination between the relevant parties, and timely and adequate reporting from consultants and civil works contractors were necessary because of the background that the number of parcels that needed to be acquired during the project implementation increased as a result of the design review. The Resettlement Implementation Team (hereinafter referred to as "RIT") was formed for this project. The RIT comprised UNRA land acquisition experts, district administration and local councillors, grievance committees and community leaders, and the group was intended to provide land acquisition support, including coordination. Based on the scope of the research conducted during this evaluation, it is not possible to conclude unequivocally that the RIT faced challenges to its functioning, but many land disputes arose because of the impact of the civil war and the traditional land tenure systems, requiring more active coordination between the parties involved.

(3) Unintended Positive/Negative Impacts

The surrounding districts (Lamwo, Adjumani, Obongi, Moyo and Yumbe), which are not adjacent to the project site, have hosted a large influx of refugees from South Sudan since 2016, and aid agencies, including the UNHCR, have procured buses to support the movement of refugees. The road was used for the transportation of refugees from the Elegu border to the districts where they were hosted. It was observed that the refugees were moved quickly and easily because of the good road conditions.[56]

In summary, with regard to the envisaged operational indicators, it was confirmed that a certain level of effectiveness was achieved, although only one of the three indicators achieved the target value at the time of the ex-post evaluation. It was confirmed that the access to medical and educational facilities improved, particularly in the case of the former. In addition, to a certain extent, the project contributed to revitalizing trade and agricultural activities and improving local residents' livelihoods. Although the contribution to the return and resettlement of IDPs was not confirmed, it was revealed that the roads improved under the project were used for and contributed to the rapid reception of South Sudanese refugees.

Thus, in terms of effectiveness and impact, the expected effects and impacts were confirmed to some extent, but the operational indicators of effectiveness, namely travel time and average speed, were not achieved. Therefore, effectiveness and impacts of the project are fair.

[54] For example, it could involve community leaders earlier and more proactively than usual to identify the status of disputes and consider initiatives to promote dispute resolution.
[55] Source: Documents provided by JICA.
[56] Source: Response to the Office of the Prime Minister questionnaire.

3.4 Sustainability (Rating: ③)

3.4.1 Institutional/Organizational Aspect of Operation and Maintenance

The executing agency for the project was UNRA. The operation and maintenance of the road section between Atiak and Nimule was managed by the UNRA Gulu Station, one of 23 stations under the UNRA's Directorate of Road Maintenance. UNRA Gulu Station managed 397 km of paved national road, 554 km of unpaved national road and 19 bridges. It was staffed by 47 employees, 27 of whom were stationed there to perform the road maintenance activities.[57] Three staff members oversee the operation and maintenance of the target section: a station manager, a road maintenance engineer, and a maintenance technician. They were assisted by ten temporary staff.[58] The main equipment owned by UNRA Gulu Station is shown in Table 5.

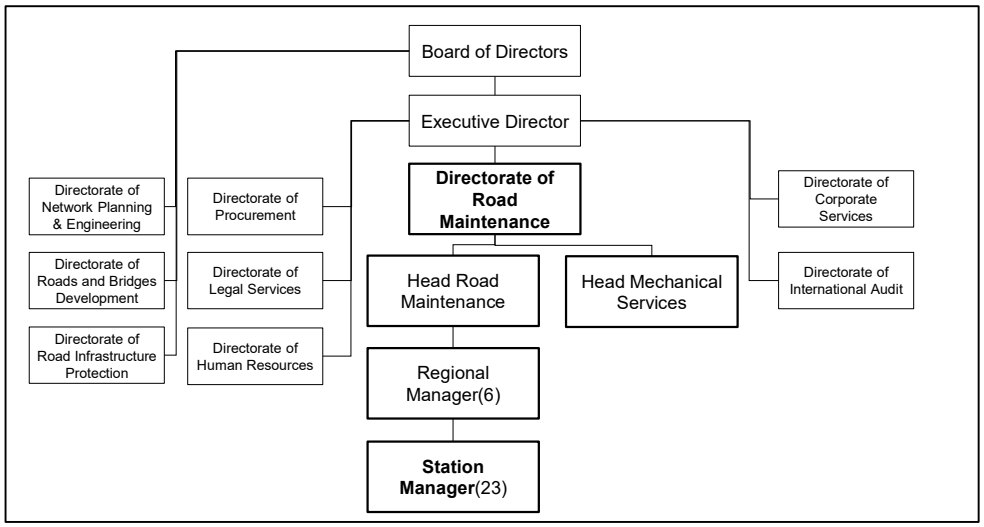


Figure 1: UNRA organization chart[59]

Table 5: Main Equipment Owned by UNRA Gulu Station[60]

Excavators	1
Grader	1
Motor grader	2
Dump trucks	3
Vibro Rollers	2
Water truck	1
Pickup truck	5
Fuel truck	1
Low floor truck	1

[57] The 27 employees include a station manager, two road maintenance engineers, five maintenance technicians, three mechanical and equipment assistants, six vehicle assistants, seven mechanical and equipment operators, a technical supervisor and two mechanics.
[58] Under Gulu Station, 30 temporary staff were employed.
[59] Prepared by the evaluator based on documents provided by the executing agency.
[60] Prepared by the evaluator based on documents provided by the executing agency.

In principle, UNRA Gulu Station prepared an annual work plan for maintenance and management that was divided into two categories: routine and periodic. The former was for routine repairs and inspections, whereas the latter was for major repairs and restorations performed every few years.

During the field survey, the answers UNRA Gulu Station provided on questionnaires and in interviews, it was confirmed that staffing was sufficient for the operation and maintenance of the target road section.

Therefore, it can be said that there were no particular problems with institutional/organizational aspects of the operation and maintenance of the project.

3.4.2 Technical Aspect of Operation and Maintenance

UNRA Gulu Station was responsible for the general maintenance and management of the target road section and its safety equipment (e.g., kerbs, road signs, rumble strips, road humps), with the exception of drainage facility cleaning, which Labour Based Routine Manual Maintenance Contractors (hereafter referred to as "LBC[61]s") performed, Personnel perform quarterly and semi-annual inspections, and the results were kept at the station.

The UNRA provided regular training on road maintenance and organised short-term training aimed at improving maintenance techniques. The agency has also developed a road maintenance manual, of which UNRA Gulu Station kept several copies for use as required.[62]

From the above, it can be said that there were no particular problems with technical aspects of operation and maintenance of the project.

3.4.3 Financial Aspect of Operation and Maintenance

The UNRA's annual budget is shown in the table below. Recurrent and development budgets have been allocated consistently, and the budget of Uganda Road Fund (hereinafter referred to as "URF")[63], which was established to secure the cost of operating and maintaining existing roads, has been stable since the 2017 financial year.[64]

[61] Individual contractors who are residents along the road sections.
[62] Digital data were held by all technical staff.
[63] At the time of the review, it was planned to secure US$127 million for maintenance by the URF, separate from the budgetary structure of the Ministry of Works and Transport and UNRA (Source: Appraisal document).
[64] At the time of appraisal in FY2008, the total budget for the maintenance of existing roads was approximately 83 million USD short; beginning in FY2017, the URF budget has covered that shortfall almost completely.

Table 6: Annual Budget of UNRA

(Unit: millions of USD)

			2016	2017	2018	2019	2020
			Outturn	Outturn	Outturn	Outturn	Budget
(1)	Recurrent	Wage	16.7	19.7	18.8	19.2	19.1
(2)		Non-wage	7.6	6.4	7.2	6.2	8.6
(3)	Development	Government of Uganda	411.7	424.5	431.7	466.2	472.8
(4)		External funding (Development partners)[65]	81.0	126.5	146.0	119.1	442.1
(5)	Arrears		0.0	8.6	0.0	0.0	0.0
(6)	Sub total		516.9	585.7	604.0	610.7	942.6
(7)	URF[66]		-	73.4	83.7	76.1	83.4
Total			1,034.2	1,245.0	1,291.6	1,297.2	1,968.9

Source: UNRA website[67]

UNRA Gulu Station's FY2020 budget was 4,281 million shillings (approximately 122 million yen). Of this amount, 800 million shillings (approximately 22 million yen) was allocated for the operation and maintenance of paved national roads, and 56 million shillings (approximately 1.6 million yen) was allocated for the section improved by the project. This amount was equivalent to approximately 7% of UNRA Gulu Station's budget for the maintenance of paved national roads. In total, 397 km of paved national roads were under the station's jurisdiction, and the section improved by the project is about 36 km long, or 9% of the total length. Therefore, it can be said that the allocation of maintenance and management costs to the target section of this project was appropriate to some extent.

Interviews with UNRA Gulu Station staff confirmed that the budget allocated for the maintenance of the target section is adequate. However, although the situation was similar in other stations, it was sometimes necessary to prioritise relatively costly repairs, such as the replacement of damaged guardrails.

From the above, it can be said that there were no particular problems with financial aspects of operation and maintenance of the project.

3.4.4 Status of Operation and Maintenance

As described in Section 3.4.2 Technical Aspect of Operation and Maintenance, UNRA Gulu Station outsourced the cleaning of drainage facilities to local private contractors, but it also performed other operation and maintenance tasks.

[65] With regard to external funding, there tends to be a large discrepancy between budget and outturn. For example, the agency's budget execution rate for 2019 was 20%, whereas the execution rate for the development budget, which as funded by the Government of Uganda, was 99%.

[66] Established in July 2010.

[67] https://www.unra.go.ug/resources/publications/annual-performance-reports (accessed on March 5, 2021).

The field survey results indicated that the maintenance and management of the road and the related facilities in the section improved by the project were generally satisfactory. However, it was observed potholes in the paved road surface (five in the driving lanes and one in the shoulder) and six damaged guardrails, and some drainage facilities encountered problems due to the sediment accumulation.

Pothole
(10 km from Elegu)

Damaged guardrail
(4.6 km from Elegu)

Note: Photos were taken by the local assistant in April 2021.

According to UNRA Gulu Station, these potholes and the damaged guardrails would be repaired using allocated budget. Problems arose with the cleaning of drainage facilities, especially near the Elegu border. In this area, there were shops operating on the shoulder of the national road, so a large amount of waste was thrown into the drainage facilities and became sediment. UNRA Gulu Station was aware of this problem and has increased the number of cleaners in the area. It has also offered the environmental awareness campaigns such as litter picking, targeting the town council and the community. The LBCs were selected annually, and measures were taken to ensure that contracts with poor performers are not continued.[68]

From the above, the status of operation and maintenance of the target section of the project was generally good. In addition, the executing agency responded appropriately to some issues, and no particular problems arose.

In summary, although there were some financial constraints in terms of operation and maintenance, these did not undermine the sustainability of the effect of the project, and no major problems have been observed in the institutional/organizational, technical and current status of the operation and maintenance system. Therefore, sustainability of the project was high.

[68] For FY2020, LBC selection was not conducted due to the impact of the COVID-19 pandemic, but LBCs were selected for FY2021 (Source: Interview with UNRA Gulu Station).

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

This project aimed to enhance the transportation capacity of the target area by upgrading the existing road from Atiak to Nimule on the border with South Sudan in the northern part of Uganda, thereby contributing to promoting the economic integration with the neighbouring countries, revitalizing economic activities, improving the livelihoods of local people living along the road, and reducing poverty.

As these objectives were consistent with Uganda's development plan and development needs as well as Japan's ODA policy, the relevance was high. Although the project cost was within the plan[69], the project period exceeded the plan. Therefore, the efficiency was fair. After implementing this project, the number of vehicles traveling on the target section increased significantly. In addition, travel time was shortened and average speed increased, but the target values set at the time of the appraisal were not achieved. Confirmed impacts include the improvement of access to medical and educational facilities, revitalization of trade and agricultural activities, and improvement of locals' livelihoods. This project achieved its objectives to some extent; however, two operational indicators did not achieve target values. Therefore, the effectiveness and impacts of the project were fair. Although a minor financial constraint was confirmed regarding operation and maintenance, it did not impair the sustainability of the effects of this project. There were no major issues with institutional/organizational aspects, technical aspects, or the status of operations and maintenance. Therefore, sustainability is high.

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

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

The evaluation survey's results indicated that some of the land rights holders remain uncompensated even though their land compensation disputes have been settled. It is desirable to confirm whether disputes have been settled, and if so, fully compensating them as soon as possible. It is also recommended that the status of disputes is reconfirmed efficiently with the cooperation of local administrative organizations and community leaders.

In addition, UNRA Gulu Station should take the lead in alleviating traffic congestion near the Elegu border by conducting a study to identify the major factors contributing to the congestion and implementing feasible mitigation measures. For example, if a lack of parking spaces for customs clearance is a major factor, it is recommended that UNRA consults with the Uganda Revenue Authority to increase the number of parking spaces. In cases where the congestion caused by informal shops is significant, it is recommended that UNRA works with the Elegu Town Council and the police to reach out to the community members, including shopkeepers, and take

[69] Within this report, "the plan" means "the original plan".

measures to move informal shops off the shoulder of the road.

4.2.2 Recommendations to JICA

It is expected that the executing agency will consider paying resettlement compensation and implementing measures to alleviate traffic congestion near the Elegu border. JICA is encouraged to stay in close contact with the executing agency to monitor and facilitate the implementation of these recommendations and provide technical advice where necessary.

4.3 Lessons Learned

Understanding land acquisition risks and taking appropriate action to address risks

In countries and regions where land ownership remains traditional, especially where land disputes are expected due to the effects of civil wars, land acquisition plans should take these points into full consideration. This evaluation confirms that, at the time of the project's appraisal, the traditional land tenure system in the target area and the lack of land rights registration were taken into consideration, but land disputes arising from the effects of civil war were not considered. Had these disputes been accounted for appropriately at the time of appraisal, community leaders could have been involved more actively at an early stage of assessing the situation and facilitating dispute resolution.

During the implementation phase, in addition to the background described above, the design review led to an increase in the number of parcels that needed to be acquired. This, in turn, led to delays in land acquisition.

In this project, multiple factors led to land acquisition delays. For example, there was traditional tenure system without registration, and there was a possibility of land disputes, and the need to acquire additional land. In such situations, consultants and civil works contractors must share and report information to the executing agency appropriately, and they must pay more attention to and monitor the timely and appropriate coordination of land acquisition by the parties concerned.

Technical support for feasibility studies of co-financing projects

The project was co-financed with the WB (parallel), and the F/S was conducted by a consultant hired by the executing agency with the WB's support, and this project was assessed on the basis of the F/S. However, the F/S design did not include the necessary hydraulic analysis and it did not comply with the Ugandan Road Design Manual in several areas. Therefore, the number of design changes were required, and these increased the necessary construction requirements significantly and prolonged the project's duration.

It is assumed that the quality of the F/S design would have been higher if JICA had provided input, for example, complementary studies and input on design, environmental and

social considerations based on the studies' results prior to F/S.

Thus, when implementing co-financing projects with international organizations or other donors, it is important that JICA provides technical input as needed to the relevant stakeholders including consultants conducting F/S, in order to ensure the quality of F/S design.

Comparison of the Original and Actual Scope of the Project

Item	Plan	Actual
1. Project Outputs	1) Civil works a) Improvement of 34.725 km of the existing Atiak-Nimule road (standard width 9.5 m [roadway: 3.25 m × 2, shoulder: 1.5 m × 2]) b) Road water pipe facility construction (road crossing culverts [600 mm diameter, 38 locations]) c) Ancillary road structure construction (concrete safety fences, kerbs, road signs, road markings, rumble strips, road humps, guardrails) 2) Consulting services Design review, construction management	1) Civil works a) Improvement 35.221 km of the existing Atiak-Nimule road (standard width 10.5 m [roadway: 3.25 m × 2, shoulder: 2 m × 2]) b) Road water pipe facility construction (road crossing culverts [900 mm diameter, 62 locations], access culverts [600 mm diameter, 42 locations] c) Ancillary road structure construction (concrete safety fences, kerbs, road signs, road markings, rumble strips, road humps, guardrails, pedestrian slabs [10 locations]) 2) Consulting services As planned
2. Project Period	March 2010 - January 2013 (35 months)	March 2010 - May 2016 (63 months)
3. Project Cost Amount Paid in Foreign Currency	1,038 million yen	1,064 million yen[70]
Amount Paid in Local Currency	2,454 million yen (49,078 million shilling)	2,149 million yen[71] (71,633 million shilling)[72]
Total	3,492 million yen	3,213 million yen[73]
ODA Loan Portion	3,395 million yen	3,099 million yen
Exchange Rate	1 shilling = 0.05 yen (As of October 2009)	1 shilling = 0.3 yen (Average between 2013 and 2018)
4. Final Disbursement	December 2018	

[70] Foreign currency portion of the total loan executed.
[71] Local currency portion of the total loan executed.
[72] The amount was calculated using the average exchange rate for the period during which the ODA loan was executed.
[73] The Ugandan project cost was calculated using the amount in yen shown in PCR because the data were unavailable from the executing agency.

United Republic of Tanzania

FY2020 Ex-Post Evaluation Report of Technical Cooperation Project

"The Capacity Development Project for

Improvement of Dar es Salaam Transport (Phase 2)"

External Evaluator: Mayumi Hamada

Foundation for Advanced Studies on International Development

0. Summary

This project was implemented for the organizations concerned to function coordination mechanism for improvement of traffic conditions in Dar es Salaam City by enhancing coordination capacity among the members of the Dar es Salaam Urban Transport Steering Committee (hereinafter referred to as Steering Committee) and the Dar es Salaam Urban Transport Secretariat (hereinafter referred to as Secretariat) toward establishment of Dar es Salaam Urban Transport Authority (hereinafter referred to as DUTA), strengthening organizational capacity for planning, implementation, monitoring, and evaluation, as well as improving technical capacity to address urban transport issues. The project's direction to aim at improvement of traffic conditions in Dar es Salaam City corresponded with Tanzanian policy and development needs, as well as Japan's ODA policy. Thus, the relevance of the project is high. As for the status of the outputs at the time of project completion, Secretariat members' technical capacity to address urban transport issues was achieved through training. However, organizational capacity improvements in planning, implementation, monitoring, and evaluation were fair, and coordination capacity improvement among the members of Steering Committee and Secretariat toward establishing DUTA was low. Therefore, the functional status of coordination mechanism among the concerned organizations, which was the project purpose, remained fair. At the time of the ex-post evaluation, the achievement of the overall goal—i.e., improved traffic conditions—was fair, with some positive impacts such as improved scenery, decreased street parking, and so on. Thus, the project's effectiveness and impact were fair. Although the project cost was within the plan, the project period exceeded the plan. Therefore, the project efficiency was fair. Some minor problems have been observed in terms of the institutional/organizational and financial aspects. Therefore, the sustainability of the project's effects is fair.

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

1. Project Description

Project Location

Clock Tower Roundabout
on Samora Avenue

1.1 Background

In Dar es Salaam City, which holds an important position in Tanzanian national traffic, traffic congestion at arterial roads had been deteriorated year by year due to the increased number of registered cars and disorganized urban development. *The Dar es Salaam Transport Policy and System Development Master Plan* was established by *The Study for Formulation of Dar es Salaam Transport Policy and System Development Master Plan* supported by JICA from 2007 to 2008. The master plan recommendations included establishing DUTA, indicating that the effects of policy and projects had not emerged because of the insufficient coordination of the transport policies and projects among the multiple government bodies and business organizers. Based on the master plan, JICA implemented *the Capacity Development Project for Improvement of Dar es Salaam Transport* (hereinafter referred to as the phase 1) for two years beginning in 2010. Consequently, Steering Committee and Secretariat, which undertakes practical operation, were established for comprehensive coordination to function among existing government bodies and business organizers. Since then, Steering Committee and Secretariat have played key roles to strengthen related organizations, keeping an eye on the possibility of establishing DUTA. This project was expected to accelerate the establishment of DUTA, which was not accomplished by the phase 1, improve the whole transport system through the related organizations such as Steering Committee and Secretariat, and support formulation of viable policies. This project was implemented under the circumstances described above. Incidentally, in November 2015, approximately one year after the project commencement, ex-President Jakaya Kikwete was replaced by former President John Magufuli, who emphasized fiscal austerity and so on.

1.2 Project Outline

Table 1 Project Outline[1]

Overall Goal		Traffic conditions in Dar es Salaam are improved.
Project Purpose		A coordination mechanism in related organizations is well-functioning which ensures coordination in planning and implementation of selected projects.
Output	Output 1	Coordination capacity among the members of Steering Committee and Secretariat is enhanced towards establishment of DUTA.
	Output 2	Organizational capacity on planning, implementation, monitoring, and evaluation (PDCA) of the relevant agencies of Steering Committee and Secretariat is strengthened through selected project(s).
	Output 3	Technical capacities to address urban transport issues are improved through various training methods.
Total cost (Japanese Side)		287 million yen
Period of Cooperation		October 2014 – November 2017
Target Area		Dar es Salaam City
Implementing Agency		President's Office – Regional Administration and Local Government[2] (hereinafter referred to as PO-RALG)
Other Relevant Agencies/Organizations		Steering Committee (17 government organizations such as PO-RALG, MOWT, Ministry of Finance, Tanzania National Roads Agency (TANROADS)) and Secretariat (16 government organizations such as Regional Administrative Secretary – Dar es Salaam (RAS-DSM), Dar es Salaam City Council (DCC)).

[1] Concerning the overall goal, the project purpose, and some of the outputs of the PDM, there are some differences in the expression between the English and the Japanese language versions. Table 1 above is described based on the English version, which was agreed upon between the Tanzanian and Japanese sides. The difference with the Japanese versions is as follows.
(1) Overall Goal: Traffic conditions in Dar es Salaam are improved by implementation of the selected projects. (2) Project Purpose: The selected projects are implemented through capacity of Steering Committee and Secretariat is enhanced, after appropriate coordination. (3) Output 2: Organizational capacity on planning, implementation, monitoring and evaluation of Steering Committee and Secretariat is strengthened through selected project(s).

[2] At project commencement, the implementing organization was PO-RALG, but this was changed to Ministry of Works, Transport and Communications (hereinafter referred to as MOWTC) later. This consisted of two separate ministries, the Ministry of Works and Ministry of Transport, which were merged into MOWTC. At the time of the ex-post evaluation, MOWTC changed again to become the Ministry of Works and Transport (hereinafter referred to as MOWT). Throughout this report, the agency's latest name, MOWT was adopted, to avoid confusion.

Consultant	- International Development Center of Japan - Oriental Consultants Global Co., Ltd.
Related Projects	**Technical Cooperation Project** - The Capacity Development Project for Improvement of Dar es Salaam Transport (Phase 1) (2010 – 2012) - The Project for the Comprehensive Transport and Trade System Development Master Plan (2011 – 2014) - Dar es Salaam Comprehensive Urban Transport System Formulation Study (2008) **Japanese Grant Aid** - The Project for Widening of New Bagamoyo Road (2010) - The Project for Improvement of Transport Capacity in Dar es Salaam (2012) - The Project for Improvement of Tazara Intersection (2013) **Other International Organizations and Donors** - Dar es Salaam Metropolitan Development Project (hereinafter referred to as DMDP) (2012 - 2017) (World Bank, hereinafter referred to as WB)

1.3 Outline of the Terminal Evaluation

The Terminal Evaluation was not conducted for this project.

2. Outline of the Evaluation Study

2.1 External Evaluator

Mayumi Hamada, Foundation for Advanced Studies on International Development

2.2 Duration of Evaluation Study

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

Duration of the Study: November 2020 – November 2021

Duration of the Field Study: December 2020 – October 2021 (conducted by a local consultant)

2.3 Constraints during the Evaluation Study

Due to the spread of COVID-19, the filed surveys by the external evaluator were cancelled, and remote surveys utilizing a local consultant were conducted instead. In

addition to the information collection through email and online communication, the local consultant conducted on-site information collection under instruction of the external evaluator such as collection of questionnaires, interview surveys to those who were concerned such as the implementing organization, project site visits, a travel speed survey, a pedestrian interview survey, a resident interview survey. The external evaluator scrutinized the collected information, made evaluation analysis and assessment.

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

3.1 Relevance (Rating: ③[4])

3.1.1 Consistency with the Development Plan of Tanzania

At the time of planning, *Tanzania Development Vision 2025* aimed to improve Tanzanian citizens' quality of life, achieve good governance based on laws, and realize a competitive and strong economy. The *National Strategy for Growth and Reduction of Poverty (MKUKUTA)* (Phase 1: formulated in 2005, Phase 2: formulated in 2010), which was formulated based on *Tanzania Development Vision 2025,* positioned the transport sector as a priority sector. At the time of project completion, *Tanzania Development Vision 2025* was still effective. Furthermore, the *Second Five-Year Development Plan* (hereinafter referred to as *FYDP II*) (2016/17 – 2020/21) was established in 2016, and the government of Tanzania has addressed further economic development and poverty alleviation issues accordingly.

Based on the above, the project's direction to aim to improve traffic conditions in Dar es Salaam City was consistent with Tanzanian policy from the planning stage until the completion.

3.1.2 Consistency with the Development Needs of Tanzania

Dar es Salaam City was the central city for Tanzanian domestic economic activities and a strategic place for all transport (i.e., roads, railroads, airport, port). Moreover, the city played an important role as the starting point of an international corridor for landlocked countries. On the other hand, the traffic congestion along arterial roads in Dar es Salaam City had worsened year by year due to an increased number of registered cars as well as disorganized urban development. Improvement of transport policies and systems, as well as developing human resources to carry them out, was crucial for any infrastructure development to have an effect to promote distribution as well as improve transport efficiency. At the time of project completion, no change was observed in that Dar es Salaam City was the center of the Tanzanian domestic economy and the strategically important city for

[3] A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory
[4] ③: High, ②: Fair, ①: Low

domestic and international transport. The number of registered cars[5] increased as follows.

Table 2 Number of Registered Cars in Tanzania

(Unit: cars)

Fiscal Year	2012/13	2013/14	2014/15	2015/16
Number of Registered Cars	187,589	283,137	276,558	248,472

Source: Tanzania Revenue Authority

Thus, no change is observed in Dar es Salaam's economic and transportation importance upon project completion. The project's aim to improve the city's traffic conditions was consistent with Tanzania's development needs.

3.1.3 Consistency with Japan's ODA Policy

Japan's *Country Assistance Program for Tanzania* (June 2012) adopted "infrastructure development to support economic growth and poverty alleviation" as a priority area. Thus, the consistency with the Japanese ODA policy at the time of planning was high.

3.1.4 Appropriateness of the Project Plan and Approach

The change of Tanzania's president and the resulting policy shift greatly affected this project, resulting in delayed activities for Output 1 (enhancing coordination capacity of Steering Committee and of Secretariat toward establishment of DUTA). Those who were concerned with the project discussed their exit strategy with the related organizations, and it was decided that Steering Committee would coordinate at the policy level under the MOWT's umbrella, existing Regional Road Board (hereinafter referred to as RRB) would coordinate at the project level. This decision is regarded as unavoidable under the circumstances. Thus, it cannot be said there were serious problems in terms of project planning or changes during implementation.

Based on the above, this project was highly relevant to Tanzania's development plan and needs, as well as Japan's ODA policy. Also, as there were no significant problems with the appropriateness of the project plan and the approach, the project's relevance is high.

3.2 Effectiveness and Impact[6] (Rating: ②)

3.2.1 Effectiveness

The Project Design Matrix (hereinafter referred to as PDM) of this project had mainly

[5] There is no data at a city level alone, but only at a national level (Tanzania Revenue Authority).
[6] Sub-rating for Effectiveness is to be put with consideration of Impact.

two issues: a gap between Japanese and English versions, and the PDM's logic itself, including indicators. These issues compelled the external evaluator to realign part of the PDM before confirming achievement status, analyzing effectiveness, and so on. More specifically, the issues were: (1) a gap between expressions in the Japanese and English versions of the PDM (Objectives: the overall goal, the project purpose, and Output 3. Indicators: some indicators for Outputs 1 & 3), (2) Issues with the appropriateness of indicators (the project purpose and Output 2). Therefore, the phrasing of the Japanese version of the PDM was modified in accordance with the English version, which was agreed on by both countries concerning (1). As for (2), Output 3's Indicator 2 was deleted because the indicator (travel speed) was regarded as unnecessary. The overall goal, the project purpose, the outputs, and the indicators after re-alignment are shown below.

Table 3 Objectives and Indicators of the Re-Aligned PDM

Overall Goal	Traffic conditions in Dar es Salaam are improved.	(1) Travel data (e.g., travel speed, congestion, user satisfaction) is improved when compared to that in 2014.
Project Purpose	A coordination mechanism that ensures planning and implementation of the selected project(s) functions in related organizations.	(1) 70% of selected projects in line with the Urban Transport Investment Plan and Action Plan appear in the budget plan/pipeline of concerned implementing agencies by the end of the project.
Output 1	Coordination capacity among Steering Committee and Secretariat is enhanced towards the establishment of DUTA.	(1) DUTA establishment bill is developed during the first year of the project and further actions towards the establishment of DUTA are taken after the second year of the project. (2) Action plan(s) in accordance with the Urban Transport Investment Plan is approved by the (provisional)[7] board of management of DUTA in each fiscal year.
Output 2	Organizational capacity on planning, implementation, monitoring and evaluation (PDCA) of Steering Committee and Secretariat is strengthened through the selected project(s).	(1) All implementing agencies of Secretariat encompass PDCA project management cycle by the end of the project.

[7] In the Japanese version of the PDM, the word "(provisional)" is described as "(or Steering Committee)."

Output 3	Technical capacities to address urban transport issues are improved through various training methods.	(1) 90% of Secretariat members acquire practical skills in planning, implementation, and data analysis of traffic surveys by the end of the project. (2) 80% of Secretariat members acquire advanced skills to conduct comprehensive demand forecast by the end of the project. (3) 70% of Secretariat members acquire advanced knowledge in the network analysis and in planning optimum network improvement plan, identifying the priority corridor(s) by the end of the project[8]. (4) 70% of Secretariat members acquire advanced skills to conduct the feasibility study of the priority project by the end of the project.

Remarks: "the selected projects" indicated in the project purpose mean the pilot projects designed and approved through this project.

3.2.1.1 Project Output

Regarding the achievement of the outputs by the project completion, the indicators and the achievement status are shown in Table 4.

The achievement of Output 1 (enhancement of Steering Committee and Secretariat coordination capacity toward the establishment of DUTA) was low upon project completion. This was due to long delays in activities resulting from the policy changes brought about by the inauguration of a new president (reducing government expenses by dismantling existing organizations and resisting establishment of new organizations, as well as the shift of DUTA ownership from PO-RALG to MOWT), which hampered the establishment of DUTA. The achievement of Output 2 (strengthening of organizational capacity for planning, implementation, monitoring, and evaluation of Steering Committee and Secretariat) is assessed to be fair. Although the implementing organizations monitored and reported on the pilot projects by the project completion, the number of pilot projects whose project management cycles were completed by the end of the project was only three out of seven – fewer than half. At the time of the ex-post evaluation, although some questions were asked to the related organizations and those who were concerned with the project during implementation, sufficient information to assess this achievement was not obtained, as there were mixed answers. Thus, the achievement of Output 2 at the time of project completion is assessed as fair. Concerning Output 3 (improvement of technical capacities to address urban transport issues), the rate at which trainees acquired knowledge was high, according to their own evaluation of the training and questionnaires given to the institutions which dispatched the trainers and the institution for the training. Hence, the achievement of Output 3 was high.

In light of the above, the achievement of the outputs upon project completion was fair.

[8] The indicator 3-3 is described in the Japanese version of the PDM as follows. "70% of Secretariat members acquire advanced skills on the optimum network and the network analysis regarding selection of priority projects."

Table 4 Achievement of Outputs by Project Completion

Output	Indicator	Achievement	Achieve-ment Level
1. Coordination capacity among the members of Steering Committee and Secretariat is enhanced towards establishment of DUTA .	1-1. DUTA establishment bill is developed during the first year of the project and further actions towards establishment of DUTA are taken during the second/third year of the project.	· By October 2014, the concept paper and the bill were prepared by the task force (TF) of PO-RALG. · On the other hand, the organizations concerned did not agree with the above bill because it included establishment of an Urban Transport Authority (UTA), which targeted the entire country and required transition of power and budget of the concerned organizations. Consequently, the bill was modified to Dar es Salaam Urban Transport Authority (DUTA), which targeted the local government without transition of power. After that, DUTA was not established because a new president acceded to office and changed the policy, and the ownership of this project was transferred from PO-RALG to MOWT. As a result, the initial activity plan was significantly delayed (*Project Completion Report* [p5, p35]. (Achievement Level: Low)	L
	1-2. Action plan(s) in accordance with the Urban Transport Investment Plan is approved by the (provisional) board of management of DUTA in each fiscal year.	· The DUTA Operation Plan formulated in December 2016 was discussed together with the exit strategy. · It could not be confirmed whether the action plan in accordance with the Urban Transport Investment Plan was approved by the provisional board of management (Steering Committee) in each fiscal year. The DUTA board of management was not established (*Project Completion Repor*t, Questionnaire to the implementing organizations). (Achievement Level: Fair)	
2. Organizational capacity on planning, implementation, monitoring and evaluation (PDCA) of the members of Steering Committee and Secretariat is strengthened through selected project(s).	2-1. All implementing agencies of Secretariat encompass PDCA project management cycle by the end of the project.	· Indicator 2-1 was assessed to have been achieved at the project completion, because the implementing organizations monitored and reported on the pilot projects. · On the other hand, only three pilot projects out of seven were completed by the project completion, one was partially implemented, and one was planned only. The remaining two were not implemented. Namely, although the related organizations made progress reports during the project implementation period, the number of the pilot projects for which related organizations could actually experience the project management cycle by PDCA was less than half. · The replies to the questionnaires and interviews at the ex-post evaluation from the related organizations and the key persons during the project period showed mixed responses regarding to what extent the implementing organizations of Secretariat acquired skills on project cycle management by PDCA. Therefore, sufficient information was not obtained to assess the achievement of this indicator.	F
3. Technical capacities to address urban transport issues are improved through various training methods.	3-1. 90% of Secretariat members acquire practical skills in planning, implementation and data analysis of traffic surveys by the end of the project.	· Based on the result of the skill test conducted at the completion of the training, practical skills were acquired as follows and the indicators were achieved; 57% of the trainees acquired a "capacity to sufficiently utilize the training results in practice," and 32% acquired a "capacity to mostly utilize the training results in practice," which meets the requirement "70% - 90% of the trainees of Secretariat acquire practical skills on traffic planning" (*Project Completion Report* [p38]). · The trainers from National Institute of Transport (hereinafter referred to as NIT)and Ardhi University who taught the above training responded that the trainees' levels of understanding by the project completion was 5 or 4 out of 5 scales (Questionnaire).	H
	3-2. 80% of Secretariat members acquire advanced skills to conduct comprehensive demand forecast by the end of the project.		
	3-3. 70% of Secretariat members acquire advanced knowledge in the network analysis and in planning optimum network improvement plan, identifying the priority corridor(s) by the end of the project.		
	3-4. 70% of Secretariat members acquire advanced skills to conduct the feasibility study of the priority project by the end of the project.		

Source: Questionnaire to the implementing organization, *Project Completion Report*
Remarks: The marks shown in the Achievement Level column indicate the following:
H: High (achieved by 80% and above) F: Fair (50% - 79%) L: Low (Less than 50%)

3.2.1.2 Achievement of Project Purpose

Regarding the achievement status of the project purpose by the project completion, the indicators and the achievement are shown in Table 5.

Table 5 Achievement of Project Purpose by Project Completion

Project Purpose	Indicator	Achievement	Achieve-ment Level
A coordination mechanism in related organizations is well - functioning which ensures coordination in planning and implementation of selected project(s)*.	70% of selected projects in line with the Urban Transport Investment Plan and Action Plan appear in the budget plan/pipeline of concerned implementing agencies by the end of the project.	・At the time of the ex-post evaluation, questions were asked in the questionnaires to the implementing and related organizations on the status of coordination mechanisms at project completion on a scale from 1 to 5 (5 is the best, 1 is the worst). The average of the answers received from six organizations and two persons who worked as the key persons for the Steering Committee and Secretariat was 3.4, which is fair (Questionnaire). ・ Among the seven pilot projects adopted, three of them were fully implemented, one was partially implemented, and one was planned only. Therefore, the project purpose was assessed to be completed at the time of project completion, because more than "70% of the selected projects appeared in the budget plan" and half of the pilot projects proceeded to the implementation stage (*Project Completion Report* [p35]).	F

Source: Questionnaire to the implementing organization, *Project Completion Report*
Remarks: The marks shown in the Achievement Level column indicate the following:
H: High (achieved by 80% and above) F: Fair (50% - 79%) L: Low (Less than 50%)

At the time of project completion, the project purpose (creating a functioning coordination mechanism) was assessed to have been achieved based on its indicator (70% of selected projects appearing in the budget plan of the implementing organizations). Not only did 70% of the selected pilot projects appear in the implementing organizations' budget plans, but more than half of the pilot projects proceeded to the implementation stage, as well. On the other hand, the appropriateness of this indicator to measure the functioning status of the coordination mechanism is questionable. According to the questionnaire survey at the ex-post evaluation, the functioning status of the coordination mechanism at the time of project completion was fair as shown in Table 5. Thus, the achievement of the project purpose at the time of project completion is assessed as fair.

As stated above, the achievement of both the project purpose and the outputs upon project completion was fair. Therefore, the project effectiveness is assessed as fair.

3.2.2 Impact

3.2.2.1 Achievement of Overall Goal

(1) Achievement of Overall Goal

The indicators and the achievement status of the overall goal at the time of the ex-post evaluation is shown in Table 6.

The indicator (improvement of travel data) for the overall goal (improvement of traffic conditions in Dar es Salaam) included travel speed, congestion, and user satisfaction (satisfaction with the pedestrian space and evaluation of Pilot Project 1 (parking and footpath renovation on Samora Avenue)). The travel speed survey[9] and user satisfaction survey (pedestrian interview survey[10] and resident interview survey[11]) were conducted as similarly as possible with the baseline survey conducted by the project during its implementation in terms of survey site, interviewees, and so on. However, because the 2014 survey data could not be confirmed, comparison was made with 2016 travel speed survey data (before implementation of Pilot Project 1, hereinafter referred to as the baseline survey) for travel speed survey, and the data in to 2017 resident survey data (after implementation of the pilot project, hereinafter referred to as the end line survey) for the resident interview survey, and both baseline and end line survey record for the resident interview survey[12].

As shown in Table 6, the travel speed survey showed that travel speed improved on Azikiwe St. (ex-Maktaba St.) during all time slots, and on Railway St. (ex-Station St.) at all time slots except for 14:00 – 17:00 at the time of the ex-post evaluation compared with the 2016 baseline survey. On the other hand, no improvement was observed on Uhuru St. at any of the time slots except for 05:00 – 08:00; to the contrary, speeds significantly slowed there

[9] Two probe cars ran the same route as the baseline survey (Travel Speed Survey) conducted by the project in 2016, in the same time slots and same frequency (five circuits on the same route between 5:00 am and 9:00 pm with the same starting time for each circuit as the baseline survey) on a week day. Speeds were measured for the same sections as the baseline survey.

[10] The pedestrian interview survey was conducted from April to May 2021. In the same way as the baseline and the end line survey conducted by the project, the same questions were asked to the pedestrians on Samora Avenue, the target area of Samora Improvement Pilot Project, based on the equal sampling interval method. The sample size was 214 persons, with the breakdown of 147 males and 67 females. By age bracket, (1) 18-25 years old: 23 persons, (2) 26-35 years old: 60 persons, (3) 36-45 years old: 59 persons, (4) 46-55 years old: 47 persons, (5) 56 years and above: 15 persons, (6) no response to the age question: 10 persons.

[11] The resident interview survey was conducted in May 2021. In the same way as the surveys conducted during the implementation period, it was implemented around Samora Avenue, i.e., the target area of Samora Improvement Pilot Project, at the three wards (Kisutu, Kivukoni, and Mchafukoge). Since population registry could not be obtained, based on the equal sampling interval method at each Ward, the same questions were asked to 123 residents, the number of which exceeded that of the end line survey. The breakdown of the respondents was 74 males and 49 females. By age bracket, (1) 18-25 years old: 15 persons, (2) 26-35 years old: 49 persons, (3) 36-45 years old: 35 persons, (4) 46-55 years old: 12 persons, (5) 56 years and above: 8 persons, (6) no response to the age question: 4 persons. The breakdown of respondents by the categories (in the same categorization with the surveys conducted during the project duration) was as follows. (1) retail shop: 29 persons, (2) office: 40 persons, (3) money exchange bureau: none, (4) hotel: none, (5) restaurant: 5 persons, (6) bank: 6 persons, (7) residence: 7 persons, (8) others: 31 persons, (9) no response to category question: 5 persons.

[12] The available data which could be compared in the travel speed survey was only the one in 2016.

Table 6 Achievement of Overall Goal (at the time of the Ex-post Evaluation)

<table>
<tr><th>Overall Goal</th><th>Indicator</th><th>Achievement</th><th>Achieve-ment Level</th></tr>
<tr><td rowspan="3">Traffic conditions in Dar es Salaam are improved.</td><td rowspan="3">Travel data (e.g., travel speed, congestion, user satisfaction) is improved when compared to that in 2014.</td><td>(1) Travel speed and congestion
The result of the travel speed survey, which was conducted as similarly as possible to the baseline survey, is shown below. Although the survey record in 2014 was not confirmed, the survey record in 2016 was obtained. Therefore, a comparison was made based on the assumption that the survey result in 2016 (before implementation of the pilot project) was the baseline survey.

Average Speed per hour (Unit: km)
<table>
<tr><th></th><th colspan="2">Samora Ave.</th><th colspan="2">Azikiwe St. (Maktaba St.)</th><th colspan="2">Uhuru St.</th><th colspan="2">Railways St. (Station St.)</th></tr>
<tr><th></th><th>2016</th><th>2021</th><th>2016</th><th>2021</th><th>2016</th><th>2021</th><th>2016</th><th>2021</th></tr>
<tr><td>05:00 - 08:00</td><td>32</td><td>21</td><td>24</td><td>33</td><td>23</td><td>33</td><td>15</td><td>20</td></tr>
<tr><td>08:00 - 11:00</td><td>10</td><td>20</td><td>13</td><td>26</td><td>12</td><td>11</td><td>7</td><td>22</td></tr>
<tr><td>11:00 - 14:00</td><td>18</td><td>17</td><td>17</td><td>18</td><td>13</td><td>12</td><td>5</td><td>15</td></tr>
<tr><td>14:00 - 17:00</td><td>4</td><td>4</td><td>18</td><td>30</td><td>12</td><td>2</td><td>11</td><td>3</td></tr>
<tr><td>17:00 - 19:00</td><td>2</td><td>7</td><td>14</td><td>20</td><td>3</td><td>2</td><td>3</td><td>16</td></tr>
</table>
Source: Traffic Survey Results (pp11-12), Travel Speed Survey
Remarks: The cells highlighted shows improvement.</td><td rowspan="3">F</td></tr>
<tr><td>(2) User satisfaction
Concerning Pilot Project No.1 (Samora improvement), pedestrian interview surveys and resident interview surveys were conducted as similarly as possible to the baseline and end line surveys conducted by the project. The results are shown below. As the survey record in 2014 was not confirmed, comparison was made with the 2016 data (before implementing the Samora improvement pilot project) and 2017 data (after implementing the same pilot project).

1) Satisfaction with Pedestrian Space
<table>
<tr><th></th><th>APR 2016</th><th>AUG 2017</th><th>MAY2021</th></tr>
<tr><td>Satisfaction Level of the Pedestrians (%)</td><td>20</td><td>95</td><td>58</td></tr>
</table>
Source: Project Completion Report (pp16-17), Pedestrians Interview Survey on Samora Ave. at the time of the ex-post evaluation (214 persons)</td></tr>
<tr><td>2) Evaluation of the Pilot Project (Resident Interview)
<table>
<tr><th></th><th>AUG 2017</th><th>MAY 2021</th></tr>
<tr><td>Satisfaction Level of the Residents (%)</td><td>97</td><td>65</td></tr>
</table>
Source: Project Completion Report (pp16-17), Resident Interview Survey near Samora Ave. at the time of the ex-post evaluation (123 persons)</td></tr>
</table>

Source: *Project Completion Report*, Travel Speed Test result, Pedestrian Interview Survey result, and Resident Interview Survey result
Remarks: The marks shown in the Achievement Level column indicate the following:
H: High (achieved by 80% and above) F: Fair (50% - 79%) L: Low (Less than 50%)

in another time slot (14:00 – 17:00). Furthermore, on Samora Ave., improvement was seen from 08:00 – 11:00 and 17:00 – 19:00, but conditions were aggravated or unchanged in the remaining three time slots. Therefore, the traffic congestion differed depending on time and place, and no common tendency throughout the city could be observed. Thus, the

improvement of the travel speed and congestion is assessed as fair.

As for the satisfaction on the pedestrian space, among the user satisfaction surveys, we conducted the pedestrian survey under the same conditions as the baseline and end line surveys in terms of survey site, target respondents, and questions. The satisfaction rate at the baseline survey was 20%, and 95% at the end line survey. Satisfaction was 58% at the time of the ex-post evaluation, which significantly exceeded the values at the baseline survey but significantly fell below the end line value. Thus, improvement of satisfaction is assessed to be as fair. Furthermore, resident interview survey results on the Pilot Project 1 (Samora improvement) showed a satisfaction rate of 65% at the time of the ex-post evaluation. This fell below the end line survey response of 97%. Therefore, the users' satisfaction rates for both indicators were fair. However, the information on actual values of these indicators at the time of the ex-post evaluation was based on information collected in the target area of Pilot Project 1 (Samora improvement), where the baseline and end line surveys were conducted during the project implementation. Analysis was made using the same survey method and target populations as the above surveys as much as possible. Therefore, there is a concern about the representativeness of our dataset for Dar es Salaam City as a whole.

Based on the above, the achievement of the overall goal is assessed as fair.

(2) Continuation of Outputs and Project Purpose

The continuation status of the outputs after the project completion up to the ex-post evaluation is shown in Table 7.

At the time of the ex-post evaluation, the DUTA had not been established. However, this does not mean that the government was no longer engaged in discussions related to its establishment. On the contrary, there is information that the discussions started again[13]. Even so, the specific progress was unclear, and the annual approval of the action plan was not observed. Thus, the continuation status of Output 1 after project completion was low. As for the strengthening of the organizational capacity for planning, implementation, monitoring, and evaluation (Output 2), sufficient information on the level of the capacity could not be obtained because many Secretariat staff members involved in the project's implementation were transferred after its completion. Because sufficient information for assessment could not be obtained, the continuation status of Output 2 after project completion is assessed fair. As for the technical capacity to address urban transport issues (Output 3), the questionnaire response from a person concerned who was a trainer of the training during the project implementation period from NIT indicated that this capacity was maintained even at the time of the ex-post evaluation. On the other hand, one response from an organization that dispatched trainers for the training to the questionnaire to the implementing organization and

[13] JICA Tanzania Office at the time of the ex-post evaluation

Table 7 Continuation of Outputs after Project Completion

Output	Indicator	Achievement	Achievement Level
1. Coordination capacity among the members of Steering Committee and Secretariat is enhanced towards establishment of DUTA .	1-1. DUTA establishment bill is developed during the first year of the project and further actions towards establishment of DUTA are taken during the second/third year of the project.	· Only one organization replied to the questionnaire indicating that the activities for establishment of DUTA were continued after the project completion, while others replied they did not know (Questionnaire and the interviews to the related organizations).	L
	1-2. Action plan(s) in accordance with the Urban Transport Investment Plan is approved by the (provisional) board of management of DUTA in each fiscal year.	· At the time of the ex-post evaluation, DUTA has not been established. Sufficient information was not available to prove that action plan in accordance with the Urban Transport Investment Plan was approved by the provisional board of management (Steering Committee) in each fiscal year after project completion (Questionnaires and interviews to the related organizations).	
2. Organizational capacity on planning, implementation, monitoring and evaluation (PDCA) of the members of Steering Committee and Secretariat is strengthened through selected project(s).	2-1. All implementing agencies of Secretariat encompass PDCA project management cycle by the end of the project.	· Since many of the Secretariat members during the project period were transferred to other sections after project completion, information on the understanding level of the project management cycle by PDCA was not sufficiently obtained (Questionnaires and interviews with the related organizations).	F
3. Technical capacities to address urban transport issues are improved through various training methods.	3-1. 90% of Secretariat members acquire practical skills in planning, implementation and data analysis of traffic surveys by the end of the project.	• Concerning the capacity of the related organizations such as Secretariat at the time of the ex-post evaluation, the trainers from NIT who were involved in Output 3 responded that they still have sufficient capacity (Interview with the related organization). · There were mixed responses regarding the continuation status of the training after project completion (Questionnaire to the related organizations).	F
	3-2. 80% of Secretariat members acquire advanced skills to conduct comprehensive demand forecast by the end of the project.		
	3-3. 70% of Secretariat members acquire advanced knowledge in the network analysis and in planning optimum network improvement plan, identifying the priority corridor(s) by the end of the project.		
	3-4. 70% of Secretariat members acquire advanced skills to conduct the feasibility study of the priority project by the end of the project.		

Source: Questionnaire to the implementing organization, *Project Completion Report*
Remarks: The marks shown in the Achievement Level column indicate the following:
H: High (achieved by 80% and above) F: Fair (50% - 79%) L: Low (Less than 50%)

related entities indicated that training continued after project completion. However, the majority of the responses from Secretariat members indicated the training ceased after project completion. Thus, the continuation of Output 3 is assessed as fair. Based on the above, the continuation of all the outputs after project completion is assessed to be fair.

Regarding the continuation of the project purpose after completion, neither Steering Committee, which was expected to take a policy coordination role, nor the Regional Road Board (hereinafter referred to as RRB), which was to coordinate at the project level, continued its activities. Although each organization reports its plans and the progress of

implementation at RRB four times a year, substantial coordination has not occurred at these meetings. Some organizations pointed out that RRB members had insufficient knowledge about or awareness of the selected projects[14]. Furthermore, the departure of key staff members at Secretariat due to transfer had a negative effect[15].

As noted above, three of the seven selected pilot projects had been implemented by project completion. Among these, in Pilot Project 3 (Daladala and bus service improvements (i.e., introduction of ticketing system, improvement of business model), Daladala fare collection rates nearly doubled. However, eight months later, the pilot project encountered a setback due to sabotage by Daladala conductors. The reasons for this sabotage were regarded as the conductors' fear of losing their jobs and shifting the role of fare collection to Daladala drivers[16]. The ticketing system is expected to be integrated into the Bus Rapid Transit (hereinafter referred to as BRT), which is operated by the Dar Rapid Transit Agency (hereinafter referred to as DART) after completion of introducing e-ticket system. However, this had not yet occurred at the time of the ex-post evaluation. Concerning the two pilot projects not implemented by project completion, Pilot Project 6 (the introduction, and optimize & synchronize traffic signals & tidal flow along Ali Hassan Mwinyi Road (with bus priority)) has not been implemented afterwards either. On the other hand, improved traffic signals have been installed, and some actions have been taken for improvement of traffic congestion by the BRT Project, TANROADS, Ubungo Flyover Project, and so on. However, these actions, which were taken after project completion, do not seem to have resulted from coordination among the related organizations. Instead, they were implemented and coordinated by their respective organizations in accordance with its own plan.

Likewise, Pilot Project 7 (Fringe Park & Ride with shuttle bus services from parking spaces around Central Business District) was not implemented by project completion. And whether the project has continued after the project completion remains unconfirmed. However, former President Magufuli instructed DART and TANROADS to proceed with the improvement of park and ride services and related facilities at Kimara in Dar es Salaam City in 2017. Although DART completed its design for the park and ride facility, construction has not yet begun due to government budget shortages. At the time of the ex-post evaluation, discussions regarding the construction of the facility had been held between DART and TANROADS. On the other hand, taking the importance of the above facility, TANROADS has been providing park and ride services at Kimara and Korogwe in Kimara Ward under contracts with six domestic investment companies. DART also secured the BRT development budget for designing and constructing the Kimara park and ride facility for FY2017 and

[14] Questionnaire to the related organizations
[15] Questionnaire to the related organizations
[16] Interviews to those who were concerned

FY2018. However, the facility remained unbuilt at the time of the ex-post evaluation[17]. Thus, the continuation of the project purpose after completion is low.

Based on the above, the continuation of the outputs at the time of the ex-post evaluation is fair, the continuation of the project purpose is low, and achievement of the overall goal is fair. Concerning the cause for the overall goal remained fair, there is a possibility that the discontinuation of the project purpose (i.e., ensuring the functioning of the coordination mechanism) negatively affected the achievement of the overall goal.

3.2.2.2 Other Positive and Negative Impacts

No impact on the natural environment was observed. And neither relocation of residents nor land acquisition was caused by the project[18]. Concerning other indirect impacts, no negative impact was observed. It was pointed out that Pilot Project 1 (Samora improvement) led to positive results such as the improvement of scenery and a decrease in street parking[19].

Concerning impact, as stated above, improvements to travel speed and congestion levels at the time of the ex-post evaluation were fair. Although pedestrian satisfaction significantly exceeded baseline data, it fell significantly below the end line data. Resident satisfaction also fell below the end line data. Therefore, the achievement of the overall goal was fair. The continuation of the outputs from project completion to the ex-post evaluation was fair, but the continuation of the project purpose was low because the coordination mechanism no longer functions. Other indirect impact such as the improvement of scenery and a decrease in street parking were pointed out. Therefore, impact is fair.

In terms of effectiveness and impact, the achievement of the project outputs and the project purpose at the time of project completion was fair. Thus, the effectiveness was fair. The achievement of the overall goal at the time of the ex-post evaluation was fair, and the low continuation status of the project purpose after project completion might have hampered the achievement of the overall goal. Other positive impacts included improved scenery and decreased street parking. Therefore, the project had fair effectiveness and impact.

[17] Interviews to DART and TANROADS
[18] Questionnaire and interview to the implementing organization
[19] Questionnaire to the implementing and related organizations

3.3 Efficiency (Rating: ②)

3.3.1 Inputs

The project's planned and actual inputs at the time of project completion are shown in Table 8.

Table 8 Project Inputs

Inputs	Planned	Actual (Project Completion)
(1) Experts	● Approximately 33 M/M ● Fields: Traffic administration, traffic planning, road planning/construction management, human resources development, etc.	● Approximately 59.47 M/M ● Fields: Traffic administration, traffic planning, road planning/and construction management, human resources development, etc.
(2) Trainees	● Training in Japan ● In-country training or third-country training (Number of persons was not specified.) The fields are such as traffic planning and traffic policy.	● Training in Japan:8 persons in 7 courses ● Third-country training: 25 persons in 2 courses - South Africa: 19 persons - Indonesia: 6 persons
(3) Equipment	● Provision of equipment (Amount was not specified.)	●Provision of equipment - Office equipment (computers, photocopy machine, printer, projector) - Office furniture (book shelf, table) (USD2,470 and 16,197,323 Tanzanian shillings)
(4) Local Cost	● Local cost (Amount was not specified.)	● Local cost (Amount was not specified.)
Japanese Side Total Project Cost	Total: 300 million yen	Total: 287 million yen (including the cost for the Detailed Planning Formulation Study)
Tanzanian Side Total Project Cost	● Allocation of counterparts (permanent and part-time) - PO-RALG (several staff from some sections, including the Urban City Development Bureau) - Dar es Salaam City (city director and several staff from some sections) ● Provision of office space for the experts	● Allocation of counterparts - Steering Committee/JCC members: 25 persons - Secretariat members: 20 persons ● Office space ● Operational and running expenses (actual data unavailable)

	● Operational and running expenses (including electricity, and cost for consumables, etc.)	

* M/M stands for “man month.”

3.3.1.1 Elements of Inputs

As the major inputs from the Japanese side, the key counterpart[20] who was previously engaged with the project during project duration at the implementing organization was asked to rate the quality, quantity, and timeliness of dispatch of experts and training-in -Japan using a scale ranging from 1 (worst) to 5 (best). All elements and aspects received scores of 4. The response indicated that training in Japan contributed to enhancing participants’ capacity. Both the experts and the training-in-Japan were evaluated highly. Although the actual input data for the Tanzanian side was unavailable, the inputs were made in accordance with the plan, and no problems emerged in terms of quality, quantity, and timeliness.

3.3.1.2 Project Cost

The total project cost borne by the Japanese side was 287 million yen (96% of the intended amount), which was within the plan.

3.3.1.3 Project Period

The project period was 3 years and 2 months. This exceeded the planned period (127% of the plan). The excess resulted from the long delay of the activities for Output 1 due to the inauguration of the new president and the resulting policy changes.

As stated above, although the project cost was within the plan, the project period exceeded the plan. Therefore, the project’s efficiency was fair.

3.4 Sustainability (Rating: ②)

3.4.1 Policy and Political Commitment for the Sustainability of Project Effects

The Tanzania Development Vision 2025 and the *FYDP II* (2016/17-2020/21) were valid at the time of the ex-post evaluation. Furthermore, *Phase Three of the Transport Sector Investment Programme* (hereinafter referred to as TSIP III) (2018/19-2020/21) pointed out traffic congestion as an issue affecting urban transportation and stressed the necessity of a holistic approach that includes the overall transportation network. MOWT recognizes the importance of urban transportation in the national transportation policy, and it is unlikely

[20] At the time of the ex-post evaluation, the person was already retired. Questionnaire survey.

that the direction toward improving urban transportation will be changed. Thus, the sustainability from the aspect of policy and political commitment of the project, which aimed to improve the traffic conditions in Dar es Salaam City, is high.

3.4.2 Institutional/Organizational Aspect for the Sustainability of Project Effects

By the time of project completion, the DUTA had not been established. As an exit strategy for the project, MOWT would be responsible for establishing and managing Steering Committee, which would coordinate policy level, and RRB would address coordination at the project level, so that the organizations would work complementary. At the same time, WB, which conducted DMDP (2012-2017), was expected to continuously support the establishment of DUTA[21].

After project completion, although WB support (Dar es Salaam Urban Transport Improvement Project) continued (March 2021-December 2023)[22], the establishment of DUTA was behind the schedule, and it has not been established at the time of the ex-post evaluation. The function of Steering Committee under MOWT and Secretariat, as agreed as the exit strategy, are not working either. In addition, even though the RRB holds quarterly meetings in which each organization reports its plans and progress, joint planning does not occur. Some causes of the coordination mechanism's failure include the departure of key members at Secretariat due to personnel transfers, the lack of an organization with strong initiative to lead the related organizations, and the dissolution of DCC[23]. Among the DCC's functions, those related to multiple municipalities in Dar es Salaam City have been taken over by RAS-DSM. However, RAS-DSM does not function as Secretariat. Furthermore, the RRB lacks knowledge about and awareness of the selected pilot projects by this project[24]. At the time of the ex-post evaluation, MOWT had not received a report from Steering Committee, and does not comprehend the progress of the activities[25]. However, some possibilities are under discussion on establishing the National Urban Transport Authority (hereinafter referred to as NUTA), which is expected to supervise not only Dar es Salaam City but also whole nation's urban transport, but the details remain unclear at present. Therefore, the sustainability of the institutional/organizational aspects is low.

3.4.3 Technical Aspect for the Sustainability of Project Effects

During the project's implementation period, NIT and Ardhi University participated in training related to urban transportation planning (Output 3) and dispatched the trainers. The

[21] *Project Completion Report,* p. 40
[22] Information collected through e-mails with *Dar es Salaam Urban Transport Improvement Project*, WB
[23] The DCC was dissolved in February 2021 at the direction of the former president.
[24] Questionnaire to the related organizations
[25] Questionnaire to the implementing organizations

training was registered at the Engineer Registration Board (hereinafter referred to as ERB). Thus, at the time of project completion, the sustainability of the technical aspects was high because these institutions were considered to have sufficient capacity to train implementers[26].

At the time of the ex-post evaluation, many of the training participants who were involved in the project had left due to personnel transfer to outside of Dar es Salaam City[27]. Concerning the continuation of the training, of the eight ministries and agencies that replied to the questionnaire, four indicated that training had not continued, one indicated that training had continued, and three did not answer. As explained above, many training participants who were involved with the project left due to personnel transfer, and no training had been conducted at many related organizations at the time of the ex-post evaluation. Even so, the *Urban Transport Planning Guide Book*, which was developed by the project, has been utilized as teaching material at NIT and Ardhi University. More specifically, this guidebook has been utilized in the Logistic and Transport Management Course for diploma, bachelor's degree, and master's degree students, as well in short-term courses at NIT for working professionals such as engineers working for wards, those involved in urban planning and road planning, and construction company staff[28]. At Ardhi University, the guidebook has been utilized in classes for bachelor's degree and master's degree students. Table 9 presents the number of students who took the courses over the last three years. In addition, Ardhi University has used the guidebook as teaching material for two subjects newly established in FY2021; this information is not included in Table 9[29]. Therefore, the sustainability of the technical aspect is fair.

Table 9 Students Who Took Classes Using the Teaching Material Developed by the Project at Ardhi University

(Unit: persons)

Year	2018	2019	2020	Total
Number of Students	165	181	149	495

Source: Questionnaire to Ardhi University

3.4.4 Financial Aspect for the Sustainability of Project Effects

At the time of project completion, the sustainability of the project's financial aspect was regarded as comparatively high because Steering Committee and Secretariat's operational costs were minimal, and regular RRB meetings were held using the

[26] *Project Completion Report*, p. 40
[27] Questionnaire to the implementing organizations
[28] Questionnaire to NIT
[29] Questionnaire to Ardhi University

organization's own budget[30].

Based on the questionnaire response from the related ministries and agencies, the members of Steering Committee and Secretariat, of the eight organizations that replied to the questionnaire, one replied that its budget was sufficient to continue the project's activities, six reported that their budgets were insufficient, and one did not answer. Among those that reported insufficient budgets, two mentioned that their allocated budget was only 15%-20% of the necessary amount. Although RAS-DSM is now responsible for the issues related to multiple municipalities in Dar es Salaam City due to the dissolution of the DCC, it has no budget for such activities, as the funds for projects such as road construction are allocated to the relevant ministries and agencies. Furthermore, the funds necessary to maintain the coordination mechanism by covering costs such as those related to meetings and training courses were not secured[31]. Thus, the sustainability of the financial aspect is low.

From the perspective of policy and political commitment, the sustainability is high, as the improvement of traffic conditions in Dar es Salaam remained important at the time of the ex-post evaluation. However, the DCC, which was responsible for coordination as Secretariat during the implementation period, has been dissolved at the time of the ex-post evaluation. The implementing structure has been changed so that the RAS-DSM took over the functions of the former DCC related to the multiple municipalities. However, Steering Committee under MOWT, which was part of the agreed-upon exit strategy, is nonfunctional, and this system has engaged in no policy coordination. Moreover, the RRB does not sufficiently function as the coordination mechanism for project implementation at the related organizations. At the time of the ex-post evaluation, there was some discussion of the possibility of establishing the NUTA, a nationwide version of the DUTA. However, the details remain unclear. Therefore, the sustainability of the project's institutional/organizational aspects remains low. Many training participants who were involved in the project left due to personnel transfer, and training has not continued at many related institutions. However, the teaching material developed by the project has been utilized to facilitate human resource development in the transportation field in courses taught to students and working professionals. Thus, the sustainability of the technical aspect is assessed as fair. Because the funding necessary to maintain the coordination mechanism was not secured by the implementing organization and many of the related organizations. Thus, the sustainability for financial aspect is low.

Some minor problems have been observed in terms of the institutional/organizational

[30] *Project Completion Report*, p. 40
[31] Questionnaire and interview to the implementing organization

and financial aspects even though the sustainability was high in terms of policy and political commitment and fair in terms of technical aspect. Therefore, sustainability of the project effects is fair.

4. Conclusion, Lessons Learned, and Recommendations

4.1 Conclusion

This project was implemented for the organizations concerned to function coordination mechanism for improvement of traffic conditions in Dar es Salaam City by enhancing coordination capacity among the members of the Dar es Salaam Urban Transport Steering Committee and Dar es Salaam Urban Transport Secretariat toward establishment of DUTA, strengthening organizational capacity for planning, implementation, monitoring, and evaluation, as well as improving technical capacity to address urban transport issues. The project's direction to aim at improvement of traffic conditions in Dar es Salaam City corresponded with Tanzanian policy and development needs, as well as Japan's aid policy. Thus, the relevance of the project is high. As for the status of the outputs at the time of project completion, secretariat members' technical capacity to address urban transport issues was achieved through training. However, organizational capacity improvements in planning, implementation, monitoring, and evaluation were fair, and coordination capacity improvement among the members of Steering Committee and secretariat toward establishing DUTA was low. Therefore, the functional status of coordination mechanism among the concerned organizations, which was the project purpose, remained fair. At the time of the ex-post evaluation, the achievement of the overall goal—i.e., improved traffic conditions—was fair, with some positive impacts such as improved scenery, decreased street parking, and so on. Thus, the project's effectiveness and impact were fair. Although the project cost was within the plan, the project period exceeded the plan. Therefore, project efficiency was fair. Some minor problems have been observed in terms of the institutional/organizational and financial aspects. Therefore, sustainability of the project's effects is fair.

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

4.2 Recommendations

4.2.1 Recommendations to the Implementing Agency

None

4.2.2 Recommendations to JICA

(1) It is desired that the JICA Tanzania Office will continue to collect information on the possibility of establishing the DUTA or NUTA and share relevant information with the JICA headquarters promptly when a new development is expected concerning the establishment

of DUTA/NUTA. To ensure coordination mechanism among the many government organizations in the transportation sector in Dar es Salaam City, it is desirable to continue to monitor the local situation and reconsider the possibility of supporting the establishment of the DUTA or NUTA in cooperation with the WB.

(2) The teaching material entitled "Urban Transport Planning Guide Book," which was developed by this project, is widely utilized at NIT and Ardhi University for the sake of human resource development in the transportation sector at the time of the ex-post evaluation. It might be effective to utilize those educational institutions when JICA plans future projects in Tanzania that include training in the transportation sector.

4.3 Lessons Learned

Establishment of mechanism for coordination among various ministries and agencies in a sector

This project was implemented to create a coordination mechanism among the many relevant organizations prior to the establishment of the DUTA. Although the coordination mechanism was established to a certain extent, the DUTA was not established by project completion. In addition, Steering Committee and Secretariat, which were expected to undertake the roles to maintain the coordination mechanism after project completion, were nonfunctional. This occurred because the key members of Secretariat left due to personnel transfers, and no organization had strong leadership enough to lead the related organizations.

When there are many related ministries and agencies in the same sector and the failure of the relevant coordination mechanism has an undesirable influence on the formulation of sector policy and its implementation, long-term support should be provided to the core counterpart organization until its organizational and technical capacities reach to a sufficient level. At the same time, when the coordination of many government institutions proves difficult, it may be effective in some cases for JICA to urge the partner country through political dialogue to achieve coordination among the related institutions using a top-down approach.

Democratic Republic of the Congo

FY 2020 Ex-Post Evaluation of Japanese Grant Aid Project

"The Project for Rehabilitation and Improvement of the Poids Lourds Avenue in Kinshasa (Phase 1 and Phase 2)"

External Evaluator: Yoshio Nagamine, Global Group 21 Japan, Inc.

0. Summary

The purpose of the Japanese grant aid, "The Project for Rehabilitation and Improvement of the Poids Lourds Avenue in Kinshasa (Phase 1 and Phase 2)," is to facilitate traffic on the targeted road section by rehabilitating the Poids Lourds Avenue in Kinshasa City, and to thereby contribute to the revitalization of economic activities and the restoration of the capital's functions by improving the city's road network. Road and transportation network improvement is one of the important policies of the Democratic Republic of the Congo (DRC). This project is highly consistent with not only the development policies and needs of the DRC, but also Japan's aid policy at the time of planning. Therefore, the relevance of this project is judged to be high. Initially, a two-lane road was planned for this project. After review and consultation, however, a four-lane road was constructed in response to a renewed request from the DRC. The project cost based on this change in the plan was within the planned amount, but the project period exceeded the plan. The efficiency of the project is therefore judged to be fair. As a result of this project, the traffic capacity of the target road increased by more than five-fold compared to the pre-project level, and the planned traffic capacity was generally reached. The average speed during peak hours did not reach the level targeted at the time of planning, although it increased 2.1 times compared to the pre-project level due to the increase in traffic volume. Companies using the road have praised the improved traffic flow, shortened travel time, and better assurance of safe operation. In addition, increases have been reported in the numbers of gas stations, small businesses, and customers, as well as in the sales by the companies along the road, indicating that the project is contributing to economic and social activities. From the above, the effectiveness and impact of this project are judged to be high. The operation and maintenance activities for the project are organized, and the budget is well allocated. The operation and maintenance activities for the project, however, are not necessarily functioning efficiently and effectively. Effective implementation methods need to be established and human resources need to be developed. Therefore, sustainability of the project effects is fair.

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

1. Project Description

Project Location

The Poids Lourds Avenue

1.1 Background

Since the establishment of the transitional government in 2004 following the period of turmoil and civil war beginning in 1991, the DRC has been moving towards reconstruction and development. The roads in the metropolitan area were not maintained during the civil war, and the severely deteriorated pavement hindered the smooth flow traffic. As a result, serious traffic congestion became the norm, and the function of the capital declined. One of the main roads connecting the airport to the city, the Poids Lourds Avenue, serves as the main artery connecting the provinces of Bas Congo (now Central Congo) in the west and Bandundu (now Mai-Ndombe, Kwilu, and Kwango) in the east, as well as an industrial road for the transportation and manufacturing industries located along its length. The road, however, was severely damaged during the period of turmoil. Normal traffic was almost impossible, especially during the raining season. For this reason, there was a need to repair and renovate the Poids Lourds Avenue.

Given the above background conditions, the Government of DRC requested the Government of Japan to provide grant aid for the repair and renovation of the Poids Lourds Avenue. A project formulation study had been carried out before the request, and the reconstruction and rehabilitation of the 12 km-long the Poids Lourds Avenue had been confirmed as a grant aid target. Based on the above, a preparatory survey for cooperation was carried out in 2009, and a grant agreement was signed in November 2009 (first phase: covering 4 km, the most severely damaged parts of the road) and June 2010 (second phase: covering the remaining 8 km). The project was then started.

Location of the Poids Lourds Avenue in Kinshasa City

1.2 Project Outline

The project aims to facilitate traffic on a section of road in Kinshasa City by rehabilitating Poids Louds Avenue (12 km long, of which 4 km is covered in the first phase and 8 km is covered in the second phase) and to thereby contribute to the revitalization of economic activities and the restoration of the capital's functions by improving the city's road network.

Grant Limit/Actual Grant Amount		5,103 million yen/4,849 million yen [1,751 million yen (First Phase), 3,352 million yen (Second Phase)/1,604 million yen (First Phase), 3,245 million yen (Second Phase)]
Exchange of Notes(E/N) Date/Grant Agreement G/A) Date		November 2009 (First Phase), May 2010 (Second Phase)/November 2009 (First Phase)/June 2010 (Second Phase)
Executing Agency		Ministry of Infrastructure, Public Works and Reconstruction
Project Completion		June 2014
Target Area		The Poids Lourds Avenue, Kinshasa City
Engaged parties	Contractor	Kitano Construction Corp.
	Consultant	INGEROSEC Corporation
Preparatory Survey		February 2009 - October 2009 (Additional project of installation of streetlights: December 2014 – May 2015)
Related projects		Emergency urban and social rehabilitation project including rehabilitation of priority urban roads (World Bank: 2002-2008),

	Rehabilitation and maintenance work for 4 roads in Kinshasa City (Development Cooperation and Humanitarian Aid of Belgium: 2006-2008), Multisector project for rehabilitation of socioeconomic infrastructure (African Development Bank: 2008-2009), Liberation Avenue Project in Kinshasa (Kuwait Fund: 2008-2009), the Project of road network rehabilitation and main roads construction and improvement in Kinshasa (China-Africa Development Fund: 2008-2012), Road infrastructure maintenance and rehabilitation project (EU: 2010-2015), Strategic Orientation Plan for the Kinshasa Agglomeration (AFD: 2013), Project for Reinforcement of maintenance capacity of roads (JICA: 2016-2018), Project for urban transport master plan in Kinshasa City (JICA: 2017-2019), Project for improvement of road maintenance equipment in Kinshasa City (JICA: 2018-2019)

2. Outline of Evaluation Study

2.1 External Evaluator

Yoshio Nagamine, Global Group 21 Japan, Inc.

2.2 Duration of Evaluation Study

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

Duration of the study: November 2020-November 2021

Duration of the field survey: First survey--April 5, 2021-May 11, 2021 (of which 25 days), Second survey--August 13, 2021-August 25, 2021 (of which 10 days) (These surveys were conducted through a local survey assistant.)

2.3 Constraints during the evaluation study

COVID-19 spread worldwide during the survey period, including the target country, the DRC. The study team thereby decided to conduct this ex-post evaluation remotely and engaged a local survey assistant to perform the field survey. Due priority was given to safety and consideration for the coronavirus during the field survey, and no particular restrictions or obstacles were encountered. The same local survey assistant collected data and information in the field, but the final evaluation decision was made by the evaluator.

3. Results of the Evaluation (Overall rating: B[1])

3.1 Relevance (Rating: ③[2])

3.1.1 Consistency with the Development Plan of the DRC

President Kabila, who took office in 2006, listed infrastructure development as one of the top priorities in his inaugural address. The DRC's Strategic Document on Growth and Poverty Reduction (2006) also lists infrastructure development as a priority under the item "macroeconomic stabilization and growth."

The Strategic Document on Growth and Poverty Reduction 2 (2011), a continuation of the previous strategic document, emphasizes the need for road development as part of transportation infrastructure development, and the National Plan for Development Strategy (2019-2023) includes infrastructure rehabilitation and maintenance of infrastructure in the road network. In addition, the Kinshasa Development Strategy Policy (2015) is based on the concept of transport network development and infrastructure facility development in line with the progress of urban development, and the Urban Transport Master Plan in Kinshasa City (JICA 2019) identifies this road as part of the road network in the area of the planned transport network in central Kinshasa.

As a result, this project is consistent with the development policy of the DRC at both the time of planning and the time of the ex-post evaluation.

3.1.2 Consistency with the Development Needs of the DRC

As mentioned above, the roads within the Kinshasa metropolitan area were not maintained during the civil war. The aging pavement on the main arterial roads hindered smooth traffic flow, resulting in serious traffic congestion and a decline in the functioning of the capital. One of the main roads connecting the airport to the city, the Poids Lourds Avenue, served as an important artery connecting the east and west provinces, and also as an industrial road for the transportation and manufacturing industries along its length. However, due to the severe deterioration caused by the aging of the pavement, especially during the rainy season, normal traffic was almost impossible. Therefore, there was a great need to repair and rehabilitate the Poids Lourds Avenue.

In addition, as mentioned above, the DRC's Strategic Document on Growth and Poverty Reduction 2 (2011) emphasizes the need for road development as part of DRC's transportation infrastructure development, and the National Plan for Development Strategy (2019-2023) includes infrastructure rehabilitation and development in the road network. "The Urban Transport Master Plan in Kinshasa City (JICA 2019), a plan based on the Kinshasa Development Strategy

[1] A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory
[2] ③: High, ②: Fair, ①: Low

Policy (2015) (the concept of which is to develop transport networks and infrastructure facilities), also places this road as part of the road network in the area targeted for transport network planning in the city center of Kinshasa.

Therefore, the need for this project is maintained at the time of the ex-post evaluation.

Consequently, this project is consistent with the development needs both at the time of planning and at the time of the ex-post evaluation.

3.1.3 Consistency with Japan's ODA Policy

In the bilateral talks between the DRC and Japan held in February 2007, one of the pillars of Japan's assistance to the DRC was "economic development" with a particular focus on the development of economic infrastructure. Support for infrastructure development in Africa was also identified as one of the priority areas, from the perspective of economic development, in the Yokohama Action Plan for TICAD IV[3] held in 2008 and this project is in line with Japan's aid policy.

3.1.4 Appropriateness of project planning and approach

While the DRC initially requested that the project be four lanes, the counterparts later agreed it was to be two lanes in light of the DRC's insistence on starting construction as soon as possible and concerns about the issue of relocation of obstacles and inhabitants. Due to insufficient coordination within the country, however, the President of the DRC later requested that the road be four lanes, necessitating further coordination and negotiations, after the start of the project. In response to this request, the Japanese side decided to proceed with the project as a four-lane road. In order to reduce the burden on the DRC and to facilitate the project, the use of counterpart funds of non-project grant aid[4] was adopted through consultations. Although the construction period was delayed due to the change to four lanes, the road has been able to accommodate the increased traffic volume and is functioning as a major transportation route in the metropolitan area.

The installation of streetlights was appropriately handled within the framework of the grant, taking into account the situation where the need for the project has increased due to the active development of the roadside, the increase in commuters and the operation of large buses after evening, and the difficulty in obtaining funds from the DRC, though the installation work was

---

[3] TICAD (Tokyo International Conference on African Development) is an international conference on the theme of development in Africa led by the Japanese government. The conference is held regularly in collaboration with the United Nations, the United Nations Development Programme (UNDP), the World Bank, and the African Union Commission.

[4] A non-project grant is a grant aid that provides funds to purchase items from outside of a country that are procured based on the country's needs, such as materials and equipment, in order to support a developing country that is conducting economic and social development. The domestic funds generated from the sale of goods provided by this grant aid are called counterpart funds.

performed after the completion of road rehabilitation and improvement. While the changes in the project plan based on the request from the DRC side were major, they were judged to have been appropriate, as they were very necessary and performed through appropriate coordination and procedures.

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

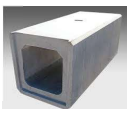
3.2 Efficiency (Rating: ②)

3.2.1 Project Output

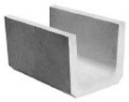
In addition to repairing and rehabilitating the 12-km-long Poids Lourdes Avenue in Kinshasa, the project also included the construction of new U-shaped side ditches, road-crossing box culverts, water-gathering basins, a box culvert outlet, and other road-related facilities. (Please refer to the following column for an outline of each facility.) While it was initially agreed that the road would be two lanes during the project planning, a new request to make the road four lanes was made as a result of renewed coordination between the relevant ministries and the President of the DRC. Through discussions and coordination on the same held with Japan, it was agreed to construct four lanes at the expense of the DRC[5] in parallel with the two-lane rehabilitation work under grant aid (see Chart 1). It was also decided that the DRC would bear the cost of removing the existing streetlights and installing new streetlights along the four-lane road. After that, the DRC requested additional cooperation for the installation of new streetlights, a work that had been originally slated to be carried out by the DRC side, after the completion of the main road rehabilitation and improvement. This request was necessitated by difficulties faced in securing a budget for the project in the DRC, and by the increased need for streetlight installation due to the active development of the roadside accompanying the increase in the traffic volume, the increase in the number of commuters after evening, and the operation of large buses. An agreement was reached after a survey mission was dispatched and the examination was made in response to the request, and the streetlight installation was carried out at the expense of the Japanese side.

Road-related facilities

[Road-crossing box culvert]
Waterway crossing under the road



[U-shaped side ditch]
Connects a drainage ditch with a U-shaped cross section



[Water-gathering basin]
Basin to gather rainwater and drainage

[Box culvert outlet]
Outlet works for pouring water (various shapes and arrangements are used, depending on the location and facility scale

[5] It was agreed that the DRC would bear the cost for the portion of road beyond the originally designed two-lane parts.

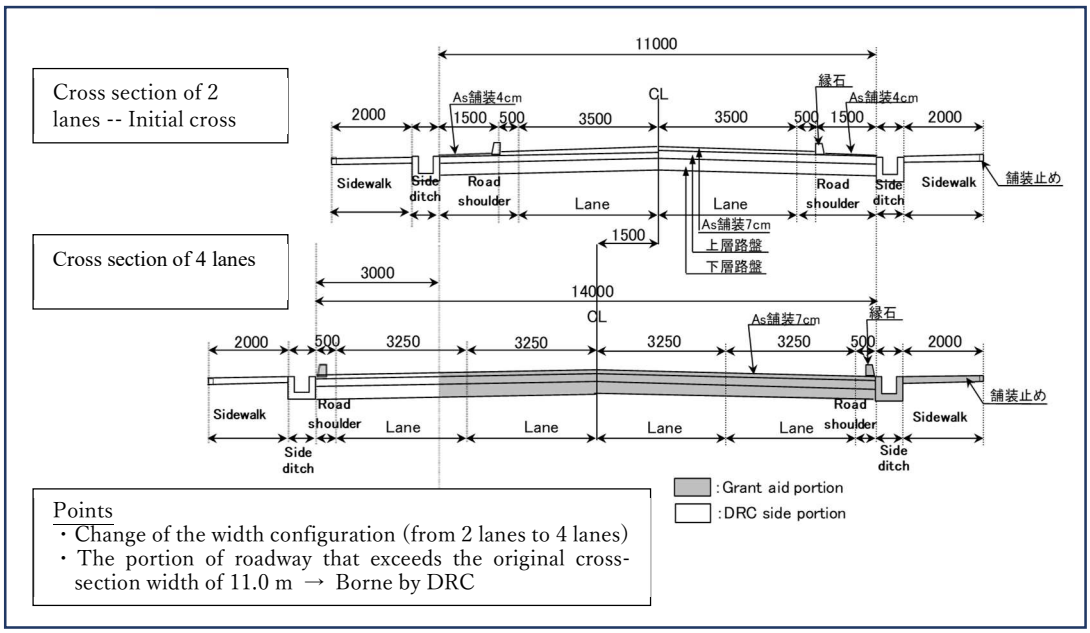


Chart 1 Road cross-section showing the cost burden of the change from two lanes to four lanes (when the initial cross-section width is 11 m)

Source: JICA material

sidewalk, side ditch, road-curb

streetlights

3.2.2 Project Inputs

3.2.2.1 Project Cost

The project cost in the initial plan was to be 5,160 million yen, of which 5,103 million yen was to be borne by Japan and 57 million yen was to be borne by the DRC. The actual project cost was 6,994 million yen, of which 4,849 million yen was borne by Japan and 2,145 million yen was born by the DRC. The actual project cost on the Japanese side was 95% of the plan, whereas the total project cost was 136% of the plan, with the DRC absorbing all of the increase. The increase in the DRC's share of the cost was a result of the change in the plan from two to four lanes. Out of the DRC's share of the project cost, 868 million yen was covered by the counterpart fund of

non-project grant aid.

Although the total project cost considerably exceeded the plan, the increase in the project cost is considered to be commensurate with the increase in the output, since the project cost borne by the Japanese side, the side responsible for the two-lane section, was within the plan, and the project was converted to four lanes using a common construction unit price. Therefore, the efficiency of the project cost is judged to be high.

3.2.2.2 Project Period

The project period for the main construction was planned to be 34 months, from the grant agreement in November 2009 to August 2012, including the periods for detailed design and procurement. The actual project period was 56 months, extending up to June 2014 (165% of the planned period). The main reason for the extension was aforementioned switch from the initial construction of a two-lane road to the construction of a four-lane road, based on requests after the start of the project, and the time-consuming coordination work involved. The construction work was suspended for nine months over this period. Design changes associated with the four-lane construction also had to be completed (borne by the DRC), and roadside facilities had to be moved. As for the installation of streetlights, as already mentioned, it became difficult to secure a budget from the DRC side. A situation arose where the roadside development became more active due to the increase in traffic volume, the increase in commuters after evening, and the operation of large buses. An additional request was therefore made after the completion of the main project, and the additional work requested was implemented with this grant aid (March 2016 to May 2017).

Even taking into account the increase in the output from two lanes to four lanes, the efficiency of the project period is judged to be moderate, because the construction suspension period, coordination period, and project period all exceeded the periods that would have been required if a contractor had been publicly procured to construct four lanes from the beginning.

As described above, the project cost was within the plan, but the project period exceeded the plan. Therefore, the efficiency of the project is judged to be fair.

3.3 Effectiveness and Impacts[6] (Rating: ③)

3.3.1 Effectiveness

3.3.1.1 Quantitative Effects (Effect Indicators)

[6] The sub-rating for Effectiveness is to be assigned in consideration of the Impacts.

Table 1 Achievement of Indicators

Indicator	Baseline	Target	Actual	Actual/Target Ratio
Traffic capacity	1,100 vehicles/h (2 lanes total)	6,840 vehicles/h* (4 lanes total)	6,080 vehicles/h (4 lanes total)	89%
Average speed during peak hours	8 km/h	30 km/h	17 km/h	57%

(Note)* The traffic capacity was calculated based on the original planned figure corresponding to the four-lane system.

(Source) Project preparation survey report and survey by a local survey assistant during the ex-post evaluation.

The project was expected to improve the traffic congestion on the Poids Lourds Avenue, the main road in Kinshasa, and to ensure safe and smooth traffic. The traffic capacity[7] and average speed during peak hours were set as indicators.

The traffic capacity is calculated as the number of vehicles that can be transported per hour, taking into account the road structure and roadside conditions. In the ex-post evaluation, the planned figure (6,840 vehicles/hour) was calculated using the same method applied for the calculation for the road planned with two lanes, reflecting the side margin design figure when the road was designed with four lanes, and then compared with the actual value. The actual value, calculated by reflecting the actual roadside conditions at the time of the ex-post evaluation, was 6,080 vehicles per hour, or about fivefold the baseline figure of 1,100 vehicles per hour. This was 89% of the target figure, representing a high level of achievement. The slightly lower than planned figure can be explained by a slight deterioration of roadside conditions due to an increase in the numbers of stores and companies along the road, and the associated increase in the loading and unloading of goods and the getting on and off of people. The background of this is that, in addition to the importance of the Poids Lourds Avenue as a major transportation route, residential areas have been developed on the Congo River side, and the area has developed into a mix of industrial and residential areas.

The average speed during the peak hours was set as the baseline figure (8 km/h) based on the results obtained during the peak hours on weekdays and Saturday mornings and evenings (3 hours each) at the time of planning, and the target figure was set at 30 km/h based on the road design speed. According to measurements taken during the ex-post evaluation under the same conditions used at the time of planning, the actual average speed during the peak hours was 17 km/h (57% of the target figure), about twice the baseline figure. A significant increase in the traffic volume, an increase well exceeding the expectations, is thought to explain why the average speed during peak hours fell short of the target figure in spite of the more than fivefold increase in the traffic capacity. The congestion caused by this increase in traffic could not have been anticipated in the

[7] The traffic capacity is not measured directly, but calculated by taking into account the road structure and roadside conditions, as described above. In the case of this road, the calculation focused on the width, side margins, roadside conditions, and inclusion of large vehicles.

forecast.[8] This reflects the importance of the Poids Lourds Avenue as a key road in Kinshasa. On the other hand, however, it can be pointed out that the road does not sufficiently respond to various situations arising from the rapid increase in traffic volume, such as the insufficient number of traffic lights installed on the Poids Lourds Avenue, the heavy traffic congestion mainly at intersections caused by the failure of some of the already installed traffic lights, and the frequent parking on the road due to the lack of parking spaces along the road. The concentration of traffic during peak hours on this road, moreover, is thought to have eased the traffic congestion on other arterial roads in Kinshasa.

3.3.1.2 Qualitative Effects

The Federation of Congolese Enterprises (an organization made up of companies that use the Poids Lourds Avenue), a bus company with routes on this road, and several companies along the road itself have offered the following comments on the effects of the road rehabilitation and improvements achieved by this project.[9]

[Federation of Congolese Enterprises]

➢ All of the Federation's member companies use this road, and the rehabilitation of the road under this project has shortened travel times and made it possible to drive and pass vehicles safely.

[Bus company]

➢ The company recognizes that this road is functioning as a main road.

➢ Based on the needs in Kinshasa, the number of bus routes along this road will be increased from two to three from 2019, and another route is currently under consideration.

[Companies along the road]

(Since most of the comments were the same, the main points can be summarized here. The interviewees were mainly managers in charge of sales, general affairs, etc. at the respective

---

[8] The traffic volume diverted to the Poids Lourds Avenue from the connected Lumumba Boulevard was predicted at the time of planning using a simple method. However, no revised prediction of the diverted traffic volume was calculated when the road was converted to four lanes.

[9] The Federation of Congolese Enterprises has about 3,000 members and 15 sectoral committees representing industry, agriculture, forestry, energy, transportation, telecommunications, and the like. It also functions as a chamber of commerce.
The Bus Company is a public transport company serving Kinshasa City. The company currently operates 580 buses on a total of 40 routes (including long-distance routes), from 5 am to 10 pm.
The following five companies along the road were interviewed. (1) Car sales company (Does business in other African countries; keeps 40 cars in one office.) (2) Construction and civil engineering company 1 (History of 98 years; owns 40 vehicles, including several heavy machinery vehicles.) (3) Construction and civil engineering company 2 (Owns 60 vehicles of various types.) (4) Food import/export and sales company (Does business nationwide, mainly in Kinshasa, with a total of 85 vehicles.) (5) Food and beverage production and sales company (History of 50 years, 2,000 employees, and three distribution centers in the DRC.)

companies. The interviewee from the car sales company was a secretary general of affiliate companies.

➢The rehabilitation of this road has led to improved traffic flow, reduced congestion, and shortened operation times.

➢The rehabilitation has contributed to the reduction of traffic on other roads, as well.

➢The quality of the road is good, and the driving is stable.

➢Street lighting has improved the maintenance of public safety.

➢(Comments from construction and civil engineering companies) Traffic congestion and the time required to transport materials between quarries and construction sites has been reduced.

In summary, the traffic capacity increased by more than fivefold compared to the plan, and the target achievement level is high. The average travel speed during the peak hours has doubled compared to the baseline figure, but the degree of target achievement is only moderate due to the severe increase in traffic volume. On the other hand, companies and other users of the road have highly evaluated the project for reducing travel times, improving traffic flow, and ensuring safe vehicle operation. Therefore, the project is judged to have achieved its goal of "improving traffic congestion on the Poids Lourds Avenue and ensuring safe and smooth traffic" to a high degree.

3.3.2 Impacts

The impacts of this project were expected to be the promotion of industries along the Poids Lourds Avenue, the revitalization of economic activities of communities, and the restoration of the capital city functions. From the following analysis, the expected impacts of this project are thought to have been realized.

The executing agency has confirmed that the number of gas stations along the road has increased from only two before the project to six after the project. While there are no concrete data on the number of companies, and the degree of increase is unknown, the executing agency and companies interviewed reported a significant increase in the number of companies after the project. There have been many companies and factories along the Poids Lourds Avenue, giving it the features of an industrial road. In addition, a residential area has been developed on the Congo River side of the road, and the area along the road is considered to have been developed as an area where industrial and residential areas are mixed. The population of Kinshasa, moreover, has been steadily increasing (see Chart 2).

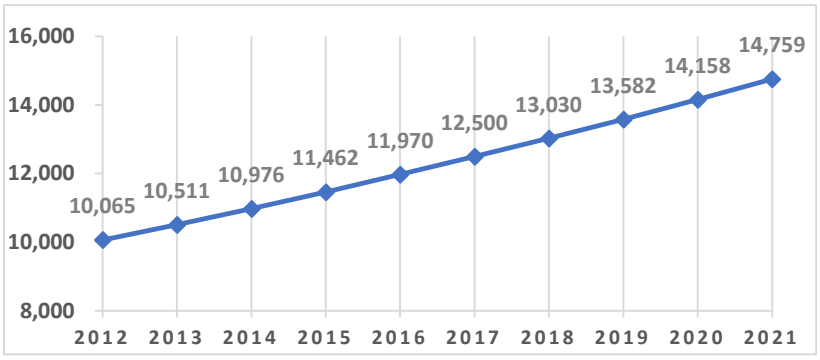


Chart 2 Population of Kinshasa City (In thousands persons)

(Source) Data prepared by OVD based on the Kinshasa Urban Transport Master Plan

The interviewed companies along the road offered comments such as the following: "The factories and companies along the road are connected to the rest of the country; the road is contributing to the economic development of the whole country"; "The number of customers and sales have increased." The companies, the Federation of Congolese Enterprises, and the bus company share the common opinion that, "The good road traffic brought by this project has had a positive impact on business and economic activities." According to another comment, the installation of streetlights had improved the maintenance of public safety at night. On the other hand, some companies pointed out the recent increase in traffic volume and resulting traffic congestion. Future measures to ease traffic congestion are therefore thought to be required.

Corporate store along the road

Streetlights at night

Traffic jam during peak hours (around 9:00 a.m.)

Congo-Japan Boulevard

The Poids Lourds Avenue was officially named as "Boulevard Congo-Japon" by Mr. André Kimbuta Yango, then Governor of Kinshasa Province, in 2014, and a monument was erected as a sign of friendship between the Democratic Republic of the Congo and Japan. Since then, this road has been very popular and used by the citizens of Kinshasa as "Congo-Japan Boulevard".

3.3.3 Other positive and negative impacts

3.3.3.1 Impact on the natural environment

In the preparatory survey report, this project was considered to have little impact on the natural environment. The executing agency has not reported any particular impact on the natural environment due to the project. During the ex-post evaluation, however, it was confirmed that garbage and weeds had accumulated in the drainage ditches of road-related facilities in certain parts of the road. As this is a drainage ditch condition in only certain parts of the road, it is not thought to have a serious impact on the environment. Measures to cope with and improve the situation, however, are thought to be necessary.

3.3.3.2 Resettlement and Land Acquisition

Although this project did not result in the resettlement of any residents, it did result in the relocation of kiosks[10], acquisition of land (for small and medium-sized businesses and part of the site of a housing estate), and relocation of facilities (buried facilities and corporate facilities).

Of the total 378 kiosks along the road, 35 kiosks that needed to be relocated were identified prior to the start of the project, and the relocation was carried out as scheduled. The number of kiosks that could be simply moved to nearby areas was 326, and the remaining 17 kiosks did not need to be relocated. The cost of relocating the kiosks was borne by the national treasury. No information on the amount was available.

Table 2 Kiosk relocation status

Classification	Number
Number of kiosks that did not need to be relocated	17
Number of relocated kiosks (The kiosks which were unable to relocate to the nearby areas)	35
Number of kiosks moved to surrounding spaces (Not applicable for relocation)	326
Total number of kiosks along the road	378

Source: OVD

A total of about 26 million yen was spent for the acquisition of land for 15 sites of small and medium-sized enterprises and residential areas along the road. (A precise record was not available.) For the relocation of facilities (buried facilities and corporate facilities), a total of about 490 million yen was required for buried cable facilities, corporate warehouses, protective walls,

[10] A kiosk is a simple store that can be moved. Kiosks that were operating against walls and facing the road could not be moved to the nearby areas, and thus had to be relocated to another location.

conduit facilities, and other facilities, as well as railway-related facilities.

Relocation and land acquisition have been carried out in accordance with the procedures prescribed under national laws such as the Expropriation Law for Public Facilities, the General Property System, and the Land and Real Estate System. The actual implementation of resettlement and acquisition of land has been handled by an acquisition (relocation) team consisting of the City of Kinshasa, the Ministry of Urban Planning and Housing, the Ministry of Infrastructure, Public Works and Reconstruction, etc. A compensation team composed of the Ministry of Finance and the same members of the acquisition team has also been formed to take charge of compensation policy formulation and implementation. There have been no particular problems with these processes in the project.

As described above, this project has mostly achieved its objectives. Therefore, effectiveness and impacts of the project are high.

3.4 Sustainability (Rating: ②)

3.4.1 Institutional / Organizational Aspect of Operation and Maintenance

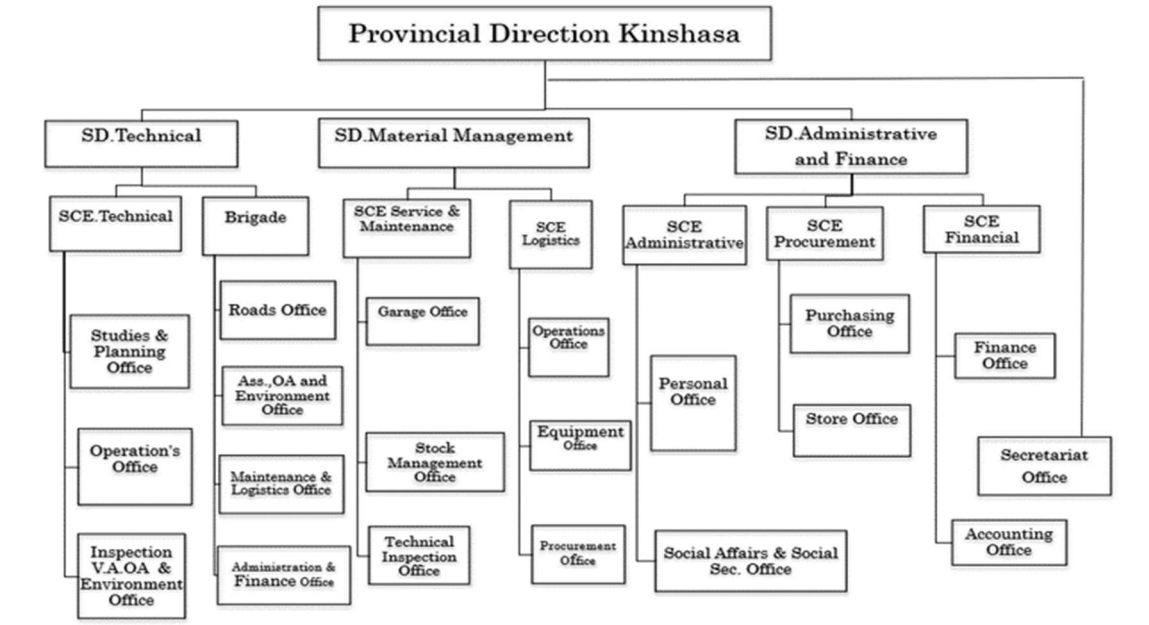
The operation and maintenance activities for the road are being carried out by the Kinshasa Provincial Office of the Office of Roads and Drainage (OVD[11]), an organization under the Ministry of Infrastructure, Public Works and Reconstruction. From 2016 to 2018, the daily operation and maintenance activities for the road were outsourced to an NGO with experience in road maintenance. Since 2019, the operation and maintenance activities have been handled by the OVD Kinshasa office. While NGOs were entrusted with the operation and maintenance of the project, the Infrastructure Unit within the Ministry of Infrastructure, Public Works and Reconstruction was responsible for supervising the operation and maintenance (the Infrastructure Unit was the main body for the project within the Ministry at the time of project implementation). The OVD Kinshasa Provincial Office, the entity currently in charge of operation and maintenance, consists of a Technical Department, Material Management Department, Administrative and Finance Department, and Secretariat. The Office employs a total of 141 persons, including the Director (as of May 2021 survey). The Brigade Division (75 staff members) in the Technical Department is responsible for specific operation and maintenance works and various projects in each district, and maintenance work requiring equipment is carried out in cooperation with the Material Management Department. For the utilization of equipment, the Material Management Department is staffed with 26 engineers at the university graduate level. The Brigade Division is organizationally structured for operation and maintenance by task (city road network, drainage

[11] OVD is an acronym for the French name, "Office des Voiries et Drainages."

and ancillary facilities, environment, operation & maintenance and support, general affairs and finance). Most of the daily operation and maintenance work, however, is carried out by part-time employees. The main tasks in daily operation and maintenance are street sweeping, side ditch cleaning, trash removal, weed removal, and curb management.

In addition to the daily operation and maintenance activities, which include direct visual inspection every day and night, periodical operation and maintenance works are conducted every three months (e.g., repairing holes in the road surface) and every three years. If urgent action is required, temporary operation and maintenance works are carried out on a case-by-case basis. While no special operation and maintenance plan is set for the future, a budget request has been made to fund staff increases by about 5 to 10 persons in each department for an overall strengthening of the system.

An organizational chart of the Kinshasa Provincial Office of the OVD follows below.



Source: OVD Kinshasa Provincial Office / Preparatory Survey Report for Improvement of Road Maintenance Equipment in Kinshasa City (2018)

Although the COVID-19 brought about the following effects in 2020, subsequent improvements in the infection levels have helped OVD avoid any interruptions in its work activities in 2021.

- Operation and Maintenance activities for the road were suspended from March to April 2020.
- The F/S (feasibility study) finalization work for the Kinshasa Road Rehabilitation and

Modernization Project (OVD's own project) was delayed in October 2020 due to a lack of human resources.

- Field checks for sewage and sidewalk repair activities were delayed after heavy rains. (April to September 2020)
- The number of staff on hand to conduct OVD's work was reduced. (April to September 2020)

Based on the above, the sustainability of the system for operation and maintenance of the project is judged to be high.

3.4.2 Technical Aspect of Operation and Maintenance

No special technology is required for operation and maintenance in the scope of the project, and there are no technical difficulties. However, even in cases where materials and equipment are used for activities other than daily operation and maintenance, the system is designed to be handled by experienced engineers in the Material Management Department, and no major technical problems have been encountered in the use of existing equipment. The OVD reported that the necessary equipment and materials for operation and maintenance were sufficiently prepared.

The technical training provided by the OVD can be divided into two main categories: internal training and training by external aid agencies. The internal training is conducted on an irregular basis either by OVD's own instructors or at the national Center for the Training of Road Engineers (CFAV) or the National Institute for Professional Preparation (INPP), for the learning of new skills. The training by external aid agencies is conducted whenever new equipment is introduced. The EU provided training in 2013. JICA provided training in 2016, and is providing new training this year for the introduction of new machinery.

As mentioned above, the training provided by OVD is irregular and limited to that for the learning of new technologies and installation of new equipment. There is no systematic training plan for the efficient and effective use of existing technologies, or for basic matters related to operation and maintenance, planning and implementation, or the various related tasks.

From the above, there are judged to be some problems with the technical aspects of operation and maintenance.

3.4.3 Financial Aspect of Operation and Maintenance

The annual road cost for operation and maintenance for the project section was estimated to be about US$115,000 (about 2.3% of the budgeted amount). This amount, however, is less than 1% of the annual budgeted amount compared to the amount budgeted by the OVD Kinshasa

Office since 2012. The total length of the roads under the control of the OVD Kinshasa Office is 678.8 km. Of that total, the 12 km of road targeted in the project makes up about 1.7%. Therefore, the operation and maintenance activities for the road are considered to be feasible under the budget. Even accounting for the expected increase in the actual annual cost of operation and maintenance due to the expansion of the road to four lanes instead from the originally planned two (even if a doubling of the cost is assumed), the cost still comes in at less than 2% of the budgeted amount. From this, the budget for operation and maintenance can be considered to have been secured. The table below shows the budget of the OVD Kinshasa Office.

Table 3 Budget and Execution amount of OVD Kinshasa Office

(US$1,000)

Year	Category	Central Government	Kinshasa Province		FONER	Total
2012	Budget	3,903	19,083		3,914	26,900
	Execution	3,058	7,147		3,889	14,094
2013	Budget	4,680	12,678		7,846	25,204
	Execution	4,126	8,672		6,756	19,554
2014	Budget	1,914	12,235		17,394	31,543
	Execution	1,096	5,704		10,854	17,654
2015	Budget	5,076	5,274		11,110	21,460
	Execution	861	1,910		7,227	9,998
2016	Budget	4,306	4,191		17,579	26,076
	Execution	405	1,488		13,883	15,776
2017	Budget	7,084	---		10,538	17,622
	Execution	8,421	---		10,538	18,959
2018	Budget	7,649	---		15,665	23,314
	Execution	5,850	---		15,665	21,515
2019	Budget	75,621	---		22,473	98,094
	Execution	53,087	---		22,473	75,560
2020	Budget	7,871	---		16,331	24,202
	Execution	3,522	---		13,756	17,278

Source: Preparatory Survey Report for Improvement of Road Maintenance Equipment in Kinshasa City (2018) and OVD

One of the sources of budget funding is FONER, the National Road Maintenance Fund, a fund established in 2009 under the guidance of the World Bank to secure budget for the operation and maintenance of roads. The funding sources include gasoline and diesel taxes, tolls, weight taxes, donor funds, and the national budget. In addition to the regular budget, a "100-day plan"[12] and

[12] The budget was designed to coincide with the inauguration of the new president in 2019 and covered a wide range of sectors, including infrastructures such as electricity and water, the social sector, and housing. OVD Kinshasa Office executed 43,342 thousand US dollars for construction of multi-level crossings and rehabilitation of roads from a budget of 61,944 thousand US dollars.

the "special budget"[13] were prepared in 2019 (as reflected in the conspicuously high Central Government budget for that year in the table). There have been no allocations from the Kinshasa provincial government since 2017.

Based on the above, the financial sustainability is judged to be high.

3.4.4 Status of Operation and Maintenance

According to the OVD, the daily operation and maintenance activities for the road are based on direct visual inspection. The side (drainage) ditches on some parts of the road are filled with garbage and weeds, and collapsed streetlights and damaged concrete side ditch covers can be found left unattended. It will be necessary to involve other related ministries and agencies to enlighten the users, as the garbage buried in the side ditches is largely the result of their manners. In any case, daily and steady operation and maintenance activities are always important. With regard to the side ditches, interviews with companies along the road indicated that, "The side (drainage) ditches are sometimes buried or flooded due to inadequate operation and maintenance." One company says that its staff sometimes cleans the drainage facilities related to the side ditches in front of their premises by themselves. Information from the Executing Agency is that they are working on rehabilitation in 2021, and it is expected that the situation will be improved.

A collapsed streetlight left unattended

Damaged concrete side ditch covers

Garbage filling the side ditch

In light of the above, problems can be found with the operation and maintenance status.

In summary, some minor problems have been observed in terms of the technical aspect and current status of operation and maintenance. Therefore, sustainability of the project effects is fair.

[13] A budget of US$5,987,000 was allocated for emergency response to the erosion and collapse of several roads due to heavy rains, and US$2,788,000 was executed.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

The purpose of the Japanese grant aid, "The Project for Rehabilitation and Improvement of the Poids Lourds Avenue in Kinshasa (Phase 1 and Phase 2)," is to facilitate traffic on the targeted road section by rehabilitating the Poids Lourds Avenue in Kinshasa City, and to thereby contribute to the revitalization of economic activities and the restoration of the capital's functions by improving the city's road network. Road and transportation network improvement is one of the important policies of the country. This project is highly consistent with not only the development policies and needs of DRC, but also Japan's aid policy at the time of planning. Therefore, the relevance of this project is judged to be high. Initially, a two-lane road was planned for this project. After review and consultation, however, a four-lane road was constructed in response to a renewed request from the DRC. The project cost based on this change in plan was within the planned amount, but the project period exceeded the plan. The efficiency of the project is therefore judged to be fair. As a result of this project, the traffic capacity of the target road increased more than fivefold compared to the pre-project level, and the planned traffic capacity was generally reached. Though the average speed during peak hours increased 2.1 times compared to the pre-project level due to the increase in traffic volume, it fell short of the level targeted in the planning. Companies using the road have praised the improved traffic flow, shortened travel time, and better assurance of safe operation. In addition, increases have been reported in the numbers of gas stations, small businesses, and customers, as well as in the sales by the companies along the road, indicating that the project is contributing to economic and social activities. From the above, the effectiveness and impact of this project are judged to be high. The operation and maintenance activities for the project are organized, and the budget is well allocated. The operation and maintenance activities for the project, however, are not necessarily functioning efficiently and effectively. Effective implementation methods need to be established and human resources need to be developed. Therefore, sustainability of the project effects is fair.

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

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

Short-Term Recommendation

Immediate action should be taken to remove and, if necessary, reinstall, the streetlights that are currently collapsed and left unattended (traffic regulations related to dealing with damage to streetlights will be reiterated in the long-term recommendations), remove garbage and weeds from the side ditches (drainage), and repair the damaged side ditch (drainage) covers. And, we have

been informed by the Executing Agency that the inspection survey is being conducted, and we expect that necessary repairs and other measures will be taken based on the results of the survey. In addition, to cope with the collapsed, abandoned streetlights and garbage clogging the side ditches, a system should be set up whereby part-time workers at road-cleaning sites can immediately contact the OVD Kinshasa office so that OVD can immediately take action, and the communication system with part-time workers should be strengthened. Taking the opportunity of this ex-post evaluation survey, OVD has decided to formulate a special road maintenance plan for the roads in Kinshasa, including the Poids Lourds Avenue, as soon as possible, with the aim of cleaning up the garbage in the side ditches and road cave-ins. It is therefore recommended that the plan be formulated and implemented at the earliest opportunity.

Medium-Term Recommendation

To develop internal human resources who can properly supervise part-time workers in the field and take appropriate actions in a flexible manner in order to better ensure that the daily operation and maintenance work can lead to actual improvements in the condition of the road and road ancillary facilities. In addition, as an organization in charge of the operation and maintenance of the road, training on efficient and effective use of existing technology, or training on basic matters related to operation and maintenance, planning and implementation, and various tasks should be conducted on a regular basis to maintain the technical level.

Long-Term Recommendation

As some of the side ditches have been filled with garbage and have lost their functionality as drains, it is recommended that OVD conduct enlightenment activities by cooperating with other related ministries and agencies, in order to improve the manners of nearby residents, kiosks, business corporations, and other road users along the road. Cooperation for the studies and promotion of traffic policy to improve traffic conditions, such as studies on measures to deal with congestion caused by increased traffic, is also recommended.

And, considering the traffic congestion that has been occurring, it is also recommended that OVD cooperate with relevant ministries and agencies to further examine ways to cope with the situation. Such examinations could focus on the installation of additional traffic signals, traffic policies that cover the conditions of intersections with other roads, and the introduction of traffic regulations, such as the installation of speed limit signs to protect the streetlights since there have been a growing number of cases of vehicles colliding with streetlights at excessive speeds on sunny days.

4.2.2 Recommendations to JICA

Considerations on the provision of training and expert guidance

It is recommended that JICA consider feasible support, such as training and expert guidance on operation and maintenance, as necessary, by monitoring the implementation of the above short- and medium-term recommendations.

4.3 Lessons Learned

Support for / Cooperation with the recipient country

Although it was agreed, at the time of planning, that the road to be rehabilitated in the project would be two lanes, the President requested that the road be four lanes after the start of the project, due to insufficient consensus-building between the relevant ministries and the President in the DRC. As a result, the DRC and the Japanese side had to re-coordinate, and construction was suspended, which extended the project period far longer than planned. In light of this, JICA needs to carefully check the status of consensus-building and information-sharing on the subject project within the government of the recipient country and the progress of the procedures before the project is commenced. It is also necessary to consider providing side support and cooperation in establishing consensus, promoting information-sharing, and facilitating related procedures in the recipient country by holding project briefing sessions and meetings to confirm procedures with relevant parties in the government, if needed.

Urban road improvement plan with consideration of the network

The main purpose of this project was to facilitate smooth traffic on the road. One indicator of the traffic flow was the increase in the average speed of vehicle travel during peak hours. While the average speed during the peak hours was more than doubled after the project was implemented, it fell short the target figure as a result of the traffic congestion caused by the concentration of heavy traffic. More traffic than had been anticipated in the planning appeared to concentrate along the road. This reflects the importance of the Poids Lords Avenue in Kinshasa's road network, and may have helped alleviate congestion on other roads. As a system of urban arterial roads forms a network, a heavy concentration of traffic on one road section can reduce the burden on other road sections, thereby facilitating the traffic throughout the entire network.

Therefore, when considering the improvement of some sections of the urban arterial road network (including the improvement of intersections), it is necessary to plan after appropriately forecasting the future traffic volume, including the volume of traffic diverted from other roads, by considering the entire road network. Traffic volume forecasting from a network perspective is usually carried out in the process of formulating an urban transport master plan. Based on this, it is considered possible to accurately plan the appropriate number of road lanes, road specifications, and ancillary facilities according to the detailed traffic volume of the road section. As such, projects to improve circumscribed sections of urban arterial roads (including intersections with other roads) should appropriately be planned on the premise of an urban transportation master

plan and with full respect for its contents. In the absence of such a master plan, the volume of traffic diverted from other roads should be forecasted over the broadest possible area. In addition, in order to properly measure the effect of the project, it is also necessary to adopt traffic volume as an indicator, along with the traffic speed so that the role of a certain road playing in the entire network can be evaluated.

Comparison of major items- Plan/actual

Item	Plan	Actual
① Outputs	[Japan side] ▪ Length of road: 11.92 km ▪ Ancillary facilities: New installation of U-shaped side ditches covering to the whole section, Road-crossing box culverts (19 places), Water-gathering basins (71 places), Box culvert outlet (1 place), and other ancillary facilities ▪ Consulting services: Detailed design, Supervision of construction work [DRC side] ▪ Traffic lane widening: No plan ▪ Relocation of kiosks*: 35 kiosks * (A kiosk is a simple store that can be moved.) ▪ Buried power lines and telephone lines: relocation ▪ Relocation of railroad signals and circuit breakers: 16 locations ▪ Street trees: removal	[Japan side] ▪ Length of road: As planned (The lane width was changed from two lanes to four lanes in the second phase. The DRC bore the cost for the widening to four lanes.) ▪ Ancillary facilities: In addition to the planned items, streetlights were installed in the four-lane section and two-lane ramp section in the second phase. ▪ Consulting services: In addition to the planned items, the work to cope with the expansion of road lanes from two to four, and the installation of streetlights. [DRC side] ▪ Traffic lane widening: Improvement of the roadway, shoulders, sidewalks, and side ditches in the widened area ▪ Relocation of kiosks: As planned ▪ Buried power lines and telephone lines: As planned ▪ Relocation of railroad signals and circuit breakers: As planned ▪ Street trees: As planned
②Period	November 2009 to August 2012 (34 months)	November 2009 to June 2014 (56 months) (Additional streetlight installation: March 2016 to May 2017 (15 months).)
③Project cost	[Total cost] 5,160 million yen ▪ Japan side: 5,103 million yen ▪ DRC side: 57 million yen	[Total cost] 6,994 million yen ▪ Japan side: 4,849 million yen ▪ DRC side: 1,209 million yen