Republic of Iraq

FY2021 Ex-Post Evaluation of Japanese ODA Loan

"Samawah Bridges and Roads Construction Project"

External Evaluator: Takako Haraguchi, i2i Communication, Ltd.

0. Summary

This project aimed to facilitate north-south traffic in Iraq and alleviate traffic congestion in the city of Samawah by constructing three bridges with a capacity for large vehicle passage and other structures in the city and its surrounding areas within Al Muthanna Governorate in southern Iraq. The project plan was consistent with Iraq's development policy and development needs and Japan's ODA policy, and the project generated positive outcomes by deliberately cooperating and coordinating with the humanitarian reconstruction aid by the Japan Ground Self-Defense Force ("JGSDF"). Therefore, the relevance and coherence of the project are high. The objectives of the project were also mostly achieved. As a result of implementing the project, the traffic volumes on the three bridges have exceeded the plan by the time of the ex-post evaluation, eliminating the traffic congestion. Although the intended impact, i.e., contribution to the economic and social reconstruction of Iraq, was not verified quantitatively, it was qualitatively verified that the project successfully responded to an increased level of economic activities in Al Muthanna Governorate and helped improve the convenience of everyday life. Therefore, effectiveness and impacts are high. Efficiency is moderately low because the project period significantly exceeded the plan. Although the project had minor issues with respect to the placement of maintenance/administrative personnel as well as with the budgetary aspect, it is expected that these aspects will improve to allow the continuation of the project effect. Therefore, sustainability is high.

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

1. Project Description

Project Location (source: 3kaku-K)

Samawah North Bridge
(source: Ex-post evaluation team[1])

1.1 Background

Having been severely damaged economically and socially by many years of economic sanctions and wars, Iraq, with assistance from the international community, was promoting its reconstruction efforts in the post-war period. The rehabilitation and expansion of the road network was a top priority because transporting aid goods and equipment via the neighboring countries was essential for the reconstruction and smooth implementation of the reconstruction aid. In particular, the National Highway No. 1 ("NH 1"), linking the Kuwaiti border and the Syrian and Jordan borders through the capital city of Baghdad and serving as a major arterial of the country's transportation, had, as of 2008, an approximately 140-km section between Nasiriyah and Diwaniya in the south where the restoration had not been completed, forcing vehicles traveling north-south to take a detour to the National Highway No. 8 ("NH 8"). As a result, the city of Samawah, Al Muthanna Governorate, where NH 8 travels right through the city center, was experiencing chronic traffic congestion due to the addition of north-south traveling vehicles to the normal city traffic. In addition, because the city was dissected to the northern and southern parts by the Euphrates, serious traffic congestion was occurring near Samawah Bridge (in the city center), where NH 8 crossed the Euphrates. This was not only making the daily life of the citizens less convenient but also creating a hindrance to the progress of the reconstruction aid. All bridges within the city and in its surrounding areas except for Samawah Bridge were temporary bridges, including narrow floating bridges or submerged bridges. Since large vehicles could not travel these bridges, the situation inevitably turned Samawah Bridge into a single point of congestion for large vehicles.

[1] Photo taken by DIJLAH Company for Engineering Consultancies Ltd. (which supplied field study assistants). The same for other photos of this project.

Al Muthanna Governorate, with the city of Samawah in its center, was experiencing significant deterioration of the basic infrastructure for the residents and was the governorate with the highest unemployment rate in the country. In the city of Samawah and its surrounding areas ("Samawah"), Japan had carried out emergency humanitarian aid through Grant Aid since 2004 and had provided humanitarian reconstruction aid between February 2004 and June 2006 through the JGSDF troops stationed in Iraq (restoration and development of public facilities including city roads, medical aid, and assistance in water supply). The two assistance efforts by Japan in Samawah—the assistance by the JGSDF and the ODA—produced positive outcomes by reinforcing each other, and it was hoped that Japan's assistance would expand for mid- and long-term development after the withdrawal of the JGSDF.

1.2 Project Outline

This project aims to facilitate north-south traffic in Iraq and alleviate traffic congestion in the city of Samawah by constructing facilities including three bridges with a capacity for large vehicle passage in Samawah, thereby contributing to the economic and social reconstruction of Iraq.

Loan Approved Amount / Disbursed Amount	3,348 million yen / 3,123 million yen	
Exchange of Notes Date / Loan Agreement Signing Date	January 2007 / January 2008	
Terms and Conditions	Interest Rate	0.75%
	Repayment Period (Grace period	40 years 10 years)
	Conditions for Procurement	General Untied
Borrower / Executing Agency	The Government of the Republic of Iraq / The Ministry of Construction, Housing, Municipalities, and Public Works ("Ministry of Construction and Housing" or "MOCH"[2])	
Project Completion	May 2018	
Target Area	Samawah, Al Muthanna Governorate	
Main Contractors (Over 1 billion yen)	DAAR Engineering, Inc. (United States) / Burj Al Emaar Co. (Iraq) (JV)	
Main Consultant (Over 100 million yen)	DPI Konsult Sdn Bhd (Malaysia)	

[2] The name at the time of the implementation of this project was the "Ministry of Construction and Housing." For convenience, it is referred to as the "Ministry of Construction and Housing" or "MOCH" in this report.

Related Studies (Feasibility Studies, etc.)	"Outline Design Study Report on the Road and Bridge Construction Plan in Samawah and Surrounding Areas in Iraq," Japan International Cooperation Agency (JICA), 2005 ("Outline Design"[3])
Related Projects	・ Humanitarian reconstruction aid by the JGSDF (2004-2006) ・ The World Bank, "Emergency Road Rehabilitation Project" (2007-2014) (An International Development Association (IDA) loan)

2. Outline of the Evaluation Study

2.1 External Evaluator

Takako Haraguchi, i2i Communication, Ltd.

2.2 Duration of Evaluation Study

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

Duration of the Study: January 2022 – January 2023

Duration of the Field Study: March 2022 – August 2022 (conducted remotely from Japan and Jordan[4])

2.3 Constraints during the Evaluation Study

Direct interviews with local residents were not conducted in the field study in consideration of safety; the evaluation was carried out based on the information obtained from government agencies and the data actually measured by our field study assistants.

[3] Initially, assistance through Grant Aid was considered for this project. However, it was decided to provide assistance through an ODA Loan due to the delay in finalizing the project scope, the progress that took place in the project formation for the Grant Aid portion, and other factors.

[4] Since the ex-post evaluator was unable to travel to Iraq to conduct the study due to safety reasons, field study assistants, under the instructions of the ex-post evaluator, conducted interviews with the executing agency and relevant agencies and on-site fieldwork (duration of the on-site fieldwork: May 15-18 and May 30-31, 2022). Some interviews were conducted online by the ex-post evaluator. In addition, the ex-post evaluator and the field study assistants had meetings in March and August 2022 in a third country (Jordan).

3. Results of the Evaluation (Overall Rating: A[5])

3.1 Relevance/Coherence (Rating: ③[6])

3.1.1 Relevance (Rating: ③)

3.1.1.1 Consistency with the Development Plan of Iraq

The national development plans and the development plans for the governorate/sectors both at the time of the appraisal and the time of the ex-post evaluation aim for reconstruction and economic development through road and bridge construction. Therefore, the consistency of the project with the country's development plan is high.

First, regarding the national development plan at the time of the appraisal, the *Second National Development Strategy* published in June 2005 designated the reconstruction/expansion of the road network including bridges as a top priority for a smooth implementation of reconstruction efforts in Iraq. At the governorate level, there was no development plan formulated by local governments; however, the road/bridge development plan and an action plan for Al Muthanna Governorate formulated in 2008 by the Roads and Bridges Directorate of MOCH ("RBD"), which was the department within the executing agency in charge of this project, state as the objectives of road/bridge development: the communication, security and stability, the delivery of ration-card items (i.e., items on a list of subsidized foods and produces), the transportation of goods arriving to the ports in the south from neighboring countries.

At the time of the ex-post evaluation, the *National Development Plan* (2008-2022) promotes various strategic goals under the slogans, "Establish the foundations of an effective development state with social responsibility" and "Post-recovery option." With respect to the development goal for the road/bridge sector, the Plan promotes: increasing the length of the road network, building a modern maintenance system for the entire road network, and implementing Traffic Control System in an integrated and precise manner. At the governorate level, the *Al Muthanna Governorate Development Plan* (2018-2022) designates "improving the transport network" as the top priority area, promoting the development and rehabilitation of road/bridge networks and the improvement of the efficiency of the operation and management of these networks to expand access to public services and improve living conditions in rural areas. Similarly, the goals stated in the *Al Muthanna Governorate Five-Year Plan* (2018-2022) of the RBD are the development and rehabilitation of road/bridge networks and the improvement of the efficiency of the operation and management of these networks.

3.1.1.2 Consistency with the Development Needs of Iraq

Although the conditions of the regional traffic have changed between the time of the appraisal and the time of ex-post evaluation, the consistency between the project and the

[5] A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory
[6] ④: Very High ③: High, ②: Moderately Low, ①: Low

development needs is high because we confirmed that the needs for the three bridges covered by the project (Samawah North Bridge, Mahdi Bridge, and Hilal Bridge) have remained high.

At the time of the appraisal, as discussed in "1.1 Background," there was a high need for constructing bridges that would facilitate north-south traffic and the traffic in the region and have a capacity for large vehicles passage. According to the study at the time of the appraisal, the traffic volume on NH 8 within the city of Samawah in 2005 was approximately 16,000 vehicles/day, exceeding the traffic capacity (10,000 vehicles/day). Subsequently, the construction of NH 1 between Nasiriyah and Diwaniya was completed before the completion of this project, eliminating the need for north-south traffic to take a detour to NH 8. However, the traffic volume has increased due to increased economic activities in Al Muthanna Governorate as a result of reconstruction. This is indicated by large volumes of traffic from the city of Samawah to both Nasiriyah and Diwaniya (Table 1). The traffic volume increase in Al Muthanna Governorate is also shown in the number of vehicles registered in the governorate, which rose from 14,020 in 2015 to 51,707 in 2020 (excluding motorcycles).[7] According to the RBD, in the city of Samawah, where Samawah North Bridge and Mahdi Bridge have been built, additional measures have been taken to prevent the crossing of the Euphrates from becoming a bottleneck, including the construction of several other bridges in addition to the bridges built under this project.[8] With respect to the traffic within the governorate, there are transportation needs among regular vehicles and trucks between the city of Samawah and the districts/villages in the western/northwestern areas (where Hilal Bridge is located) and between the city and NH 1 and NH 8. Since factories and farmlands are located throughout the governorate, the transportation volumes for construction materials and produces are high (as shown in detail in Table 2; see Figure 1 for the locations of the bridges).

Table 1 Traffic volume of major roads around the city of Samawah

(Unit: vehicles/day)

Measurement point	Description	Traffic(1)
NH 8, Rumaitha weighing station	Northern area of the governorate; between Samawah and Diwaniya	53,781
NH 8, Daraji weighing station(2)	Connecting NH 1 and the city center; between Samawah and Nasiriyah	38,115
Road No. 28, Mamlaha weighing station	Connecting the northwestern area of the governorate and the city center	11,727

Source: Data provided by the executing agency
Note:
(1) Measured between 6:00-18:00, May 22, 2022. The traffic volume is the total number of vehicles, not including motorcycles, bicycles, and pedestrians.
(2) For the Daraji district, the data can be compared to the traffic volume in 2004. The traffic volume between 6:00-18:00 was 12,436 vehicles on September 21, 2004, and 26,737 vehicles on May 22, 2022.

[7] Data from the Central Organization for Statistics of Iraq. Data for and before 2014 were not available.
[8] Beside this project, the Iraqi government constructed the following bridges within the city: Thawrat Al-Eshreen Bridge (Al-Mofawadhiya Bridge) (Steel bridge; constructed in the 1950s, repair work completed in February 2013), Al-Barboty Bridge (concrete, completed in March 2016), Al-Shuhada Bridge (concrete, completed in June 2011). In addition, a major interchange is being constructed on NH 8.

Table 2 Functions of the three target bridges at the time of ex-post evaluation

Bridge	Description
Samawah North Bridge (newly built)	Located at the northern entrance of the city of Samawah, the bridge is considered to be an important bridge for the entire governorate as it enhances the convenience of the transportation between Samawah and other cities, towns, and villages and improves the accessibility to the main hospital (Al-Hussain Teaching Hospital) located approximately 1 km from the bridge. This 400-bed hospital was built in the 1980s as part of the *Ten 400-bed Hospitals Project* assisted by the Japanese government and companies.
Mahdi Bridge (replaced a temporary bridge)	Located at the entrance to the city of Samawah from the northwestern and western areas, the bridge links the city directly to its surrounding districts, villages, farmlands, and farm roads on the other side of the Euphrates. Although its traffic density is not as high as Samawah North Bridge, the bridge is beneficial for the districts and villages located in the northwest of the city as it helps people to travel to the city center for various purposes and improves the traffic to NH 8, which connects the city to other cities and governorates in the south. It is also considered a shorter route to transport produce from farmland to urban areas.
Hilal Bridge (replaced a temporary bridge)	Located approximately 21 km northwest of the city of Samawah, the bridge provides a shorter route for people from the city of Samawah and its surrounding areas and farmland to cross to the Hilal district on the other side of the river. People use the bridge in daily life and for other purposes including going to the medical center located on NH 8. In addition, the bridge created a shorter route to transport construction materials (cement, gravel, etc.) and products (e.g., salt) to other governorates. There is a private water treatment plant and water supply station near the bridge. Many pickup trucks and water tankers cross the bridge every day to buy and refill water at this station.

Source: Interviews with the executing agency, on-site fieldwork

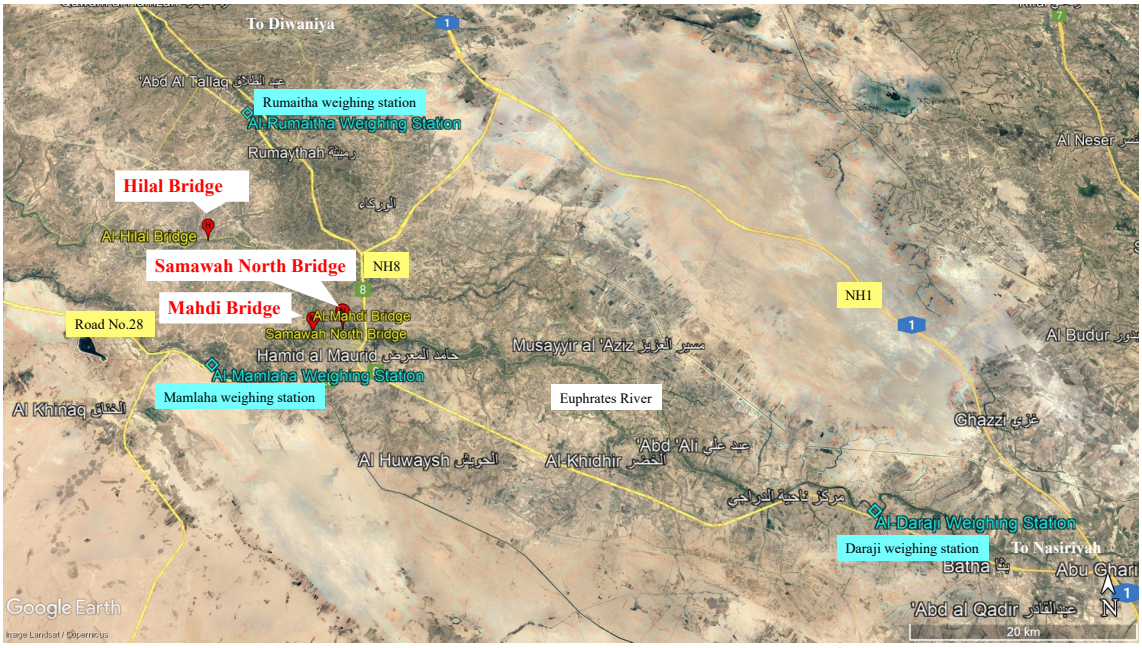


Photo credit: Google Earth

Figure 1 Major roads in Al Muthanna Governorate and the locations of the target bridges of the project

3.1.1.3 Appropriateness of the Project Plan and Approach

The project plan was appropriate. No particular issues are found with respect to the project's logic--to improve traffic flow and alleviate traffic congestion by constructing bridges. With respect to the implementation schedule of the project, however, despite the fact that the

situation was not stable, the project period was set based on almost the shortest possible period to complete paperwork and construction without expecting any possible extension in the project period. According to the interviews with the individuals who were involved in the project at that time, this reflected the Iraqi side's desire for early completion and was done in an effort to keep the interest during construction low. Thus, the decision was unavoidable. However, it was appropriate to set a long disbursement period, which was 10 years after the effective date of the loan agreement, in order to prepare for risks (for the project period, see also "3.2 Efficiency").

3.1.2 Coherence (Rating: ③)

3.1.2.1 Consistency with Japan's ODA Policy

The consistency with Japan's ODA policy at the time of the appraisal was high. In October 2003, at a donor conference in Madrid, Japan announced a $1.5-billion Grant Aid for emergency reconstruction needs for Iraq and an ODA Loan of up to $3.5 billion for mid-term reconstruction needs after 2005. This project forms part of this loan assistance. In addition, the *Medium-Term Strategy for Overseas Economic Cooperation Operations* (April 2005) by JICA (the former Japan Bank for International Cooperation (JBIC)) cites "assistance for building peace" as a priority area. Furthermore, one of the goals explicitly identified in the Strategy's discussion on the assistance policy for the Middle East is the mid- and long-term assistance to establish social stability and peace in Iraq. Thus these policies are consistent with this project, which assisted in the reconstruction of economic infrastructure in Iraq.

3.1.2.2 Internal Coherence

In this project, no specific collaboration or coordination with other JICA projects took place. Although it was planned at the time of appraisal that cooperation with the Third Country Training Program would be considered, it does not appear that any discussion took place to actually carry it out.

3.1.2.3 External Coherence

The external coherence is high. Cooperation and coordination with the humanitarian reconstruction aid by the JGSDF took place as intended at the time of the appraisal. This evaluation confirmed that these efforts have generated specific outcomes; i.e., the implementation of the project was prepared in such a way that the project would be implemented after the withdrawal of the JGSDF without any interruption, resulting in a smooth transition from the emergency aid to the mid- and long-term development phase. In addition, the fact that the bridges constructed in this project were put into use after and on top of the infrastructure rebuilt through the JGSDF aid helped advance economic and social

reconstruction and improve Japan's image. Although the roads rehabilitated through the JGSDF aid and the bridges constructed in this project are not connected directly, it is reasonable to assume that these enhancements reinforced each other to improve the traffic in Samawah.

In addition to such assistance, the project document at the time of appraisal also mentioned potential collaboration with the capacity building of MOCH through the World Bank's *Emergency Road Rehabilitation Project*. According to JICA and the RBD, no specific collaboration with the World Bank project has actually taken place, nor have individuals associated with the project participated in the training for the latter. However, the fact that the World Bank project rehabilitated some parts of the arterials in the Samawah area[9] likely means that there was a synergistic effect in the end between the two projects in improving the traffic in Samawah.

Thus, this evaluation confirms that the project is consistent with the development plan and development needs of Iraq and Japan's ODA policy and that specific outcomes have been generated by the project by addressing collaboration and coordination with other non-JICA projects. Therefore, its relevance and coherence are high.

3.2 Efficiency (Rating: ②)

3.2.1 Project Outputs

The outputs of the project consisted of the construction of three bridges in Samawah and their approach roads and consulting services. Although some changes were made, they were completed mostly as planned, and no issues are found with those changes.

As shown in the table below, the construction of the bridges and approach roads was completed mostly as planned. This was also visually confirmed at the time of the ex-post evaluation. Major changes in the scope included the elimination of decorations to save project costs and the change from pre-stressed concrete (PC) girders to steel girders in some parts to widen the opening of the mid-spans of Samawah North Bridge. These changes were made at the time of the detailed design or at later times in response to the requests from the Iraqi side and increases in project costs, and were adjusted so that they would not affect the achievement of the project objectives. Thus, these changes are appropriate. JICA also agreed to these changes as it did not find any issues.

[9] Of the three locations for which traffic volumes are shown in Table 1, the Rumaitha and Daraji weighing stations are located within the road section that was repaired in the World Bank project.

Table 3 Output "Three bridges and approach roads in Samawah": Plan vs. results

Bridge name	Plan at appraisal	Result
Samawah North Bridge (newly built)	PC girder Length: 240 m; width: 13 m (two lanes) Approach road: 1,200 m	PC girder, partially steel girder Length: 240 m; width: 13 m (two lanes) Approach road: 1,200 m
Mahdi Bridge (replacement)	PC girder; length: 192 m; width: 12 m (two lanes) Approach road: 360 m	PC girder; length: 192 m; width: 12 m (two lanes) Approach road: 360 m
Hilal Bridge (replacement)	PC girder; length: 192 m; width: 12 m (two lanes) Approach road: 480 m	PC girder; length: 192 m; width: 12 m (two lanes) Approach road: 460 m

Source: Documentation provided by JICA, documentation provided by and interviews conducted with the executing agency

Mahdi Bridge (source: ex-post evaluation team)

Hilal Bridge (source: ex-post evaluation team)

The scope of work of the consulting services planned at the time of the appraisal included assistance on procurement (a review of the detailed design, preparation of tender documents, assistance on tender, and assistance on contracts), construction supervision, etc. Since the Iraqi side, in the beginning, had a policy not to generally hire outside consultants and had extensive experience in PC simple girder bridge construction projects, the detailed design itself was to be carried out by the executing agency. However, after the commencement of the project, detailed design was also added to the scope of work. This was in response to the fact that JICA, after reviewing the existing detailed design by the executing agency, formed an opinion that it did not meet the level of accuracy required for an ODA Loan and that the executing agency also determined that it would be desirable for smooth implementation of the project if the engineering team that created the detailed design would be involved all the way from the tender to construction supervision. With these changes and the delays in the project as will be discussed in "3.2.2.2 Project Period," the volume of work significantly increased (at the time of the appraisal: 260 person-months; the result: approximately 1,005 person-months).

3.2.2 Project Inputs

(For details, see the final section of the report, "Comparison of the Original and Actual Scope of the Project.")

3.2.2.1 Project Cost

The amount of the planned total project cost at the time of the appraisal was 4,473 million yen (of which the ODA Loan was 1,739 million yen for the amount paid in foreign currency and 1,609 million yen for the amount paid in local currency, for a total of 3,348 million yen). The actual amount of the total project cost was 4,430 million yen (of which the ODA Loan was 3,123 million yen paid in foreign currency), which was within the plan (99% against the plan).

Although the civil work cost increased due to project delays, this was addressed by eliminating some of the works in scope and using the contingency. In this project, the contingency ratio was set as high as 20% by taking into account the situation in Iraq, and this proved to be a good decision. With respect to the consulting services, the scope and volume of work increased as discussed above. However, since the original contract amount was lower than the plan due to competition, the cost remained within the amount that was originally planned even after an increase in the cost due to the amendments of the contract.

3.2.2.2 Project Period

It was specified that the project period for this project would commence on the signing date of the loan agreement and end on the delivery of the facilities. At the time of the appraisal, the project period was expected to be 58 months, from January 2008 to October 2012. In comparison, the actual project period was 125 months, from January 2008 to May 2018, which significantly exceeded the plan (216% against the plan).[10] The bridges were completed in June 2015 (Mahdi Bridge), January 2016 (Hilal Bridge), and April 2018 (Samawah North Bridge).

Delays mainly occurred in the civil work phase. According to the RBD, they were caused by the insufficient capacity of the contractors (inadequate planning, management, coordination and a shortage of equipment/labor), a shortage of material suppliers, a shorter period of time available for work due to extreme heat, delays in approving designs/design modifications and the extension of the construction period. The area's safety had indirect impacts on the delays. It was reported in the documents from the time of the project and interviews with relevant parties that although there was no interruption in the construction due to security issues in Samawah, the bridge construction was delayed because, for example, buried objects, whose locations were unknown due to the loss of drawings due to fighting, were discovered only after drilling and had to be dealt with; workers were enlisted in the military during the period during which the fighting against the "Islamic State of Iraq and the Levant (ISIL) was taking place, causing a shortage of workers; payments were delayed because the Malaysian consultant could not issue the construction completion certificate as the consultant was not granted permission to travel to the site for security reasons; ISIL, which placed a dam on the upper Euphrates under its control, intentionally caused floods, delaying the piers construction; and there was a delay in customs clearance for steel girders, which the project decided to transport from Dubai to

[10] A guarantee period of one year after delivery was set, and the term of the contract for the consulting services was scheduled to end at the expiration of the guarantee period (October 2013 (plan) / April 2019 (result)).

accommodate the design modifications for Samawah North Bridge (see "3.2.1 Project Outputs").[11] In addition, it was also pointed out that, due to the relationship with the local tribe, even when the project was facing a shortage of workers, workers from other areas that belonged to other tribes could not be hired. However, the latter was an appropriate (and unavoidable) measure to help suppress destabilizing factors associated with the conflict.

It should be specifically pointed out that relevant parties including the executing agency and JICA made efforts to complete the project as early as possible even under such difficult circumstances. As will be discussed in more detail in "4.3 Lessons Learned" and "5. Non-Score Criteria," the fact that the JICA Iraq office, with the monitoring support outsourced to the United Nations Development Programme (UNDP), continued to maintain close communication with the RBD seems to have constituted a major factor in facilitating the progress of the construction.

3.2.3 Results of Calculations for Internal Rates of Return (Reference Only)

At the time of the appraisal, it was deemed impossible to calculate the Financial Internal Rate of Return (FIRR) for the lack of revenues from the project on its own and the Economic Internal Rate of Return (EIRR) for the lack of adequate data for the larger effects on the national economy and other aspects. Since the same conditions are present at the time of the ex-post evaluation, we did not calculate either FIRR or EIRR.

Therefore, the efficiency of the project is moderately low.

3.3 Effectiveness and Impacts[12] (Rating: ③)

3.3.1 Effectiveness

The intended direct outcomes of implementing the project were the "facilitation of north-south traffic in Iraq" and the "alleviation of traffic congestion in the city of Samawah." The effects of both outcomes have manifested. With respect to the first outcome, although the needs for utilizing the three bridges under this project for north-south traffic have diminished (see "3.1.1.2 Consistency with the Development Needs of Iraq"), it is reasonable to consider that the first direct outcome has been achieved since the three bridges are adequately used as the economic activities in the area became more active.

[11] Although steel girders were delivered to the site by the end of 2014, the construction of the bridge and associated structures required a longer time due to factors mentioned above including the capacity of the contractors, weather conditions, travel restrictions for the consultant. Moreover, it also took time to eliminate some parts of the scope and amend the contract to accommodate the increased project cost caused by the delay, resulting in a project period that significantly exceeded the plan.

[12] When providing the sub-rating, Effectiveness and Impacts are to be considered together.

3.3.1.1 Quantitative Effects (Operation and Effect Indicators)

In this project, an "annual average daily traffic" was set for each of the three bridges as the indicator for quantitative effects. We have examined this indicator by deeming it to be both the operation indicator and effect indicator for direct outcomes. As shown in the table below, it has been confirmed that the outcomes were mostly achieved for 2019, i.e., the target year, and achieved at a level exceeding the plan for 2022, the year in which the ex-post evaluation was conducted.

First, with respect to the results for the target year, we used 2019 (i.e., one year after the actual project completion) as the target year[13] because even though the target year was set to 2013 (i.e., one year after the project completion) at the time of the appraisal, the actual project completion was in 2018. The comparison of the traffic volume as measured in September 2019 to the target as set for 2013 (using the data obtained from the RBD) indicate that the level of achievement was 118% for Samawah North Bridge, 66% for Mahdi Bridge, and 77% for Hilal Bridge. Next, with respect to the results for 2022, i.e., the year in which the ex-post evaluation was conducted, the results of simple traffic surveys the ex-post evaluation team conducted in May 2022 indicated that the 2022 results achieved all the target numbers by large margins. The observed results seem to reflect the fact that even though the opening of NH 1 has reduced the need for north-south traffic to detour to Samawah, as discussed in "3.1.1.2 Consistency with the Development Needs of Iraq," the number of registered vehicles in Al Muthanna Governorate and the traffic volume in Samawah have both significantly increased.

The traffic volume data for 2019 consisted of 7-hour or 12-hour traffic volumes for five days, and the 2022 data consisted of the peak-time traffic volumes for one or two days. Since we have converted these data into daily average volumes to compare them to the target, the converted values may not be accurate values. However, since all measurements represent normal traffic conditions on weekdays with no special events, it may be reasonable to expect that there is no significant discrepancy with the actual conditions.

With respect to the project's effect in facilitating the alleviation of traffic congestion, no indicators for traffic congestion in the city were set at the time of the appraisal, nor were we able to obtain quantitative data at the time of the ex-post evaluation. However, at the time of the on-site fieldwork and simple traffic surveys in May 2022, no traffic congestion was observed at any of the bridges, and vehicles could travel smoothly at normal speeds. Therefore, it is reasonable to consider that traffic congestion has been alleviated.

[13] Although the year of completion varied from bridge to bridge, since the project completion year was 2018, we use 2019 as the common target year. Since the targets were set by distributing the projected future traffic volume across the road network, including the three bridges and an existing bridge (Samawah Bridge), it seemed reasonable to obtain the results for the period after all three bridges had been completed.

Table 4 Annual average daily traffic (operation and effect indicator)[14]

(Unit: vehicles/day)

Annual average daily traffic (1)	Baseline value	Target value	Actual value	
	2004	2013 1 Year After Completion	2019 (2) 1 Year After Completion	2022 (3) 4 Years After Completion
Samawah North Bridge	0	8,707	10,254	29,114
Mahdi Bridge	2,435	4,577	3,025	6,831
Hilal Bridge	937	1,762	1,364	4,562

Source: Documentation provided by JICA, documentation provided by the executing agency, simple traffic surveys by the ex-post evaluation team

Note:

(1) Total number of passenger vehicles and large vehicles (buses, trucks).

(2) The values for 2019 are based on the traffic survey data (September 22-26, 2019) provided by the RBD. The actual measurements for the 7-hour or 12-hour traffic at each bridge have been converted to daily average volumes using the proportion of these time ranges as reported in the existing survey results for nearby roads for which actual 24-hour traffic volume measurements were available (as shown in Table 1). Since data were available for five weekdays for each bridge, we used the averages of these data.

(3) The values for 2022 are based on the simple traffic surveys (May 15-18/30-31, 2022) by the ex-post evaluation team. The peak-time traffic volumes (8-9 A.M. and 2-3 P.M.) for one or two weekday(s) in which the traffic volume is normal have been converted to daily average volumes using the proportion of these time ranges as reported in the existing survey results for nearby roads for which actual 24-hour traffic volume measurements were available (as shown in Table 1). Each bridge was measured for two days. With respect to Samawah North Bridge and Mahdi Bridge, however, there was a sand storm in one of these two days, causing low visibility and a temporary holiday; for this reason, the measurements from that day are not included in the values under "Results."

3.3.1.2 Qualitative Effects (Other Effects)

The expected qualitative effects at the time of the appraisal were: (1) improvement in roadside environments (noise and air pollution caused by traffic congestion), (2) improvement in traffic safety, (3) stimulation of the economy and industry, creation of jobs, (4) strengthening of the systems for implementation and operation and maintenance at MOCH, and (5) improvement in the image of Japan in the Samawah area. Based on the subject matters of each effect, this section (Effectiveness) examined Item (2). Item (3) will be examined in "3.3.2.1 Intended Impacts," and Items (1), (4), and (5) will be examined in "3.3.2.2 Other Positive and Negative Impacts."

(2) Traffic Safety, along with convenience, improved for both vehicles and pedestrians, indicating that this qualitative effect has manifested. At the time of the project completion, the

[14] The target traffic volumes included in the table were set based on the assumption that future traffic volumes would increase 4% per year. As reference information, we calculated the projected traffic volumes for 2019 and 2022 by assuming that the bridges under this project had been completed in 2012 as scheduled and the traffic volumes thereafter have increased 4% per year as projected. As a result, as shown in the table below, the achievement level of the projected values on average for the three bridges was 69% for 2019 and 174% for 2022. The achievement level for 2019 falls slightly short of "mostly achieved," but the results for 2022 support the conclusion that the achievement level exceeded the plan.

	Target	Projected values by assuming 4% annual increase		Results	
Vehicles/day	2013	2019	2022	2019	2022
Samawah North Bridge	8,707	11,017	12,393	10,254	29,114
Mahdi Bridge	4,577	5,791	6,514	3,025	6,831
Hilal Bridge	1,762	2,229	2,508	1,364	4,562

RBD reported that traffic accidents had gone down as a result of this project by reducing the long travel time caused by poor road conditions and long-distance travel and that all residents in the target area could now use all-weather roads, allowing them to use basic services including clinics, schools, markets, etc. It was confirmed in the on-site fieldwork and the interviews with the RBD conducted at the time of the ex-post evaluation that these situations have continued to exist. We were told that no traffic deaths have occurred since project completion on or near the three bridges. The pedestrian space of each bridge is sufficient, in good condition, and free of obstacles.

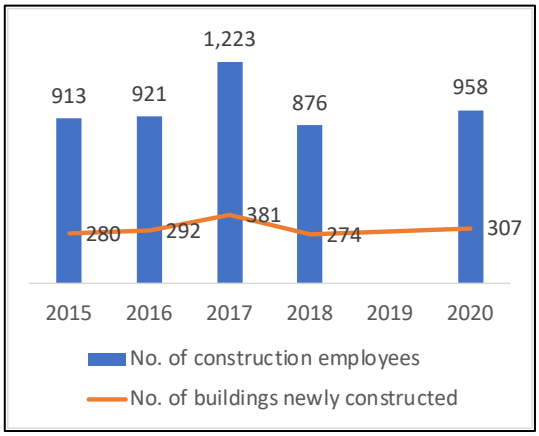
3.3.2 Impacts

3.3.2.1 Intended Impacts

The impact of the project, as intended at the time of the appraisal, "contribution to the economic and social reconstruction of Iraq" (corresponding to *(3) stimulation of the economy and industry, creation of jobs* among the five qualitative effects identified above,) has been confirmed qualitatively. First, according to the RBD and comments from Al Muthanna Governorate obtained through the RBD, this project has provided shorter routes to Samawah and to other areas in the governorate and NH 1, reduced travel and transportation costs, and addressed an increase in the transportation of raw materials and agricultural/industrial products. Al Muthanna Governorate, as one of the governorates in Iraq with a large amount of mineral resources including limestone (a raw material for cement) and sodium, has a comparative advantage in the production and transportation of construction materials. Each bridge has important purposes as shown in Table 2, and we have confirmed that these purposes are being served.

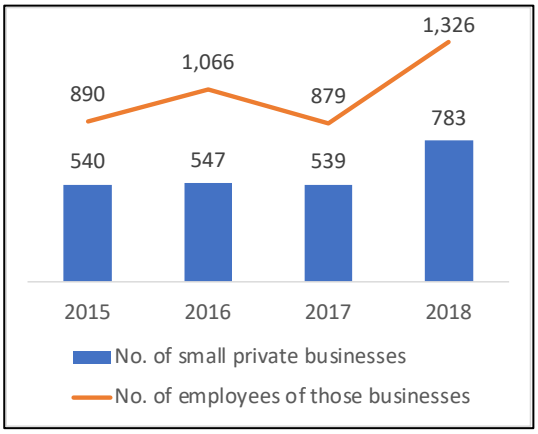
However, these positive impacts have not shown up in the statistical data yet. Although available statistics for Al Muthanna Governorate indicate that the economy and industry in the governorate have become more active after the end of the Iraq War, we did not find any data indicating that further development has taken place after this project or that the project had positive impacts. For example, an increase in the number of registered vehicles as shown in "3.1.1.2 Consistency with the Development Needs of Iraq," a stable number of building constructions as shown in Figure 2, and an increase in small private businesses as shown in Figure 3 (consistent data were not available for medium- and large-sized companies) indicate that the economic activities in the governorate have grown. Since the three bridges under this project constitute some of the major roads in Samawah, it is reasonable to assume that they are being used for economic activities and the daily life of residents, making the comments above by the RBD and Al Muthanna Governorate plausible. At the same time, however, the unemployment rate in 2021 was 27%, which did not improve over 24% in 2008 and was significantly higher than the national average in 2021, 14.2%. The fact that this is one of the

areas with the highest unemployment rates in Iraq has not changed since the time before the project.[15]



Source: Compiled using data from the Central Organization for Statistics

Figure 2 Number of building constructions in Al Muthanna Governorate



Source: Compiled using data from the Central Organization for Statistics

Figure 3 Number of small private businesses in Al Muthanna Governorate

3.3.2.2 Other Positive and Negative Impacts

1) Impacts on the Natural Environment

This project does not fall under the large-scape project in the road sector as defined in the *Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Considerations* (formulated in April 2002), is not considered as a project with a significant adverse impact on the environment, and does not fall under "projects with sensitive characteristics" or "projects located in or near sensitive areas" as defined in the *Guidelines*. For this reason, this project was classified as Category B. The areas close to the project site are not dense residential areas and are mostly farmlands and idle lands. Thus, it was not expected that there would be any significant adverse impact caused by air and noise pollution.

No Environmental Impact Assessment (EIA) report was created for this project as one was not required under the domestic laws of Iraq. According to the RBD, in implementing the project, the executing agency and the consultant monitored the project in accordance with the environmental checklist agreed upon by JICA and the executing agency at the time of the appraisal and the *National Emissions Regulation based on the Law No. 27 of 2009 on the Protection and Improvement of the Environment* formulated in 2009. It was also reported that, after the project completion, the RBD and the environment office of Al Muthanna Governorate have implemented monitoring and alleviation measures in accordance with the *Environmental and Social Considerations Plan.* Interviews with the RBD revealed no major problems based

[15] The 2001 data for Al Muthanna Governorate were provided by the RBD. The 2008 data for Al Muthanna Governorate and the national data were data from the Central Organization for Statistics.

on the monitoring results. Among the qualitative effects as intended at the time of the appraisal, the data for *(1) improvement in roadside environments (noise and air pollution caused by traffic congestion)* were unavailable. However, it is reasonable to believe that the elimination of traffic congestion has improved the conditions.

2) Resettlement and Land Acquisition

For this project, it was expected to acquire a total of approximately 10 ha of privately owned farmland at locations where approach roads were to be constructed. The acquisition was carried out in accordance with domestic laws as agreed at the time of the appraisal. According to the RBD, although some hindrances were present in the beginning (e.g., failing to agree on the terms for cutting down the date palms planted at the site), all issues have been resolved by partially changing the retaining wall design and through other means. There was no resettlement.

3) Gender Equality, Marginalized People, Social Systems and Norms, Human Well-being and Human Rights, and Other Impacts

These aspects are not specifically mentioned in the documents at the time of the appraisal, and the examination at the time of the ex-post evaluation did not find any results that could be considered in the evaluation. However, as mentioned in "3.1.1.2 Qualitative Effects (Other Effects)," the bridges under this project provide access to all residents in the target area. In addition, according to the RBD, the project plan and facility designs are not designed in a way that would cause disadvantages to some residents. Therefore, it is reasonable to say that this project has, at least, not had negative impacts, such as not providing benefits to certain groups.

4) Other Positive and Negative Impacts

Ancillary positive effects of the project include:

- Strengthening of the systems for implementation and operation and maintenance at MOCH (*Qualitative effect (4)* as intended at the time of the appraisal): With respect to the project implementation capacity, UNDP provided training for it to the project management team in the RBD as part of the monitoring support the JICA Iraq office outsourced to UNDP. The program of the training, which was designed to be practical by incorporating issues that the team was facing at a given time, helped strengthen the capacity of the RBD, which did not have any experience in implementing a project under an international contract. The training received high marks from the Iraqi government. With respect to the system for operation and maintenance, although we were not able to verify whether the system itself has been strengthened, the RBD reported that the consultant provided a variety of training during the project implementation, strengthening the capacity of the staff.

- Improvement in the image of Japan in the Samawah area (*Qualitative effect (5)* as intended at the time of the appraisal): According to the RBD, the residents in Al Muthanna Governorate and the city of Samawah has, from the time when the JGSDF was stationed to the time of the ex-post evaluation, had a positive image of Japan. This has been confirmed by the government of Al Muthanna Governorate and UNDP, which was providing monitoring support at the site. In other words, the image of Japan, which had already been improved as a result of the assistance the JGSDF provided, was maintained and further improved by implementing this project right after it.

Thus, among the objectives of the project, the direct outcomes, "facilitation of north-south traffic in Iraq" and the "alleviation of traffic congestion in the city of Samawah," have been mostly achieved. The intended impact, "contribution to the economic and social reconstruction of Iraq," has been achieved to a certain extent, and other positive impacts have also been confirmed. Therefore, as intended effects have manifested mostly as planned as a result of implementing the project, the effectiveness and impacts of the project are high.

3.4 Sustainability (Rating: ③)

3.4.1 Policy and System

As discussed in "3.1.1 Relevance," the policies of the Iraqi government and the governorate government at the time of the ex-post evaluation emphasized the maintenance of roads and bridges. Therefore, policies and systems for operation and maintenance are in place.

3.4.2 Institutional/Organizational Aspect

The system for the operation and maintenance of the project was mostly as intended at the time of the appraisal. The RBD is in charge of the operation and maintenance of the bridges located along all national highways and major roads in Iraq, and the operation and maintenance of the bridges under this project fall under the jurisdiction of the RBD's regional office in the Al Muthanna Governorate office. With respect to maintenance, the RBD is responsible for inspections and repairs, while the cleaning of the pavement is carried out by the city of Samawah.

The RBD's regional office in Al Muthanna Governorate has 57 employees, and 24 of them (three engineers, three surveyors, and assistants) are involved in the implementation and operation and maintenance of national projects, including the bridges under this project (the remaining 33 employees are responsible for the implementation and operation/maintenance of governorate-level projects). The RBD recognizes that the number of employees available for operation and maintenance is limited, and it reported that it is considering to appoint additional personnel.

Thus, although the institutional and organizational aspect of the operation and maintenance has some minor issues, there are good prospects for improvement/resolution.

3.4.3 Technical Aspect

At the time of the appraisal of this project, the RBD was developing national highways across the country and did not have any technical concerns with respect to the construction of PC bridges as it had extensive experience with this type of construction. It was also confirmed in the interviews with the RBD for the ex-post evaluation that the RBD's regional office in Al Muthanna Governorate had an adequate level of technical proficiency. The RBD has reported that people with sufficient years of experience have been hired as technical personnel and that these employees have received training from the Iraqi government (MOCH's Training and Development Center) and international organizations (including the World Bank) multiple times by the time of the ex-post evaluation.[16] In addition, the bridge maintenance manual created by the project consultant continues to be used. A portion of Samawah North Bridge was changed from PC girders to steel girders. The RBD's regional office reported that this did not pose any issue as this office had experience in maintaining steel girders.

Thus, the technical aspect of operation and maintenance has been established.

3.4.4 Financial Aspect

For 2015 and thereafter, a total of 140,309,000 USD of the national government's budget has been allocated to the RBD's monitoring and maintenance budget. The monitoring and maintenance expenses of each regional office are disbursed from this budget each year. For the Fiscal Year 2019, this budget was 27,961,000 USD for the whole country. Although other data regarding the amount were not available, the RBD reported that the allocated amount for the maintenance budget was insufficient. However, the three bridges under this project, which have been monitored semi-annually, have not required any repairs so far, incurring no actual expenditure for maintenance. In addition, the RDB also reported that a special budget would be allocated in the event any major or medium-scale emergency repair, including with these bridges, becomes necessary. The RDB explained that although such a budget is limited in terms of the amount and is allocated in accordance with the priority based on the degree of impact and other factors, a budget that is not approved for a given year would be prioritized for the following year, ensuring that a problem would not be left unaddressed for a long time.

Thus, although the financial aspect of operation and maintenance has some minor issues, there are good prospects for improvement/resolution.

[16] At the time of the appraisal, it was recommended, based on the lessons identified in the ex-post evaluations of similar projects in the past, to include training for smooth facility operation and maintenance as a project activity. As discussed in "3.3.2.2. Other Positive and Negative Impacts," this has actually taken place, strengthening the capacity of the staff.

3.4.5 Environmental and Social Aspect

As already discussed, no negative environmental or social impacts are found. Given the nature of the project, these impacts should not require any special attention.

3.4.6 Preventative Measures to Risks

No specific risks to operation and maintenance are found.

3.4.7 Status of Operation and Maintenance

With respect to the maintenance plan for the three bridges under this project, regular monitoring of these bridges and other roads and bridges in the same jurisdiction (visual inspection, reporting of problems, traffic volume surveys, collection of traffic congestion and accident information, etc.) is performed by incorporating it in the annual maintenance plan of the RBD's regional office in Al Muthanna Governorate. At the time of the ex-post evaluation, no issues to be addressed have been reported as a result of the monitoring. The on-site fieldwork by the ex-post evaluation team also confirmed visually that both the superstructure (including road surface) and the substructure of all three bridges are in good conditions.

Thus, the status of operation and maintenance is satisfactory.

Slight issues have been observed in the institutional/organizational and financial aspects of the operation and maintenance of this project; however, there are good prospects for improvement/resolution. Therefore, the sustainability of the project effects is high.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

This project aimed to facilitate north-south traffic in Iraq and alleviate traffic congestion in the city of Samawah by constructing three bridges with a capacity for large vehicle passage and other structures in the city and its surrounding areas within Al Muthanna Governorate in southern Iraq. The project plan was consistent with Iraq's development policy and development needs and Japan's ODA policy, and the project generated positive outcomes by deliberately cooperating and coordinating with the humanitarian reconstruction aid by the JGSDF. Therefore, the relevance and coherence of the project are high. The objectives of the project were also mostly achieved. As a result of implementing the project, the traffic volumes on the three bridges have exceeded the plan by the time of the ex-post evaluation, eliminating the traffic congestion. Although the intended impact, i.e., contribution to the economic and social reconstruction of Iraq, was not verified quantitatively, it was qualitatively verified that the project successfully responded to an increased level of economic activities in Al Muthanna Governorate and helped improve the convenience of everyday life. Therefore, effectiveness and impacts are high. Efficiency is

moderately low because the project period significantly exceeded the plan. Although the project had minor issues with respect to the placement of maintenance/administrative personnel as well as with the budgetary aspect, it is expected that these aspects will improve to allow the continuation of the project effect. Therefore, sustainability is high.

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

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

The RBD is recommended to continue to conduct systematic monitoring of the bridges under this project and maintain a system that is capable of swiftly responding in the event of a problem.

4.2.2 Recommendations to JICA

None.

4.3 Lessons Learned

(1) Measures for reducing risks in assisting a conflict-affected country

Identified below are examples of how this project has, and how it should have, reduced or removed destabilizing factors associated with a conflict-affected country and how this project has, and how it should have, used stabilizing factors. Since the circumstances of conflict-affected countries vary a great deal and it is difficult to generalize their experiences, we will simply list examples (note that the list below includes items that are included only in "5. Non-Score Criteria").

- The project gained significant support in the target area by providing uninterrupted assistance by initiating its preparation and creating a schedule so that the emergency/reconstruction aid would transition seamlessly into development and by setting the subject of the project to the development of transportation infrastructure, an area with high development needs and significant benefits to both civic and economic activities. (Promotion of the project effect through the application of stabilizing factors)
- There were risk factors for delays, including political instability, a shortage of workers, and the lack of information regarding the locations of buried objects due to the loss of drawings due to fighting (buried objects were discovered only after drilling). At the time of the appraisal, the project unavoidably set a short construction period because the counterpart government's desire for early completion precluded a conservative schedule. In consideration of this, the project set a long disbursement period, which was 10 years. The project, despite substantial delays, was completed within that period, thus reducing administrative procedures caused by the delay. (Reduction of negative impacts to the project by addressing destabilizing factors)

- Because the project set a high contingency ratio, 20%, in consideration of political instability, the project was able to appropriate the contingency against the cost increase due to the extension of the project period. This was one of the reasons why the project cost did not exceed the plan.[17] (Reduction of negative impacts to the project by addressing destabilizing factors)
- As a risk factor for delays prior to the signing of an exchange of notes, the new government, which was just inaugurated, did not have any experience in signing a diplomatic document and had not established a process for it, making it necessary for the two governments to discuss the signing and the scope of endorsement. A lesson has been learned that preparing a project in a country with a new constitution or government carries such risk for delays prior to the signing of an exchange of notes. (Reduction of negative impacts to the project by addressing destabilizing factors)
- The project managed to overcome issues during the period in which JICA was not able to visit the project site due to safety concerns by outsourcing monitoring support to UNDP, which had local staff members who could visit the site and had extensive experience working with the Iraqi government. (Reduction of negative impacts to the project by addressing destabilizing factors)
- Even though the tribe in the target area did not have a sufficient number of workers, the project could not hire workers from the tribes in other areas (this was an appropriate measure to avoid creating destabilizing factors). The estimate for the availability of workers should have been made by taking into account the configuration of tribes and the relationship between tribes. (Reduction of negative impacts to the project by addressing destabilizing factors; avoiding the creation of additional destabilizing factors)

(2) Measures at the time of launching a project in a country with little experience in Japanese ODA Loans

This project was one of the first Japanese ODA Loans in Iraq. Listed below are the lessons that are specifically associated with this aspect. As with the first lesson, since it is difficult to generalize these experiences, we will simply list examples (note that the list below includes items that are included only in "5. Non-Score Criteria").

- It was discovered after the project was started that even though the executing agency had extensive experience in designing and implementing projects in the relevant sector, it lacked the accuracy that was needed to meet the requirements of a Japanese ODA Loan. It would have been more desirable to fully consider, at the initial stage, whether detailed design (not just its review) should be included in the scope of work of the consulting services.[18]

[17] There are likely to be cases where the counterpart country's government does not agree to an increase in the contingency as it can lead to an increase in the loan amount.
[18] There are likely to be cases where it is not desirable, in light of political circumstances, for a consultant to create the detailed design.

- The monitoring committee meetings between the Japanese government and the counterpart government that was held quarterly by bringing together the parties involved in all Japanese ODA Loan projects in Iraq motivated these parties and facilitated the progress of the project.
- In projects, such as this project, that are small-scale and lack preceding projects, even if a joint venture with contractors from developed countries is used, the construction tends to be carried out mainly by local contractors due to low incentives for such foreign contractors. One of the risk factors for delays was the unfamiliarity with the procedures for international contracts. The latter aspect was addressed by detailed supervision of the implementation, including the service contract with UNDP.

(3) Avoiding the impact of design changes for some bridges on the entire project period in projects involving multiple bridges

While the project experienced significant construction delays on all three targeted bridges due to a combination of factors (contractor capacity, weather, consultant travel restrictions, etc.), there were also variations in progress by bridge. The completion date for each bridge was 2015 for Mahdi Bridge, 2016 for Hilal Bridge, and 2018 for Samawah North Bridge, with the delays for Samawah North Bridge being particularly noticeable. The difference between Samawah North Bridge and the other bridges in terms of delay factors was that a part of the main girder of Samawah North Bridge was changed from PC girder, which can be procured domestically, to steel girder, which needs to be imported, and the customs clearance was delayed due to the deteriorating security situation. This, combined with the above-mentioned delay factors that had also occurred in other bridges, increased the delay, and it also took time to cancel some scopes and contract amendments to cope with the increased project cost due to the delay, resulting in the project period being significantly longer than planned.

Therefore, when making design changes to some bridges in a project involving multiple bridges, it is necessary to realistically estimate the time required for new processes, such as the transportation of materials, to determine how much the delay in completing the bridge in question will affect the overall project period and whether this is commensurate with the benefits to be gained from the design changes (in the case of this project, the use of steel girders to lengthen the center span, thereby improving the convenience of using the water surface). Furthermore, it would be desirable to take into account how the assumed risk of delay and the benefits to be gained differ for each material when selecting the type of bridge girder at the outline and detailed design stages.

5. Non-Score Criteria

5.1 Performance

5.1.1 Objective Perspective

The evaluation confirms that JICA played roles expected for a project-related agency and contributed to the results. Even though this project was one of the first Japanese ODA Loans in

Iraq, it was successfully completed and produced effects by taking measures that were aligned with the circumstances of the country and the target area (ensuring the continuity of assistance by coordinating the schedule with the withdrawal of the JGSDF, designing a development project that succeeded the emergency/reconstruction aid, providing prior notification by aligning it with the timing of the official inauguration of a new government, conducting elaborate monitoring that was also assisted by UNDP, etc.).

The evaluation also deems that the project had an adequate system of supervision, which took into consideration the changes in the project environment. Although no major changes occurred in the project environment during its implementation, the JICA Iraq office initially did not have local staff, and there were periods during which its personnel (Japanese persons) was not able to visit the site for safety reasons (note that the latter issue no longer exists at the time of the ex-post evaluation). This evaluation gives high marks to the fact that the project overcame this problem by sending UNDP's local staff to the site through a service contract with UNDP.

It appears that the maintenance of communication and the building of a cooperative relationship with the executing agency were carried out at a satisfactory level. The distance to the site made communication between relevant parties difficult, and, within the executing agency, there was a miscommunication between the ministry and the project management team at the sites; however, the JICA Iraq office, with the assistance of UNDP, maintained close contact with both the ministry and the project management team and attended all relevant meetings to coordinate the opinions of these parties.

Monitoring Support by UNDP

Between 2009 and the time of the ex-post evaluation, the JICA Iraq office has had a service contract with UNDP's Iraq office on monitoring support for ongoing ODA Loans, through which UNDP, as a neutral third-party organization, has checked and reported on the status of the site when JICA was unable to visit it, facilitated the project's progress in the quarterly monitoring committee meetings, provided coordination between the Iraqi government and JICA, assisted and provided training to the Iraqi government on procedures for project implementation, conducted performance evaluations, etc. Because the Iraqi government did not have any experience in implementing a project under an international contract and there were periods during which the JICA office was not able to access the site, this arrangement helped the progress of the project and capacity building of the Iraqi government.

5.1.2 Subjective Perspectives (retrospective)

We interviewed former project staff at JICA and the UNDP staff member who was in charge of the outsourced monitoring support and asked them to reflect on the situation during the project. The following discussion describes the situation from the perspectives of these former staff members. It shows that they assisted, in a less than satisfactory security situation, an executing agency that was implementing an ODA Loan project for the first time and worked on the project to complete it while facing difficult circumstances.

(1) Formation and Planning of the Project

<Accounts by Former JICA staff members>

During the second half of 2005, rumors began to circulate in the area that the JGSDF would be withdrawn from Samawah, and the local press began to take the tone of "Will Japan be gone from Samawah?" It was important to make a transition from the assistance by the JGSDF to a more general mechanism for development. To this end, preparations were made so that project approval and prior notification by the Japanese government could be completed before the JGSDF's withdrawal from Samawah in July 2006. It was necessary to provide a new assistance project also in terms of ensuring a safe withdrawal of the JGSDF. At the same time, since it was expected that the government would have new members upon the inauguration of the official government in May 2006, the prior notification had to be made to the official government. Under these conditions, preparations were made at unprecedented speed, with the completion of JICA's outline design in July 2005, the delivery of a list of ODA Loan requests from the Iraqi government in October, intergovernmental consultation in December, dispatching of the JICA appraisal mission in the following year in January-February 2006, and prior notification in June.

The Iraqi side, due in part that this was its first-ever Japanese ODA Loan, indicated that the project period proposed by JICA was too long. One of its comments was, "We can get it done in two years if we construct it ourselves (so why would it take more than four years?)" In consideration of the circumstance at that time, we felt that even that project period was not long enough; however, we dealt with the situation by setting a long disbursement period, not the project period, as a conservative construction period would increase the interest during construction.

The project made progress as expected up to the prior notification, but it halted at the next stage, the exchange of notes. Because the new Iraqi government had never signed a diplomatic document, the Iraqi government and the Ministry of Foreign Affairs of Japan had to discuss the signing process. JICA and the World Bank also joined the discussion and studied the new constitution together, but the discussion took more than one year to complete.

(2) Implementation of the Project

<Accounts by Former JICA staff members>

The loan agreement was signed in January 2008 and became effective in June. In March 2009, the JICA Iraq office was established. Our initial task was to understand who were involved in the project and how they were involved and to establish communication channels. At that time, since the office did not have any local staff and overnight stays were not allowed in the southern region for safety control reasons, we had to visit Samawah on one-day trips, making it difficult to grasp the conditions of the site. For this reason, we outsourced monitoring support to UNDP and had UNDP's local employees visit the site.

The contract for the project, which was awarded to a U.S.-owned company and an Iraqi company, was structured in a way so that the construction would be mainly carried out by the

Iraqi company. As a result, the contract amount was very low, much lower than expected. Looking back from the time of the ex-post evaluation, we feel that such a situation would not be unusual for projects in Iraq and that a project with approximately 3 billion yen in the contract amount would be considered small by international contractors and would not provide much incentive to them. In fact, delays occurred due to the lack of workers, funds, etc., on the part of the contractor. Moreover, there also were delays due to external factors beyond the control of the project, such as the extreme heat that made the construction impossible, or the increased level of ISIL's activity that prevented the Malaysian consultant from staying at the site. The JICA office frequently met with both the ministry, served as the executing agency, and the field team and repeatedly explained the benefits that would be realized once the project was completed. There were times when the leader of the executing agency's field team was stressed for not being able to communicate adequately with the ministry due to the distance between the site and Baghdad. We moved the process forward by always talking to and encouraging this leader whenever he visited Baghdad. At the time of the ex-post evaluation, we still maintain a good relationship with this leader, staying in touch through social networks.

After this process, Mahdi Bridge was completed in June 2015, and Hilal Bridge was completed in January 2016. At that time, Samawah North Bridge was passable, but it took another two years for the construction to complete. We remember that the cost increase due to delays made it necessary to eliminate portions of the scope to avoid cost overrun, but this discussion was not easy.

<Accounts by the UNDP staff member in charge of the outsourced monitoring support>

As part of the monitoring support UNDP provides, we are under contract to hold quarterly meetings of the ODA Loan monitoring committee between the Japanese government and the Iraqi government. Since relevant parties involved in all ODA projects came together at these meetings, a person reporting a delay had to do so in front of all attendees. This probably motivated them to make progress by setting the quarterly reporting as a target. We feel that compared to other donors, the JICA office was characterized by its detailed involvement in the project through frequent meetings with the executing agency and that this facilitated the progress of the project.

(3) Project Completion

<Accounts by Former JICA staff members>

The last bridge, Samawah North Bridge, was completed in April 2018. An initial staff member: "It even feels like a miracle that we managed to achieve project completion." Multiple staff members: "This is one of the projects that we have fond memories of. We are very pleased to learn from this ex-post evaluation that these bridges are being fully used."

<Accounts by the UNDP staff member in charge of the outsourced monitoring support>

We provide monitoring support for all Japanese ODA Loan projects in Iraq, but we had an impression that this project was "a small but demanding project." But we believe that its impacts,

including the elimination of traffic congestion, are noticeable. Our local employees checked on the bridges recently when they visited Samawah and reported that they were in good condition.

5.2 Additionality

The added value of this project, as already discussed, has been the uninterrupted provision of assistance since the JGSDF's assistance in Samawah. This enabled a seamless transition from the emergency/reconstruction aid to development assistance, helped the project gain the trust of the residents of the target area, and improved the convenience for the residents.

Comparison of the Original and Actual Scope of the Project

Item	Plan	Actual
1. Project Outputs New construction of three bridges and approach roads for each bridge in Samawah Consulting Services	Samawah North Bridge (PC girder, bridge length 240 m, approach road 1,200 m) Mahdi Bridge (PC girder, bridge length 192 m, approach road 360 m) Hilal Bridge (PC girder, bridge length 192 m, approach road 480 m) Assistance with procurement, construction supervision, etc. Total: 148 person-months	Samawah North Bridge (PC girder/steel girder, bridge length and approach road length were as planned) Mahdi Bridge (as planned) Hilal Bridge (PC girder, bridge length as planned, approach road 460 m) Detailed design, assistance on procurement, construction supervision, etc. Total: 1,004.63 person-months
2. Project Period	January 2008- October 2012 (58 months)	January 2008- May 2018 (125 months)
3. Project Cost Amount Paid in Foreign Currency Amount Paid in Local Currency Total ODA Loan portion Exchange Rate	1,739 million yen 2,734 million yen （34,047 million Iraq Dinar (IQD)) 4,473 million yen 3,348 million yen 1IQD ＝ 0.0803 yen (As of January 2006)	3,123 million yen 1,310 million yen (15,384 million IQD) 4,430 million yen 3,120 million yen 1IQD ＝ 0.085150751 yen (Average for 2008-2018)
4. Final Disbursement	January 2018	