

JBIC ODA Loan project Mid-Term Review 2006

Evaluator: Asahi Ltd. (Teruo Kawakami)

Time of Mid-Term Review Field Survey: January 2007

Project Title: The Republic of the Philippines “Urgent Bridges Construction Project for Rural Development” (PH-P231)

[Loan Outline]

Loan Amount/Contract Approved Amount/Disbursed Amount: 18,488 million yen/7,433million yen/1,116 million yen (As of the end of September 2006)

Loan Agreement: March 2002 (5 years after L/A signing)

Original Project Completion Date: July 2007

Revised Project Completion Date: July 2009

Loan Expiry Date: September 2009

Executing Agency: Department of Public Works and Highways (DPWH)

Operation and Maintenance Agency: Department of Public Works and Highways (DPWH)

Selection Criteria for Mid-Term Review: Special Yen Loan

[Project Objective]

The objective of this project is to replace or construct a total of 201 bridges on national roads in major local cities all over the country with the aim of ensuring safe and efficient distribution, thereby supporting the development of regional economies.

Consultant: Katahira & Engineering International (Japan)

Contractor: Package III: JV of Toyo Construction Co., Ltd. (Japan) and Tobishima Corporation (Japan)

[Mid-Term Review Result]

Item	Ex-ante Evaluation (at the time of appraisal) (March 2002)	Result of mid-term review and ex-post evaluation results as estimated at time of mid-term review
Relevance	<p>(1) National policy level</p> <ul style="list-style-type: none"> · In the Medium-Term Development Plan (2001-2004), one of the major objectives of the development of the transport sector was to “support the social development policy of the Philippines by providing safe and reliable transportation service”. In order to achieve this objective, a goal was set to increase the ratio of permanent bridges to all bridges on national roads to 95% by 2004 (the ratio was 89% as of 2000). <p>(2) Policy level</p> <ul style="list-style-type: none"> · In the medium-term infrastructure plan for road and water control projects by DPWH, 66% of the total amount of the infrastructure improvement plan for 2001-2004 was allocated to roads and bridges. · According to the national bridge survey conducted by DPWH in 1994, 302 bridges were seriously damaged and 1,717 bridges were emergency bridges. Based on this result, the request for urgent construction of these bridges was made to JBIC. <p>(3) Planning level</p> <ul style="list-style-type: none"> · There remained many dilapidated simple emergency bridges and permanent bridges were also aging, breaking down, and deteriorating 	<p>(1) National policy level</p> <ul style="list-style-type: none"> · In the Medium-Term Development Plan (2004-2010), connecting each region with the transport and communication networks that help develop new economic opportunities, reduce the transportation cost and improve access to social services was mentioned as an issue to be tackled for development. In the Medium-Term Investment Plan (2006-2010), the infrastructure improvement plan occupied 59% of the investment plan and 52% of the infrastructure improvement plan is occupied by the transport sector, of which 43% is allocated to roads and bridges. These facts indicate that the development of the transport sector, particularly improvement of roads and bridges, remains an important issue in this country. <p>(2) Policy level</p> <ul style="list-style-type: none"> · In the medium-term infrastructure plan for road and water control projects by DPWH, 82% of the total amount of the infrastructure improvement plan for the period after 2005 is allocated to roads and bridges. · DPWH is currently working on a new road and bridge planning process. Under the new planning process, asset conservation is integrated into network development, based on which designation, identification, priority order determination, and cost estimation of each road/bridge project are planned to be conducted within the framework of the annual budget. <p>(3) Planning level</p> <ul style="list-style-type: none"> · Of the initially selected 201 bridges, 42 bridges were excluded

	<p>due to factors such as lack of adequate maintenance, increase in overloaded vehicles and traffic volume and the effects of natural disasters. With disasters like frequent typhoons prevalent, the road network was also in danger of severance as bridges were washed away or collapsed. Therefore, in order to establish a safe and efficient regional road network, replacement of emergency bridges with permanent ones in the road network was necessary along with the paving of unpaved roads. The bridges to be covered by the project were selected from the list of 887 bridges submitted by DPWH using the flow chart to determine whether each bridge meets the requirements such as needs, benefits, technology and the present state. As a result, 201 bridges were selected as appropriate to be covered by the project.</p>	<p>because of overlapping with other projects and 2 bridges were excluded because of substantial increase in the cost. Instead, 38 bridges were added to make the total of bridges covered by this project 195, at present. The newly added 38 bridges were selected by DPWH from those meeting the requirements of having no public safety problem, being located on the national road, not overlapping with other projects, having a traffic volume of over 50 vehicles per day, within 1 hour of the nearest city, having an access road of at least 6 meters, and in good condition. In this way, relevance of the project is maintained. Although EIRR has not been calculated for these 38 bridges, they all satisfy the screening criteria for the bridges to be covered by this project, according to the executing agency that selected them (DPWH-PMO-F/S).</p>																	
<p>Effectiveness (Impact)</p>	<p>(1) Operation and Effect Indicators 1. Quantitative effects Sample bridges to be monitored (10 bridges) were selected as shown below taking into account the current type of bridge, bridge length, geographical distribution and data availability. According to the letter from JBIC addressed to DPWH dated February 6, 2002 (proposal on the bridges to be monitored), EIRRs for these 10 bridges were all over 15%.</p> <table border="1" data-bbox="465 1129 1279 1417"> <thead> <tr> <th>Indicator</th> <th>Bridge (Region)</th> <th>At present (2001)</th> <th>Target (7 years after completion)</th> </tr> </thead> <tbody> <tr> <td rowspan="4">Traffic volume (vehicles/day)</td> <td>Bangcag(CAR)</td> <td>1,172</td> <td>2,170</td> </tr> <tr> <td>Amburayan(I)</td> <td>6,443</td> <td>11,932</td> </tr> <tr> <td>Pantal(I)</td> <td>NA</td> <td>NA</td> </tr> <tr> <td>Quirino(I)</td> <td>6,443</td> <td>11,932</td> </tr> </tbody> </table>	Indicator	Bridge (Region)	At present (2001)	Target (7 years after completion)	Traffic volume (vehicles/day)	Bangcag(CAR)	1,172	2,170	Amburayan(I)	6,443	11,932	Pantal(I)	NA	NA	Quirino(I)	6,443	11,932	<p>(1) Operation and Effect Indicators 1. Quantitative effects (1) Monitoring Indicators Of the 10 bridges that were selected for monitoring at the time of appraisal, 2 bridges were excluded from the project as a result of review: Laoang (VIII) (due to more than expected increase in cost) and Embarcadero (VI) (due to overlapping with other project). These 2 bridges need to be excluded from the list of bridges for monitoring. The Pantal Bridge is planned to be constructed in an urban area as part of the new bypass road now under construction as mentioned in 2 below and therefore, in light of the purpose of constructing this bridge, the monitoring indicators shown on the left are considered inappropriate in measuring the effects. (For those bridges to be newly constructed including this bridge, it is advisable to include the time and cost saving resulting from congestion reduction as monitoring indicators.) For the evaluation of achievement levels of the monitoring indicators agreed at the time of appraisal, a system for</p>
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		Mabbang2(II)	370	685	measuring these indicators needs to be established. DPWH is currently working to enhance the project evaluation capability of the regional offices through the training. It is necessary to urge the Planning Service, etc. to make it possible to measure the evaluation indicators of this project by the time of ex-post evaluation.
		Payapa(IV-A)	1,250	2,315	
		Rangas3(V)	685	1,269	
		Embarcadero(VI)	1,460	1,926	
		Laoang(VIII)	420	778	
		Malitbog(X)	285	528	
	Period of traffic interruption due to bridge collapse (days)	Bangcag(CAR)	315	0	(2) Traffic Volume
		Amburayan(I)	730	0	A field survey was conducted for the bridges of Amburayan and Quirino that are planned to be replaced. According to the measuring of one-way traffic volume per minute on the road between Amburayan and Quirino that was conducted for three times between 3:00 p.m. and 4:00 p.m., 13 to 23 vehicles passed on the road per minute. Based on this result, the one-way traffic volume per hour is estimated at 800 to 1,300 vehicles. Since the above survey was conducted during busy hours, these data cannot be directly used to estimate the traffic volume per day. Still it seems that the traffic volume near Amburayan and Quirino Bridges increased from that as of 2001 (Annual Average Daily Traffic (AADT): 6,443 vehicles).
		Pantal(I)	NA	NA	
		Quirino(I)	730	0	
		Mabbang2(II)	30	0	
		Payapa(IV-A)	158	0	
		Rangas3(V)	397	0	
		Embarcadero(VI)	332	0	
	Detouring distance in the event of bridge destruction (km)	Lao-ang(VIII)	730	0	
		Malitbog(X)	60	0	
		Bangcag(CAR)	84.5	0	
		Amburayan(I)	NA	0	
		Pantal(I)	NA	0	
		Quirino(I)	NA	0	
		Mabbang2(II)	20.0	0	
		Payapa(IV-A)	NA	0	
	Reduction in traveling distance to a local city in the event of	Rangas3(V)	15.0	0	
		Embarcadero(VI)	13.5	0	
		Lao-ang(VIII)	NA	0	
		Malitbog(X)	NA	0	
		Bangcag(CAR)	NA	2.41	
		Amburayan(I)	NA	NA	
		Pantal(I)	NA	NA	
		Quirino(I)	NA	NA	
	Mabbang2(II)	NA	0.57		

bridge destruction (hours)	Payapa(IV-A) Rangas3(V) Embarcadero(VI) Lao-ang(VIII) Malitbog(X)	NA NA NA NA NA	NA 0.43 0.39 NA NA																																				
<p>2. Qualitative effects</p> <p>1) Regional development</p> <p>Through the improvement in convenience and safety of bridges, the project would help promote the interchange of people and goods and achieve efficiency improvement, cost reduction and safety improvement of transport, thereby contributing to the development of regional economy. It was also expected to contribute to poverty reduction in connection with the improvement of the majority of target bridges.</p>		<p>2. Qualitative effects</p> <p>1) Regional development</p> <p>The expansion of bridge width and relaxation of vehicle weight limits are expected to help increase the interchange of people and goods and thus promote regional development. The following data are only for information because GRDP is available only for each Region and it is difficult to explain the causal link between the implementation of the project and GRDP.</p>																																					
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	<p>2) Effect on poverty reduction In the F/S, 105 bridges out of 201 target bridges were specified as “bridges for poverty reduction” where the rate of poverty among the beneficiaries of the project exceeds that among the national population (estimated to be 24.9% as of 1997). However, as the bridge code used in the list is not used for the data on the bridges covered by the project, it is not known which bridges are the bridges for poverty reduction.</p> <p>3) Environmental impact With respect to the environmental impact of this project such as the impact on soil, water quality, residence and houses, adequate measures would be taken in the design and construction. Monitoring was planned</p>	<table border="1" data-bbox="1301 172 1908 213"> <tr> <td>XIII</td> <td>14,330</td> <td>15,509</td> </tr> </table> <p>(Source: 2006 Philippine Statistical Yearbook)</p> <p>2) Effect on poverty reduction Since no bridge has been completed, the actual effect is unknown. It is expected that as the transport of agricultural products to the market is facilitated and the transportation time for people and goods is substantially reduced, economic conditions will improve and as a result poverty will be reduced. The data for reference relating to poverty reduction are presented below (only for the provinces relevant to Package III).</p> <table border="1" data-bbox="1301 619 1883 1281"> <thead> <tr> <th rowspan="2">Province</th> <th colspan="2">Ratio of Poor Households (%)</th> </tr> <tr> <th>1997</th> <th>2000</th> </tr> </thead> <tbody> <tr> <td>Pangasinan</td> <td>33.5</td> <td>30.9</td> </tr> <tr> <td>Cavite</td> <td>8.0</td> <td>10.2</td> </tr> <tr> <td>Batangas</td> <td>25.6</td> <td>25.9</td> </tr> <tr> <td>Laguna</td> <td>12.3</td> <td>8.6</td> </tr> <tr> <td>Quezon</td> <td>36.5</td> <td>34.1</td> </tr> <tr> <td>Occ.Mindoro</td> <td>34.0</td> <td>41.4</td> </tr> <tr> <td>Ori.Mindoro</td> <td>34.4</td> <td>43.1</td> </tr> <tr> <td>Camarines S.</td> <td>43.7</td> <td>42.6</td> </tr> <tr> <td>Sorsogon</td> <td>42.1</td> <td>41.4</td> </tr> <tr> <td>Albay</td> <td>43.2</td> <td>39.6</td> </tr> <tr> <td>Catanduanes</td> <td>41.3</td> <td>44.7</td> </tr> <tr> <td>The Philippines</td> <td>28.1</td> <td>28.4</td> </tr> </tbody> </table> <p>(The Philippine Countryside in Figures – 2002 Edition)</p> <p>3) Improvement of living conditions of local residents</p>	XIII	14,330	15,509	Province	Ratio of Poor Households (%)		1997	2000	Pangasinan	33.5	30.9	Cavite	8.0	10.2	Batangas	25.6	25.9	Laguna	12.3	8.6	Quezon	36.5	34.1	Occ.Mindoro	34.0	41.4	Ori.Mindoro	34.4	43.1	Camarines S.	43.7	42.6	Sorsogon	42.1	41.4	Albay	43.2	39.6	Catanduanes	41.3	44.7	The Philippines	28.1	28.4
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	<p>to be conducted by the consultant and necessary recommendation and measures would be carried out. Therefore, no problem was expected.</p> <p>4) Land acquisition and resident relocation Resident relocation was expected to be necessary (for 168 households in total) for the work of some (29) bridges. Careful consideration would be given in the detailed design so that resident relocation can be avoided as far as possible. Should relocation be determined necessary, while due consideration would be given so that residents would be relocated within or to the same or adjacent Barangay as far as possible, appropriate steps would be taken in accordance with relevant laws of the Philippines and JBIC guidelines, and appropriate monetary compensation would be provided based on market prices.</p>	<p>· The Pantal Bridge (380m long) which is currently under construction in Dagupan City is to form a part of the Dawel-Pantal-Lucao Road (under construction), a bypass road running through Dagupan City. Dagupan City is one of the core cities in Pangasinan Province with a population of 130,000 and is developing with fisheries such as aquaculture industry as the main industry. With the completion of the bypass road, vehicles heading for Manila from Pangasinan Province can take a bypass through Dagupan City and, consequently, saving of traveling time and cost as well as reduction of traffic congestion in the city are expected.</p> <p>4) Environmental impact The ECCs for 26 bridges that had not been obtained at the time of appraisal have been obtained. For the Pantal Bridge under construction at the time of mid-term review, noise control measures were considered because the construction work is conducted near the urban district (commercial district). However, as the construction work is not conducted after 7:00 p.m. at the request of residents, no complaint has been made by residents so far. Noise control measures including construction hour restriction to daytime are necessary for the Panamitan and Malamok Bridges that are to be constructed in densely built-up areas, though ECCs for these bridges are unnecessary because the total length is less than 50m.</p> <p>5) Land acquisition and resident relocation Land acquisition is necessary for 10 bridges in CP-I, 19 bridges in CP-II, 27 bridges in CP-III, and 40 bridges in CP-IV. With respect to CP-II and CP-IV, negotiation is under way for all bridges. As for CP-III for which the project is being carried out, land acquisition has been completed for one bridge (Pantal), the payment process is under way for 18 bridges, and rights have been waived for 8 bridges. These</p>
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		<p>procedures are taking time because of the delay in the submission of the certificates of ownership and the negotiation of the land price. In most construction sites, those residents who need to be relocated own the substitute land and there is no need to provide the substitute land for relocation. In the case of the Pantal Bridge, however, the substitute land was provided to illegal occupants.</p> <p>(2) Factors which may influence the effectiveness and impact: nothing in particular</p> <p>(3) Factors which may influence the sustainability</p> <ul style="list-style-type: none"> · The new road and bridge planning process mentioned in the section of relevance is expected to have a positive impact by improving efficiency of the operation and maintenance of bridges. 				
Information for reference						
<p>[Efficiency]</p> <p>(1) Outputs</p>	<p>(1) Outputs</p> <ul style="list-style-type: none"> · Replacement or construction of 201 bridges (to be implemented in 4 packages) · Consulting services: 1,165M/M in total 	<p>(1) Outputs</p> <ul style="list-style-type: none"> · Replacement or construction of 195 bridges (to be implemented in 4 packages) <p>At the stage of detailed design, 36 bridges on the list were changed to other bridges due to overlapping with other projects or the problem of public safety, 2 bridges in Northern Samar were changed to one other bridge in the vicinity due to the substantial cost increase, and 2 bridges in Cebu were changed to one other bridge due to overlapping with other domestic projects. In addition, 4 other bridges were excluded due to overlapping with other projects. In total, the number of bridges decreased by 6. The number of bridges to be repaired, replaced and constructed and the number of bridges by span length are presented below.</p> <p>Number of Bridges to be Repaired, Replaced and Constructed</p> <table border="1" data-bbox="1301 1342 1933 1390"> <tr> <td>Total</td> <td>Repair</td> <td>Replacement</td> <td>Construction</td> </tr> </table>	Total	Repair	Replacement	Construction
Total	Repair	Replacement	Construction			

	<p>(2) Project period March 2002 – July 2007 (65 months)</p>	<table border="1" data-bbox="1301 172 1933 220"> <tr> <td>195</td> <td>165</td> <td>23</td> <td>7</td> </tr> </table> <p>Number of Bridges by Span Length</p> <table border="1" data-bbox="1301 343 1861 438"> <thead> <tr> <th>Total</th> <th>~20m</th> <th>~40m</th> <th>~100m</th> <th>100m~</th> </tr> </thead> <tbody> <tr> <td>195</td> <td>100</td> <td>77</td> <td>9</td> <td>9</td> </tr> </tbody> </table> <p>· With respect to the Amburayan Bridge (535m long) which is subject to monitoring, the widening of the bridge is expected to prevent congestion caused by alternate passing of large-sized vehicles. However, there is a movement by local residents demanding preservation of the existing bridge, which was initially planned to be removed. If the existing bridge is destroyed by flood, the new bridge could be damaged, reducing the effect of the construction of the bridge. Close attention should be paid to how the executing agency will deal with this issue.</p> <p>(2) Project period March 2002 –July 2009 (89 months)(scheduled)(137% of the planned period) Amount of consulting services necessary for completion as estimated at the time of mid-term review: 1,862M/M (160% of the planned amount)</p> <p>The construction work for Package III started in April 2006 and the contractors of Package I were selected in January 2007. As for Package II (the construction period is scheduled for 24 months starting June 2007) and Package IV (the construction period is scheduled for 24 months starting July 2007), they are in the</p>	195	165	23	7	Total	~20m	~40m	~100m	100m~	195	100	77	9	9
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	<p>(3) Project cost 21,750 million yen (ODA Loan portion: 18,488 million yen)</p>	<p>procurement process. The project implementation is delayed because tendering for the initially planned Packaged I-A failed and that the approval for the procurement procedure for all ODA Loan projects involving DPWH as the executing agency was suspended until the VAT issue concerning the Second Magsaysay Bridge was settled.</p> <p>(3) Project cost 21,750 million yen (ODA Loan portion: 18,488 million yen)</p>
<p>(2) Results of Special Yen Loan Satisfaction Survey</p>	<p>A. Initial expectations and current opinions of the executing agency, etc. concerning the objectives of the special ODA loan (economic stimulus, job creation, private sector investment environment, productivity improvement)</p> <p>1. Initial expectations of the executing agency, etc.:</p> <ul style="list-style-type: none"> · Project to promote economic growth in economically stagnant areas · High expectation as a project that provides funds for areas that have difficulty procuring funds from the private sector · Catalyst for growth in the areas that need government assistance and infrastructure substantially · Great expectation for transfer of outstanding, state-of-the-art technology from Japan (NEDA) <p>2. Current views of the executing agency, etc.: Views held during the project implementation</p> <p>3. Views of the existing agency, etc. on STEP loan: High expectations for STEP loan, which places importance on support for infrastructure projects</p> <p>B. Views on the special ODA loan procedures (originating in Japan, simplifying the procedure, enhancing competitiveness, evaluation of bidding companies)</p> <ul style="list-style-type: none"> · Desire easing of the rigid application of the Japan origin provisions. · Desire application of Japan's origin standards to different projects with different degrees of rigidity. Also, with a view to transferring Japan's outstanding technologies to the borrowing countries, is it possible to develop a pilot project where corporate bidders are limited to JV of Japanese companies and local companies? · Desire expansion of the opportunity for the local companies/consultants to participate in as main contractors for the purpose of promoting economic activities between donor countries and borrowing countries. · Indirect costs of large Japanese companies are high. Formation of consortiums by medium-sized companies should be encouraged. 	

	<ul style="list-style-type: none"> · Leasing of inexpensive construction machines by local subcontractors should be used. · Each Japanese company that participated in PQ and tendering has excellent technical and financial capacity satisfying the strict requirements of prequalification. <p>C. Evaluation of the consultants and contractors by the executing agency Highly satisfied with the contractors from which procurement has been completed to date</p> <p>D. Evaluation of the executing agency by the consultants and contractors · No particular evaluation was made which is due to the special yen loan.</p> <p>E. General overview of the special yen loan system · Tender failed when the bidding prices tendered exceeded the predetermined price. Thus, implementation of the project is significantly delayed. In similar cases of the Special Yen Loan in the future, it seems necessary to improve procurement procedure by introducing the system of joint contracting with local companies or relaxing the Japanese-origin requirement to allow flexible adjustment of tender prices.</p>	
Lessons Learned and Recommendations	Monitoring The monitoring indicators agreed on with the executing agency at the time of appraisal were determined supposing that bridges would be repaired or replaced. However, the Pantal Bridge which is included for monitoring is to be newly constructed and therefore is inappropriate for the monitoring. Considering that the 7 bridges to be constructed including the Pantal Bridge are long span bridges and require huge costs, it is advisable to conduct a survey of the present values and the target values of major operation and effect indicators such as the traveling time, cost, etc. for all those bridges, if possible.	
Indicators set for use at time of ex-post evaluation	Traffic volume (vehicles/day) Period of traffic interruption due to the bridge collapse (days) Detouring distance in the event of bridge destruction (km) Reduction in traveling distance to a local city in the event of bridge destruction (hours)	Traffic volume (vehicles/day) Period of traffic interruption due to the bridge collapse (days) Detouring distance in the event of bridge destruction (km) Reduction in traveling distance to a local city in the event of bridge destruction (hours)