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| Country Name | The Project for the Bridge Construction for Expanded Agrarian Reform Communities |
| Republic of the Philippines | Development |

I. Project Outline

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| Background | <p>The Philippine government set forth the Comprehensive Agrarian Reform Program (CARP) in 1987 as an effective measure to achieve rural development. Recognizing that the land distribution target had been substantially attained in 2003, the Department of Agrarian Reform (DAR), the lead agency for agrarian reform, shifted its priority to support Agrarian Reform Beneficiaries (ARBs) in the distributed land by providing services including agricultural support, potable water, infrastructure, and agricultural credit assistance.</p> <p>The Agrarian Reform Infrastructure Support Project (ARISP), with financial assistance from Japan's ODA loan, had been implemented for some 220 Agrarian Reform Communities (ARC) nationwide. On the other hand, DAR identified 34 bridges nationwide necessary to be constructed in order to improve access and connectivity of ARCs to improve their living and marketing conditions. The support for the outside areas of ARCs, however, was out of the coverage of ARISP.</p> <p>In this context, a grant aid project was requested to construct two bridges¹ in Barangay Bazal and Barangay Umiray to improve poor access condition, which was a main hindering factor for rural development.</p> | | | | |
| Objectives of the Project | To ensure year-round traffic in the Bazal bridge area and to improve access in expanded ARCs by constructing Bazal Bridge | | | | |
| Outputs of the Project | <ol style="list-style-type: none"> 1. Project Site: Barangay Bazal and Barangay Malasin, Maria Aurora Municipality, Aurora Province 2. Japanese side: Construction of Bazal Bridge (110 meters) and approach road (393.5m, Plan was 424m) 3. Philippine Side: (1) social preparation and community consultations, (2) acquisition of land for construction, (3) securing of land required for the construction works (Site office, stock-piling yard, working yard), (4) developing an access road necessary for construction, (5) relocation of utility poles and pipes, and others | | | | |
| Ex-Ante Evaluation | 2008 | E/N Date | 20 May 2009 | Completion Date | 15 November 2010 |
| Project Cost | E/N Grant Limit: 610 million yen, Actual Grant Amount: 530 million yen | | | | |
| Implementing Agency | Department of Agrarian Reform (DAR) | | | | |
| Contracted Agencies | CTI Engineering International Co., Ltd. and Toyo Construction Co., Ltd. | | | | |

II. Result of the Evaluation

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| 1 Relevance | <p>This project has been highly relevant with the Philippines' development policies at both ex-ante and ex-post evaluations: priority has been given to rural development and sustainable agricultural development under the Medium-term National Development Plan (2004-2010), and even up to present as set forth in the Philippine Development Plan (2011-2016). Support for ARBs in terms of land productivity improvement and enhancement of access to market through establishment of physical infrastructure have been regarded as key strategies to rural development under the above mentioned policies. The project has also been highly consistent with development needs of constructing bridges in rural areas outside of ARCs where the lack of access to markets and basic services is a problem at both ex-ante and ex-post evaluations. It was also consistent with Japan's ODA policy to reduce disparity under the Country Assistance Program to the Philippines (2000) at ex-ante evaluation. Therefore, relevance of this project is high.</p> |
| 2 Effectiveness/Impact | <p>The project has largely achieved its objective of "ensuring year-round traffic in the Bazal Bridge area and to improve access in expanded ARCs." Indicators of quantitative effects, such as the annual number of days of access disruption and average time to cross the river have shown great improvement at both target year and at the time of ex-post evaluation in comparison with the time before the project. Bazal River has become passable all year round without disruption, and traffic time between Barangay Bazal and Maria Aurora town proper has been reduced after the construction of the bridge in 2011. In addition, results of the actual traffic count conducted by the ex-post evaluation survey team during peak hours and interviews with barangay residents indicated that the Bazal Bridge is being well used by motorists particularly those who operate or own motorcycles and tricycles².</p> |

¹ The Bazal Bridge was constructed by this project and the Umiray Bridge was constructed by the second phase of the project.

² Traffic volume at peak hour (16:30-17:30) increased from 90 vehicles in 2005 to 108 vehicles in 2014. According to barangay residents, the rise is due to the increase in ownership of vehicles (motorcycles and tricycles) within the Barangay Bazal after the bridge was constructed. The number of tricycles owned by barangay residents increased from 7 units in 2010 to 30 units at the time of site visit in 2014 and the number of motorcycles sharply increased during the same period.

As for impact, the construction of the bridge significantly contributed to the improvement of access to basic services for residents in Barangay Bazal and Barangay Malasin. According to school officials and barangay officials, after the bridge was constructed, students can attend schools and patients can be brought to health facilities even when Bazal River is swollen due to heavy rains. In addition, interviews with barangay officials and farmers indicated that after the bridge was constructed, transport of agricultural products from Barangay Bazal to the market centers in Aurora Province has greatly improved as more traders can easily visit Barangay Bazal to buy and haul farmers' products using four-wheeled vehicles. Improved access of traders to Barangay Bazal was also partly due to the concreting of provincial road from the national highway up to the barangay center through the efforts of the Local Government Unit (LGU). Access to microfinance also has increased as the improved access enable agents/personnel of microfinance institutions to visit Barangay Bazal more often. Data showed that the agricultural production in Barangay Bazal has also increased from 2010 to 2013 (See chart 1 below). On the other hand, no income data was available at the time of site survey but farmers interviewed informed that their incomes have improved because of increase in yield and better prices for their produce attained by the improvement of accessibility to the market.

Land acquisition was completed in accordance with domestic law and with full consent of the landowner and there was no resettlement as the site was uninhabited. No dispute has happened before, during and after land acquisition. No negative impacts on natural environment were observed. According to DAR, unexpected positive impacts observed include: 1) increase in eco-tourism activities; 2) acceleration of the concreting of the provincial road between national highway and Barangay Bazal; 3) enhancement of DAR's capability in managing bridge construction projects; and 4) strengthening of partnerships among local governments in O&M of rural infrastructure.

Therefore, effectiveness/impact of this project is high.

Quantitative Effects

| Indicators | Year 2008 (before the project) Actual value (Note1) | Year 2011 (target year) Target value | Year 2011 (target year) Actual value | Year 2014 (ex-post evaluation year) Actual value |
|---|---|--|--|--|
| Indicator 1: Annual number of days of access disruption | 36 days/year(Note 2) | 0 days/year | 0 | 0 |
| Indicator 2 Average time to cross the river | 6.1 minutes (Note 3) | Approximately 16 seconds (Average speed: 25km/hour) | n.a. | 16 seconds at an average speed of 25km/hour |

Source: For 2008:Basic Design Report (BD report), For 2014: measured during project site visit on 23 and 24 April 2014 and interviews with tricycle operators and barangay residents.

(Note1) People and vehicles crossed the riverbed where the depth of the water is relatively shallow (BD Report P 1-5).

(Note 2) No of days, which people/vehicles could not cross a river due to flooding (BD Report P 3-2),

(Note 3) Average time to cross the river on foot and by tricycles (BD Report P 3-2),

3 Efficiency

The outputs of the project were completed as planned and both the project cost and the project period were within the plan (ratio against the plan: 87%, 63%). Therefore, efficiency of this project is high.

4 Sustainability

The operation and maintenance (O&M) of the bridge has been carried out jointly by Aurora Province, Maria Aurora Municipality, and Barangay Bazal and Barangay Malasin. The institutional set-up for O&M of Bazal Bridge was clearly established and the roles of the provincial, municipal and barangay governments in O&M of bridges along provincial roads are clearly defined under the Local Government Code of 1991, and appropriate number of staff is allocated. Further, a Memorandum of Agreement (MOA) between DAR and LGU was executed in 2009 to signify commitment of the LGU as a co-implementing body for this project. The MOA also included specific roles for both parties during the course of project and O&M roles after the project. The Municipal Engineering Office (MEO) has a total of 13 personnel with 3 staff members directly in-charge of O&M of Bazal Bridge while the barangay governments mobilize 20 volunteers for monthly cleaning which is common practice in barangays.

Technical level of the personnel at the Provincial and Municipal Engineering Office is deemed appropriate to the O&M requirements of Bazal Bridge. No technical difficulties have been encountered, according to the municipal and barangay officials. 3 Civil engineers of MEO are able to update their skills through participation in conferences where new developments in the field of civil engineering are being shared. On the job mentoring or coaching is also being practiced within the MEO.

As for the financial aspect, there is an increasing trend in the O&M budget for provincial roads and bridges at provincial and municipal governments. In addition, a sustainability plan prepared by DAR and LGU (provincial, municipal, and barangay levels) in February 2014 indicated sharing of financial responsibility among the province, municipality and barangays for the implementation of required O&M activities of the bridge from 2014 to 2016.

In general, the bridge was observed to be in good condition and required O&M activities are regularly carried out by the municipal government of Aurora and the barangay governments of Bazal and Malasin. In addition, as mentioned above, the sustainability plan, which includes the riverbank protection, slope protection, painting of bridge railings and wingwalls, maintenance of bridge/traffic signs, tree planting in the watershed and riverbanks and regular bridge inspection was developed. However, long-term mitigation measures are needed to minimize problems such as siltation of riverbed, inundation of riverbank and meandering of river channel, that had already existed even before the construction of the bridge. For these points, construction of riverbed protection and dredging of riverbed are included in sustainability plan but a concrete implementation

plan was not provided at the time of ex-post evaluation.

Thus, as institutional, technical and financial sustainability of this project effect have been secured, and there is no problem of current status of O&M, the sustainability of this project effect is high.

5 Summary of the Evaluation

The project has largely achieved its objective of “ensuring year-round traffic in the Bazal Bridge area and to improve access in expanded ARCs”, as the Bazal River has become passable all year round without disruption and smooth traffic has become possible after the construction of the Bazal Bridge. Positive impacts were also identified such as improved access to the markets and basic services. Therefore, effectiveness/impact of this project is high.

As for sustainability, no problem has been observed in the institutional, technical and financial aspects as well as current status of operation and maintenance

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

III. Recommendations & Lessons Learned

Recommendations to implementing agency:

1. The local governments of Maria Aurora Municipality and Barangay Bazal and Barangay Malasin are recommended to 1) allocate funds to implement the activities identified under the sustainability plan of Bazal Bridge, and 2) continue the regular O&M activities such as periodic bridge inspection, clearing of approach roads, etc.
2. In order to enhance the effect of the project, the Provincial Government of Aurora is recommended to 1) concrete the unpaved portion of the provincial road, 2) coordinate with the national government for planning and implementation of long-term measures to arrest river siltation and riverbank inundation in Bazal River.
3. DAR Provincial Office is recommended to monitor the implementation of the activities identified under sustainability plan.

Lessons learned for JICA:

1. Impact of bridge construction in rural areas is greatly enhanced by improvement of connecting roads. In this project, reduction in travel time was not only brought by the bridge construction but also by concreting the provincial road which was conducted by LGU. Therefore, it is important to encourage counterparts to make an effort to improve the road condition alongside the project site.
2. Given the significant role of LGUs especially in the O&M of the bridge, the involvement of LGUs at the planning stage of the project enabled not only smooth implementation of the project but also ensuring sustainability after its completion.



Chart 1 Volume harvested in Barangay Bazal (in tons/ha)

Source: Office of the Municipal Agriculture



Pedestrian and tricycles crossing the Bazal Bridge