

Republic of the Philippines

FY2018 Ex-Post Evaluation of Japanese ODA Loan Project

“Help for Catubig Agricultural Advancement Project”

External Evaluator: Takako Haraguchi, OPMAC Corporation

0. Summary

The aim of this project was to improve agricultural productivity and production, primarily of rice, in the Catubig Valley in the east-central part of Northern Samar Province by developing rural infrastructure such as irrigation facilities, thereby contributing to higher incomes for local farmers and the improvement of public health and the sanitation conditions in the area. The relevance of the project is high because these objectives are consistent with the Philippine development plan and development needs as well as with Japan’s aid policy. The evaluation confirms certain effects of project implementation, such as an improvement in the ease of travel as a result of road the development as well as a supply of safe water through the construction of water supply facilities. However, the degree of attainment of rice production, the primary purpose of this project, was still limited at the time of the ex-post evaluation since the development of irrigation facilities has been delayed and land development by farmers has been slow. In addition, the measures to control schistosomiasis raised awareness among residents but did not actually reduce morbidity. Therefore, the effectiveness and impact are low. The efficiency is also low. Of the project outputs, the irrigation and drainage facilities were not yet completed at the time of the ex-post evaluation. Regarding the inputs, the project cost exceeded the plan and the project period significantly exceeded the plan. The sustainability is fair, reflecting some concerns about the institutional aspect and the implementation status of operation and maintenance (O&M).

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

1. Project Description



Project location



A field where irrigated rice cultivation has begun
(Las Navas Municipality)

1.1 Background

Northern Samar Province, located in the northern part of Samar Island in Eastern Visayas of the central Philippines, was one of the areas with the slowest economic and social development in the country. Even though agriculture was the primary source of income, self-sufficiency in rice within the province had not been achieved. Therefore, the province relied on the transfer of rice from neighboring areas such as Leyte Province. In addition, the area's development was being impeded by poor health and sanitation conditions caused by poor drainage (e.g., the contraction of schistosomiasis among residents). The province, especially the area called the Catubig Valley, which was chosen as the project site, was naturally suitable for agriculture in terms of both soil and water quality. Thus, along with the Central Luzon Plain and Mindanao Island, Northern Samar Province had been thought to be a region with a high potential for increasing agricultural production. In the 1970s, with the support of the Australian government and the World Bank, a development plan (Feasibility Study) was formulated which included the development of roads, fishery ports, water supply facilities, agriculture, and anti-schistosomiasis measures. However, due to security problems at that time, this plan was not implemented. As a result, crop yields were sluggish due to the lack of irrigation facilities and for other reasons, and farmers were unable to escape poverty. The security issue had been resolved by around 2000 when the ex-ante evaluation for this project was performed. There was the demand to increase farmers' income through the development of basic infrastructure such as irrigation facilities. Furthermore, in addition to the agricultural infrastructure, it was an urgent issue to improve the living environment and the livelihood of farmers by carrying out measures such as the development of water supply facilities, control of schistosomiasis, the development of transportation infrastructure, and the institutional development of related organizations.

1.2 Project Outline

The objective of this project was to improve agricultural productivity and production, primarily of rice, in the Catubig Valley in the east-central part of Northern Samar Province by developing rural infrastructure such as irrigation facilities, thereby contributing to higher incomes for local farmers and the improvement of public health and sanitation conditions in the area.

Loan Approved Amount/ Disbursed Amount	5,210 million yen / 3,924 million yen
Exchange of Notes Date/ Loan Agreement Signing Date	May 2001 / May 2001
Terms and Conditions	<p>Interest Rate 2.2% (0.75% for Consulting Services)</p> <p>Repayment Period 30 years (40 years for Consulting Services) (Grace Period 10 years)</p> <p>Conditions for Procurement General Untied (Bilateral Tied for Consulting Services)</p>
Borrower/ Executing Agencies	The Government of the Republic of the Philippines / Provincial Government of Northern Samar (PGNS); National Irrigation Administration (NIA); Department of Public Works and Highways (DPWH); Department of Agriculture (DA); Department of Health (DOH); Department of Agrarian Reform (DAR); Department of Environment and Natural Resources (DENR); Municipality of Catubig (MC); Municipality of Las Navas (MLN)
Project Completion	Not completed as of July 2019 ¹
Target Areas	Part of Catubig Municipality and Las Navas Municipality, Northern Samar Province
Main Contractors (Over 1 billion yen)	Hanjin Heavy Industries & Construction Co., Ltd. (Republic of Korea), Adige Bitumi Impresa S.P.A. (Italy) / Sta. Clara International Corporation (Philippines) (JV)
Main Consultants (Over 100 million yen)	Sanyu Consultants Inc. (Japan) / Hydroterre Consultants, Inc. (Philippines) / Cebu Engineering and Development Corporation, Inc. (Philippines) (JV)
Related Studies (Feasibility Studies, etc.)	<ul style="list-style-type: none"> • “Catubig Valley Comprehensive Development Study” (The World Bank, 1982) - Feasibility Study • “Implementation Program for the HELP for Catubig’s Agricultural Advancement Project, Stage 1” (NIA, 1998) – Review of the Feasibility Study • “Special Assistance for Project Formation (SAPROF) for Catubig Agricultural Advancement Project, Stage 1” (Japan International Cooperation Agency: JICA (former Overseas Economic Cooperation Fund), 1999) • “JICA Special Assistance for Project Implementation (SAPI) for Help for Catubig Agricultural Advancement Project (HCAAP)” (JICA, 2010-2011) – Schistosomiasis control

¹ Only the irrigation facilities are incomplete. See Table 3 for the completion dates of other components.

	<ul style="list-style-type: none"> • “JICA Special Assistance for Project Implementation (SAPI) for Help for Catubig Agricultural Advancement Project (HCAAP) Study on Project Performance and Sustainability” (JICA, 2012-2013) – Study on project progress (hereafter referred to as “the SAPI”) • “JICA Special Assistance for Project Sustainability (SAPS) for the Help for Catubig Agricultural Advancement Project (HCAAP)” (JICA, 2017-2019) – Study on farming (hereafter referred to as “the farming study SAPS”) • “JICA Special Assistance for Project Sustainability (SAPS) for the Help for Catubig Agricultural Advancement Project (HCAAP)” (JICA, 2019-2020) – Assistance in project management of the portion implemented by NIA (hereafter referred to as “the project management SAPS”)
Related Projects	-

2. Outline of the Evaluation Study

2.1 External Evaluator

Takako Haraguchi, OPMAC Corporation²

2.2 Duration of Evaluation Study

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

Duration of the Study: November 2018 – December 2019

Duration of the Field Study: March 10 – April 3, 2019 and June 23 – 29, 2019

2.3 Constraints during the Evaluation Study

- (1) A long time has passed since the appraisal and commencement of the project, which limited the availability of information at the time of the ex-post evaluation. In addition, it took time for the ex-post evaluator to confirm the history of the development of the irrigation and drainage facilities (hereafter referred to as “the irrigation component”), which has not yet been completed, as described later. Thus, many of the details of other outputs which had been completed early—such as the final quantity of the outputs and the reasons for scope changes—were unavailable; the evaluator was only able to track them down to the extent possible within the work volume allocated for the ex-post evaluation. Regarding the irrigation component, it is also noted that this evaluation cannot be regarded as an ex-post evaluation because the construction work within the scope of this project was continuing as of July 2019 (for JICA, in principle, an ex-post evaluation is carried out within three years of project completion).

² Participated as reinforcement from i2i Communication, Ltd.

- (2) At the time of the ex-post evaluation, the Japanese evaluator was not allowed to visit most of the project sites for security reasons. Therefore, the evaluator conducted site surveys at only a few locations, where safety could be confirmed.³ For other sites, the evaluator was only able to confirm the degree of project completion, the O&M status, and the manifestation of the expected effects based on information provided by the executing agencies, JICA, the consultants, etc.⁴

3. Results of the Evaluation (Overall Rating: D⁵)

3.1 Relevance (Rating: ③⁶)

3.1.1 Consistency with the Development Plan of the Philippines

As explained below, the consistency between this project and the Philippines' development policy was high, both at the time of appraisal and the ex-post evaluation.

The Philippine national medium-term development plans, namely, the *Medium-Term Philippine Development Plan* (1999-2004) and the *Philippine Development Plan* (2017-2022), consistently emphasize agricultural development centered on the development of irrigation and collaboration/coordination between national and local governments in the development and the O&M of infrastructure.

Regional medium-term development plans, such as the *Provincial Development Plan of Northern Samar* (2000-2005), the *Eastern Visayas Regional Development Plan* (2017-2022) and the *Northern Samar Provincial Development and Physical Framework Plan* (2018-2023), give a high priority to improving agricultural productivity through irrigation and improved farming. Among these plans, in particular, the *Eastern Visayas Regional Development Plan* stipulates the fast-track completion of this project (which has been ongoing as a domestic project of the Philippines since 2013). This is the third item in its nine main strategies. In addition, the *Northern Samar Provincial Development and Physical Framework Plan* positions the Catubig Valley area as “the food silo of Northern Samar” (as a designated rice production area) and calls for local government units to identify the specific areas that “should be benefiting from the HCAAP (i.e., this project⁷) irrigation facility” in their comprehensive land utilization plans.

³ The project sites visited by the ex-post evaluator: the national roads between Rawis Junction and Catubig and between Catubig and Las Navas (including Las Navas Bridge); the farm-to-market road between Las Navas and Bulao; the ferry landings in Catubig Municipality and Las Navas Municipality; NIA project field office in Catubig Municipality; Bulao Dam; a rice field in the Catubig Service Area; the water supply facilities in Barangay Doroles and Barangay Bugay in Las Navas Municipality.

⁴ The agencies/stakeholders consulted/provided information to the ex-post evaluator: all the Executing Agencies listed in “1.2 Project Outline” above; the National Economic and Development Authority; the project consultants/SAPI and SAPS consultants (Sanyu Consultants Inc. and UPLB Foundation, Inc.); Barangay Doroles; Barangay Bugay; three irrigators' associations (IAs) in the Catubig Service Area; JICA.

⁵ A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

⁶ ③: High, ②: Fair, ①: Low

⁷ “HCAAP” is the abbreviated form of the title of this project.

3.1.2 Consistency with the Development Needs of the Philippines

Based on the circumstances described in “1.1 Background” and in the paragraphs below, the consistency between this project and the development needs (i.e., the achievement of self-sufficiency in rice and improved income through the promotion of irrigated rice cultivation and improvements in the living environment and livelihood of farmers through the development of rural infrastructure and measures against schistosomiasis) was consistently high from the time of appraisal to the time of the ex-post evaluation.

The household poverty rate and the average household income in Northern Samar Province are far below the national average, as shown in Table 1. In the agricultural sector, the province has not yet attained self-sufficiency in rice. Individuals representing the national and local governments and farmers who were interviewed in the ex-post evaluation pointed out that farmers needed irrigation. In particular, they stated that the impact of typhoons and floods on rainfed agriculture in the wet season was greater than before due to recent climate change; therefore, there is a growing need for irrigated agriculture in the dry season, which is less susceptible to natural disasters (See “3.3.1 Effectiveness” and Box 2 in the same section for the details on the issue that irrigated rice cultivation is not expanding as expected because farmers do not carry out land development, despite the high demand). Although data was not available, the provincial government commented that coconut cultivation, which is the main industry in the target area along with rice farming, was also slowing down the growth of farmers’ income due to the drop in the price of copra (coconut product). The prevalence of schistosomiasis is also high.

Table 1: Poverty-related indicators in Northern Samar Province

Indicators		2000	2012	2015	2017
Household poverty rate (%)	Philippines	21.0 (2006)	19.7	16.5	N.A.
	Northern Samar Province	44.6 (2006)	43.5	47.9	N.A.
Average household income (peso)	Philippines	144,039	234,129	266,962	N.A.
	Northern Samar Province	80,114	155,417	196,524 (Eastern Visayas Region)	N.A.
Self-sufficiency in rice within the province (%)	Northern Samar Province	Less than 50	N.A.	N.A.	59.595
Rice production (ton/ha)	Philippines	3.77 (2008)	3.84	3.90	4.01
	Northern Samar Province	2.54 (2008)	2.80	2.87 (2014)	2.65
Rice production (ton/year)	Northern Samar Province	101,007 (2008)	111,206	111,795 (2014)	73,634
Number of schistosomiasis-positive barangays / Total number of barangays	Catubig Municipality	18/27	26/47	26/47	26/47
	Las Navas Municipality	9/53	22/53	22/53	22/53

Source: Philippines Statistical Authority; questionnaire to DOH; documents provided by JICA; documents provided by the executing agencies

3.1.3 Consistency with Japan's ODA Policy

As explained below, consistency with Japan's ODA policy at the time of appraisal was high. In *Japan's ODA Annual Report 1998*, the Ministry of Foreign Affairs of Japan identified the following as the priority areas for Japan's assistance for the Philippines. "1) Strengthening of the economic structure for sustainable growth and the removal of impediments to such growth," "2) Mitigation of disparities (poverty alleviation and mitigation of regional disparities)," "3) Environmental conservation and disaster management," and "4) Human resources development and institution building." Of these, the second priority area consisted of "a) Agricultural and rural development: Improving agricultural productivity, building of basic social and economic infrastructure in rural areas, strengthening of farmers' organizations and promotion of agrarian reform" and "b) Improvement of basic living conditions focused on health and medical care, water supply systems and poverty alleviation in urban areas." Both of these were consistent with the content of this project.

3.1.4 Appropriateness of the Project Plan and Approach

This evaluation examined whether the delays and limited effects of the irrigation component were due to inappropriate project plans and approaches.

The project design is one of systematic responses to needs and thus seems to be generally appropriate. Regarding the construction plan, the question is whether the plan took into account the adverse conditions (topography, weather) and the security of the project site, which were the major causes of construction delay. According to the project consultants, estimation was made using the construction unit prices that had been applied in areas with similar conditions, and the schedule was formulated using construction days calculated from past rainfall data. In other words, it seems that the project plan did consider the topographic and meteorological conditions. However, the actual rainfall and the number of days for which construction work was impossible (re-calculated accordingly) were much higher than expected.⁸ Regarding the topographical conditions, the consultants also pointed out that the detailed design might have taken longer than expected because the existing topographic data were insufficient. However, they added that it was difficult to grasp, before topographical surveys, whether the existing topographic maps were accurate enough, unless a topographic survey was actually performed. While the risk of delays due to security was not factored into the construction plan, some individuals pointed out that the trend of communist guerrilla activities, which was an inhibiting factor in terms of security, was constantly changing and thus difficult to predict.

⁸ The climate zones of the Philippines are classified in four types by rainfall distribution. The target area of this project is included in Type 2 (wherein there is no distinct dry season and with particularly heavy rainfall from November to April). According to documents provided by JICA and the project consultants, the project plan assumed the number of unworkable days based on average rainfall in the past but the actual rainfall during the construction period was greater than expected (plan: 4,561 mm/year; actual: 7,520 mm/year in 2008) and the number of unworkable days significantly exceeded the assumption (plan: 109 days; actual: 235 days in 2008).

The implementation structure of this project was that the provincial government coordinated the executing agencies, which consisted of multiple national and local (province/municipality) government agencies.⁹ There was no single cross-cutting, integrated project management office overseeing all executing agencies. Instead, a system was created in which the Project Steering Committee (chaired by the governor of Northern Samar Province) and its subordinate organization, the Project Coordination Office (established within the PGNS), would coordinate the Project Management Offices organized in each executing agency. No one questioned the coordination ability of the PGNS in interviews with individual executing agencies and consultants. At the time of ex-post evaluation, it was found that the Multi-Stakeholders Meetings (the successor of the Project Steering Committee; regularly organized for the implementation of the irrigation component) and various arrangements related to this ex-post evaluation study generally functioned well.

Thus, looking back at the time of planning from the time of the ex-post evaluation, it may have been possible to avoid or reduce delays in the irrigation component by formulating a schedule with greater margins. However, the topographic and meteorological conditions that caused major delays had been reflected in the plan to the extent that could be anticipated from past data.

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

3.2 Efficiency (Rating: ①)

3.2.1 Project Outputs

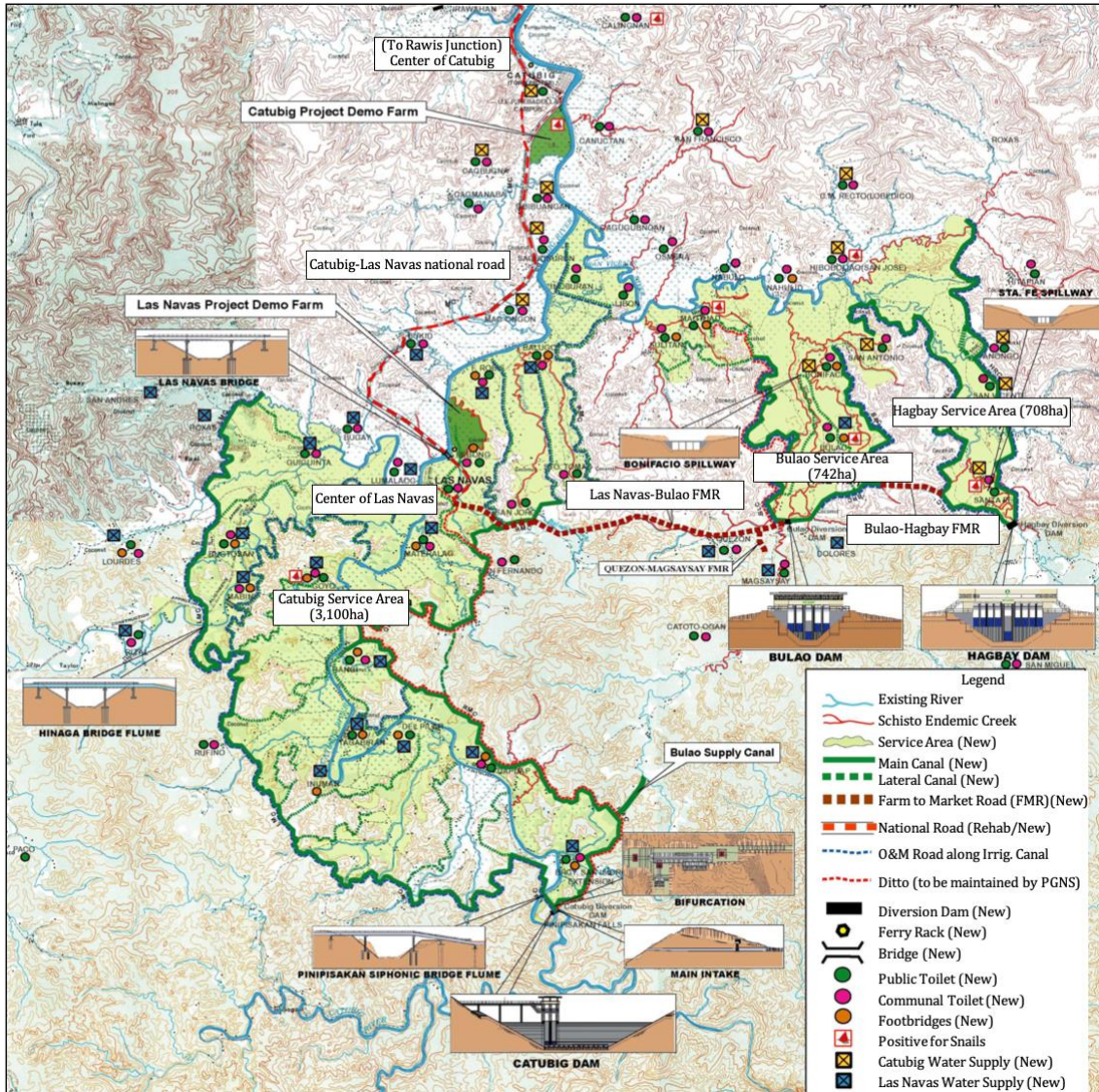
The outputs of this project consisted of the six components and the consulting services shown in Table 2. All outputs, except for the irrigation component, were completed after going through some modifications of scope. However, the irrigation component was incomplete at the time of ex-post evaluation.

⁹ According to JICA documents, this project was a pioneering attempt to align decentralization since the promulgation of the Local Government Code in 1991.

Table 2: Components of the project

Component	Description	Executing Agency
(1) Irrigation and drainage facilities, etc. (Irrigation component)	Civil works (intake (diversion dams), tunnels, main canals, laterals, drainage canals, irrigation maintenance roads, on-farm facilities, demonstration farms); procurement of O&M equipment	NIA
(2) Roads and bridges, etc. (Road component)	Civil works (construction of a national road between Catubig and Las Navas, rehabilitation of existing roads, construction of Las Navas Bridge, construction of ferry landings)	DPWH
	Civil works (construction of farm-to-market roads); procurement of O&M equipment	PGNS
(3) Water supply facilities	Civil works (Level 1 (supplied by wells or springs) water supply facilities)	MC, MLN
(4) Schistosomiasis control	Civil works (drainage canals, public water sealed toilet)	NIA
	Control of Oncomelania snails; procurement of equipment for schistosomiasis control; health education on schistosomiasis control (training and awareness raising)	DOH
(5) Agriculture support services	Rehabilitation of the regional integrated agricultural research center; procurement of equipment for agriculture support; agricultural modernization training	DA
(6) Institutional development	Procurement of equipment for institutional development at the Project Coordination Office, etc., training (support for the establishment of farmers' organization, capacity building of officials of local government units, capacity building of officials of national government organizations); strengthening of barangay water and sanitation associations (BWSAs)	NIA, DOH, DA, PGNS, MC, MLN

Source: Documents provided by JICA; questionnaire to and documents provided by the executing agencies



Source: Document provided by the project consultants

Figure 1: Map of the project site



The completed Catubig Dam
(Photograph provided
by the executing agency)



Main irrigation canal
under construction
in the Bulao Service Area



Ferry landing in Las Navas
Municipality



Las Navas Bridge on the national road
between Catubig and Las Navas



Farm-to-market road between
Las Navas and Bulao
(concrete paved and upgraded to a
national road after this project)



Water supply facility

(1) Irrigation and drainage facilities, etc. (Irrigation component)

The NIA is the executing agency of this component. The irrigation and drainage facilities consist of those in the three service areas, namely, the Catubig Service Area (also known as the Pinipisakan Area), the Bulao Service Area, and the Hagbay Service Area. In all of these, the facilities were under construction at the time of the ex-post evaluation (The on-going construction works include those within the scope of this project and additional works outside the project scope). The facilities that had been completed by loan expiration in January 2013 (extended from January 2011) were limited to those such as a diversion dam (Catubig Dam) and part of the right main canals and laterals in the Catubig Service Area. Since then, construction has continued as a domestic project of the Philippines. The physical progress rate as of February 2019 was about 85%, and the achievement rate of the planned quantity was one out of three diversion dams, 80% of main canals (about 56 km out of about 70 km), 29% of laterals (9 km out of about 31 km), 63% (2,759 ha out of 4,374 ha) of on-farm facilities (on-farm channels, sub-channels and turnouts) (The comparisons are made with the plan after detailed design or contract amendments; the plan involves some changes from the appraisal stage; the actual figures are mainly based on the consultant's response to the questionnaire). The irrigable area

where all the construction works from the diversion dam to the on-farm facilities are completed is limited to 1,229 ha in the Catubig Service Area, which includes the entire Catubig Right Main Canal area and a part of the Catubig Left Main Canal Area, among a total of 4,550 ha planned at appraisal for all three service areas. See “3.2.2.2 Project Period” for reasons for the construction delays.

(2) Roads and bridges, etc. (Road component)

Regarding the portion in which the DPWH acted as the executing agency, the project completed the construction of approximately 10 km of a new national road section between Catubig and Las Navas, Las Navas Bridge on the same national road, ferry landings, mainly for transporting agricultural products (one each in Catubig Municipality and Las Navas Municipality), and the rehabilitation of an existing national road (approximately 1 km). These were mostly as planned in the appraisal. Except for one segment (624 m), the rehabilitation of about 13 km of an existing trunk road (national road) between Rawis Junction and Catubig was excluded from the scope of this project as it was implemented as a Philippine domestic project.

As for the portion in which the PGNS acted as the executing agency, the plan at the time of appraisal to construct 42 km of new farm-to-market roads was changed to about 9 km, from Las Navas to Hagbay via Bulao, after detailed design. This section was completed as planned. Other planned sections were canceled because they overlapped with the irrigation maintenance roads of the irrigation component.

(3) Water supply facilities (Water supply component)

The executing agencies of this component were the MC and the MLN. As planned at the time of appraisal, the project constructed rural water supply facilities for 58 villages in 20 locations in Catubig Municipality (20 barangays) and 24 locations in Las Navas Municipality (24 barangays).

(4) Schistosomiasis control (Schistosomiasis control component)

Regarding the portion in which the NIA acted as the executing agency, the project constructed a total 64 km of main, secondary, and village drainage canals (The reason for the change from the total length of approximately 112 km planned at the appraisal is unknown). The plan at the time of appraisal for toilets was the construction of 291 public toilets, but as a result of detailed design, this was changed to 76 public toilets and 670 communal toilets (shared by two to three families). These were completed as planned. In addition, 51 footbridges were constructed.

As to the portion in which the DOH acted as the executing agency, the project carried out all activities that were in the plan at appraisal including the removal of *Oncomelania* snails (hosts

of schistosomes), the procurement of materials and equipment such as microscopes, and training/awareness activities.

(5) Agriculture support services (Agriculture support services component)

The DA acted as the executing agency of this component and carried out all activities that were in the plan at appraisal including the rehabilitation of the regional integrated agricultural research center, the procurement of equipment for agriculture support, and training for farmers.

(6) Institutional development (Institutional development component)

To support the establishment of farmers' organizations, this project completed the establishment of nine irrigators' associations (IAs). Adding these nine and another one (organized outside the project) to the two that had existed before the project, the total number of IAs in the target area became 12, as planned at appraisal. The project provided training for all the IAs. Furthermore, the project organized a total of 35 barangay water and sanitation associations (BWSAs) for the O&M of rural water supply facilities. It also trained local government officers as well as the officers in charge of this project at the central government ministries and agencies.

(7) Consulting services

The consulting services covered the planned activities at appraisal including detailed design, the preparation of tender documents, assistance for tender evaluation, construction supervision, training of local government and related executing agency staff, support for the establishment of farmers' organizations such as IAs, strengthening and guiding the organizational structure for project implementation, assistance in the selection of NGOs (related to schistosomiasis control, farming guidance, and support for the formation of IAs), and support for environmental monitoring.

3.2.2 Project Inputs

3.2.2.1 Project Cost

The total project cost planned at the time of appraisal was 6,947 million yen (of which, the ODA loan portion amounted to 5,210 million yen, consisting of 3,278 million yen in foreign currency and 1,932 million yen in local currency). This evaluation calculated the actual project cost by summing the disbursed amount of the ODA loan, the Philippine government's expenditures on the counterpart fund during the loan disbursement period, and the amount of expenditure (by the end of February 2019) on the construction of the facilities within the scope of this project, among the irrigation component items that became a Philippine domestic project after the expiration of the loan. As a result, the actual total project cost was 9,955 million yen

(of which, the ODA loan totaled 3,924 million yen, consisting of 919 million yen in foreign currency and 3,005 million yen in local currency). This exceeded the plan (the ratio against the plan: 143%).

One of the main reasons for the decrease in the disbursed ODA loan amount was the delayed disbursement due to the delay in the irrigation component. Another possible reason was as follows: As described later, the procurement package was restructured during project implementation, and the procurement method was changed from international competitive bidding to domestic competitive bidding. These changes increased local currency spending, which may have been affected to a greater degree by the decline in the Philippine peso (hereafter, “peso”) against the yen during the loan disbursement period. The main reason for the increase in the cost borne by the Philippine government appears to have been the increased costs, mainly construction and administrative costs, caused by the delay and the multiple rounds of contract terminations/amendments and re-procurements.

3.2.2.2 Project Period

At the appraisal, the period between the signing of the loan agreement and project completion¹⁰ was planned to be 80 months between May 2001 and December 2007. The actual signing of the loan agreement was as planned, but the irrigation component is continuing, with completion expected in 2020. Therefore, the project as a whole was evaluated as incomplete at the time of ex-post evaluation (the ratio against the plan would be 273% if the actual duration was counted as 218 months through June 2019). The project period of all other components also exceeded the plan (the ratio against the plan: 124%-175%). However, components other than irrigation and institutional strengthening were completed by January 2011, which was the initial loan expiration date, and the institutional strengthening component was completed by January 2013, the expiration date of the extended loan.

¹⁰ While documents provided by JICA do not state the definition of project completion, this evaluation defined it, based on the project implementation schedule, as the completion of all construction works.

Table 3: Project period (Completion date of each process and major reasons for the delay)

Process	Plan at appraisal	Actual	Major reasons for the delay	
Signing of loan agreement	May 2001	May 2001	-	
Selection of consultant(s)	June 2001	June 2002	Delay in evaluation of the proposal by JICA (examination of the additional items proposed)	
Detailed design	September 2002	March 2006	Delay in the project commencement procedure of the Philippine government Delay in the topographic survey (poor accessibility of the site due to unexpected bad weather, an expansion of the target area for survey due to insufficient scale and accuracy of existing topographic maps, and inadequate capabilities of the surveyors)	
Tender	September 2003	February 2007		
Civil works Irrigation	December 2007 (completion of civil works of all components)	Initial package: July 2010 After the first repackaging: June 2013 After the second repackaging: Ongoing Planned completion: 2020	Initial package: Unexpected bad weather After the first repackaging: Delayed start and slow progress of construction due to bad weather and poor accessibility reported by the contractors After the second repackaging: Delayed release of the budget; difficulties in procurement and coordination due to the subdivision to small packages; lack of workforce, materials/equipment and funds of local contractors (Also see Box 1)	
Roads, bridges, ferry landings		July 2009		Delays in consultant selection, detailed design, and tender
Farm-to-market road (under PGNS)		April 2010		
Water supply		February 2010		
Schistosomiasis		December 2010		
Agriculture support services		December 2010		
Institutional strengthening		December 2012		
Final disbursement (loan expiration)	January 2011	January 2013	Extended due to delays in the irrigation component	

Source: Documents provided by JICA; documents provided by and interviews with the executing agencies; interviews with the project consultants

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

The economic internal rate of return (EIRR) was calculated at 16% at the time of appraisal. The costs included the project costs and O&M costs, and the benefits included increases in rice yield, reductions in vehicle operation costs thanks to road development, and reductions in medical expenses thanks to improvements in the sanitation environment. An attempt was made in the ex-post evaluation to recalculate the EIRR even though many assumptions had to be made due to limited availability of data. The costs included the actual project cost (the amount of expenditures by 2018) and the O&M cost (using the same assumptions as those at the time of appraisal). The benefits included increases in rice yield (differences in net income per hectare of irrigated rice and rainfed rice cultivations) and savings in transportation costs and travel time

(opportunity cost)¹¹ after road development. The recalculated EIRR resulted in a negative value, possibly due to factors such as increased costs, lost opportunities due to delays in project implementation, and limited benefits due to the slow expansion of irrigated rice cultivation.¹² It should be noted that a positive EIRR may be obtained if the calculation only considers the costs and benefits of the road component.

The financial internal rate of return was not calculated at the time of appraisal. Likewise, no calculations were performed in the ex-post evaluation since there were no project components that would generate fee incomes.

In light of the above, the project outputs have not yet been completed, the project cost exceeded the plan, and the project period significantly exceeded the plan. Therefore, the efficiency of the project is low.

Box 1: Construction delays in the irrigation component

At the construction stage of the irrigation component, the procurement package was restructured (repackaged) as a result of the delay, which caused further delay. The component was initially procured as one package through international competitive bidding, but after delays and extension of the construction period due to unforeseen bad weather, some construction works were excluded by contract amendments. According to the project consultants, the construction plan proposed by the contractor was appropriate in light of the local situation within the range that could be expected, but there was insufficient capacity to mobilize and deploy additional construction machinery and personnel to cope with the delay.

The remaining work was subsequently divided (first repackaging) after the contract with the initial contractor was terminated, and two major Philippine companies received four contracts through domestic bidding. However, the contracts were terminated midway due to the delayed start and slow progress of the work by contractors due to bad weather.

In June 2013, after the loan expired, the remaining work was subdivided into many small packages (second repackaging), and eight local contractors received 20 contracts through local bidding. However, progress has been slow due to the delayed release of the Philippine government budget, insufficient capacity of contractors, and inadequate coordination among packages and with other public works. According to the JICA Philippine Office, this situation might largely be due to the fact that only a limited number of local contractors existed in the Samar and Leyte region and their construction capacity was overwhelmed when they received contracts for multiple packages (together with other public works projects, etc.).

In response to this situation, JICA has provided follow-up support using the Special Assistance for Project Sustainability (SAPS) framework, namely, the farming study SAPS (2017-2019) and the project management SAPS (2019-2020). Among these, the project management SAPS was ongoing at the time of the ex-post evaluation, and the consultants were providing support such as advice to the NIA to accelerate the construction. However, despite the promise each contractor made to prepare a catch-up plan, the contractors failed to submit plans, did not fulfill the plan (if they submitted one), missed meetings, and ignored warning letters. Even if the NIA terminates contracts with contractors with poor performance, there do not exist companies that can take over the remaining work. The said project management SAPS consultant and the JICA Philippine Office are working with the NIA to complete the irrigation components within the adjusted deadline (2020).

Furthermore, according to some of the existing documents, the deterioration of security in the target area (communist guerrilla activities) caused a delay (such as a two-month delay in detailed design due to the forced suspension of the survey at some sites). Even recently, a document provided by JICA reported that in 2017, there

¹¹ The basis for calculating benefits at the time of appraisal was unknown. In addition, traveling by vehicle was difficult in the target area (people traveled on foot or by boat) before the project. Therefore, in calculating the benefits, the ex-post evaluation did not use vehicle operation cost, which was used at the appraisal. Instead, the evaluation multiplied the difference in transportation fee expenses and travel time between before and after the project by the number of users estimated from the traffic volume.

¹² The ex-post evaluation did not include the benefit of reduced medical costs because the baseline data was not available. However, the EIRR was negative even in a calculation in which it was assumed that this project halved household medical expenditure.

was the explosion of an improvised explosive device set near the project site, and a subsequent shooting while the vehicle was running, during which a contractor employee was killed. According to the JICA Philippine Office, the NIA then declared a temporary suspension of contracts for all contractors. The Office also pointed out that it informally heard about interference (such as blackmail) with contractors by the communist forces, and this might be leading to factors that have hindered the construction process and reduced the willingness to perform tasks among the contractors.

3.3 Effectiveness and Impacts¹³ (Rating: ①)

3.3.1 Effectiveness

3.3.1.1 Quantitative Effects (Operation and Effect Indicators)

This evaluation organized the direct outcomes that are evaluated for Effectiveness into (1) the improvement of rice-centered agricultural productivity and production (the agriculture outcome) and (2) the improvement of public health and sanitation conditions (the health and sanitation outcome). Next, the evaluation classified the operation and effect indicators defined at the appraisal into one of these outcomes to verify the degree of achievement.¹⁴ Even though the degree of achievement of individual indicators varied as shown below, it is judged that the quantitative effects were limited when giving weight to (1), the primary objective of this project.

(1) Improvement of rice-centered agricultural productivity

As shown in Table 4, two out of the three operation indicators (1-1 Length of the national road and 1-2 Number of IAs) achieved the target, and one indicator (1-3 Irrigable area) did not. With regard to the three effect indicators, one (1-3 Hauling time) partially achieved the target while the other two (1-1 Rice yield per hectare and 1-2 Rice production volume) did not achieve it (For 1-1, although the numerical value itself reached 70% of the target, it was judged as not to have been achieved considering that the planted area was only 469.4 ha, which is about 10% of the planned 4,550 ha). Therefore, the degree of achievement of the objective “to improve rice-centered agricultural productivity and production” is judged to be limited.

Table 4 also shows the operation and effect indicator (income for rice farmers) that is classified as an impact indicator (Net income of rice farmer household). See “3.3.2.1 Intended Impacts” for analysis of this indicator.

The reasons why rice production was significantly below the target are considered to be as follows.

- The irrigable area has not increased. The project has constructed a total of 2,759 ha of on-farm facilities on the right and left banks of the Catubig Service Area. However, due to

¹³ Sub-rating for Effectiveness is to be put with consideration of Impacts.

¹⁴ Because the irrigation component is incomplete, this evaluation was not able to determine a single target year for achieving the indicators, which was defined as “seven years after project completion” in the appraisal. In addition, due to the restrictions in the survey, data for years other than those presented here was not available. Therefore, this evaluation judged the degree of achievement primarily based on the data for 2018, which was close to the ex-post evaluation period, while referring to the data for 2013, the final disbursement year.

delays in the construction of upstream facilities, only 1,229 ha can be supplied with irrigation water. There is still no irrigable farmland in the Bulao and Hagbay Service Areas.

- The planting area of irrigated rice has not increased. For irrigated rice cultivation in fields where the construction of this project is complete, the farmers themselves need to carry out land development (paddy diking and leveling), but this has not progressed for several reasons (see Box 2). Of the 1,229 ha irrigable area, land development was performed only on the 469.4 ha of the Catubig Right Main Canal Area (This area also represents the water flowing area and the planted area; The figures are based on the consultant's response to the questionnaire).
- Even in farmland where irrigated rice cultivation has started, productivity has not reached the target. The DA, IAs, and the consultant for the farming study SAPS (JICA's follow-up support to promote irrigated rice cultivation) among others, pointed out several reasons. These included: (a) Some of the completed irrigation facilities are already damaged, but they have not been repaired because the O&M system is not adequately operated (see "3.4 Sustainability"); (b) Irrigated rice fields are susceptible to pest damage due to the existence of large uncultivated land in the same area; and (c) Use of certified seeds or fertilization is insufficient. Actions to respond to these issues are ongoing, such as technical support (pilot farmers) in the farming study SAPS and various extension programs by the DA and local government units. To address these issues, the provincial and municipal governments, related central government organizations, and IAs have formulated Sustainability Plans for manifestation of irrigation effects under this project since around 2010. Although the Sustainability Plans include the countermeasures mentioned above, significant effects have not been observed. At the time of the ex-post evaluation, the Sustainability Plan (2018-2020) had been formulated with assistance from the farming study SAPS.¹⁵

¹⁵ The Sustainability Plan agreed at the multi-stakeholders meeting in November 2018 sorted the issues and countermeasures by 2020 along with the following ten areas: (1) Capacity building of IAs; (2) Networking among stakeholders; (3) Microfinance; (4) Insurance; (5) Land development; (6) Maintenance of irrigation systems; (7) Tenure and land use; (8) Construction/rehabilitation of farm-to-market roads; (9) Capacitating local government units in the marketing of produce; (10) Encouraging young people to take up agriculture.

Table 4: Operation and effect indicators related to the agriculture outcomes

	Baseline 2000	Target	Actual	Actual
		2014	2013	2018
		7 Years After Completion	3 Years After Completion of Road Component	8 Years After Completion of Road Component
Operation Indicator (OI)				
OII-1: Length of the national road passable during wet season (distance from Rawis Junction on the existing main national road) (km)	6.0	21.7 (Passable to Las Navas)	27.3 (Passable to Las Navas)	27.3 (Passable to Las Navas)
OII-2: Number of IAs increased (IAs)	2	9	12	12
OII-3: Irrigable area ^(a) (ha)	60	4,550	1,083 (January 2013)	1,229 (June 2019)
Effect Indicator (EI)				
EII-1: Increase in rice yield (t/ha)	0.90	5.00 ^(b)	N.A.	3.00-3.50 ^(d)
EII-2: Increase in production volume of rice (t/year)	4,475	39,813	N.A.	9,894 ^(e)
EII-3: Improved access to market (reduction in hauling time) by constructing farm-to-market road (hour:minute)				
Catubig-Anongo	1:20 (boat)	75% reduction (changed to land transportation)	65% reduction by land transportation ^(f)	
Las Navas-San Isidro	0:30 (boat)		No reduction despite land transportation ^(f)	
Nahulo-Bulao	1:30 (boat and walk)		No reduction despite land transportation ^(f)	
(Additional) Las Navas-Bulao ^(c)	4:00-5:00 (boat and walk)	N.A.	70-80% reduction by land transportation	
Impact Indicator				
Impact Indicator 1-1: Increase in net income of rice farmer households (peso/year/household)	10,180	57,750	Irrigated 16,714 Rainfed 12,637 (2012) ^(g)	Irrigated and Rainfed mixed 42,781 (2017) ^(g)

Source: Documents provided by JICA; documents provided by the executing agencies

Note: (a) The "Irrigable area" is not described in the Ex-ante Evaluation Report, but it was additionally examined in this evaluation since the agreement document between JICA and the Philippine side clearly states it as an operation and effect indicator, and it seems to be an important indicator for improving agricultural production.

(b) Calculation of the target value assumes a cropping intensity of 175% (100% for wet seasons and 75% for dry seasons).

(c) This appraisal document does not mention this section, but it was additionally examined in this evaluation because of its importance as a road connecting to the national road newly constructed under this project (Operation Indicator 1-1) as well as connecting the three target areas of the irrigation component.

(d) The value represents the productivity of irrigated rice cultivation by general farmers targeted in this project. For the pilot farmers supported by the farming study SAPS consultant, the value is 4.5-5.0 t/ha (source: response to the questionnaires to the executing agencies).

(e) The value is the total of irrigated and rainfed rice cultivation. The annual production volume of irrigated rice cultivation was estimated as follows. [Irrigated] 469.4 ha (planted area within the project service area as of June 2019) x 3.25 t/ha (average of Effect Indicator 1-1) x 118% (cropping intensity estimated in the SAPI study) = 1,800 t. [Rainfed] 2,855.9 ha (planted area within the project service area as of June 2019) x 2.6 t/ha (average productivity of rainfed cultivation in the two target municipalities) x 109% (cropping intensity estimated in the SAPI study) = 8,094 t.

(f) The result is based on interviews at the project site, not on actual measurement.

(g) The values for 2012 and 2017 represent the net agricultural income based on the surveys of farmers in the target area in the SAPI (240 households) and the farming study SAPS (838 households), respectively. In the context of the survey reports, the values seem to be the nominal prices. When converted into real prices based on the year 2000 using the consumer price index, the actual values for 2012 are 9,497 pesos (irrigated) and 7,180 pesos (rainfed), and the value for 2017 is 21,716 pesos. No description of nominal/real price about the target value was available.

Box 2. Land development by farmers

The slow progress of land development by farmers, especially of paddy diking, has been a major challenge for this project, along with the problem of incomplete construction of the irrigation component. The executing agency and JICA (through the SAPI, the farming study SAPS, and the project management SAPS) have repeatedly analyzed the cause and examined the response but have not yet made significant improvements.

The reasons are summarized as follows based on the combined analysis of existing documents and interviews with related parties. Of these, the second and subsequent reasons explain why the farmers do not develop their lands, even where the irrigation facilities are complete.

- 1) Irrigated water is not available due to the unfinished construction work of this project.
- 2) Lack of machinery. For land development, the NIA is supposed to provide materials and equipment (such as tractors), which farmers are supposed to use to perform the work themselves or by hiring workers. IAs pointed out that there was an insufficient number of tractors for the land and that the tractor models were not suitable for the land (While it is assumed that the suitable model and the required number of tractors were assessed by the NIA, information on how the model and the quantity were determined was not available).
- 3) Lack of funds. The target area is an impoverished area, and labor costs are rising. Credit programs by entities such as the provincial government are being implemented, but farmers pointed out that loan disbursement was slow. The conditional cash transfer program for poor households of the Department of Social Welfare and Development (DSWD) (with paddy diking being the condition for benefits) has achieved some effects, but not everyone was included in the scope of these programs.
- 4) Lack of labor force. The demand for workers is high in the target area as there are several ongoing public works such as road construction, in addition to the irrigation work of this project. Laborers tend to be hired for public works, the terms of which are generally better than for paddy diking.
- 5) Impact of agricultural land reform policy. The agrarian reform policy currently in place in the Philippines stipulates that farmland over 5 ha be redistributed from landowners to tenants; thus landowners are reluctant to pay for land development themselves. In addition, although the share among the beneficiary farmers is small, tenant farmers are unwilling to pay their expenses because rights to land use are unstable due to the slow progress of the reform.¹⁶
- 6) Attitude of farmers, who are reluctant to adopt new things. An irrigation development official of the NIA said that the residents tended to be conservative and did not have financial and other capacities to start new activities. Therefore, it would take time for them to adopt irrigated agriculture.

(2) Improvement of public health and sanitation conditions

The operation indicator—the improvement of accessibility to potable water supply through the construction of water supply facilities—materialized after completion of the construction. This indicator had almost achieved the target numerically at the time of the ex-post evaluation. However, this seems to be due to population growth, and operation has already stopped at nearly half of the facilities due to breakdowns. The measures against schistosomiasis have continued after completion of the activities under this project, and, as will be mentioned later, improved awareness among residents has been qualitatively confirmed. However, this improvement is not reflected in the prevalence of schistosomiasis, the effect indicator. Therefore, it is judged that this outcome has only been partially manifested.

Regarding the effect indicator, municipal health officials mentioned that the target value (for the schistosomiasis prevalence rate) was set very low when the baseline was already low, thus making it difficult to achieve the target. According to the regional office of the DOH, there was a project covering a wide range of anti-schistosomiasis measures in 1990, which might have temporarily reduced the morbidity. However, they pointed out that the actual value at the time

¹⁶ According to the farming study SAPS, tenant farmers accounted for 19% of the farmers in the project target area.

of ex-post evaluation was very high as an absolute value, posing a dangerous situation. The DOH, provincial, and municipal health officials all pointed out that continuous awareness-raising activities are most important for schistosomiasis control and that they were continuing to conduct mass treatment, epidemiological surveys, and information, education and communication (IEC) activities at the time of ex-post evaluation.

Table 5: Operation and effect indicators related to the health and sanitation outcomes

	Baseline 2000	Target	Actual	Actual
		2014	2013	2018
		7 Years After Completion	3 Years After Completion of Related Components	8 Years After Completion of Related Components
Operation Indicator (OI)				
OI2-1: Number of households with access to potable water supply (household) ^(a)	(1999)			
Catubig Municipality	2,999	3,442	2,276 (In operation: 20/20 locations)	2,314 (In operation: 11/20 locations)
Las Navas Municipality	1,303	2,988	2,843 (In operation: 14/24 locations)	2,930 (In operation: 16/24 locations)
Effect Indicator (EI) / Impact Indicator				
EI2-1: Reduction in prevalence rate of schistosomiasis (%) (number of people affected/population)	(1991-1993)			
Catubig Municipality	2.1	1.05 (50% reduction)	(2012) 5.24	(2015) 5.46 ^(b)
Las Navas Municipality	2.2	1.10 (50% reduction)	(2012) 5.12	(2015) 4.14 (2016) 4.00

Source: Documents provided by JICA; documents provided by the executing agencies

Note: (a) The actual value of this indicator is the total number of households in the barangays (numbers in parentheses) where the water supply facilities of this project or water facilities that had improved based on the project facilities after the project, were in operation. The calculation used the number of households identified in the 2015 survey as this was the latest figure.

(b) The municipal health officials said that the figure they had was 9.17%.

3.3.1.2 Qualitative Effects (Other Effects)

(1) Qualitative effects of the irrigation component and the agricultural support services component

The SAPI and the farming study SAPS conducted sample surveys (hereafter, “the farmer household survey”) of farmer households in the target area in 2012 and 2017. Both surveys concluded that the effects of the irrigation component of this project were observable among the farmers who had access to the irrigation facilities. However, most farmers still had no access to irrigation. The qualitative survey at the time of ex-post evaluation also confirmed this finding. For example, in a focus group discussion with IAs (18 members from three IAs in the Catubig Right Main Canal Area, including the presidents of the IAs and other members who were

practicing irrigated rice cultivation¹⁷), all participants agreed that “Irrigated rice cultivation produced profits,” and that “We plan to crop in the next dry season.” At the same time, they said that 80%, 50%, and 40% of members of each of the three IAs still had no access to irrigation facilities (“The canals are not completed,” and “The canal is far,”). Furthermore, damage from typhoons, etc., remained unrepaired (“A large-scale repair is necessary, and that is beyond the capacity of the IA.”). Besides these three IAs, the access rate of the nine other IAs to irrigation facilities is still 0%.

An increase in production activities by the agriculture support services was observable at the time of the completion of the component. In the 2012 SAPI farmer household survey (240 households), 95% of the respondents cited “HCAAP-introduced technology” as a factor in improved agricultural production and income, 3% cited “easier access to the farm due to the HCAAP farm-to-market road,” and 2% did not respond. In the qualitative survey at the time of the ex-post evaluation, it was seen that almost all the farmers who were practicing irrigated rice cultivation had received training by this project and later by other entities such as the DA, the NIA, and the farming study SAPS consultant. Techniques that were cited as useful included transplanting, seeds, and pest control.

(2) Qualitative effects of the road component

Regarding the effects of road and bridge construction on agricultural production, as described in Table 3 above, related parties (mainly the municipal government officials and the farming study SAPS consultant who frequently conducted surveys in the target area) considered that the hauling time had not decreased in some sections. At the same time, however, they admitted that the introduction of road transportation was very effective because people—whose only means of transportation used to be walking and boats, as there were no roads before the project—could now travel at any time, and transport large loads.

In particular, thanks to the construction of the Catubig-Las Navas national road and the Las Navas-Bulao-Hagbay road (a farm-to-market road; the section up to Bulao was upgraded to a national road in 2018),¹⁸ trucks and boats started to come to Las Navas frequently to buy copra and abaca. This seems to have reduced the transportation cost for the barangays alongside these roads. For example, in the qualitative survey at the time of the ex-post evaluation, the Barangay Captain of Barangay Doroles, Las Navas Municipality (along the Las Navas-Bulao road) said, “Thanks to the road development of this project, the travel time to Las Navas has been shortened from three hours on foot on mountain paths to 15 minutes by vehicle. Income has increased by 20% as it has become easier to transport copra and other goods.” However, the

¹⁷ They consisted of six females and 12 males. They were key members of each IA and selected by the Project Management Office of the NIA.

¹⁸ The number of barangays directly benefiting from these roads (those located alongside the roads) is 14 along the national road and seven along the Las Navas-Bulao-Hagbay road.

SAPI/SAPS consultants pointed out that farmers did not frequently transport rice to Las Navas because of the high transportation cost relative to the income generated; rather, they tended to consume the rice within families or sell it in the local market.

As for the effects of the construction of the ferry landings on agricultural production, the one constructed in Catubig Municipality was being used exclusively for transporting construction materials for the irrigation component of this project at the time of the ex-post evaluation. The municipality built a separate landing facility nearby for its economic activities. On the other hand, the evaluator observed that the landing the project constructed in Las Navas Municipality was being used for purposes such as the shipment of copra.

(3) Qualitative effects of the water supply component and the schistosomiasis control component

In the SAPI farmer household survey (240 households) in 2012, two years after the completion of the water supply component, water supply facilities were cited as the most useful intervention in this project (28%), followed by farm-to-market roads, irrigation, agricultural machinery/pumps, national roads, and toilets, among others. In the same survey, the proportion of residents who had suffered from diseases (such as diarrhea) caused by drinking water in the past year was 17% before the project and 5% after the project (at the time of the survey). This seems to attest to the effects of the water supply component. At the time of the ex-post evaluation, the residents in barangays where the water supply facilities were operating said that they were getting safe water, indicating that the effects are continuing.

Although the evaluation could not confirm the use of the toilets and other schistosomiasis control facilities, the DOH, the province, and the municipalities said that they were continuing awareness-raising activities and the dissemination of toilets and that residents' awareness was increasing. For example, according to the municipal health officials, people began to worry about the questions "Is it the schistosome-contaminated barangay?" or "Is there a toilet in the house?" when they visit an acquaintance's house.

3.3.2 Impacts

3.3.2.1 Intended Impacts

(1) Increase in net income of rice farmer households

As shown in Table 4 above for the impact indicator related to the agricultural outcome, namely, "Increase in net income of rice farmers," the actual values in 2012 and 2017 (net agricultural income) increased, even though they did not reach the target. However, in the same survey in 2017, most of farmers' income was from off-farm income,¹⁹ and there was no

¹⁹ According to the 2017 farmer household survey conducted in the farming study SAPS, the average income of the 838 households in the project's target area was 42,781.2 pesos for agricultural income (after deducting expenses),

significant difference in net income between irrigated and rainfed rice cultivation. Considering that only a limited number of farmers have access to irrigation facilities, the impact of this project on rice farmers' income is still small.

(2) Improvement of public health and sanitation

Due to its nature, the effect indicator "Reduction in prevalence rate of schistosomiasis" shown in Table 5 above can also serve as an impact indicator. As already mentioned, this indicator did not achieve the target due to the very low target value.

An attempt was made in the ex-post evaluation to verify the impact on medical cost reduction but no achievement could be confirmed. Comparing the results of farmer household surveys for 2012 (the SAPI) and 2017 (the farming study SAPS), the average household medical expenditure increased from 5,167 pesos to 8,671 pesos.

3.3.2.2 Other Positive and Negative Impacts

(1) Impacts on the natural environment

Prior to the commencement of this project, an Environmental Compliance Certificate (ECC) was issued for each irrigation and road component, based on the results of the Environmental Impact Assessment (EIA). The assumed environmental impacts were all small – air and water pollution from the use of chemicals and fertilizers on the farmland in the operation stage of the irrigation component (the impacts were to be reduced by the agricultural support services of the DA, etc.) and dust and noise from the road component during the construction period (the DPWH was to implement its standard environmental countermeasures). Regarding the irrigation component, the mid-term review of this project (2007) judged that the planned diversion irrigation dam (intake) would not have a significant impact on the river flow compared to that of storage dams.

At the time of the ex-post evaluation, no significant adverse impacts had been identified in the interviews with related parties such as the PGNS, the NIA, the DPWH, and IAs. None of the executing agencies had received any complaints from residents regarding the environment. However, details of the implementation status of the countermeasures assumed and prescribed by the EIA/ECC were unknown. In the irrigation component, the NIA admitted that it had not complied with the ECC requirements to prepare monitoring reports and submit them to the DENR. Regarding environmental measures at the time of ex-post evaluation, the NIA said that it cooperated with IAs to plant trees along irrigation canals to prevent the dumping of garbage into the canals.

49,224.2 pesos for farm labor, 160,835.5 pesos for non-farm income, totaling 252,840.9 pesos.

(2) Resettlement and land acquisition

Resettlement and land acquisition did not take place in the irrigation component of this project. The NIA responded that although it paid only a small amount of compensation for damage to the residents' land, etc. caused by the construction work, there were no significant problems. In the road component, the DPWH responded that a small amount of land acquisition had taken place with compensation according to the regulations of domestic law, and no significant problems had occurred.

(3) Positive impacts on road network development

The farm-to-market roads, built in this project in areas where there had been no roads before, became an impetus for the development and expansion of the road network by the DPWH. As mentioned above, the PGNS constructed the Las Navas-Bulao-Hagbay road as a farm-to-market road in this project, and then the DPWH concrete-paved the Las Navas-Bulao section, making transportation in the target areas significantly more convenient. The DPWH has been working since 2018 to further extend the road from Bulao to the east to connect it to the road network in East Samar Province. Also, the NIA constructed a farm-to-market road between Las Navas and San Isidro as an irrigation maintenance road in the irrigation component of this project, and the DPWH is currently paving it. The PGNS said that it was considering tourism development for the Pinipisakan Falls on the same route.

Furthermore, several related parties pointed out that the road development improved security (better visibility).

In light of the above, emphasizing the agricultural outcome, the primary project objective, this project has achieved its objectives at a limited level. Therefore, the effectiveness and impacts of the project are low.

3.4 Sustainability (Rating: ②)

3.4.1 Institutional/Organizational Aspect of Operation and Maintenance

(1) O&M system and organization of the irrigation facilities

Being classified as a national irrigation project (i.e., with 1,000 ha or more of beneficiary areas), the appraisal assumed that the NIA would perform the O&M of the main irrigation facilities while each IA would take care of the facilities downstream from the secondary canals. At the time of the ex-post evaluation, the role and organizational structure of the NIA were the same as those at the time of appraisal, but its regional offices had expanded from 12 to 14, under which there were 40 irrigation management offices. This project is under the responsibility of the Northern Samar Irrigation Management Office of the NIA Regional Irrigation Office VIII. The Irrigation Management Transfer (IMT) program started in the mid-2000s, under which the

scope of O&M entrusted to IAs is determined by the IMT contract between the NIA and individual IAs. Each of the three IAs in the area where the irrigation facilities were completed signed an IMT contract with the NIA in 2017. There are four models of IMT contract depending on the share between the NIA and IAs; the three contracts above used “Model 1,” which has the smallest burden on the IA side. According to the IMT contract, the O&M for the facilities, including the main canal, is within the scope of the delegation from the NIA to each IA. However, while the cleaning and small repairs on all of the main irrigation canal, the laterals, and on-farm facilities are the responsibility of the IA, large-scale repairs are to be performed by the NIA (“assist” (implying “to be assisted”) on the contract document). O&M costs for irrigation facilities are to be provided to the IA by the NIA based on the IMT contract. Collection of irrigation service fees was assumed at the time of appraisal, but the Republic Act No. 10969 (Free Irrigation Act) in 2018 abolished the irrigation service fee collection from landowners under 8 ha. The facilities under this project fall under this category.

By the end of 2008, the development of the organizational structure of the 12 IAs (e.g., preparation of by-laws and regulations and registration with the Securities and Exchange Commission of the Philippines) was completed. The number of beneficiary farmers in each IA as of December 2018 was between 58 and 125 (The total number of farmers in the area covered by each IA was not available).

A major issue for the O&M of the irrigation facilities is that the O&M system for completed facilities is not yet in operation. After the completion of the irrigation facilities, the jurisdiction is to be turned over from NIA’s project office to the regional office, and O&M is to be initiated by the irrigation management office responsible. As this project was not completed, the facilities in the Catubig Right Main Canal Area, some of which had been completed as early as in 2010, were not turned over and, thus, were not subject to O&M. However, given the deterioration of those facilities, the NIA central office issued a notification in 2015 declaring that the completed 1,229 ha would be turned over (i.e., this project would be partially turned over) to the NIA Regional Irrigation Office VIII and that an O&M team would be established in the Northern Samar Irrigation Management Office accordingly. The number of staff assigned to the O&M team is 13, which seems to be sufficient as it is the number determined by the size of the irrigable area. However, as of June 2019, the O&M system was not functioning as the on-site staff seemed to recognize that the entire project was still incomplete. In other words, although the above system exists on paper, it has not been implemented (i.e., repairs and compensation of O&M expenses based on the IMT contract have not taken place yet).

It should be noted that after the completion of various training and extension activities under this project, the DA Regional Office VIII has continued to take charge of these activities as part of the agriculture-related services for irrigated rice cultivation. The NIA, the DAR, and the provincial and municipal governments also provide agricultural machinery and training for IAs.

As already mentioned, the Sustainability Plan for the effective utilization of the irrigation facilities has been formulated encompassing those countermeasures, and related organizations such as the provincial government, the municipal governments, the NIA, the DA have agreed to carry out the actions designated to each of them.

(2) O&M system and organization of the roads and bridges, etc.

The DPWH is responsible for the O&M of national roads and bridges in line with the expectations at appraisal. The national road targeted by this project is under the responsibility of the DPWH Northern Samar 2nd District Office with 63 staff members (including two vacancies) as of March 2019. Three staff members are in charge of the maintenance section, where 98 workers are employed besides the staff. They are organized, assigned, and engaged in the O&M work in accordance with the DPWH's guidelines on national road maintenance.

As for the farm-to-market road, the responsibility for O&M for the section between Las Navas and Bulao—a part of the Las Navas-Bulao-Hagbay road that was converted to a national road—was transferred from the PGNS that built the road to the DPWH in 2018. For the other section, the PGNS Engineering Office (with one provincial road O&M officer and three maintenance workers) is in charge of O&M. In addition, the irrigation maintenance roads constructed by the NIA are officially under the jurisdiction of the PGNS as provincial roads, while the NIA takes charge of their O&M (including the responsibility for cost) as part of the irrigation facilities based on the agreement with the PGNS.

The ferry landings were handed over from the DPWH (which built them) to the respective municipal governments after completion. The Engineering Office of each of the MC and the MLN is in charge of O&M. This arrangement is in line with the expectations in the appraisal.

(3) O&M system and organization of the water supply facilities

In line with the expectations at the time of appraisal, the MC and the MLN (Engineering Offices) are responsible for the O&M of the water supply facilities built in respective municipalities. The appraisal also assumed that the actual implementation of O&M, such as the collection of water charges and repair of facilities, would be carried out by each BWSA, a community organization. Although BWSAs were established and exist on paper, they have not performed any substantive activity. This responsibility is borne by barangays. It is possible to say that there is an O&M system in which municipal governments engage in the repair and improvement of the facilities based on requests from barangays; but in reality, the O&M status of the facilities differs depending on each barangay's willingness and commitment.

(4) O&M system and organization of the schistosomiasis control facilities and equipment

The appraisal assumed that the PGNS Health Office would lead O&M with the assistance from the MC and the MLN. The DOH was to provide support as necessary. However, no schistosomiasis officer was assigned to the PGNS until 2014. Therefore, the schistosomiasis control team (consisting of experts from multiple fields) at the DOH provincial office implemented O&M. The team was dissolved in 2014, and a new schistosomiasis coordinator of the PGNS Health Office has been in charge of the coordination of DOH programs (mass treatment, epidemiological surveys, training, etc.), data collection/analysis, responses to the problems of municipal-level activities (surveys and awareness activities by sanitation inspectors, etc.) and other coordination work since 2015. The equipment procured by this project, such as microscopes, is managed by the respective recipient organizations (the DOH provincial office and the municipal health offices).

Thus, although the O&M system and organization are in place, there are some concerns over the implementation of the system for the irrigation facilities and the water supply facilities.

3.4.2 Technical Aspect of Operation and Maintenance

The NIA has abundant experience and training opportunities in the O&M of irrigation facilities; thus, no technical problems seem to be present. The O&M skills required for IAs include the minor repairs of facilities, water distribution, lubrication, and diversion gate management. The NIA provides various kinds of training for these and provides technical support as necessary.

Regarding roads and bridges, the DPWH has abundant experience and training opportunities in the O&M of national roads and bridges. There appear to be no technical problems. As for the farm-to-market roads, the O&M skills required for the PGNS include vegetation control, patching, and the repair of soil ditches, for which advanced technology is not necessary. According to the PGNS Engineering Office, it offers the necessary training opportunities. Although specific information is not available about O&M technology for the ferry landings, there seems to be no technical problem as the structure of the facilities is not special.

Regarding the water supply facilities, they are general facilities such as pumps, water tanks, water pipes, faucets, etc. The municipal engineering offices said that they had the O&M skills for these facilities.

As for the schistosomiasis control facilities and equipment, they are general facilities and equipment, and there seems to be no technical problems with O&M. On the other hand, techniques such as microscopic analysis are required for epidemiological surveys. Although the DOH conducts training, it was reported that opportunities for provincial and municipal officials to participate were limited, as the training was at the regional level with a limited number of

places; thus not all of the related personnel could attend. Also, it was noted that training related to education/ awareness-raising had not been conducted since 2014.

Thus, although there are some challenges, O&M techniques are mostly secured.

3.4.3 Financial Aspect of Operation and Maintenance

Although this evaluation could obtain only a small amount of information on the financial aspect, it seems that each O&M organization is spending a certain amount of money on the O&M of the project facilities. Even for facilities with insufficient O&M (including completed irrigation facilities, farm-to-market roads, and water supply facilities), the problem tends to be institutional, and there is no case where O&M has not been performed due to a lack of the absolute amount of budget.

For irrigation facilities, the NIA's budget is comprised of self-income (irrigation service fees, rentals, service fees, etc.), operation subsidies (compensation for shortages of self-income), and project funds provided by the national government. The O&M expenses for irrigation facilities, excluding personnel costs, were approximately 1,498.9 million pesos in FY2016 and approximately 1,666.4 million pesos in FY2017. Based on this and the separately obtained budget/expenditure data of the NIA Regional Irrigation Office VIII by irrigation facility (not disclosed), it can be judged that the O&M budget is allocated to completed facilities. The annual O&M cost for irrigation facilities is calculated and disbursed based on the respective unit prices of heavy equipment fuel, operators, and O&M incentives and planting incentives to IAs for IMT contracts. This cost should cover the 1,229 ha of the facilities of this project that have been partially turned over, but as mentioned above, there is still no actual O&M expenditure. Although the income from the irrigation service fees will be lost due to the termination of the system in 2018, the NIA central office said that that would not impact O&M as the necessary funding would be drawn from the Treasury (They said that a sufficient budget was allocated at least in FY2018).

Regarding national roads and bridges, the DPWH's annual daily maintenance unit cost is 199,000 pesos/km. Since the evaluator was able to observe that the completed roads were in good condition and maintenance work had been carried out frequently, it seems that the DPWH has been spending a sufficient amount on O&M. However, data on the budget size and balance was not available.

Regarding farm-to-market roads, the PGNS had spent about 310,000 pesos (about 660,000 yen) annually for routine maintenance of the Las Navas-Bulao-Hagbay road (gravel pavement in the entire section at that time) until the road was partially transferred to the DPWH. Expenditure per kilometer was approximately 40,000 pesos, which was far below the province's routine maintenance unit cost of 100,000 pesos, but as mentioned above, the maintenance cost of the transferred section has been paid by the DPWH since 2018.

For water supply facilities, no fees are collected from residents, and O&M is carried out using the barangay or municipal budget. According to both the MC and the MLN, the annual municipal budget for infrastructure maintenance (including water supply, roads, canals, electricity, etc.) is fixed at 1 million pesos, excluding personnel costs. They perform O&M by prioritizing work within the available budget.

Regarding agriculture support services, the national government bears the cost for activities such as extension, training, and mechanization support. The budget, including personnel costs, was 230 million pesos in FY2016, 373 million pesos in FY2017, and 202 million pesos in FY2018. Breakdown by province was not available.

For schistosomiasis control, annual expenditure is determined according to the amount allocated from the DOH each year. According to the DOH, although there is a budget specifically for schistosomiasis control, the amount for each province and municipality is not specified. The budget covers training, research, advocacy, and case finding, and was roughly 16 million pesos in 2017 and 20 million pesos in 2018. The DOH always has some external projects; the spending for these two years was expensed as counterpart funds for projects with NGOs. According to the DOH, when there was no external project, the DOH alone would pay the expenses.

Thus, although not sufficient, it can be said that the financial aspects of operation and maintenance have been secured to a certain extent.

3.4.4 Status of Operation and Maintenance

Regarding the irrigation facilities, the IAs said that they were carrying out routine maintenance, but some completed facilities had been damaged due to aging, natural disasters, and lack of O&M. IAs desire that they would be repaired by the NIA.

For national roads and bridges, routine maintenance is performed in accordance with the DPWH's guidelines on national road maintenance, and improvement work is performed by regional offices (100 million pesos or more) or district offices (less than 100 million pesos) based on the annual road condition inventory. The roads constructed by this project were found to be in good condition.

As for farm-to-market roads, the PGNS said that it provided year-round O&M to the sections other than those transferred to the DPWH. Several people pointed out that the O&M of the irrigation maintenance road constructed by the NIA was generally not sufficient and the road conditions during the wet season were bad (however, the evaluator could not visit and observe this directly).

As mentioned above, nearly half of the water supply facilities are damaged and no longer in operation. In one barangay visited by the evaluator, because the faucets were often stolen, the barangay supplied water by leaving the water running on the pipe (hose) without attaching a

faucet, opening and closing the plug of the tank near the water source twice a day. Some barangays keep the facilities in good condition and request the municipal government to repair and improve them when necessary.

No information was available about the conditions of the public toilets and footbridges at the time of the ex-post evaluation. The Mid-term Review Report (2007) of this project reported that some of the completed facilities had been damaged before they were handed over to the community and, thus, recommended a provision of O&M guidance to communities. Since the O&M system by communities was not well established, as with the water supply facilities, this recommendation was not followed through.

Thus, while the O&M status is good for the national roads and bridges, some issues have been found regarding other types of facilities.

In light of above, some problems have been observed in terms of the institutional/organizational aspect and the current status. Therefore, sustainability of the project effects is fair.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

The aim of this project was to improve agricultural productivity and production, primarily of rice, in the Catubig Valley in the east-central part of Northern Samar Province by developing rural infrastructure such as irrigation facilities, thereby contributing to higher incomes for local farmers and the improvement of public health and the sanitation conditions in the area. The relevance of the project is high because these objectives are consistent with the Philippine development plan and development needs as well as with Japan's aid policy. The evaluation confirms certain effects of project implementation, such as an improvement in the ease of travel as a result of the road development as well as a supply of safe water through the construction of water supply facilities. However, the degree of attainment of rice production, the primary purpose of this project, was still limited at the time of the ex-post evaluation since the development of irrigation facilities has been delayed and land development by farmers has been slow. In addition, the measures to control schistosomiasis raised awareness among residents but did not actually reduce morbidity. Therefore, the effectiveness and impact are low. The efficiency is also low. Of the project outputs, the irrigation and drainage facilities were not yet completed at the time of the ex-post evaluation. Regarding the inputs, the project cost exceeded the plan and the project period significantly exceeded the plan. The sustainability is fair, reflecting some concerns about the institutional aspect and the implementation status of O&M.

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

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

- (1) It is recommended that the PGNS continues to focus on coordination towards the completion of the irrigation component by the new target year (2020). As leader of the multi-stakeholders meetings, the PGNS is also expected to implement, coordinate, and monitor the current Sustainability Plan, including both the actions to be taken by the PGNS and those by other stakeholders (such as the continued agricultural support services). When the ex-post evaluator observed a multi-stakeholders meeting, it seemed that the relevant parties were not thoroughly fulfilling their responsibility to report the progress of the actions at the meetings. The PGNS is expected to encourage them to be well prepared for the meetings so that they can organize their activities along with the framework of the Sustainability Plan and report on and discuss their current undertakings at the meetings.
- (2) It is recommended that the NIA completes the irrigation construction by the adjusted deadline. It is also recommended that the O&M of the completed portion of the facilities is started as soon as possible, desirably placing a high priority on the areas where farmers have already developed their lands. Regarding the O&M, it is important that communication between the Regional Irrigation Office and the Provincial Irrigation Management Office regarding the partial turnover is improved, as it seems to be not thorough enough.
- (3) It is recommended that the DA and the provincial agricultural office coordinate with each other and continue agriculture support in cooperation with the DAR, the DSWD, and the municipal agricultural offices and that they promote the use of the completed irrigation facilities (i.e., land development and the practice of irrigated rice cultivation using appropriate techniques by farmers).
- (4) It is recommended that the DOH continues anti-schistosomiasis and sanitation measures.
- (5) It is recommended that the MC and the MLN continue the O&M of the water supply facilities in cooperation with barangays. It is also recommended that they carry out repairs and updating of the facilities for barangays where the project facilities are not in operation.
- (6) It is recommended that the MC considers how to use the ferry landing after the completion of the irrigation component.
- (7) It is recommended that the PGNS and the NIA properly conduct monitoring of the ongoing irrigation component, manage related reports and information and share them with the members of the multi-stakeholders meetings, including JICA.

4.2.2 Recommendations to JICA

Given the low degree of completion during the implementation period and the seriousness of the issues that have continued through the time of the ex-post evaluation, as an ODA loan project, this project should be the subject of ex-post monitoring, which is conducted several years after

the ex-post evaluation. At the same time, in order to fulfill the responsibility for its post-project supervision, it is desirable that JICA continue the monitoring activities of the Philippine Office until the time of the ex-post monitoring or until the planted area of irrigated rice reaches a certain level in the three service areas of Catubig, Bulao, and Hagbay.²⁰ Although irrigated rice cultivation was practiced only in the Catubig Right Main Canal Area at the time of ex-post evaluation, the target values might need to include figures for the Catubig Left Main Canal Area as well as the Bulao and Hagbay Service Areas. For reference, the total area where farmers had completed land development as of December 2018 was 767.9 ha, consisting of 469.4 ha in the Catubig Right Main Canal Area, 136 ha in the Catubig Left Main Canal Area, 65 ha in the Bulao Service Area, and 96.7 ha in the Hagbay Service Area. As farmers developed these areas with the hope of getting irrigation water, JICA should encourage the executing agency to complete the construction of the upstream facilities in these areas at an early stage to allow the water to flow.

Given the lack of significant progress in land development by farmers, it is necessary to further strengthen and coordinate measures such as the provision of incentives by the DA, the NIA, the DSWD, and local governments. It is desirable that JICA monitor whether such collaboration is continued and strengthened and that they provide advice to executing agencies.

4.3 Lessons Learned

(1) Sufficient examination of the implementation system of a comprehensive agriculture and rural development project

The implementation system of this project was that the provincial government coordinated the executing agencies, which consisted of national, provincial, and multiple municipal governments. It was recognized from the time of project planning that the provincial government lacked both experience in ODA loans and sufficient project implementation capacity, and therefore capacity building of the executing agency was included in the consulting services. For the same reason, it appears that the project set up a system where each executing agency took initiatives in carrying out project implementation. To establish a comprehensive project implementation system consisting of multi-sector and multi-level implementing organizations, as is the case in comprehensive agricultural and rural development projects, it is important to fully grasp the project implementation capacity of the organization that plays the coordination role and to set up a viable implementing system. For example, the project could give each executing agency relatively strong autonomy to avoid delays caused by the coordinating agency's lack of capacity, or add a component to support project implementation capacity, as was done in this project.

²⁰ The target value of the "certain level" could be 910 ha which is 20% of the planned total irrigation service area. Alternatively, given the high needs for irrigated rice cultivation in the target area, 2,275 ha, which is 50% of the planned total irrigation service area, could be considered.

(2) Comprehensive examination of risk factors of delays based on the topography and weather conditions of the target area

The reasons for the delay in the irrigation component of this project, often pointed out by the related parties, were the topographic and meteorological conditions and the security situation at the project site. Based on the analysis of the information obtained, the evaluator concluded that the topography and meteorological conditions were considered in the construction plan and tender documents to the extent that could be anticipated from existing data. In addition, the comment made by some parties that the security situation, especially the trend of communist guerrilla activity that was a problem in the project site, was constantly changing, and was difficult to predict, is understandable. However, this project had many other high risk factors behind the delay besides the topography and weather, such as the remoteness and extreme poverty of the target area, the lack of experience in large-scale irrigation projects, the limited availability of local contractors, and the complex nature of the project, where roads and other components progress simultaneously. In light of this condition, more diverse strategies should have been considered to avoid risks by explicitly recognizing (stating) in the discussions and agreements in the planning stage (e.g., in points to be noted at the time of appraisal) that a delay caused by any factor can cause additional delays in a cascading fashion. For example, strategies might include phasing of the construction work (starting the construction of irrigation facilities after road work) or dividing irrigation packages into several from the onset and implementing them in order. At the same time, given the risks, it is important to formulate a schedule with greater margins.

In addition, although it might not be fully applicable to this project, as it might have hurried to address urgent issues, a multifaceted development project in an area with many challenging conditions could start with the formulation of a master plan. The prioritization of projects and the preparation of a medium to long-term timeline as part of master planning prior to the implementation of individual projects could eventually lead to high development effects and efficiency.

(3) Measures to increase the planted area in irrigation projects in poverty areas

In this project, even in areas where construction of the irrigation facilities has been completed, irrigated rice cultivation has not progressed much, and agricultural productivity has not increased as expected. The on-farm facilities within the scope of this project only included water turnouts, on-farm channels, and subchannels, and farmers were responsible for the land development (paddy diking and leveling) necessary to turn the farmland into paddy fields. This arrangement seems to be the standard division of responsibility for irrigation projects in the Philippines. However, compared with other irrigation projects in the country, the implementation of land development by farmers has been very limited in this project. The reasons for this include the lack of funds, machinery, and labor, anxiety about land ownership/usage rights against the backdrop

of agrarian reform policy, and the attitude of farmers (who wish to adhere to traditional farming methods). These factors seem to be an indication of a tendency among farmers in areas with a high poverty rate to not favor the beneficiary-pays principle. In addition, although the NIA and several other national and local government agencies implemented programs such as the provision of incentives in parallel with the project, active collaboration with the project has not been confirmed except for a few one-shot programs. Therefore, in irrigation projects in impoverished areas, it is desirable that the inclusion of land development is also considered in the project scope and that sufficient cooperation between the project and other existing support to farmers, such as incentive provision programs, is ensured.

Another factor behind the slow growth of the planted area was that, although the creation of farmers' organizations and training on irrigated rice cultivation were implemented mostly as planned, most farmers could not immediately put into practice what they had learned because irrigation work was significantly delayed. Therefore, when implementing irrigation projects in areas where farmers have no previous experience in irrigated agriculture, it is important that the project schedule is designed in such a way that the awareness-raising for the farmers and the extension of techniques can be implemented at appropriate times, according to the progress of the construction. This would allow the farmers who acquire new techniques to practice them in their own fields.

Comparison of the Original and Actual Scope of the Project

Item	Plan	Actual
1. Project Outputs		
1) Irrigation and drainage facilities, etc.	Beneficiary area (approx. 4,500 ha), Demonstration farms (2 locations), etc.	Beneficiary area (1,229 ha: construction ongoing as of June 2019); Demonstration farms (2 locations), etc.
2) Roads and bridges, etc.	National road and farm-to-market road (approx. 65 km); Ferry landings (2 locations), etc.	National road and farm-to-market road (approx. 23km); Ferry landings (2 locations), etc.
3) Water supply facilities	58 villages	Same as planned
4) Schistosomiasis control	Improvement of drainage canals (approx. 112 km), Health education seminars for local residents (6 times), etc.	Improvement of drainage canals (approx. 64 km); Seminars (same activities as planned but quantity unknown), etc.
5) Agriculture support services	Rehabilitation of the regional integrated agricultural research center (1 location), Agricultural modernization training (2,160 people), etc.	Same activities as planned (quantity of training unknown)
6) Institutional development	Farmer organization training (6,200 people), Training for municipal government officials (250 people), Training for national government officials (50 people), etc.	Same activities as planned (quantity of training unknown)
7) Consulting services	Total 605 person months Detailed design; Preparation of tender documents; Tender evaluation assistance; Construction supervision; Training of local government and related executing agency staff; Support for establishing farmers' organizations such as IAs; strengthening and guiding the organizational structure for project implementation; Assistance in selection of NGOs (related to schistosomiasis control, farming guidance and support for formation of IAs); Environmental monitoring support	Total 646.6 person months Same activities as planned
2. Project Period	May 2001 – December 2007 (80 months)	May 2001 – Ongoing as of June 2019 (218 months or more)
3. Project Cost		
Amount Paid in Foreign Currency	3,462 million yen	919 million yen
Amount Paid in Local Currency	3,485 million yen (1,244 million pesos)	9,036 million yen ^(Note) (4,107 million pesos)
Total	6,947 million yen	9,955 million yen
ODA Loan Portion	5,210 million yen	3,924 million yen
Exchange Rate	1 peso = 2.8 yen (As of January 2000)	1 peso = 2.2 yen (Average between 2002 and 2018)
4. Final Disbursement	January 2013	

Note: Of the actual project cost, the local currency includes the amount paid by the Philippine government (expenditures through the February 2019) for the construction work within the project scope after the final disbursement of the ODA loan.

Comments on Ex-post evaluation report
for “Help for Catubig Agricultural Advancement Project”

[General remarks]

It was found during ex-post evaluation by JICA Philippine Office that some of the numerical values on irrigation component as well as calculation methods for those items described in the “Quantitative Effects” would require modification. Through discussion with the consultant who provided relevant information to the third party evaluator, this view was confirmed after completion of ex-post evaluation. The said consultant was engaged by JICA for a year from February 2019 for the implementation of Special Assistance for Project Sustainability (SAPS) for HCAAP. In the course of SAPS implementation, the consultant supported the executing agency (i.e. National Irrigation Administration) in measuring the project progress and compiled various relevant figures. All of the figures described below were compiled by the SAPS consultant as part of SAPS implementation.

The following (1) to (5) are deemed to be items for revision based on JICA Philippine Office’s opinion.

[Details]

Related item: 3.3.1.1 Quantitative Effects (Operation / Effect Indicators)

(1) Cultivation area (Page 17)

Statement in the Report: the planted area was only 469.4 ha, which is about 10% of the planned 4,550 ha

Proposed amendment: the irrigated rice planted area is only 89 ha, which is about 2% of the planned 4,550 ha

In the word "planted area" used by the evaluator, it can be said that the scope (relationship with the target crop and irrigation water) is ambiguous, but in case it is interpreted as "the area where irrigation water is supplied through the irrigation facility and rice is planted using this irrigation water" from the context before and after etc., the area should be 89 ha.

(2) Area where irrigation water can be delivered (Page 18)

Statement in the Report: only 1,229 ha can be supplied with irrigation water

Proposed amendment: only 840 ha can be supplied with irrigation water

In measuring the area where irrigation water is supplied, the following two possible areas should be considered; (1) Area where Main Farm Ditches (MFDs) and Supplemental Farm Ditches (SFDs) have not been constructed, but irrigation water reaches by flowing over rice fields, and (2) Area where MFDs and SFDs have been constructed, but the downstream area are not able to receive water due to insufficient water distribution or excessive water reception in the upstream area. It can be said that the evaluator's expression "can be supplied with irrigation water" is ambiguous in these two points; and in view of the fact that the argument in this section is focusing on the delay in construction of irrigation facilities, it would be considered appropriate to set it as "Area where construction of canals, MFDs and SFDs from upstream to downstream has been completed, and irrigation water can be delivered". Therefore the concerned area should be 840 ha.

(3) Land development area (Page 18)

Statement in the Report: Of the 1,229 ha irrigable area, land development was performed only on the 469.4 ha of the Catubig Right Main Canal Area (This area also represents the water flowing area and the planted area. The figures are based on the consultant's response to the questionnaire.)

Proposed amendment: Of the 840 ha irrigation water reaching area, land development was performed only on the 308 ha of the Catubig Right Main Canal Area.

(4) Irrigation water reaching area (Table 4 in Page 19)

Statement in the Report: "Actual (2018)" of "OI 1-3: Irrigable area (ha)" in "Table 4: Operation and effect indicators related to agricultural outcomes" 1,229 ha

Proposed amendment: "Actual (2018)" of "OI 1-3: Irrigation water reaching area (ha)" of "Table 4 Operation and effect indicators related to agricultural outcomes" 840 ha

As mentioned above, the area where irrigation is possible differs depending on its definition, but no definition is stated in the evaluation report. The concerned value should be "840 ha" in case the area mentioned in (2) is applied.

(5) Production volume of rice (Table 4 in Page 19)

Statement in the Report: "Actual (2018)" of "EI 1-2: Increase in production volume of rice (t/year)" in "Table 4 Operation and effect indicators related to agricultural outcomes" 9,894 t/year

Proposed amendment: "Actual (2018)" of "EI 1-2: Increase in production volume of rice (t/year)" in "Table 4 Operation and effect indicators related to agricultural outcomes" 8,313 t/year

As the basis for calculating 9,894 t/year in the report, footnote e) states that "The value is the total of irrigated and rainfed rice cultivation. The annual production volume of rice cultivation was estimated as follows. [Irrigated] 469.4 ha (planted area within the project service area as of June 2019) x 3.25 t/ha (average of Effect Indicator 1-1) x 118% (cropping intensity estimated in the SAPI study) = 1,800 t. [Rainfed] 2,855.9 ha (planted area within the project service area as of June 2019) x

2.6 t/ha (average productivity of rainfed cultivation in the two target municipalities) x 109% (cropping intensity estimated in the SAPI study) = 8,094 t". However, in case "the irrigated rice planted area of 89 ha" described in (1) is applied instead of "the planted area of 469.4 ha", the calculation result is 8,313 t/year.

END