The Republic of the Philippines

Ex-Post Evaluation of Japanese ODA Loan Project

"The Philippines: Selected Airports (Trunkline) Development Project (I) & (II)"

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1. Project Description

Project Location Map

Passenger Terminal Built by the Project
（New Bacolod Airport）

1.1 Background

The air transportation grew rapidly in the Philippines during the decade between the end of 1980's and early 1990's (passengers 40.5% and cargos 89.8%). Development of air transportation (both passengers and cargos) was considered as one of the key factors to achieve economic growth and it was expected to play an important role for the country consisting of more than 7,000 islands. The country had 90 airports managed by the government (7 international airports, 12 trunkline airports serving the transportation between large cities, 37 regional airports between large cities and medium-sized cities and 34 branch line airports between medium-sized cities and small cities.) The Government of the Philippines had so far made large investment mainly for international airports such as Manila, Cebu and Davao. The government had an intention to develop 13 regional airports (one airport at each of 13 regions in the nation) to satisfy ICAO (International Civil Aviation Organization) standards and advices. At the time of appraisal, there was no development plan for Bacolod airport (the 6th largest in the country in terms of number of domestic passengers) or Tacloban airport (8th) and improvement of these existing airports had become an urgent issue.

1.2 Project Outline

The project objective is to satisfy increasing air traffic demand and operational safety requirements at Bacolod airport by constructing a new airport and providing urgent repairing to the existing airport, and at Tacloban airport by expanding the airport, thereby effectively contributing to economic

development[1] in respective regions.

Approved Amount/ Disbursed Amount	（I）5,728 million yen,（II）11,743 million yen /（I）2,335 million yen,（II）6,437 million yen
Exchange of Notes Date/ Loan Agreement Signing Date	（I）Sep. 1998,（II）March 2001/ （I）Sep. 1998,（II）May 2001
Terms and Conditions	（I） Interest Rate: 2.2% Repayment Period: 30 years (Grace Period: 10 years) Conditions for Procurement: General Untied ---------- Consulting Services: Interest Rate: 0.75% Repayment Period: 40 years (Grace Period: 10years) Conditions for Procurement: General Untied （II） Interest Rate: 2.2% Repayment Period: 30 years (Grace Period: 10 years) Conditions for Procurement: General Untied ---------- Consulting Services: Interest Rate: 0.75% Repayment Period: 40 years (Grace Period: 10years) Conditions for Procurement: Bilateral Untied
Borrower / Executing Agency(ies)	Government of the Republic of the Philippines / DOTC(Department of Transportation and Communications）[2] （The operating agency is CAAP (Civil Aviation Authority of the Philippines) at the evaluation time.
Final Disbursement Date	（I）May 2006,（II）September 2008
Main Contractor (Over 1 billion yen)	Takenaka Corporation (Japan）/ITOCHU Corporation (Japan）（JV）
Main Consultant (Over 100 million yen)	Pacific Consultants International (Japan)
Feasibility Studies, etc.	“Feasibility study on Iloilo and Tacloban Airport Development” , JICA, January 1997; “Feasibility Study on Bacolod Airport Development”, JICA, March 1997
Related Projects (if any)	“Master Plan on Development of Bacolod, Iloilo, Tacloban and Legazpi Airports”, JICA, May 1996; Detailed Design of New Bacolod Airport, JICA, March 2000; JICA Specialist assigned at Air Traffic Control at DOTC

[1] The project objective is changed to “contribution to economic development” here in order to clarify the impact.

[2] DOTC-ATO (Air Transportation Office, Department of Transportation and Communication) had been in charge of operation and maintenance of the project till March 2008, when it became an independent public corporation called CAAP (Civil Aviation Authority of the Philippines).

2. Outline of the Evaluation Study

2.1 External Evaluator

Rie KAWAHARA, R-Quest Corporation

2.2 Duration of Evaluation Study

Duration of the Study: March, 2010 – December 2010
Duration of the Field Study: June 8, 2010 – June 19, 2010; September 22, 2010 – September 30, 2010

2.3 Constraints during the Evaluation Study

DOTC-ATO (Air Transportation Office, Department of Transportation and Communication) became a public corporation called CAAP (Civil Aviation Authority of the Philippines) in March 2008. CAPP was still in the process of restructuring the organization at the time of evaluation. Therefore the evaluator was unable to obtain sufficient information, especially financial data of ATO and was not able to make a sufficient evaluation of financial sustainability.

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

3.1 Relevance (Rating: a)

3.1.1 Relevance with the Development Plan of Philippines

At the Time of Project Appraisal:

The government of the Philippines targeted at economic growth by modernizing transportation infrastructure and facilities and promoting exports by air in the Medium-Term Philippine Development Plan (1993-1998). Development of airport network and facilities was an important issue for the country.

At the Time of Project ex-post Evaluation:

The government of the Philippines had the Medium-Term Public Investment Programme (2004-2010), in which both Bacolod and Tacloban airports in the central region were selected as priority airports for development in order to make efficient transportation between islands. Also, JICA' s Master Plan on Nation-wide Airport Development (March 2006) targeted for 2025 had three objectives including improvement of safety and security of air transportation services, improvement of efficiency in airport services and realization of sustainability of airport operation.

3.1.2 Relevance with the Development Needs of the Philippines

At the time of Project Appraisal:

Air transportation's share to total domestic transportation increased sharply between 1986 and 1995 in the Philippines and air transportation development was considered as one of the factors for economic development. It was expected that air transportation, both passengers and cargos, would play an important role as economy and income increase in this country consisting of over 7,000 islands.

Under these circumstances, development of Bacolod airport, 6th airport in terms of number of domestic passengers (320,000) in 1994, located in Negros Island, and Tacloban airport, the 8th with 240,000 domestic passengers, located in Leyte Island, became an important issue to be solved. While the demand increases, facilities and equipment of both airports were very old. As there was an urgent need to improve the situation from the point of air transportation management, a JICA Master Plan study was carried out to improve 4 trunkline airports including Bacolod and Tacloban in May 1996. Based on the Master Plan, the Government of the Philippines and JICA respectively implemented a feasibility study of development of Tacloban airport and Bacolod airport in 1997.

The study recommended that a new airport should be constructed in Bacolodo. There was a serious problem for safety at the existing Bacolod airport as the surrounding area became urbanized with building nearly as high as the height limit for approaching airplanes. The truckline road just behind the airport terminal was also a concern for the safety. On the other hand, the study concluded that the terminal area should be moved to the adjoining land for Tacloban airport.

This project planned to construct about 60% of the new Bacolod airport in Phase I and the remaining in Phase II. It also planned to carry out a detailed design in Phase I and make construction in Phase II for Tacloban airport.

At the time of Project ex-post Evaluation:

Air transportation in the country increased more than the original estimate on back of price competition amongst airline companies and its importance has increased further. Air traffic increased sharply at the new Bacolod airport. There were three flights per day between Manila and Bacolod and 5 flights between Cebu and Bacolodo at the old Bacolod airport before 2006. But respective number of flights increased to 5 and 7 flights at maximum in 2010 at the new airport. Total traffic was 9,556 flights and 1.1 million passengers in 2009.[3]

The Phase II construction work at the Tacloban airport was cancelled and only equipment procurement for urgent improvement was implemented due to budget shortage of the government of the Philippines, despite the need to improve airport facilities and equipment to meet increasing traffic demand and to improve safety. In 2009, the government of the Philippines, based on the revision of the detailed design, implemented runway re-pavement and civil engineering work for the new terminal

[3] It is not possible to make the comparison as traffic data of old Bacolod airport data for 2000-2006 was not made available to the evaluator. However, 1995 actual data is 37,200 passengers and 2,444 flights in 1995 according to the 1995 Master Plan report. It could therefore be said that that passengers and flights increased by nearly three times and four times respectively over 14 years.

building to be constructed in the future. Traffic demand was strong with 7,752 flights and 89200 passengers at Tacloban airport in 2009. Equipment procured for urgent improvement scheme such as X-ray inspection contributed to improvement of safety and reduction of time[4].

This project prioritized construction of the new Bacolod airport to improvement of Tacloban airport, which could be considered as reasonable decision as traffic demand at the new Bacolod airport increased rapidly.

As for cargo transportation, demand has been weaker than the original estimate of 1990's at both airports due to Asian economic crisis and lengthened world-wide economic downturn. Nevertheless, recent cargo volume shows a sign of improvement in Asian region.

3.1.3 Relevance with Japan's ODA Policy

At the time of project appraisal in 1998, Japan's ODA policy toward the Philippines listed sustainable economic growth as one of the development issues for the country. It also listed "reinforcing economic structure for sustainable economic growth and overcoming constraints for economic growth" as one of the development aide policies for each important sector and issue and pointed out importance of the traffic infrastructure development for the country consisting of many islands.

This project has been highly relevant with the Philippines' development plan, development needs, as well as Japan's ODA policy, therefore its relevance is high.

3.2 Efficiency (Rating: b)

3.2.1 Project Outputs

The project output is summarized in the below table.

4 Actual traffic data was 258,000 passengers and 3,094 flights in 1995 at Tacloban airport according to 1995 Master Plan report. The growth was almost 3.5 times for passengers and 2.5 times for flights over 14 years' period.

	Plan	Actual
(1) Construction of New Bacolod Airport		
Civil Works	Runway (2,000 m x 45 m, 7.5 m shoulder) Taxiway (678 m x 23, 10.5 m shoulder) Apron (passenger：33,657 m^2, general 6,720 m^2) Road (3,350 m),Parking lot (320 cars, 15,428 m^2) Airport peripheral fence (12,880 m)	No change No change No change No change 17,880m
Architectural Works	Terminal buildings Passengers:6,180m^2 Cargo: 1,660 m^2 Control tower/administration building:1,000 m^2 Others (fire truck car park, fire fighting equipment, power supply building, communication facility building, security staff building)	Basically no change No change No change No change
Air Navigation System	Radar navigation facility, air traffic control communication facility/equipment, airfield lighting facility/equipment, meteorological facility	No change, apart for addition of taxiway markers to the original equipment list.
Supporting Facilities	Power supply system: Water supply facility Sewage facility Fuel supply facility	An urgent power voltage stabilizer and an uninterruptible power supply were added. Water filtering facility was added. A drain construction was added. Cancelled
(2) Construction of New Bacolod Airport		
Civil Works	Runway (2,140 m) Taxiway improvement Apron improvement Other facilities (courtyard road and parking lot)	All cancelled
Architectural Works	Construction of terminal building Construction of cargo terminal Construction of control tower	All cancelled
Air Navigation System	Improvement of air traffic security facility and equipment(radio, radar and airfield lighting)	All cancelled
(3) Urgent Improvement		
Old Bacolod Airport	X-ray equipment (4 units) Vehicles (1 grass mowing tractor, 1 dump truck, 1 runway cleaner and 3 fire trucks)	No change
Tacloban Airport	Re-pavement of the runway Construction of peripheral fence X-ray equipment (4 units) Vehicles (1 grass moving tractor, 1 dump truck and 1 runway cleaner and 3 fire-fighting cars)	No change Cancelled Changed to 2 units No change

Figure 1 Control Tower Built by the Project (New Bacolod Airport)

Figure 2 Passenger terminal and Check-in Counter (New Bacolod Airport)

Some changes in output were caused by unexpected external factors, which should be taken into account in evaluating the project. For instance, airport security became severer to satisfy international standard and advices in the Philippines due to the simultaneous multiple terrorist acts in the US in 2001. This, in turn, caused the change in the project's original output design. Improvement of Tacloban airport was suspended due to budget constraint policy of the Philippines implemented in and after 2003. The government made a priority list of implementing projects and the Tacloban airport project was low on the list. Nonetheless, as discussed above, the government did carry out preparing work for improvement of Tacloban airport on its own budget in 2009, which shows that the planning itself was reasonable.

The following changes were made in civil and construction works and equipment procurement from the planning stage to implementing stage.

3.2.1.1 Construction of Bacolod Airport

(1) Civil Works

Sewage drain construction was added to the project based on the design re-calculation as the original design calculation on ground and drainage was found out to be mistaken. The peripheral fence was redesigned and made longer in order to increase airport security, following 2001 terrorist acts in the US. Due to these changes, the security facility of the airport could satisfy the international standards recommended by ICAO.

(2) Buildings

The floor material of the passenger terminal building was changed from lumber to stone, which resulted in saving of maintenance costs.

(3) Air Navigation Facility/System

Airlines insisted, during the project implementation period, the need for installing markers at the

access area from the runway to the taxiway in order to secure safety for taxing aircrafts. The taxiway markers were therefore added to the project.

(4) Power and Fuel Facilities

The original plan was that Central Negros Electric Cooperative (CENECO), a private local electricity supply company, would construct a substation during the project's construction period to supply power for the project. However, it was not constructed and the project added SLF series transient voltage surge suppression and an uninterrupted power supply (UPS). There was no formal contract signed between the implementing agency and this company regarding the substation construction.

At the time of evaluation in September 2010, CENECO was constructing the substation as originally planned. It should contribute to stabilization of power voltage for the airport when it starts operation.

The fuel supply facility was cancelled. It was considered as a standard facility required for airport construction according to the 1996 Master Plan and Feasibility Study. Refueling was also considered necessary for the airplanes in operation at Bacolod airport at that time. Airplanes, however, became more fuel efficient since then and refuelling the aircrafts was no longer required. Cancellation of the fuel supply facility resulted in reduction of project costs by 9.28 million yen.

3.2.1.2 Improvement of Tacloban Airport

Cancellation of Tacloban airport improvement project was made as it became difficult for the Philippines government to provide its part of fund due to constraint budget policy of 2003-2004. The implementing agency had to revise the priority of projects both undergoing and planned. And construction of the new Bacolod airport and Iloilo airport[5], another yen-loan project, were given higher priority to Tacloban airport improvement, based on negotiation between the government of the Philippines and Japan. Tacloban airport project was formally cancelled in September 2008 by the government of Philippines.

The direct reason for cancellation of the project was financial reasons on the part of the government of the Philippines. But, there was also an indirect reason, which was slow redevelopment of the new community for the residents to be transferred. The government of the Philippines planned for transfer of neighboring residents living near the airport to other area and redevelopment of the new community[6] and the Tacloban City was to provide land for this. However, it did not proceed as planned[7] and the Tacloban project itself was suspended since 2004.

The need for improvement of airport facility and equipment was strong at Tacloban airport in order to

[5] "New Iloilo Airport Development Project"（E/N and L/A in August 2000）
[6] National Housing Authority (NHA)
[7] It was confirmed from the interview at evaluation survey that the Tacloban City Council opposed to community redevelopment and thus Tacloban airport improvement was suspended. The project was cancelled later on and accordingly as community redevelopment was not implemented.

secure safety and convenience to meet increasing air traffic. The project (mainly Phase 4) was cancelled. However, the government of the Philippines did re-pavement work of the runway and partial civil engineering work as the base for the new terminal building to be made in the future in 2009.

3.2.1.3 Urgent Improvement

(1) Old Bacolod Airport

The old airport was closed as the new airport started operation. The equipment procured under urgent improvement project was all transferred to the new Bacolod airport. There was no change in procuring materials.

(2) Tacloban Airport

The peripheral fence was cancelled and the number of X-ray inspection equipment decreased from 4 units to 2 units. These X-ray inspection equipment and other materials were found to be operational at the time of evaluation.

3.2.2 Project Inputs

3.2.2.1 Project Period (Sub-rating: b)

The project period was longer than planned. It was longer than the plan by 39%. There were, however, unexpected external factors to prolong the project period.

The project period was 107 months from September 1998 (LA signing) to July 2007 (completion of construction of new Bacolod airport) in comparison to the original plan of 77 months from September 1998 (sign of LA) to January 2005 (up to completion of construction of Tacloban airport) The actual project period was 30-month longer than the plan.

The main reason for the delay was caused by delay in construction and material procurement of the new Tacloban airport due to the following reasons. There were unexpected external factors such as 2001 multiple terrorist attacks in the US, which made change the specifications of the project in order to reinforce the airport security and meet the international standards.

The period of consulting services was extended following changes in design and tender documents and it required long time to reply to the questions made by applying companies.
It required longer time than planned to go over legal procedures to change land ownership as some of the land was owned by people residing abroad.
The construction site was attacked and some construction equipment was damaged in October 2008, which forced temporal suspension of the construction.
There was need to change the design of peripheral fence and drainage to reinforce airport security recommended by ICAO after the simultaneous multiple terrorist attacks in the US.

3.2.2.2 Project Cost (Sub-rating: a)

The project cost was lower than planned.

The original project cost was 12,184 million yen in Phase I (1998) and 15,260 million yen (2001), totaling to 27,444 million yen. The total project, however, was revised to 23,294 million yen at the beginning time of Phase II (2001) following revision of project cost of Phase I (1998). As explained above, data for civil engineering works for Phase I was revised, fuel supply facility was cancelled and there was delay in tender procedure (2001). Accordingly the project process was delayed and some works were transferred from Phase I to Phase II.

Therefore, the present evaluation reasonably assumes revised total project cost (23,294 million yen) as the original plan. The actual project cost was 13,758 million yen, or a mere 59% of the original cost. It was mainly due to reduction in project output following as cancellation of improvement of Tacloban airport and cancellation of construction of fuel supply system for New Bacolod airport. For reference, evaluation of project costs excluding these cancellations is made below. In this case, actual project costs (13,758 million yen) were almost 100% of the original estimate of 13,538 million yen. There were other changes than above two major changes to the project such as cancellation and thus this calculation should be treated only as reference.

+ The original project cost (23,294 million yen)
- Combined estimated construction costs of fuel supply system for New Bacolod airport and estimated project costs and part of consulting services[8] of Tacloban airport (9,756 million yen)
＝13,538 million yen (The original project cost excluding above two major works)

Although the project cost was lower than planned, the project period was longer than planned, therefore efficiency of the project is fair.

3.3 Effectiveness (Rating: a)

3.3.1 Quantitative Effects

3.3.1.1Results from Operation and Effect Indicators

Table 1and 2 show comparison of original plan and actual number of traffic at Bacolod airport. The original estimate is based on the demand forecast of JICA Master Plan Study of 1996.

[8] A part of consulting services spent in prior to the formal cancellation of Tacloban airport improvement project is excluded from the planned project costs.

Table 1 Air Traffic of Bacolod Airport – Forecast and Actual (Thousand)

	Estimate*			Actual**	
	1995	2005	2009	2008	2009
Domestic Passengers (Thousand)	372	1,003	1,175	841	1,099
Cargo (Thousand)	7,581	15,600	15,872	8,269	11,674
Annual number of flights	2,444	7,060	7,792	7,879	9,556
Peak-time flights per day	280	630	830	N.A.	N.A.
Peak-time flights per hour	2	3.9	4.5	N.A.-	N.A.

* Completion goal: June 2004
**Actual completion: July 2007, operational in January 2008
Source: CAAP
Note: The estimate for 2009 is calculated by the evaluator based on M/P forecast for 2005-2015 made in 2006.

Actual domestic passengers of 1,099 thousand in 2009 were almost in line with the original estimate of 1,175 thousand. Actual annual flights were 9,556, or higher than the estimate of 7,792 in the same year. Increase in passengers was principally brought by price competition amongst airline companies. Increase in number of flights was brought by the policy of airliners to fly small jets more frequently. The project

As for cargo, actual volume of 11,674 ton was lower than the plan of 15,872 in 2009. The implementing agency considers that the original estimate was too optimistic and the demand became sluggish affected by Asian Economic Crisis. It was also mentioned that inland sea transportation was further developed and price competitiveness of sea transportation still remained especially for agricultural products such as sugar canes, which are the main product in West Bisaya Region. Nonetheless, all in all, it could be said that the implementation of Bacolod airport project enabled to satisfy increasing traffic and to provide required services.

As for Tacloban airport, actual passengers and flights were higher than planned in 2009 as price competitiveness increased. The project contributed to improvement of safety and convenience at the airport.

Table 2 Air Traffic of Tacloban Airport – Forecast and Actual (Thousand)

		1995	2005	2008	2009
Domestic Passengers (Thousand)	Plan	258	655	740	768
	Actual	N.A	329	626	892
Cargo (Thousand)	Plan	2,881	5,600	6,320	6,560
	Actual	N.A	3,507	4,546	5,019
Annual number of flights	Plan	3,094	5,010	5,525	5,698
	Actual	N.A	4,440	N.A	7,752
Peak-time flights per day	Plan	280	480	516	528
	Actual	N.A	N.A	N.A	N.A
Peak-time flights per hour	Plan	2.0	3.2	4.4	4.5
	Actual	N.A	N.A	N.A	N.A

* Completion goal: January 2005

Source: CAAP (2010), JICA M/P on 4 Trunkline Airports (1996)

Note: Improvement project of the Tacloban airport was cancelled and only equipment procurement was implemented under the scheme of urgent improvement. The estimate for 2009 is calculated by the evaluator based on M/P forecast for 2005-2015 made in 2006.

3.3.1.2 Results of Calculations of Internal Rates of Return (IRR)

Table 3 summarizes financial internal rate of return (FIRR) and Economic internal rate of return (EIRR) of the New Bacolod airport project. The methodology for IRR calculation at the time of appraisal was not available.

FIRR was 6.2% at the appraisal time and was 2.7% at evaluation time. Although the simple comparison would not be adequate, the reason for lower IRR should be increased project costs including land acquisition cost and construction of detour and increased operation and maintenance costs.

EIRR was reasonable at 16.7% at the evaluation time due to travel time reduction, tourism income and cargo income.

Assumptions for IRR calculation at evaluation time:

Project period 25 years, base year 2008, depreciation period 30 years and 10% annual increase in revenues

Table 3 IRRs at New Bacolod Airport

	At Appraisal Time	At Evaluation Time
FIRR	6.2%	2.7%
Financial Costs	Project costs and incremental operation and maintenance costs	Construction, equipment, materials, O&M costs, indirect costs such as personnel costs, utility costs
Financial Revenues	Incremental revenue	Aeronautical revenues and fixed assets
EIRR	N.A.	16.9%
Economic Costs	N.A.	Construction, equipment, materials, O&M costs, indirect costs such as personnel costs, utility costs
Economic Benefits	N.A.	Reduced travel time for passengers switching from ship and land transportation to air transportation, tourism income, cargo revenue

3.3.1.3 Qualitative Effects

The project appraisal expected improvement of safety and convenience in air transportation as qualitative effect of the project.

It was confirmed from the interview with the air traffic controllers at the New Bacolod airport that safety in air transportation was improved by installing new aeronautical navigational system, increasing parking space for 5 aircrafts at the apron (previously space for only 3 aircrafts) and having no obstacle such as high buildings for approaching airplanes. As for convenience, it was also confirmed from the interviews with 3 out of 4 airline companies in operation that time required for work and passenger movement was reduced thanks to new facilities, especially aerobridges and procured materials. For instance, it took on average 30~40 minutes for passengers to get off and board an airplane before but it only takes 25~ 30 minutes now, contributing to efficiency of the travel. It could also be said that airport security has improved at Tacloban airport owing to installation of new equipment such as X-ray equipment procured under urgent improvement scheme.

This project has largely achieved its objectives, therefore its effectiveness is high.

3.4 Impact

3.4.1 Intended Impacts

3.4.1.1 Impact to Project Region and Beneficiaries

It was expected at the time of appraisal that the project would contribute to economic development of respective regions. Table 4 summarized trend of GRDP in West Bisaya region, where the New Bacolod airport is located, and GDP of the Philippines. Average annual growth rate of GRDP was 5.7% and that of GDP was 4.4% in 2005-2008.

Table 4 Trend of GRDP and GDP

	West Bisaya Region		Philippines		GRDP/ GDP
	GRDP (million pesos)	Growth rate （%）	GDP (million pesos)	Growth rate （%）	
2005	87,553	-	2,774,281	-	7.2%
2006	91,858	4.9	3,339,217	5.4	7.2%
2007	98,963	7.7	3,949,421	7.2	7.2%
2008	103,145	4.3	4,954,029	3.7	7.3%
2009	109,252	5.9	5,417,983	1.1	7.6%
Average annual growth rate （2005－2008）	5.7%		4.4%		

Source：National Statistical Coordination Board

Note：The new Bacolod airport was completed in July 2007 and started operational in January 2008.

(1) Reduced Travelling Time for Converted Travellers

The number of passengers was 264,498 at the new Bacolod airport in 2009, which was 25% higher than in 2008. Reduced travel time for passengers switching from a bus and ferry to an airplane would be 129 million pesos in terms of money, which is equivalent to 0.1% of GRDP.

(2) Other Economic Benefits

The project also contributes to the local economy through increased tourism and cargo revenues.

The number of tourists visiting West Bisaya region increased from 25,453 in 2008 to 32,533 in 2009. Cargo volume at new Bacolod airport increased by 42% from 8,245 ton in 2008 to 11,688 ton in 2009. Increased tourism and cargo revenues would respectively be 32 million pesos and 20 million pesos, which total to 50% of GRDP of West Bisaya region in 2009.

It could be concluded from above that the project has contributed to economic development of West Bisaya region.

3.4.1.2 Contribution to Economic and Social Development in the Region

It was confirmed at the evaluation time that there were over 600 people working at the new Bacolod airport (airlines and tenants) and adjacent facilities (related organizations) in total. The number would be even greater if indirect growth in employment and salary such as those of taxi drivers are included. It could be said that the project has contributed to employment growth and economic growth.

There was review of land use in Silay city where the new Bacolod airport is located following the construction of the new airport, which contributed to promotion of commercial and industrial activities near the airport and increased land value. For instance, the agricultural land cultivating sugar canes were converted into commercial or industrial site and the land price increased by more than 10 times. There are two new hostels near the airport and there is a plan for a large super market to be built in Silay city in the near future.

Tacloban airport should also have some impact, albeit limited, to regional economy as the number of passengers is increasing.

3.4.2 Other Impacts

3.4.2.1 Impacts on the Natural Environment

At the time of appraisal, the implementing agency was in the process to obtain an environmental compliance certificate (ECC) of the Ministry of Environment and Resources of the Philippines, whose approval was given for new Bacolod airport in May 1999 and Tacloban airport in October 2000. The surrounding area of the project site for new Bacold airport was sugar cane field with no residents and there was no negative problem to natural and social environment such as noises. As for Tacloban, there was no negative impact to natural environment either as it was equipment procurement project.

3.4.2.2 Land Acquisition and Resettlement

It was considered at the time of appraisal that it would require resettlement of 35 families (legal residents) for new Bacolod airport and 70 families (legal and illegal residents) for Tacloban airport. It was planned to provide adequate compensation based on the market value to legal residents. The local government was also planning to provide resettlement land for illegal residents near the original land.

At the time of evaluation, it was confirmed that 187 hectare land was acquired for the project site in July 2007. The implementing agency made compensation to the land owners and the land ownership was completed smoothly. Also it was confirmed from the interviews with the implementing agency, Silay city and neighborhood community that the project site, which is in the suburb 5 km away from the city center, was sugar cane field. Tenant farmers were compensated by the land owners in form of money or alternative land. Some illegal residents living in the community had already moved to other places and there were no residents within the project site. Therefore, there was no resettlement or related trouble concerning acquisition of land for the project.

There was no resettlement or land acquisition for Tacloban airport as only equipment was provided to be used at the airport.

Based on above discussion, it could be said that the project had made some positive impact such as contribution to regional economic development with no negative impact.

3.5 Sustainability (Rating: b)

3.5.1 Structural Aspects of Operation and Maintenance

The implementing agency of this project was Department of Transportation and Communications (DOTC), which formulates air transportation policies, implements development projects for airports and air transportation facilities, plans public airport facilities and services and supervises private airline companies in the Philippines. And Air Transportation Office (ATO), which is a subordinate

organization under DOTC, was to be responsible for operation and maintenance of the airport. ATO had been in charge of operation and maintenance of all government controlled airports except for financially independent airports such as Manila and Cebu international airports. It therefore is considered that there is no special problem regarding operation and maintenance of the project.

ATO became a financially independent organization named Civil Aviation Authority of the Philippines (CAPP) in March 2008. CAPP operates 80 regional airports excluding 5 financially independent international airports such as Manila and Cebu international airports, formulates operation regulations regarding air transportation, inspects aircrafts and operates Civil Aviation College. Former ATO employees were transferred to CAAP. It seems necessary to reinforce the structural aspect of operation and maintenance as there is concern such as delay in responding to urgent breakdowns.

Both airports seem to have sufficient number of employees. 207 CAPP employees and 76 airport security employees are stationed at new Bacolod airport. 93 CAAP employees are stationed at Tacloban airport.

However, there seemed to be problems in communication and administrative work between the CAPP head office and these two airports. It was commented that long time was required to process administrative work in case of urgent repairs at CAPP head office, Bacolod and Tacloban airports. It also seemed that Tacloban would need an employee to operate the runway cleaner, which was acquired by the project.

From this, it could be concluded that there are slight problems in structural aspect of operation and maintenance of airport facilities.

3.5.2 Technical Aspects of Operation and Maintenance

Aerodrome Development and Management Service (ADMS) of CAPP head office adjusts requests from all the airports in the country and distributes required equipment, materials and capital to all the airports in the country, while responsibility of operation and maintenance of airports is in hand of the facility managers of each airport.

New Bacolod airport has, as operation and maintenance staff, 10 staff at electronic machinery division and 39 staff at building and ground operation division. Tacloban has 35 staff in charge of operation and maintenance of facilities and machinery. Both airports have sufficient number of staff for operation and maintenance. CAPP employees, however, learn operation and maintenance skills basically on the job training basis and there seems room for expanding existing training courses in the future

CAPP was planning to make a manual for medium and large-sized regional airports first and then another manual for small regional airports. However, the plan is being delayed.

It is expected that the manual should be made as soon as possible and the capital for repair would be distributed smoothly from CAPP to new Bacolod airport and Tacloban airport.

3.5.3 Financial Aspects of Operation and Maintenance

CAAP became financially independent organization in March 2008, as explained above.

Table 5 Revenue and Expense of CAAP
（Million pesos）

	2008	2009
Revenues	2,613	3,705
Main expenses		
Personnel costs	702	1,265
Operation and maintenance costs (including training)	619 （37% of revenues）	1,154 （31% of revenues）
Others	0.05	3

Source：CAAP (September 2010)
Note：Financial data of previous ATO was not made available to the evaluator.

Revenues increased from 2008 to 2009 as shown in Table 5. It is not possible to compare the financial status of the organization between appraisal time and evaluation time as financial data of previous ATO was not made available to the evaluator. However, both airports managed to increase revenues after projects were completed. Operation and maintenance costs of airport facilities and equipment are also on the rise.

CAPP adjusts annual budget of regional airports through the process of budget request and hearings and redistributes annual budget to each airport. That is to say, airports such as new Bacolod airport transfer the income to CAAP head office and do not hold the income to itself. These airports need to follow procedures to use the money for other purposes other than predetermined budget categories (for instance in case of emergent trouble of facilities and machinery). But the communication between CAAP head office and regional airports is not always smooth and this process tends to take long time. It may be partly because CAAP, being a new organization, is still in the process of building its structure.

There was a plan to entrust operation of new Bacolod and Tacloban airports to a private company at the time of appraisal, which had not yet been realized at the evaluation time.

3.5.3.1 Financial Status of New Bacolod Airport

Table 6 summarizes income and O&M costs of new Bacolod airport. Airport revenues have increased by 4.5 times from 20.6 million pesos in 2008 to 112.8 million pesos in 2009. It was mainly because the tariff was raised as its facilities met the international standards while traffic demand increased as air ticket prices lowered due to price completion among airliners. Annual O&M costs of new Bacolod,

equivalent to almost half of annual budget, are sufficient for usual O&M of the airport.

Table 6 Annual Revenues and O&M Costs of New Bacolod Airport

(Million pesos)

	2008	2009
Annual budget	22.1	43.9
Airport revenue	20.6	112.8
O&M costs of facilities and machinery	N.A	22.2 (51% of annual budget)

Source: New Bacolod Airport and CAAP (July 2010)
Note: Airport revenues include aeronautical and non-aeronautical revenues and other income.

3.5.3.2 Financial Status of Tacloban Airport

There has been no big change in facilities/equipment of Tacloban airport as it was not repaired by the project. Airport revenue increased from 2008 to 2009 on back of increased passengers, as shown in Table 7.

It was confirmed at the evaluation that electronic controlling unit of one out of two fire trucks was broken. There is no budget for repairing this precision unit and has not been fixed yet.

Table 7 Annual Revenues and O&M Costs of New Bacolod Airport

(Million pesos)

	2008	2009
Annual budget	75.3	46.0
Airport revenue	29.9	46.0
O&M costs of facilities and machinery	18.3 (24% of annual budget)	21.6 (47% of annual budget)

Source: Tacloban Airport and CAAP (July 2010)
Note: Airport revenues include aeronautical and non-aeronautical revenues and other income.

3.5.4 Current Status of Operation and Maintenance

3.5.4 .1 Current Status of Operation and Maintenance of New Bacolod Airport

It was confirmed at the evaluation that maintenance of the elevator and escalator installed by the project and the X-ray equipment procured under the urgent improvement scheme is consigned to another company while maintenance of general facilities is done by airport employees by themselves. There is no problem in maintenance and conditions of facilities and equipment seem to be good in general, except for X-ray equipment. Two of 4 X-ray equipments supplied by urgent improvement scheme were broken, which was causing trouble in passenger boarding.

The rooftop of the terminal building was originally designed in such a way that people could come up there to see the airport. However, the roof top had been closed in order to reinforce security following

2001 multiple terrorist acts in US. There is no plan to use the roof top for other purposes.

Power voltage at the airport is unstable due to power supply shortage and unstable power voltage problems prevailing in West Bisaya and the central air-condition control equipment got broken and inoperable. CAPP has secured the budget to investigate the reasons for breakdown of the central air-condition control equipment. CENECO, a private power supply company, is in the process of constructing a substation for the airport area, which is expected to solve unstable power voltage problem at the airport soon.

3.5.4 .2 Current Status of Operation and Maintenance of Tacloban Airport

It was confirmed at the evaluation survey that equipment procured by the urgent improvement scheme was maintained well in general, except for fire trucks and runway clear, which were broken. One of two fire trucks was inoperable as the electronic control was broken. The other fire truck had a problem with the engine and is also inoperable. The runway cleaner had never been used as there is no staff with adequate operation skill. The runway cleaner is also broken.

Some problems have been observed in terms of structural aspect and current status of operation and maintenance, therefore sustainability of the project is fair.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

The number of passengers and flights has increased more than the original plan at New Bacolod airport on back of brisk domestic demand in the Philippines in general. The project could satisfactorily provide sufficient infrastructure to meet this increasing traffic demand. Especially construction of new Bacolod airport could contribute to improvement in air transportation safety and airport services as well as revitalization of regional economy.

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

4.2 Recommendations

4.2.1 Recommendation to the Executing Agency

(1) Personnel to Control Procured Equipment at Tacloban Airport

The runway cleaner provided by the urgent improvement scheme to Tacloban airport has not been used. The reason may be that there is no personnel assigned to the task and it is not clear how to operate it. Therefore, the executing agency should assign a technician to carry out this task regularly.

(2) A Manual to Operate and Maintain Airport Facilities and Equipment

It seems at evaluation survey time that the command line and communication between CAAP and

regional airports was not functioning sufficiently.

CAPP has been planning to make a manual for regional airports for some time but the manuals have not been made yet. It may be one of the reasons for not so efficient operation and maintenance of the airport. It is expected therefore that responsibilities be made clearer and the manual should be made as soon as possible.

(3) Organization of CAPP

It would be important for CAAP to reinforce its operational structure in order to carry out airport operation and maintenance of the airport facilities and equipment better.

4.2.2 Recommendation to JICA

None.

4.3 Lessons Learned

(1) Construction of Power Supply Facility

It was originally planned that CENECO, a private local power supply company, would build a substation for new Bacolod airport, which though was not built during the project construction period. Therefore, the airport has the problem of power voltage instability. It was confirmed at the evaluation survey in September 2010 that CENECO is building the substation near the airport, which should solve the problem of power voltage instability in the near future.

The issue of power supply, including contracts with power suppliers, should be well planned at the project planning stage for similar projects in the future, as it is vital for operation of facilities and equipment.

(2) Intrusion by Trespasser

Construction of new Bacolod airport was temporarily suspended as there was an explosion near the power generating facility caused by an anti-government group. Adequate measures should be taken for similar projects in the future in order to prevent trespassers to enter the construction site.

Comparison of the Original and Actual Scope of the Project

Item	Original	Actual
1.Project Outputs		
(1) Construction of New Bacolod Airport		
Civil Works	Runway (2,000m x 45m, 7.5m shoulder) Taxiway (678m x 23, 10.5 m shoulder) Apron (passenger：33,657 m^2, general 6,720 m^2) Road (3,350m),Parking lot(320 cars, 15,428 m^2) Airport peripheral fence (12,880m)	No change No change No change No change 17,880m
Architectural Works	Terminal buildings Passengers:6,180 m^2 Cargo: 1,660 m^2 Control tower/administration building:1,000 m^2 Others (fire truck car park, firefighting equipment, power supply building, communication facility building, security staff building)	Basically no change No change No change
Air Navigation System	Radar navigation facility, air traffic control communication facility/equipment, airfield lighting facility/equipment, meteorological facility	No change, apart for addition of taxiway markers to the original equipment list.
Supporting Facilities	Power supply system: Water supply facility Sewage facility Fuel supply facility	An urgent power voltage stabilizer and an uninterruptible power supply were added. Water filtering facility was added. A drain construction was added. Cancelled
(2) Construction of New Bacolod Airport		
Civil Works	Runway (2,140m) Taxiway improvement Apron improvement Other facilities (courtyard road and parking lot)	All cancelled
Architectural Works	Construction of terminal building Construction of cargo terminal Construction of control tower	All cancelled
Air Navigation System	Improvement of air traffic security facility and equipment(radio, radar and airfield lighting)	All cancelled
(3) Urgent Improvement		
Old Bacolod Airport	X-ray equipment (4 units) Vehicles (1 grass mowing tractor, 1 dump truck, 1 runway cleaner and 3 fire trucks)	No change
Tacloban Airport	Re-pavement of the runway Construction of peripheral fence X-ray equipment (4 units) Vehicles (1 grass moving tractor, 1 dump truck and 1 runway cleaner and 3 fire-fighting cars)	No change Cancelled Changed to 2 units No change
2.Project Period		

	September 1999 – January 2005 (77 months)	September 1998 - July 2007 (107 months)
3.Project Cost (Sum of Phase I and Phase II)		
Amount paid in Foreign currency	12,942 million yen	5,978 million yen
Amount paid in Local currency	10,352 million yen (3,696 million pesos)	7,788 million yen (3,417 million pesos)
Total	23,294 million yen	13,758 million yen
Japanese ODA loan portion	17,471 million yen	8,769 million yen
Exchange rate	Phase I：PHP 1 = ¥3.5 (March 1998) PhaseII：PHP 1 = ¥2.8 (January 2000)	PHP 1 = ¥2.28 (Average of 2001 to 2008)

Approved Amount/ Disbursed Amount	22,222 million yen / 21,720 million yen
Exchange of Notes Date/ Loan Agreement Signing Date	June, 1998 / December, 1998
Terms and Conditions	Interest Rate: 2.2% Repayment Period: 30 years (Grace Period: 10 years) Conditions for Procurement: General Untied ---------- Consulting Services: Interest Rate: 0.75% Repayment Period: 40 years (Grace Period: 10years) Conditions for Procurement: General Untied
Borrower / Executing Agency(ies)	Government of the Republic of Kazakhstan / International Astana Airport[1]
Final Disbursement Date	June 2007
Main Contractor (Over 1 billion yen)	Alarko (Turkey) / Laing Limited (UK) / Marubeni (Japan) / Siemens Aktiengesellschaft (Germany) (JV)
Main Consultant (Over 100 million yen)	CH22M Hill International, Ltd. (UK) / Kisho Kurokawa Architect & Associates (Japan) / Pacific Consultants International (Japan)(JV)[2]
Feasibility Studies, etc.	Feasibility study, the Government of Kazakhstan (Consigned to CH2Mhill (U.S.)), October 1997
Related Projects (if any)	Master Plan, JICA, "Air Transportation Development Study", March 1997

2. Outline of the Evaluation Study

2.1 External Evaluator

YAMAGUCHI Takao, President, Gyros Corporation

2.2 Duration of Evaluation Study

Duration of the Study: March, 2010 – December 2010

Duration of the Field Study: June 21, 2010 – June 30, 2010; October 18, 2010 – October 21, 2010

2.3 Constraints during the Evaluation Study

The evaluator was unable to obtain sufficient project information from IAA and thus was not able to evaluate organization of IAA or financial aspect including IRR. It was partly because almost all IAA employees who were familiar with the project left the organization when IAA was restructured.

[1] International Airport Astana (IAA) was established under the Ministry of Communication as the State Enterprise Company, SEC by Government Decree No.60 in 1998. IAA become Closed Stock Company, CSC on 27th September 2002, and become Joint Stock Company, JSC in May 2005. The share of IAA is 100 % owned by Astana City.

[2] At the beginning, the joint venture was consisted of 3 companies, CH2M-KKAA-PCI, however, CH2M was dropped out after the completion of the design stage.