

1. Project Description



Project Location Map



New Passenger Terminal Pier No.1 Built by the Project

1.1 Background

Bandaranaike international airport, opened in 1959 at 32 km towards the north from Colombo city and also known as Colombo international airport, is the only international airport in Sri Lanka and functions as the gateway for the country. Traffic demand has been increasing at the airport.

Many of the facilities at the airport were supplied by Japan, UK, France, Netherland and Sri Lanka between 1984 and 1988 based on the master plan compiled by the Netherland in 1981. These facilities have become very old as no major repairing work has been done since then. The taxiway and apron, in especial, were seriously deteriorate needing for urgent repair. There was also problem of safety and convenience. The airport was not equipped with a boarding bridge and passengers had to take a bus to get on board and ground staff had to walk on the apron. It also took long time to handle boarding procedures and luggage at peak hours. And it became urgent to improve safety and convenience for passengers by reducing time for boarding and alleviate the rush. It was also urgent to expand the existing cargo terminal and build a new one as the capacity could not meet increasing demand.

1.2 Project Outline

The project objective is to satisfy increasing air cargo demand and improve convenience and safety for users at Colombo international airport by repairing old facilities, modernizing air traffic control facilities and building a cargo terminal building, thereby effectively contributing to economic

development of the region.¹

Approved Amount/ Disbursed Amount	12,384 million yen / 12,055 million yen
Exchange of Notes Date/ Loan Agreement Signing Date	July, 1999/ August, 1999
Terms and Conditions	<p>Interest Rate: 1.8% Repayment Period: 30 years (Grace Period: 10 years) Conditions for Procurement: General Untied</p> <p>-----</p> <p>Consulting Services: Interest Rate: 0.75% Repayment Period: 40 years (Grace Period: 10years) Conditions for Procurement: Bi-lateral Untied</p>
Borrower / Executing Agency(ies)	Government of the Republic of Sri Lanka / Airport and Aviation Services Sri Lanka Ltd. (AASL)
Final Disbursement Date	December 2006
Main Contractor (Over 1 billion yen)	Taisei Corporation (Japan) /Mitsubishi Corporation (Japan) (JV) / Selex Sistemi Integrati S.P.A (Italy)
Main Consultant (Over 100 million yen)	Japan Airport Consultants (Japan) / Nippon Koei (Japan)(JV)
Feasibility Studies, etc.	<p>-M/P, NACO (Holland), January 1981 -F/S, JICA (consigned to Japan Airport Consultants), August 1997 -SAPROF, JBIC (consigned to Pacific Consultants International), November 1998</p>
Related Projects (if any)	<p>- JICA, Technical Cooperation, “The Detailed Design Study on Bandaranaike International Airport Development Project in Sri Lanka”, November 2000 - JBIC, yen loan SL-P6,” Bandaranaike International Airport Development Project”, L/A in 1983 (L/A amount 10,200 million yen), completed in 1988</p>

2 . Outline of the Evaluation Study

2.1 External Evaluator

¹ The project's objective was changed to “contribution to economic development“ in order to make the project outcome and impact clearer.

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 19, 2010 – June 27, 2010; September 15, 2010 – September 21, 2010

2.3 Constraints during the Evaluation Study

This project is partial repair of the existing airport. The implanting agency continued to improve Bandaranaike international airport, including improvement of the engineering work done by this project, on its own even after the yen loan was completed.

In addition, some project outputs were changed. Thus, the implementing agency did not clearly understand the local portion of this project. Moreover, the Project Completion Report was not compiled because of difference in opinions between the implanting agency and the contractor, which made it difficult to understand the project. This evaluation is made mainly on information and data collected from the implementing agency in Colombo in June and September 2010.

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

3.1 Relevance (Rating: a)

3.1.1 Relevance with the Development Plan of Sri Lanka

At the Time of Project Appraisal (1999):

The government of Sri Lanka announced the six-year development plan (1999 – 2004) in 1999, in which it placed importance to “accelerated economic development” and “regional hub development of international cargo infrastructure facilities” and “investment for private sector priority and economic infrastructures” were two of priority policies. The six-year development plan also specified importance of improvement and modernization of existing infrastructure facilities and expansion and facility improvement of Bandaranaike international airport was considered as important policy.

At the Time of Project ex-post Evaluation (2010):

“Mahinda Chinthana Vision for the Future” announced by the President in 2009 insisted that it was important to increase competitiveness in South Asia in handling air passengers and cargos by developing air transportation sector.

3.1.2 Relevance with the Development Needs of Sri Lanka

Many of the facilities at Bandaranaike international airport were supplied by Japan, UK, France, Netherland and Sri Lanka between 1984 and 1988 based on the master plan compiled by the

Netherland in 1981. Major improvement work has not been made since then and the runway and passenger terminal had become old and obsolete. Traffic demand was weak at Colombo airport as the country was not considered as safe due to ethnic conflict since 1980's. The airport was not equipped with a boarding bridge and it therefore was not safe or convenient for airport staff and passengers. Also, there was an urgent need to increase the cargo terminal to cope with increasing demand.

Bandaranaike international airport is the only international airport in Sri Lanka and is an important international gate-way and base for economic growth for this island country. The traffic demand is at the airport is increasing even more following the end of the civil war in May 2009.

3.1.3 Relevance with Japan's ODA Policy

Japan's ODA policy toward Sri Lanka in 1999 placed importance to the sector of "development and improvement of economic infrastructure" and sub-sectors of "development of transportation infrastructure" and "improvement of social infrastructure".

This project has been highly relevant with Sri Lanka's 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.

	Plan	Actual
Civil Works	Taxiway extension (2km to the south) Apron Repair (14,000 m ²) Extension (50,000 m ²)	1,860 m ² x 45 m ² to the south 8,900 m ² including reinforcement of 1,000m ² 59,150 m ² Addition: - Extension of Apron C to the south (45,000m ² for space for 4 airplanes) - Installation of Visual Docking Guidance System (VDGS)
Architectural Works	Passenger pier construction (19,200 m ²) Passenger terminal repair (3,000 m ²) Construction of cargo terminal (15,500m ²)	18,000 m ² No change 13,000 m ² Addition: - Access road - A storage - Security checking point at the new cargo terminal
Air Navigation	Renovation and installation of radar control system	No change No change

System	Renovation of air traffic control facility Installation of meteorological observation system Installation of HF air communication system	No change No change Addition: - High-level electronic guidance system
Supporting Facilities	Power supply facility Purifying and water distribution system Sewage disposal facility Incinerator Telephone facility	Cancelled No change No change Change in design Cancelled
Consulting Services	51 months 8 to 12 months (bidding assistance) 24 months (construction management) 12 months (defect liability period)	66 months 21 months 46 months 12 months Addition: - A feasibility study on airport expansion project (Phase II, stage 2) was implemented.



Figure 1 Moving Walk at Entrance of New Passenger (Pier 1) Built by the Project



Figure 2 New Cargo Terminal Built by Project

Main reasons for the above changes in the outputs are explained below.

There was difference in opinions between the executing agency and the contractor regarding a part of the collapse found on the taxiway surface during the defect liability period. Thus, a defect liability certificate was not published at time of the evaluation survey. It was found, however, that the contractor will remedy the problem in the near future, based on the interview with both parties.

The taxiway area needing repair was revised to be reduced based on JICA's detailed design. It was the main reason for change in volume in civil works.

The air conditioning system at the concourse of the existing passenger terminal has a problem with the control software. The executing agency has not published a defect liability certificate. The interview

with both parties revealed at the evaluation that they were in the process to solve the problem.

A part of the HF communication system is damaged due to thunder light. The executing agency was planning to replace the damaged equipment by its own budget.

Central Environmental Authority of Sri Lanka (CEA) changed some environmental standards in 2001 after completion of the detailed design. Thus there was a need to change design of the incinerator to comply with the new standards.² The design was changed in April to December 2006 based on discussion between the executing agency and the contractor in 2003-2006 to satisfy the new standards in the area of waste disposal method and equipment operation. The environmental protection license issued by CEA was already received in September 2009. The facility complying with the new standards had been found installed and in operation at the time of evaluation survey.



Figure 3 Arrival Hall Improved by the Project

3.2.2 Project Inputs

3.2.2.1 Project Period (Sub-rating: b)

The project period was longer than planned.

The project period was 89 months from August 1999 (L/A signing) to February 2007 (up to completion of the construction work and equipment procurement), 37% longer than the original plan of 65 months from August 1999 (L/A signing) to December 2004 (up to completion of the construction work and equipment procurement).

Main reasons for longer project period was delay in procedures and approval following dividing the work into small-scaled bids and contracts, delay in negotiation among relevant organizations, delay in construction and addition of some works. Construction of the cargo terminal was suspended for 3.5 months as it was used as the storage for emergency materials when there occurred the Indian Ocean

² Standards for incinerators include aspects such as noise, solid waste proposal method, usage of bottom ash, skills and training of personnel, disposal volume of polyethylene products, combustion efficiency, burning temperature, fuel (diesel), colour of smoke, height of chimney and cleaning.

Tsunami in December 2004. It is considered as an unexpected external factor out of control of the executing agency.

3.2.2.2 Project Cost (Sub-rating: a)

The project cost was lower than planned.

Actual project cost was 12,064 million yen (foreign 8,710 million yen and domestic Rp 3,355 million, of which yen soft loan 12,055 million yen, 12% lower than the original project cost of 14,569 million yen (foreign 10,589 million yen and domestic Rp 2,152 million, of which yen soft loan 12,384 million).

The project cost was reduced as even local construction companies participated in the bidding³ thanks to division of the work into small scaled bids and contracts. Quality of the output, however, was not low despite lower project costs as the executing agency had sufficient control capabilities. Total project cost was 10,804 lower than the plan even if there were additional work such as apron expansion and installation of visual docking guidance system (VDGS). Another reason is considered to be weaker local currency than the plan.

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

3.3.1.1 Results from Operation and Effect Indicators

There were no indicators set up at the time of appraisal. Table 1 summarizes traffic movement based on JBIC SAPROF study in 1998 and JICA detailed design in 2000.

³ For instance, many Sri Lankan companies participated in biddings of cargo terminal construction and apron expansion work and had won the contracts against foreign companies and JV of foreign and local companies.

Table 1 Actual and Forecast Traffic Movement at Bandaranaike International Airport

		1997	2003	2007	2008	2009
Passengers (thousand)	Plan	2,319	3,663	4,861	5,161	5,416
	Actual	N.A	N.A.	4,899	4,642	4,242
Cargo (tons)	Plan	97,436	190,500	294,420	320,400	346,380
	Actual	N.A	N.A.	163,570	151,954	138,684
Flight movements	Plan	22,568	32,400	38,400	39,900	41,400
	Actual	N.A	N.A.	42,878	41,734	37,651
Peak-time passengers per day	Plan	7,259	11,630	14,980	16,380	17,220
	Actual	N.A	N.A.	N.A.	1,370	1,481
Peak-time cargo per day (ton)	Plan	301	620	964	1,050	1,155
	Actual	N.A.	N.A.	N.A.	515	567
Peak-time Flight movements per day	Plan	51	78	79	100	110
	Actual	N.A	N.A.	N.A.	123	122
Parking airplanes per day	Plan	11	16.6	20	20.5	21.6
	Actual	N.A	N.A.	N.A.	62	62

Source: SAPROF (1998), Detailed design study (2000) and AASL (July 2010)

* 2007 and 2009 figures are calculated by the evaluator based on average growth rate of 2008-2013 figures of SAPOF and DD.

**Repair Completion goal: December 2003

*** Actual completion: July 2007

Actual passengers and cargos were both lower than the plan in 2007 and 2008 as a result of aggravated civil war and world-wide economic recession. As both of these reasons were unexpected external factors and were uncontrollable by the executing agency, it would not be adequate to judge the project efficiency only based on these operation and effect indicators.

Aircraft movements and parking airplanes are increasing faster than the plan after 2008. Annual number of passengers decreased in 2009 than in 2008 but monthly figures started to recover following termination of the civil war in May 2009.

The project expected cargo demand to expand as there was prevailing estimate that air cargo in the whole Asia would expand in 1990's. However, actual growth of cargos was not as strong hit by the Asian economic crisis of 1997, the world-wide economic recession later and aggravated civil war⁴ after 2006.

Nonetheless, it could be considered that the project could provide airport infrastructure and services required to meet increasing traffic demand following the recent peace accord and stabilization of the internal affairs.

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

Table 2 compares FIRR and EIRR of the project both at the time of appraisal and evaluation. It is not possible to make a simple comparison as calculation methodology at the appraisal time is not available and preconditions are different. The project period is assumed to be 25 years for the analysis at

⁴ The civil war between the government and anti-government force was going on for 26 years. It aggravated following annulation of the accord in 2006. The peace accord was finally concluded in May 2009.

evaluation time.

FIRR was 2.25% at appraisal but was slightly better at 2.72% at evaluation, the reason for which may be better than expected airport revenues. EIRR was sufficient at 21.3% at evaluation albeit slightly smaller than 23.5% of the appraisal and 21.3% at evaluation.

Table 2 IRRs of Bandaranaike International Airport Project

	At Appraisal	At Evaluation Time
FIRR	2.25%	2.72%
Financial Costs	Project Costs, O&M costs, administration costs	Construction costs, facility costs, equipment costs, O&M costs, indirect costs including personnel costs, utility costs
Financial Revenues	Landing and parking charges, air security facility charges, aerobridge charges, airport entrance fees, duty-free shop tenant fees, fuel charges	Various types of airport revenues
EIRR	23.5%	21.3%
Economic Costs	Project costs excluding taxes and inflation	Construction costs, facility costs, equipment costs, O&M costs, indirect costs including personnel costs, utility costs
Economic Benefits	All the above financial revenues, indirect benefits through expansion of air transportation industry and tourism industry	Travel time saving for passengers switching from ship/land to air, tourism income, cargo income

3.3.1.3 Qualitative Effects

The project appraisal expected improvement in facility users' convenience and improvement in air transportation as qualitative effects of the project.

Airliners operating at Bandaranaike international airport insisted at the interview that convenience had increased after the project. Time required for immigration process was reduced owing to construction of the new pier, repair of the terminal and installation of the terminal. Also the concourse repair made it possible for even airport visitors to enter the airport building. Moreover, convenience and safety for passengers, especially for the aged, the handicapped and small children, improved thanks to the boarding bridge as they do not need to walk or take a bus to get on board any more. The space between airplanes has been widened as the apron space was expanded. There is now less risk of airplanes having minor collisions. Airlines also commented that turnover of the airplanes increased due to shortened time required for boarding and parking and that convenience, safety and efficiency have improved in areas such as cargo handling. It is further expected that low cost carriers already operational at Bandaranaike international airport would increase flights in the future.

The executing agency records daily service operation and sets the annual service target based on the

records. Table 3 summarized such data for the year 2008. The agency achieved 95% of the target in handling boarding passengers and 97% both in handling arriving passengers and luggage pick-up. The agency also met the self-established targets in prevention of the problems in the Colombo airport air space and prevention of delay in departing and arriving airplanes. It is therefore could be said that standards of the service and convenience is maintained high at Bandaranaike international airport.⁵

Table 3 Achievement Ratio of Service Targets of AASL(2008 Actual)

Items	Targets	Achievement Ratio in 2008
Handing boarding passengers	Complete safety inspection, check-in and passport control in 40 minutes	95%
Handing arriving passengers	Complete immigration, customs and luggage pick-up within 40 minutes	97%
Luggage pick-ups	Complete luggage pick-ups in 30 minutes	97%
Prevention of problems inside the Colombo airport air space	Contain the number of accidents to less than 40 out of 100,000 flights	100%
Prevention and management of delay in departing and arriving airplanes due to the crowd	Maintain the ratio less than 6% of the total flights	100%

Source: Annual Report, AASL, 2008

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

The appraisal expected that the project would contribute to development of the regional economy.

Table 4 summarizes GRDP of Greater Colombo Region, where Colombo airport is located and GDP of Sri Lanka. Both GRDP and GDP grew steadily from 2005 to 2009. The annual average growth of GDP was 6.4% during this period.

⁵ AASL announces key performance indicators to measure convenience and effect of the airport operation based on the annual plans in the annual reports.

Table 4 GRDP and GDP Trend

	Colombo Metropolitan Area	Sri Lanka		GRDP/ GDP
	GRDP (Billion rupees)	GDP (Billion rupees)	Growth rate (%)	
2005	1,065	2,453	5.4	43%
2006	1,472	2,939	6.2	50%
2007	1,664	3,579	7.7	46%
2008	2,002	4,411	6.8	45%
2009	-	4,825	6.0	-
Average growth rate (2005 - 2009)	-		6.4%	-

Source: Sri Lanka economic Update, World Bank

(1) Reduced Travelling Time for Travellers

Total number of passengers was 4.8 million at Bandaranaike international airport in 2007. Passengers decreased in 2008-2009 as the civil war aggravated. But the passengers could enjoy reduced travelling time, which is calculated as 1 billion rupees, or equivalent to 0.05% of GRDP of 2008. This benefit should grow further as the number of passengers is expected to increase after 2010.

(2) Other Economic Benefits

Bandaranaike international airport was the only international airport both at appraisal and evaluation time. International passengers increased following development and repair of the airport by the project. The number of passengers decreased from 2007 to the beginning of 2009 due to aggravation of the civil war but is expected to grow by 10% per annum from 2010 onwards. Other economic benefits, based on this estimate, are calculated to be 1.6 billion rupees in 2010 and 4.5 billion rupees in 2015.

From above, it could be said that the project has contributed to activation of the Greater Colombo Region.

3.4.1.2 Contribution to Regional Economic and Social Development

The interview with the executing agency confirmed that the number of people working at the passenger and cargo terminals has increased. The number of people working for the duty-free tenant shops has also increased as the shops increased following repair of the existing passengers. Thus, the project could contribute to the job market both directly and indirectly.

Bandaranaike international airport was the main gate for international activities such as tourism both at appraisal and evaluation. The number of tourists visiting Sri Lanka was down in 2007 and 2008, which coincides with the project construction period. It was also the period when the civil war became more serious. However, it is recovering steadily after the peace accord of May 2009. As Table 5 shows, the number of tourists for the first 9 months in 2010 was up by 28% year on year, or almost equivalent to the figure for 12 months of 2009. There came 433,000 foreign tourists in the first 6

months of 2010, up by 150% of the same period of 2009. ⁶

Table 5 Trend of Foreign Tourists Visiting Sri Lanka

	Foreign tourists (thousand)	Year on year growth rate
2007	494	-11.7 %
2008	438	-11.2 %
2009	448	2.1 %
2010 (up to September)	433	28 % (Year on year comparison)

Source: Sri Lanka Tourism Development Authority,
Key Statistic Indicators Sri Lanka Tourism 2009 and 2010

From above, it could be said that the project contributed to promotion of employment and tourism.

3.4.2 Other Impacts

3.4.2.1 Impacts on the Natural Environment

It was considered that the project would have little impact on the natural environment as it is improvement of airport facilities at the existing airport. There was no request to implement EIA for the same reason.

There was no big impact to the environment confirmed at the evaluation. There was however a clam from residents living nearby the sewage disposal facility regarding sewage water smell during the construction period. The executing agency installed a chimney to the facility for ventilation, which is considered to be an adequate measure.

Burden to the natural environment was largely reduced by installing incinerator and sewage facilities. This incinerator reduces the waste volume and produces reusable bottom ash. It is therefore more efficient and less burdensome to the natural environment than the old incinerator. For instance, daily disposal capability of the new incinerator is 1,000 tons in comparison to 6,000 tons of the old one.

The implementing agency received an EPL (environmental protection license) from CEA for the incinerator in September 2009 and sewage disposal in July 2006.

It could be considered that there was no particular negative impact of the project to the natural environment.

⁶ According to the quarterly report of UN-WTO published in April 2010, annual growth of foreign tourists was highest in Sri Lanka with 150%.



Figure 4 Incinerator Repaired by Project

3.4.2.2 Land Acquisition and Resettlement

This project did not entail land acquisition as it was improvement of facilities and equipment of the existing airport. Therefore, there was no resettlement required due to the project.

3.4.2.3 Others

AASL was able to acquire ISO9001/2008 in August 2010 as the airport's service improved and control system of the services was established following the project. Conditions for ISO9001/2008 are to satisfy customer needs and several standards and regulations as well as to provide the quality control system to satisfy customers. It could be said that the airport's social recognition and general evaluation has been improved by the project and efforts on the part of AASL.

From above, it is considered that the project had positive impacts such as contribution to regional economy development and social aspects including tourism promotion while it had little negative impacts.

3.5 Sustainability (Rating: a)

3.5.1 Structural Aspects of Operation and Maintenance

AASL is a public corporation owned 100% by the government of Sri Lanka and is under the supervision of Civil Aviation Authority of Sri Lanka both at appraisal and evaluation time.

AASL's responsibilities are specified in the air transportation regulations of Sri Lanka, as to implement operation and maintenance of the facilities, provide passenger services and conduct airport terminal tasks, air traffic control and airport security and fire-fighting activities at Bandaranaike international airport. It is the only international airport operated by AASL both at appraisal and evaluation time.

Figure 5 depicts the organizational structure of AASL, which is basically composed of three main

groups; administration, operation Bandaranaike international airport and implementation of new projects and repair, which are further divided into 8 sub-groups. The following 8 sections are in charge of technical aspects of the airport.

- Operation: Safety management, firefighting and air traffic control
- Maintenance: Airport control (maintenance and control of the all facilities and equipment), electric and machinery engineering (maintenance and control of electric and machinery equipment at the airport), electronic and airport security (security facilities and monitoring), civil engineering (maintenance and control of civil engineering facilities), IT section (maintenance of electronic control equipment)

Responsibilities of each division and the order line of AASL are clearly defined.

The number of employees was 2,300 at the appraisal as of January 1999 and increased to 3,208 at evaluation as of June 2010, of which 2,849 are stationed at Bandaranaike international airport office. The personnel increased during the past decade following expansion of the airport facilities and equipment by this project. It could be said that the project contributed to employment promotion in this aspect. Some of these newly employed are expected to work at the new international airport being built in Hambantota in the south region at present.⁷

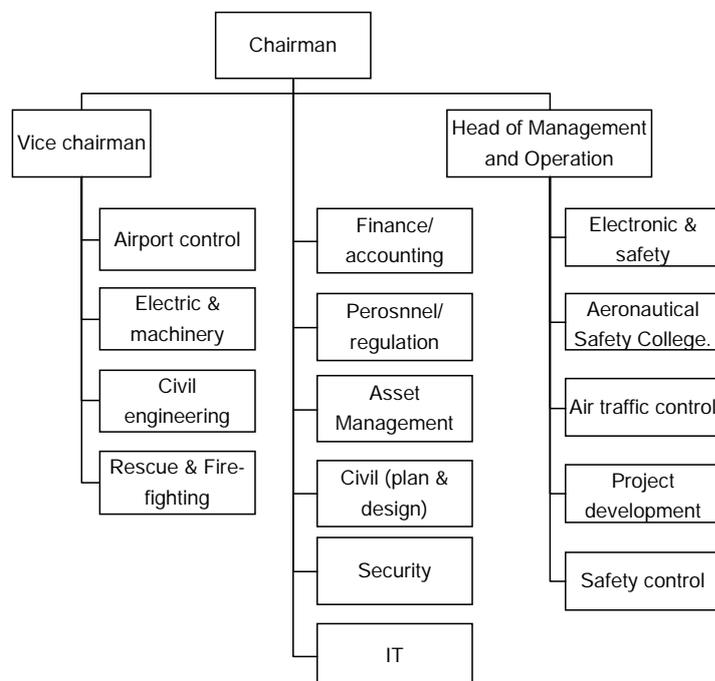


Figure 5 Organization Chart of AASL (as of September 2010)

⁷ The South international airport (provisional name), scheduled to constructed in 2012, is to accommodate air cargos and charter flights for foreign tourists.

New employment of AASL is decided based on the annual corporate plan and is implemented through approval and decision of the board. Annual reports of AASL list organizational structure and operation records.

AASL has established the organizational structure as a public corporation responsible for airport operation and maintenance and its management structure seems to be solid and sound. It could be said that there is no particular problem in structural aspects of operation and maintenance operation at Bandaranaike international airport.

3.5.2 Technical Aspects of Operation and Maintenance

The appraisal considered that AASL held sufficient skills in operation and maintenance of communication equipment for air traffic control as it owned the Aeronautical Safety College. The appraisal considered that AASL was capable of operation and maintenance of facilities and equipment provided by the project also because the skills of employees seemed sufficiently high.

There was 143 technical staff at AASL at the time of evaluation, all of which hold at least diploma or a bachelor's degree. AASL also provides training at the Aeronautical Safety College and dispatches staff to other training institutes both in and out of the country. 1,224 staff received training in the country while 85 was sent abroad for training in 2009.

Each of eight sections explained above is responsible for operation and management of facilities and equipment. Each section has complied manuals and regulations specifying how to regularly maintain facilities and equipment and checking points, in addition to manuals provided by equipment manufactures.

In summary, AASL holds enough staff with sufficient knowledge and skills. There employees are regularly provided with training in and out of the country. The executing agency is capable of handling the maintenance and breakdowns of the facilities and equipment at the airport.

3.5.3 Financial Aspects of Operation and Maintenance

AASL is a public corporation 100% owned by the government of Sri Lanka, under the supervision of Civil Aviation Authority of Sri Lanka. AASL receives a part of funds necessary for new construction and repair of facilities from the government budget. But other than that, it is financially independent.

The appraisal reports no particular financial problems with AASL. 47% of the airport income was sent to the government of Sri Lanka, while 40% was spent for operation at AASL and 13% kept as retained earnings for future investment. Apart of this airport income, AASL expected to receive tenant charges and sales right from shops at the airport as well as sales income from its own shops.

Table 6 summarizes AASL revenues in 2005 to 2010. Aeronautical revenues are composed of by landing charges, parking charges, overflight charges and airport facility charges while non-aeronautical revenues are tenant income, car parking fees, advertisement income, interest income

and lounge charges. Revenues have grown steadily in the period despite decline in air traffic volume. It shows AASL's efforts in financial management.

Table 6 Revenue Breakdown of AASL (Rp. million)

	2005		2006		2007		2008		2009	
	Amount	%								
Aeronautical revenues	1,047	38	2,990	58	3,153	50	3,176	45	3,151	45
Non-aeronautical revenues	1,710	62	2,133	42	3,162	50	3,818	55	3,814	55
Total	2,757	100	5,123	100	6,315	100	6,994	100	6,965	100

Source: AASL (2010)

Each division of AASL makes the budget request, which is adjusted and approved by the board of AASL both at appraisal and evaluation time. AASL confirmed that there is no shortage in O&M budget. Each division is allowed to make request for urgent budget such as in the case of breakdowns of machinery and equipment to monthly AASL board meeting, which then is generally distributed from AASL's non-operating budget.

As table 7 summarizes, O&M expenses account for the majority of airport revenues. It was 5,225 million rupees, or 79% of annual airport revenues in 2009. Approximately 30% of airport facility usage income is distributed to Sri Lanka Tourism Bureau to be spent for tourism promotion activities. Similarly, about 2.5% is distributed to Civil Aviation Authority of Sri Lanka to be spent for activities related to regulation and approvals in the area of air transportation and services. Civil Aviation Authority of Sri Lanka is also supervised by Ministry of Ports & Aviation Sri Lanka.

Table 7 O&M Expenses of AASL (Rp. million)

	Year	Revenues	O&M Costs	
			Amount	Proportion to revenues
Before completion	2005	2,757	2,088	76%
	2006	5,123	-	-
After completion	2007	6,315	3,846	61%
	2008	6,994	5,252	75%
	2009	6,965	5,525	79%

Source: AASL (2010)

From above, it could be said that there is no particular problem as to O&M budget of AASL.

3.5.4 Current Status of Operation and Maintenance

Facilities constructed and equipment procured by the project was generally in good condition and was operational in full at evaluation time.

There was, however, difference in opinions between AASL and the contractor as to status of a part of the taxiway and control system of the air-conditioning facility built by the project. AASL insists on defects by construction and had not yet issued the defect liability certificate for some facilities and equipment at the evaluation time. The constructor insisted that these malfunctions were triggered by operation and not be liability defect in construction or instalment. At the evaluation time, both parties

were having meetings to solve this problem as soon as possible. It was already agreed upon that the constructor would repair the taxiway pavement while the executing agency would replace the communication equipment. It is expected that AASL will solve these problems as soon as possible in order to avoid further problems in operation and maintenance of the said facilities and equipment.

No major problems have been observed in the operation and maintenance system, therefore sustainability of the project is high.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

Both passenger and air cargos at Bandaranaike international airport, the only international airport in Sri Lanka, are increasing on the back of recent brisk air transportation demand in Sri Lanka in general. And the project was able to provide sufficient airport facilities to cope with this demand hike at the airport. It was confirmed that the project had contributed to substantial improvement in operational safety and convenience in air transportation and airport service as well as to activation of the economic development of the region.

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

4.2 Recommendations

4.2.1 Recommendation to the Executing Agency

AASL has not issued defect liability certificates for some facilities and equipment provided by the project though they have already been delivered to AASL and have been operated and maintained by AASL. It is recommended that the executing agency solve this problem as soon as possible so that it could better conduct operation and maintenance of the facilities and equipment and thereby manage airport operation more sufficiently.

4.2.2 Recommendation to JICA

None.

4.3 Lessons Learned

Actual project costs were lower than the budget. It was partly due to weakening rupee but the main reason would be adopting small-scaled bids and contracts, which made it possible not only multinational corporations but also local companies could participate in the biddings. It introduced competition principle to the biddings, contributing to containment of the project costs. Meanwhile, quality of outputs was maintained high enough despite the low costs due to sufficient supervising skills on the part of the executing agency.

However, making small amounts of many contracts did make the administrative procedure for bidding and approval complicated and long and delayed the construction period.

The following is the lessons learned from this experience.

(1) Containing the contract amounts by supervising skills of construction

It is possible to contain the project costs by breaking the work into small sizes and maintain the output quality at the same time under good supervision of an executing agency. It however requires high supervising skills on the part of the executing agency as well as sufficient preparation period.

(2) Delay caused by making many contracts with small amount

Making many bids and contracts of small amount would make administrative procedures complicated. Therefore, it would be required to improve the structural aspect such as increasing staff of the executing agency and consultants.

Comparison of the Original and Actual Scope of the Project

Item	Original	Actual
1. Project Outputs		
Civil Works	Taxiway extension (2km to the south) Apron Repair (14,000 m ²) Extension (50,000 m ²)	1,860 m ² x 45 m ² to the south 8,900 m ² including reinforcement of 1,000m ² 59,150 m ² Addition: - Extension of Apron C to the south (45,000m ² for space for 4 airplanes) - Installation of Visual Docking Guidance System (VDGS)
Architectural Works	Passenger pier construction (19,200 m ²) Passenger terminal repair (3,000 m ²) Construction of cargo terminal (15,500m ²)	18,000 m ² No change 13,000 m ² Addition: - Access road - A storage - Security checking point at the new cargo terminal
Air Navigation System	Renovation and installation of radar control system Renovation of air traffic control facility Installation of meteorological observation system Installation of HF air communication system	No change No change No change No change Addition: - High-level electronic guidance system
Supporting Facilities	Power supply facility Purifying and water distribution system Sewage disposal facility Incinerator Telephone facility	Cancelled No change No change Change in design Cancelled
Consulting Services	51 months	66 months
2. Project Period		
	August 1999 – December 2004 (65 months)	August 1999 - February 2007 (89 months)
3. Project Cost		
Amount paid in Foreign currency	10,589 million yen	8,710 million yen
Amount paid in Local currency	1,794.5 million yen (970 million rupees)	3,345 million yen (2,998 million rupees)
Total	14,569 million yen	12,064 million yen
Japanese ODA loan portion	12,384 million yen	12,055 million yen
Exchange rate	Rp 1 = ¥1.85 (January 1999)	Rp1=¥0.8962 (Average of 2001 to 2007)