

Philippines

Metro Cebu Development Project (II)

Report Date: March 2001

Field Survey: September ~ October 2000

1. Project Profile and Japan's ODA Loan



Metro Cebu



Inayawan Sanitary Landfill



Mandaue Causeway Road



Northern Bus Terminal



Mandaue Public Market



Talisay Public Market

(1) Background

Metro Cebu comprises three cities (Cebu, Mandaue and Lapu Lapu) and seven towns (municipalities) with a total land area of approximately 80,000ha (15.7% of the total area of Cebu Island). The population at the time of the appraisal was approximately 1.1 million, accounting for 45% of the total population of Cebu Island. Metro Cebu was the second largest urban area in the Philippines, behind Metro Manila. Metro Cebu is the economic, trading and educational center of the central and southern Philippines, besides developing as a distribution relay hub and a tourist area. The establishment of the Mactan Export Processing Zone is part of a great surge in its economic vitality.

Under this situation, the buildup of social infrastructure was not keeping pace with the industrial development and the rapid increase in population in the areas, resulting in problems such as traffic congestion and shortages of water and electricity. Therefore, it was necessary to develop this area urgently with improvement of urban infrastructure and services in order to stimulate improvement of the living environment of the residents and the regional development.

(2) Objectives

To alleviate problems associated with population growth, such as traffic congestion and the decline of waste collection and other urban services, in order to improve the living environment for the area's residents, and also to improve urban functions that would spur investment in the Mactan Export Processing Zone and elsewhere in the region. These measures were intended to stimulate industry and commerce, create job opportunities and improve the residents' standard of living.

(3) Project Scope

The project included these components:

- [1] Expansion of national roads and construction of new roads.
- [2] Construction of bus terminals.
- [3] Expansion and development of public markets (Mandaue and Talisay Public Markets).
- [4] Development of solid waste management system.
- [5] Consulting services.

The Japan's ODA loan covered 75% of the total cost of the project, for the procurement of equipment, materials and services necessary for the implementation of the project. The loan agreement was signed in 1990.

(4) Borrower/Executing Agency

Republic of the Philippines / Regional Development Council-Region VII

(5) Outline of Loan Agreement

Loan Amount/Loan Disbursed Amount	¥4,301 million / ¥4,301 million
Exchange of Notes/Loan Agreement	October 1989 / February 1990
Terms and Conditions	Interest rate: 2.7%, Repayment period: 30 years (10 years for grace period), General Unfunded (partially unfunded for consulting services)
Final Disbursement Date	December 1997

2. Results and Evaluation

2-1 Expansion of National Roads and Construction of New Roads

Project Scope:

Expansion / Improvement (13Link : 52.58km)

(I) Lapu-Lapu (Link 44, 45), (II) Mandaue (Link 18, 22, 28, 29, 129, 132),
(III) Cebu (Link 8, 14, 34, 35, 38)

Construction of new roads (2Link : 2.80km)

Mandaue Causeway and Colon Road

(1) Relevance

This project aimed to improve the living environment of the region's residents by alleviating the traffic congestion associated with rapidly growing population, and the relevance of the project is still recognized today.

(2) Efficiency

The plan called for construction to begin in January 1992 and be completed by September 1994, but it began in March 1995 and was completed in April 1998, with approximately three and a half years delay. The delay was due to the time required for land acquisition¹. In interviews, the executing agency (DPWH VII District Office) stated that the relocation had ultimately been achieved through agreement with the residents and was carried out without major problems.

This component was divided into three packages (packages I-a, I-b and I-c), and all of them completed the construction by contractors. However, packages I-a and I-c have not yet been formally turned over due to procedural delays.

(3) Effectiveness

Measurement of effects such as traffic volume has not been carried out for the three packages, with some exceptions. For package I-b, the maintenance agency (the DPWH) says that it does not keep statistical data on traffic volumes, but appropriate measurements have been conducted, which indicate that the facilities are being used effectively after the completion of construction. Table 1 shows traffic volume data measured on a portion of the road in package I-a. The road has been used effectively since the completion of construction in March 1999.

Table 1: Traffic Volume (average vehicles per day)

(no./day)	1997	1998	1999	2000
V.Rama/Tres de Abril	37,102	N.A.	49,086	48,720
Gov. Cuenco Avenue	N.A.	N.A.	32,345	32,022

Source: DPWH VII District Office

The executing agency (DPWH) says that the roads which have not yet been formally turned over are

¹ The delay in land acquisition was due to concerns over low land valuations among landowners, delays in developing infrastructure at the relocation destination, and delays in documentation procedures for the transfer of ownership.

currently in use, and the traffic volume on each of the roads built under the project is already growing as they help to alleviate overall traffic congestion. In particular, the new Mandaue Causeway was constructed as part of the Mandaue coastal route that links between the Mactan bridge, which is the access road to the airport, and northern Cebu City. It is serving to clear congestion on central arterial roads.

(4) Impact

The main impacts anticipated at the time of the appraisal were improvement of the living environment (alleviation of traffic congestion) and economic development (assistance for development in the project area and its surroundings). The executing agency (DPWH) says that the development of roads has had a positive impact in attracting new investment and promoting regional development.

Social and environmental impact

As above mentioned, land acquisition took longer time than planned, but the executing agency (DPWH) reports that it was arranged based on the law, and that the relocation had ultimately been achieved through agreement with the residents and was carried out without major problems.

(5) Sustainability

The operation and maintenance (O&M) of the project after its completion is implemented by the VII District Office of the DPWH, for national road routes, and the relevant local authorities for roads other than national routes.

Out of the three packages which make up this component, packages I-a and I-c have not yet been formally turned over. The normal procedure for formal turnover of a road after completion is as follows:

- [1] When construction is completed, the DPWH issues Certificate of Substantial Completion which proves the completion of the project, and the contractor is responsible for maintenance for one year from that time.
- [2] Once the DPWH receives a report from the contractor that it has completed one year of maintenance, a final inspection is conducted. If the road passes the inspection, Certificate of Final Acceptance is issued which proves that the final turnover could take place.

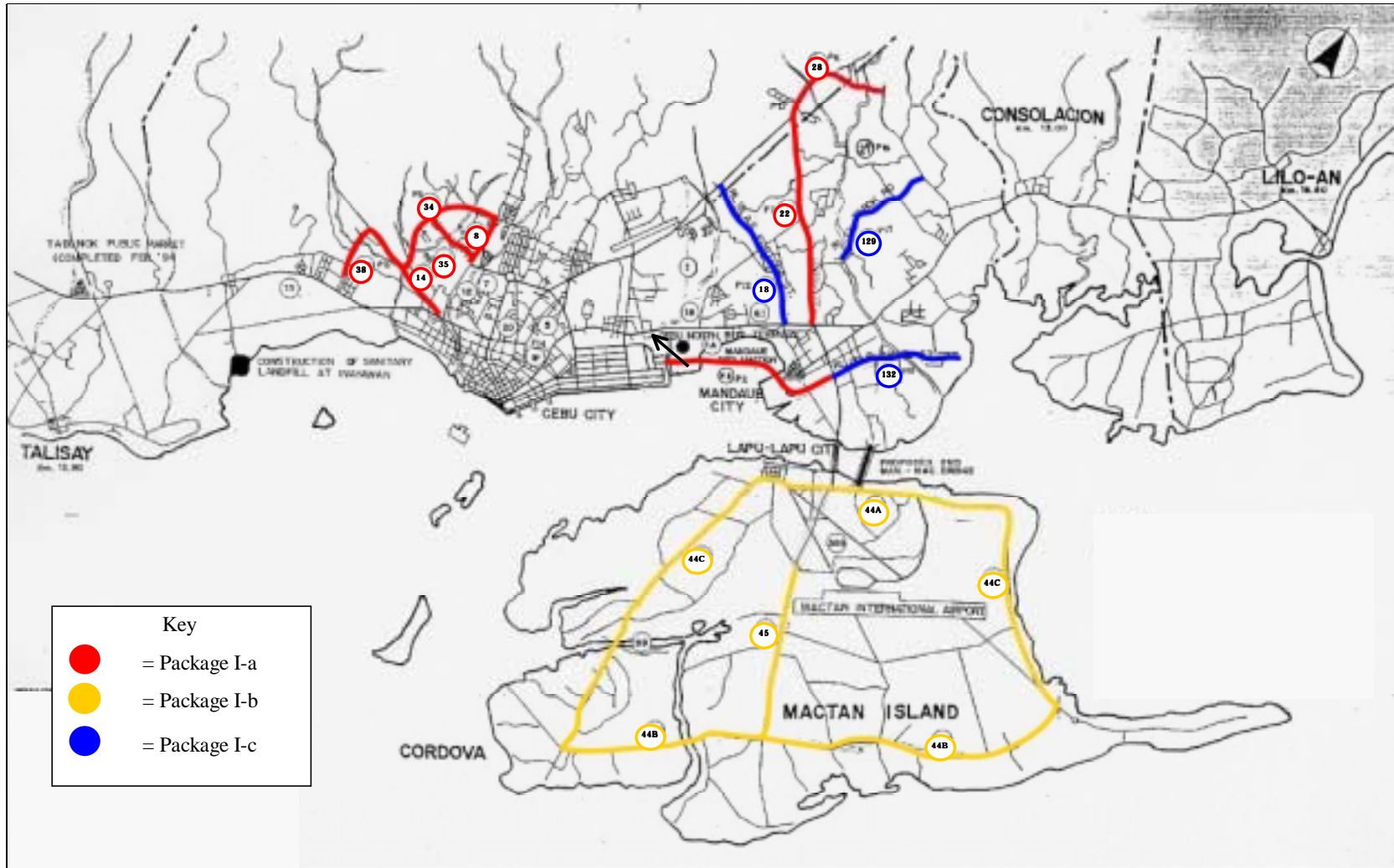
Certificates of Substantial Completion were issued for package I-a in March 1999 and for I-c in August 1998, but since then there have been no reports of maintenance by the contractor. The DPWH conducted an inspection of package I-a in February 2001 to check the situation. The contractor is now being ordered to take appropriate action based on the findings of the inspection.

Approximately two and a half years have passed since the completion of construction for package I-c and problems such as surface cracking have started to emerge, necessitating urgent remedial action. The DPWH continues to follow up on these problems.

DPWH, Region VII Office spends an average of 75,000 Pesos/ EM Km² per year on maintenance. The DPWH says that this budget is slightly too small, but it is managing to keep up with maintenance within the budget.

² EM Km = Equivalent Maintenance Km: This unit is used because the frequency of repair varies with road surface materials. One EM Km is equivalent to approximately 1.2~1.4km.

Metro Cebu Development Project (2) Figure 1 Expansion of National Roads and Construction of New Roads



2-2 Bus terminal construction

Project Scope

Construction of a bus terminal (arrival and departure lanes for buses and jeepneys) and related facilities (office, shops, peripheral roads etc.).

(1) Relevance

This project was implemented as part of the Metro Cebu development plan, and it met many objectives of improving the severe traffic congestion within Cebu City, bringing social infrastructure up to date, and encouraging urban services, regional promotion and improvements to citizens' living environments. However, the Northern Bus Terminal, which was the subject of this project, is located in Mandaue City, which is some distance from the center of Metro Cebu, and the surrounding area is not well developed. Also, the jeepney terminal is not adjacent to the bus terminal³, which means people have to use other means of transport, such as another jeepney, to move between the jeepney terminal and the bus terminal⁴. This low level of convenience is one factor behind the poor profitability of this bus terminal. The relocation of the bus terminal and its integration with the jeepney terminal is being discussed. Therefore, while this plan remains relevant, there is room for improvement in the areas such as convenience of transfer.

(2) Efficiency

The construction was scheduled to begin at the start of 1992 and finish in June of the next year, 18 months later. However, delays in the selection of consultants and the procedures for bidding set the project back by approximately one and a half years, so that it began in July 1993. However, the construction period was shortened from the planned 18 months to 16 months.

(3) Effectiveness

This bus terminal was a municipal project for Mandaue City, which leases the facilities to Cebu City. The facilities are actually run by the Cebu Provincial Bus Operators Multipurpose Cooperatives, Inc. (CPBO-MPC), which is an organization of bus operators, on the basis of a memorandum of agreement with Cebu City. (For details, refer to "(5) Sustainability").

[1] Operation effects

At the time of the appraisal, effects such as safety improvement, better living environment and economic development were mentioned. While the actual numbers of bus passengers could not be obtained, the utility rate of the bus terminal, as shown in Table 2, is at 87% of the initial target (actual 170 vs. planned 195 buses per day) and it has been providing transport services for passengers.

Meanwhile, the number of jeepneys using the terminal is far below the initial target, apparently because

³ The bus terminal and the jeepney terminal are not adjacent or on the same site because the bus terminal site is only 9,000m², which is too small to accommodate both terminals. The current jeepney terminal has a land area of 15,000m².

⁴ In Cebu, buses are used for medium and long distances and jeepneys are used for medium and short distances of up to 30km.

the cramped site of the bus terminal makes it difficult to use as a terminal for jeepneys, which are for short and medium-distance journeys. It is also apparent that the location of the terminal is inconvenient for passengers. Most jeepneys use the new jeepney terminal, which is situated a short distance away in Cebu City. In 2000, when the field survey was conducted, shop occupancy was only 60%. The CPBO-MPC regards that this is due to problems with the location of the bus terminal and the locations of the stores within it.

Table 2: Utilization of the Bus Terminal

Type of usage		Target value	1997	1998	1999	2000
Shop occupancy (%)		100	60	70	70	60
Users (vehicles /day)	Buses	195	150	160	170	150
	Jeepneys	1,331	70	80	75	70

Source: CPBO-MPC

[2] Financial Internal Rate of Return (FIRR)

The bus terminal's revenue over the last three years is around 3.5 million Pesos per year and operating costs are around two million Pesos. That leaves a profit, but once the CPBO-MPC pays the lease charge stated in the memorandum of agreement with Cebu City (two million Pesos a year), it runs a loss of 500,000~600,000 Pesos a year. This deficit is covered by the profit the cooperative makes from the jeepney terminal it operates. The bus terminal's profit and loss situation is as shown in Table 3 (the figures do not include the annual lease charge of two million Pesos).

Table 3: Bus Terminal profit and loss Situation

Classification	Unit: peso			
	1997	1998	1999	2000
Car parking fee profit	1,954,221	2,008,571	2,258,179	2,243,022
Rent on facilities on the terminal building	710,889	1,038,040	1,007,859	1,021,080
Other profit	435,419	471,107	518,541	687,145
Total (A)	3,100,529	3,517,718	3,784,579	3,951,247
Maintenance costs (B)	1,899,549	2,047,829	2,437,627	2,481,046
(A)-(B)	1,200,980	1,469,889	1,346,952	1,470,201

Source: CPBO-MPC

The appraisal calculated the FIRR for the terminal at 13.7%, taking car parking and shop rental fees as the benefits and project cost and maintenance cost as the costs. With both the lease and depreciation cost excluded from IRR calculations and the project life set at 25 years, the recalculated FIRR is 2.3%. The result depends on the conditions set for the appraisal, but the main reason is estimated to be the low utility rates for the facilities.

(4) Impact

The positive impacts of the project are that the creation of a reliable bus terminal organization has made bus services more convenient for their users, and that employment opportunities have been created for vendors and others. Before the project, buses stopped at scattered locations such as roads and gas stations, but now they park at one location, which reduces the negative impact on the surrounding environment.

On the other hand, noise is one negative environmental impact. The noise is generated by buses using the terminal, and staff, including drivers, have been cautioned to reduce it. There used to be a waste disposal problem, but that was solved by the provision of a waste collection truck from Mandaue City.

(5) Sustainability

This project was implemented as a project of Mandaue City, but Cebu City took a 25 year lease for the operation of the terminal in a lease agreement dated 11th January 1995. Cebu City concluded a memorandum of agreement dated 15th November 1995 with the Cebu Provincial Bus Operators Multipurpose Cooperatives, Inc. (CPBO-MPC) under which the cooperative is rented the facilities to operate over a period of 25 years.

The CPBO-MPC has a staff of 14, including the manager, for the operation and maintenance of the bus terminal and the jeepney terminal. The mayor of Cebu City issued "Executive Order No.95-08: An Order Creating a Management Advisory Committee for The North Bus Terminal" dated 1st September 1995, which was the basis for the creation of a management advisory committee. The committee consists of eight members, with substitution of the mayor of Cebu City. Its role is to devise policy proposals for the operation of the terminal and provide overall advice and supervision. The CPBO-MPC has also laid down Rules for Terminal Use and Operation, which came into effect on 27th December 1995 and is applied in the day to day running of the facilities. Regarding the financial condition, while it seems to be difficult for the bus terminal alone to be operated favorably as described before, in combination with the jeepney terminal, the pair forms a viable business.

2-3 Expansion and development of public markets (Mandaue Public Market)

Project Scope

- [1] Construction of market buildings (total building area: 7,330m², number of shops: 859).
- [2] Development of parking lots and sidewalks.
- [3] Improvement of water drainage facilities.

(1) Relevance

The Mandaue Public Market is located in the center of Mandaue City (population 195,000 in 1995) and is able to sell food and sundries to local residents efficiently. This project aimed to expand and develop a general public market that would be independent, hygienic and safe, in order to provide residents with benefits such as improved urban functions and more business opportunities in the city. It was also expected to relieve traffic congestion on roads and on sidewalks that were crowded with street sellers. The relevance of the plan is still recognized today.

(2) Efficiency

Construction was to start in January 1992 and end in December of the same year, but in fact it started in May 1995, approximately three and a half years late. Mandaue City explains that the delay was due to procedures required for the temporary relocation of traders using the Mandaue Public Market to another location. Specifically, the procedures included the preparation of land for the temporary relocation site, procedures for obtaining contractors and budget acquisition. The construction was completed almost as planned, although it required 14 months, slightly over the 12 months anticipated in the plan.

(3) Effectiveness

[1] Numbers of customers and shops

In 1999 there were 1,330 shops, of which 1,000~1,050 were in use. The numbers of customers per day have not been counted with any precision, and the market estimates an average of 3,500 per day. However, the actual number entering the market appears to be higher, and the market is prospering.

[2] Financial Internal Rate of Return (FIRR)

At the time of the appraisal, an FIRR of 16.06% was anticipated for the project. The FIRR recalculated on the basis of business profits for the last three years is 9.0%.

(4) Impact

The project has been observed to help improve the living environment for local residents. The public market where the citizens can buy food and sundries cheaply is located close to the city hall and it provides the citizens with good urban functions and business opportunities.

Efforts are being made to prevent traffic congestion around the public market, through measures such as

restrictions on motor tricycle parking between 08:00 and 19:00. In addition, a car park was built near the market in February 1999. A waste collection center has been built 100 m away from the market to hold its wastes. Every night wastes are carried from the market to the collection center, and it is carried to the Mandaue city waste disposal facility. Thus care is taken over hygiene in the market.

(5) Sustainability

[1] Operation and Maintenance

Organizationally, Mandaue Public Market is under Mandaue City administration. It is now staffed by 105 workers, including cleaners and guards on a three-shift for 24-hour. Fifteen staff have been added to the complement of 90 as of the end of 1999. The additional staff are employed for cleaning, security and fee collection. The management of the market employs a sectioning approach in which shops of the same type are grouped together in the interests of hygiene, and the retailers are instructed in the hygienic and legally proper operation of their stores. The market operators are well aware that providing both buyers and sellers with safety and order in a clean place of business is an important service.

[2] Financial Status

As Table 4 shows, business and other profits in 1998 were double those of the preceding year, and 1999 again showed growth of nearly 40% on the preceding year. Growth in profits from store rental fees is particularly high⁵. Such growth over a short period can be regarded as the result of improved collection rates for store rental charges and other charges, which is to say management efforts, rather than the result of growth in the numbers of stores or customers. Initiatives by the mayor have had a major influence in the upturn of the market's financial position. The mayor reviewed the old market ordinance, which regulated the operation of the market and was adopted in the 1980s, and replaced it with a new market ordinance in July 1998⁶. The mayor also appointed people with private sector backgrounds to run the market, and took appropriate action on squatting in the market, in line with relevant domestic laws.

Mandaue City is considering privatizing the operation of the Public Market in future, rather than leaving it under city control. Thus the sustainability and independent development potential for the Public Market are commendable in terms of organizational system and financial status.

⁵ Mandaue Public Market has numerous revenue sources, including rent payments on shops and spaces, taxes on goods entering the market, water usage charges, toilet usage charges, and car entry charges. Stores which are expanded beyond the regulation size pay additional charges for the expanded portion, and considerable efforts are exerted in the setting and collection of charges.

⁶ According to the market ordinance, the mayor of Mandaue City is to carry out general supervision of the operation of the market, but direct supervision of the market is entrusted to the market supervisor. The market ordinance for Tallsay Public Market, in contrast, says that the mayor shall directly supervise the market.

Table 4: Profit and Loss Position for Mandaue Public Market

Units: Pesos			
Classification	1997	1998	1999
Revenue			
Sales and other revenue	7,854,344	15,775,965	21,886,346
Portion of the above from market operation	3,660,372	4,077,671	7,051,525
Portion of the above from stores rentals	4,193,973	11,698,294	14,834,821
Costs			
Personnel costs	5,243,476	7,857,733	6,138,546
Maintenance and other business costs	3,253,315	5,959,264	12,091,609
Capital expenditures	120,375	0	0
Total expenditures	8,617,166	13,816,997	18,230,155
Business profit	-762,822	1,958,968	3,656,191

2.4 Expansion and development of public markets (Talisay Public Market)

Project Scope

- [1] Construction of market buildings (two buildings, total building area: 1,975m², number of shops: 260).
- [2] Improvement of parking lots and sidewalks.
- [3] Land filling of low-lying areas
- [4] Improvement of water drainage facilities.

(1) Relevance

The urbanization of Talisay City⁷ (population 151,000 in 1999) is proceeding rapidly⁸. Its position adjacent to Cebu City (population 662,000 in 1995) means that it must absorb extra demand for housing and commercial and retail activity which exceed the capacity of Cebu City. This plan was relevant as it aimed to enhance urban functions and provide citizens with functions such as business opportunities by expanding and developing a general public market.

(2) Efficiency

The start of construction was delayed for one year, but the length of construction was around one year, as planned. When the site was surveyed, technical problems were observed with the drainage equipment, which had a very small gradient which did not give a smooth flow of water, leaving room for improvement on hygiene. For the water supply equipment, while some shops used piped water, most of the water supply demand is met by well water obtained on the site. However, the capacity of the water supply tank is too small, and water distribution equipment to serve the rented stores is not in place⁹. The market also pointed out problems with the toilet facilities.

(3) Effectiveness

- [1] Usage of the market

Table 5 shows figures estimated by Talisay Public Market for numbers of users and shops¹⁰.

⁷ Talisay was changed from a municipality to a city in December 2000.

⁸ The average annual population growth rate in Talisay between 1990 and 1995 was 4.2%, rising to 5.8% between 1995 and 1999, while the equivalent rate in Cebu City between 1990 and 1995 was 1.64% per year.

⁹ There are two mains water faucets in the fresh fish corner and one in the toilets.

¹⁰ Talisay Public Market has an area of 13,553m², of which approximately 3,300m², around one quarter, was covered by the Japan's ODA loan.

Table 5: Usage of Talisay Public Market

	Target	1997	1998	1999	2000
Users per day	1,500	1,000	1,200	1,500	2,000
Stores per day	500	550	600	700	850

Source: Talisay Public Market

Note: These are figures for the whole of Talisay Public Market, including the portion which was covered by the Japan's ODA loan.

Records from the year of completion up to 1996 are not available, but both users and stores have been increasing steadily over the last four years, and reaching the target levels by 1999.

The numbers of market users are estimated by the market, but the member of city staff responsible says that the actual number of users is much higher. According to the market operator, the market is particularly crowded in the morning and evening, and is prospering with many users every day. The figures for the number of shops are for the number installed in the market's buildings, and there are approximately 300 other stores trading in simple structures erected around the buildings.

The market operators explain that use of the market is increasing by users from other nearby cities as well as users from Talisay City (transport costs to reach Talisay public market are cheaper than those to reach Cebu City, and the sales prices of goods in the market also reflect the lower transport cost). The rapid population growth mentioned before and the market's good location are also boosting usage. Considering the high level of usage of the expanded market, this project can be regarded as having attained its objective of helping to enhance the development of distribution functions.

[2] Financial Internal Rate of Return (FIRR)

The FIRR figure calculated at the time of the appraisal was 21.0%, taking shop rental charges and other charges (entry charges to traveling traders, car parking fees etc.) as the main benefits. Looking at the level of revenue from shop rental charges and other charges, which are lower than anticipated, the FIRR is currently negative.

(4) Impact

[1] Improvement of the standard of living for local residents

The expansion and development of this market has made daily life more convenient for local residents. By now the market is three times larger than its previous size, enabling it to offer a more plentiful variety and quantity of foods and sundries. People who previously had to go all the way to Cebu City to buy or sell goods (particularly people living in mountainous areas) can use this market instead, saving their travel time and distance. They are also able to buy goods more cheaply.

[2] Traffic congestion

Alleviation of traffic congestion was one of the project effects anticipated at the time of the appraisal. However, considering this market alone, it is situated where the Cebu South National Highways crosses the Toledo – Manlipisu highway, which is one of the factors that cause the morning and evening congestion

(6~9a.m. and 4~8p.m.) by the motor tricycles people used for shopping. Congestion leads to further problems of exhaust gases and noise. There is now a plan in Tallsay City to move the market to a new location, but at the time of the field survey there was still no prospect for finding funding or a use of the present site, and land acquisition procedures for the new site had not begun. In addition to the relocation issue, it would be necessary for Tallsay City to consider measures to improve the current situation, such as adoption of restrictions on parking at congested times.

[3] Order and congestion inside the market

There are large numbers of stores and sellers, and the aisles inside the market are narrow, which causes extreme congestion inside the market. The field survey found that the reason for narrow aisles is that retailers using shop spaces line up goods beyond their contract floor areas, and the city was unable to enforce observance of the market rules. The market is not surrounded by any fence, which shows a need for improvement in safety measures.

[4] Waste management problems

The Tallsay Public Market uses one truck owned by the market to dump wastes at the public waste dump site in the Boason area of the city, with four trips a day, two in the morning and two in the evening. However, when the truck breaks down the collections tend to be inadequate, and apparently there are complaints from local residents over the bad odor. It is thought that the dump site could be used for two or three more years from now, and the construction of a large waste disposal facility at a separate location is now being planned. Discussions with local residents are now under way.

(5) Sustainability

[1] Operation and Maintenance

Tallsay Public Market is part of the city government, and its organization is broadly split between six departments, with a total of around 84 staff. Nine of those staff are dispatched by the city government and are not paid by Tallsay Public Market.

The rules for usage charges and operation of Tallsay Public Market were laid down in Tax Ordinance No.93-12 (Revenue Code of the Municipality of Tallsay, Cebu), which went into effect in January 1994. The Tax Ordinance puts the operation and personnel management of the market under the direct supervision and management of the mayor of Tallsay City, while all revenues are under the direct supervision and management of the financial officers of the city government. The Market Committee of Tallsay Public Market, which has the mayor as its chairman, comprises the city's finance officer (or a representative) and city council members (or their representatives). The role of the committee is to run competitive bids for the use of empty or newly built shop spaces, with the trader offering the highest rent being permitted to use the shop. Applications for the use of shop spaces are to be submitted to the mayor's office. Thus the operation, finances and personnel management of the Tallsay public market are all controlled by the city government, and in some instances, appropriate measurements seem not to be taken properly, such as dealing with rent defaulters.

[2] Financial Status

The financial status of Tallsay Public Market (see Table 6) shows that operating revenues have failed to cover operating costs for the last three years. Maintenance expenditure also appears not to be sufficient to meet maintenance needs. According to Tallsay city government, one reason could be the fact that the Tallsay city government does not handle the collection of rental fees efficiently, and therefore does not obtain adequate revenue. Main reason for this would be the lack of the implementation of the strict measures against those who do not pay their fees.

Table 6: Profit and Loss Position for Tallsay Public Market

Classification	1997	1998	1999
Revenue			
Sales and other revenue	5,692,826	6,615,236	7,286,648
Sales and other profit	1,161,576	1,067,078	1,656,944
Shop rental (Rental Market)	4,472,595	5,514,932	5,587,203
Culture Center	58,655	33,226	42,500
Costs			
Personnel costs	3,284,960	4,184,964	4,589,816
Maintenance and other operating costs	2,624,492	4,672,136	4,260,327
Capital expenditures	795,000		
Total expenditures	6,704,452	8,857,100	8,850,143
Business loss	-1,011,626	-2,241,865	-1,563,496

The following measures would be important steps to bring improvements in these operational aspects:

- Learning from Mandaue Public Market, which has turned its financial position around.
- Introduction of private sector expertise into the management.
- Training of market staff and clarification of their responsibilities.
- Review of the rental charge system¹¹.
- Education of shop users in proper payment and hygienic practices.

¹¹ We were told that the current charge system sets differences in rental charges between shop types, but does not differentiate between shop locations.

2.5 Development of Solid Waste Disposal System

Project Scope

- [1] Procurement of the vehicles, equipment and materials necessary for a solid waste disposal system.
- [2] Development of the Inayawan disposal site in Cebu City.
- [3] Development of the Labogon disposal site in Mandaue City.

(1) Relevance

Cebu City has a total of 82 barangay (towns and villages), and it collects wastes from the 52 barangay in the urban area. Collected wastes are disposed of at the Inayawan sanitary landfill. At the appraisal stage of this project, the population of Cebu City was estimated at 740,000 in 1993 and 850,000 in 2000. With the population growing constantly, the volume of wastes generated also rises and, as a way of meeting the needs of beneficiaries who want wastes to be disposed of properly, this project is still relevant today.

(2) Efficiency

[1] Implementation Schedule and Timing

The Inayawan sanitary landfill was scheduled for completion by mid-1994 under the initial plan, but in fact it was delayed by over three years, to August 1997. The start of construction was delayed by land acquisition problems, which led to the equipment needed (for the collection, transportation and burial of wastes) for the operation of the solid waste disposal system was obtained over a year before construction of the sanitary landfill began. It would have been more efficient to time the purchase of this equipment to match the completion time of the sanitary landfill site. Furthermore, the medical waste disposal incinerator obtained as an addition to this project was rendered unusable by a change in the Philippines' environmental regulations, and it is now disused. The material recovery and storage building devised as an related facility for the sanitary landfill for the sake of scavengers, is now disused due to the inconvenience of its design.

The Mandaue City Labogon disposal site took time to acquire the Environmental Compliance Certificate from the Department of Environment and Natural Resources, which delayed the schedule, and was ultimately excluded from the ODA loan.

[2] Project Scope

The equipment procured for the collection and transportation of wastes included many alterations from the plan due to a review of the necessary equipment. Of the equipment procured, all of them other than the collection trucks and bulldozers are utilized by Cebu City for other purposes, such as road maintenance and earth movement, as the need arises.

[3] Project Cost

The planned project cost was 108 million Pesos (¥669 million), but the actual cost was very different, at 312 million Pesos (¥1,246 million). The cost increase was due to additional earthworks, increased use of Portland Cement Concrete Pavement (PCCP) and an addition of incinerator.

(3) Effectiveness

Table 7 shows the daily volumes of waste discharge and collection and the collection rates in Cebu City. In the first year, from October 1998 to September 1999, waste collection amounted to around 90% of the estimated discharge volume. All the wastes collected in Cebu City are disposed of at Inayawan sanitary landfill. At the time of the appraisal, the waste collection rate in Cebu City was estimated to be at a low level due to the shortage of collection trucks¹². Taking that problem into account, this project can be judged to have made a contribution to its objective of alleviating the decline of urban services such as solid waste disposal.

Table 7: Volumes of Discharged and Collected wastes (estimated)

	October 1998 ~ September 1999 ^(Note)	October 1999 ~ September 2000	October 2000 ~ September 2001
Volume of solid waste discharged by Cebu City (tons/year) (a)	135,086	136,820	138,680
Volume of solid waste collected and disposed of by Cebu City (tons/year) (b)	119,316	114,438	N.A.
Collection rate (b)/(a) x 100	88.3%	83.6%	N.A.

Source: Department of Public Service (DPS), Cebu City

Note Operation of the Inayawan landfill site began in September 1998.

(4) Impact

[1] Positive contribution to residents' living environment

The collection rate for waste discharges in the waste collection area is now over 80%. The degree of this project's contribution to residents' living environment can be inferred from the improvement in waste collection rate.

[2] The state of land filling at the sanitary landfill sites, and the environmental problems

This sanitary landfill is unable to carry out the proper land filling of the wastes according to the plan because the procured equipment is not used sufficiently and the cover soil (lime is used, which is ideal for coverage) is not used efficiently. The material recovery and storage building is unusable, obliging scavengers to work on the land filling site. Cebu City is considering changing the specifications of this facility to make it use in a way close to the original plan.

Bad odors have been pointed out as a negative environmental impact of the project but lime is being used as a countermeasure. There have also been some complaints of noise at night, but it is said that it is not a serious problem. According to the Cebu City Department of Public Services (DPS), monitoring of the sanitary landfill and its surrounding environment by a multipartite monitoring team (comprising city council members, staff of the Inayawan sanitary landfill, the Department of Environment and Natural Resources (DENR), NGOs and residents' representatives) is scheduled, but while the meetings were held

¹² At the time of the appraisal, the collection rate was estimated at 20~30%, but that is no more than an estimate because the volume of wastes was not measured accurately at that time.

the monitoring has not yet been taken placed.

[3] Social Impact (relationship with scavengers¹³)

The scavengers who had been collecting waste before the construction of the sanitary landfill were concerned that the implementation of the project would prevent their own waste collection activities in future, and they opposed the project as a result. Cebu City responded by allowing the scavengers continued access to the sanitary landfill on the condition that they form a union. The union is named the GKK-LIHOK PagtInabangay Multi-purpose Cooperative and it exchanged a memorandum of agreement (MOA) with the Cebu City dated 27th June 1997.

Under the MOA, Cebu City permitted the scavengers to recover waste under certain conditions¹⁴. The advantage for the city was that recycling by the scavengers would extend the lifespan of the sanitary landfill. The successful organization of the scavengers and the creation of a framework for discussion, through the union, on their use of the waste disposal site, is a commendable secondary benefit of this project.

(5) Sustainability

[1] Operation and Maintenance

The operation and maintenance (O&M) of the project after completion is implemented by Cebu City, as originally planned. At the time of the field survey in October 2000, the Inayawan sanitary landfill was attached to the Garbage Collection Division of the Department of Public Services¹⁵. The Garbage Collection Division has 321 staff, including 14 who currently operate the Inayawan sanitary landfill. The Inayawan sanitary landfill is calling for another 7 workers to enable sustained operation of a two-shift system.

Table 8 Maintenance Cost of Inayawan Sanitary Landfill

	Unit: million peso		
	1998	1999	2000
Maintenance cost	0.3	1.7	4.1

Source: Inayawan sanitary landfill (Department of Public Services, Cebu City)

Note The Inayawan sanitary landfill obtained cover soil free of charge in 1998 and 1999, but the maintenance budget for 2000 included 1.4 million Pesos for coverage soil.

¹³ There are now approximately 300 scavengers engaged in waste recovery, working in two shifts of 150. At the time of the appraisal the scavenger population was estimated at around 200 in 1989. They live outside the disposal site, and their daily income is estimated at approximately 200 Pesos per day.

¹⁴ Cebu City organized the scavengers into a union, and worked through the union to ask them to use the waste disposal site and carry on their waste recovery work according to set rules. For example, the MOA stipulates that 16 is the minimum age for those working in waste goods recovery, and all those working in sorting and recovery shall be provided with uniforms and equipment to preserve their health.

¹⁵ Following the restructuring of Cebu City government in January 2001, the site, as a sanitary landfill, is organizationally separated from waste collection within the Refuse Collection and Disposal Division, which is under environmental waste management of the Department of Environmental Management and Public Services.

Table 8 shows the maintenance costs for the Inayawan sanitary landfill. The landfill went into operation in September 1998, thus its maintenance costs for FY 1998 are lower than those for FY 1999. The cost of cover soil is estimated at approximately 500,000 Pesos per month¹⁶, meaning that the necessary cost of cover soil is six million Pesos per year. However, the actual procurement of cover soil proceeds through free supplies and a special budget which is disbursed irregularly. This method appears to be providing the bare minimum volume at present.

The waste collection costs are included in the expenditures of the Refuse Collection and Disposal Division of the Cebu City Public Services Department, to which the Inayawan sanitary landfill is attached. The total recorded expenditure of the Refuse Collection and Disposal Division (the total cost related to waste disposal) was 40.3 million Pesos in 1998¹⁷. The charge for waste collection is accounted as a portion of the amount paid by business when they renew their annual business permits (there is no charge collection for household waste collection in particular). The sums collected for waste collection over the last three years are as shown in the table below.

Table 9: Movements in waste Collection Fees in Cebu City

Unit: million peso

	1997	1998	1999
Total waste collection charges	6.2	6.8	6.9

Source: Cebu City

Note: A portion of the fees paid for business permits in Cebu City is collected as a waste collection fee.

Table 9 shows that waste collection fees have been in the 6-7 million Peso range over the last three years, which is far removed from the total cost of waste disposal as stated before (40.3 million Pesos, as recorded in 1998). Cebu City is now drafting a new waste collection fee system to cover the funding shortfall. The city anticipates introducing a new system that would secure an adequate budget to cover all waste disposal costs in Cebu City.

[2] Waste disposal capacity of the sanitary landfill

The Inayawan sanitary landfill has a measured area of 15.41ha, of which 11.73ha has been prepared for landfill. Cebu City plans filling the area with waste to an average thickness of 8m, which means the total volume of the sanitary landfill would be 938,400m³. Given that 9.73ha of the sanitary landfill has already been filled to a depth of 2m, 79.3% of the total capacity remains. In the initial plan it was thought that the site would fill within 6-7 years, but it now appears that the site will last for 5-10 years from 2000¹⁸.

¹⁶ 140m³/day x 110 Pesos/m³ x 30 days/month = 462,000 Pesos/month

¹⁷ The amount apparently allocated to cover this in the 2000 budget is 44.2 million Pesos (the total for the Garbage Collection and Disposal Division).

¹⁸ However, according to a study carried out by the Japan Bank for International Cooperation (JBIC) (June 2001), the remaining lifespan of the hygienic landfill site is approximately 2.5 years.

Table 10: Residual Area and Volume of the Inayawan Sanitary Landfill

	Total Volume	1998	1999	Sep. 2000
Residual volume of the sanitary landfill (If a thickness of 8m is the limit of filling)	938,400m ³	883,800 m ³	803,800 m ³	743,800 m ³
Residual volume relative to total volume		94.2%	85.7%	79.3%

Source: Inayawan Sanitary Landfill Site (Cebu City, Dept. of Public Services)

JBIC has conducted a study to solve the problems of equipment usage and overall operation at the Inayawan sanitary landfill. The improvement measures which will be suggested by the study are expected to improve the operation and maintenance of this project.

3. Lessons Learned

Development of Solid Waste Disposal systems:

For greater efficiency, equipment and material procurement should be matched with the plant construction time.

There are no other notable lessons for the other components.

Metro Cebu Development Project (II)

Comparison of Original and Actual Scope

Item	Plan	Actual
Project Scope	Expansion of national roads and construction of new roads Bus terminal construction Expansion and development of public markets Development of solid waste management system Consulting service	~ Same as left In the development of the garbage disposal system, the Labogon disposal site in Mandaue City was removed from the ODA loan project.
Implementation Schedule	Jan. 1990 ~ Sep. 1994 (57 months)	Feb. 1993 ~ Apr. 1998 (63 months)
Project Cost		(Note)
Foreign currency	¥3,267 million	¥704 million
Local currency	¥2,468 million (398 million peso)	¥4,995 million (1,249 million peso)
Total	¥5,735 million (925 million peso)	¥5,699 million (1,425 million peso)
ODA Loan portion	¥4,301 million	¥4,301 million
Exchange rate	1 peso = ¥6.2	1 peso = ¥4.0

Note: The project cost includes consultant fees (actual cost ¥286 million in foreign currency, ¥200 million equivalent in local currency, of which the Japan's ODA loan covered ¥286 million and ¥181 million, respectively).

(1) Expansion of National Roads and Construction of New Roads

Comparison of Original and Actual Scope

Item	Plan	Actual
Project Scope	1) Expansion and Improvement of national roads 13 link roads were covered 52.58km 2) Construction of new roads -Mandaue Causeway 2.5km -Extension of Colon Road 0.3km	12 link roads were covered. (No.29 was excluded) } Distances differ somewhat As left The extension of the Colon Road was not built.
Implementation Schedule	Jan. 1992 ~ Sep. 1994	Mar. 1995 ~ Apr. 1998 (Construction of the project)
Project Cost		
Foreign currency	¥1,977 million	¥0 million
Local currency	(218 million peso)	¥3,583 million (896 million peso)
Total	¥3,329 million (537 million peso)	¥3,583 million (896 million peso)
ODA Loan portion	¥2,496 million	¥2,336 million
Exchange rate	1 peso = ¥6.2	1 peso = ¥4.0

Note: Project cost does not include the consultant fees and contingency. (Same as below)

Breakdown of Package

Classification	Package I-a 8, 14, 22, 28, 34, 35,38,Mandaue Causeway	Package I-b 44-A,44-B,44-C,45	Package I-c 18,132,129 (Tabok Bridge and access road)
Extension of targeted road (km)	16.52	33.55 (Note 1)	7.95
Start of construction	1995/03/19	1995/03/19	1995/03/19
End of construction (Initial plan)	1996/05/14	1996/05/14	1996/05/14
Same as above (actual)	1998/04/06	1997/08/12	1998/02/05
Construction cost (plan)	P556,311,738.26	P309,486,987.70	P182,168,874.70
Same as above (actual)	P521,693,271.17	P326,326,371.05	P173,228,182.65

(2) Bus Terminal Construction

Comparison of Original and Actual Scope

Item	Plan	Actual
Project Scope -Terminal area (3,500m ²) -Building area (1,711m ²) -Utility area (900m ²) (Note 1)	Bus terminal lane: 24 lanes Jeepney terminal lane: 10 lanes Office area: 72m ² Shop area: 284m ² Others (restaurants, waiting rooms, ticket booths, toilets etc.). Peripheral roads etc.	-Same as left -Jeepney etc.: 27 lanes -Parking lots for motorcycles etc. Same as left (the area of the building is 1,575m ²) Same as left (Area: N.A.)
Implementation Schedule	Jan. 1990 ~ Jun. 1993 (42 months)	Jul. 1993 ~ Oct. 1994 (16 months)
Project Cost Foreign currency Local currency Total ODA Loan portion Exchange rate	¥25 million (5 million peso) ¥56 million (9 million peso) ¥42 million 1 peso = ¥6.2	¥0 million ¥69 million (17 million peso) ¥69 million (17 million peso) ¥64 million 1 peso = ¥4.0

Note 1: Content of the construction is as follows:

1. Filling
2. Construction of terminal building
3. Pavement of parking area etc.
4. Installation of drainage facilities, water treatment tank
5. Fence

(3) Mandaue Public Market

Comparison of Original and Actual Scope

Item	Plan	Actual
Project Scope	Site area (10,176m ²) Market building (7,330m ²) -No. of occupied shops: 859 Improvement of car parks and sidewalks Improvement of water drainage facilities	Site area (11,374m ²) Market building -Fresh food stores 80 (0.9m x 1.5m) -Other shops 721 (2.0m x 3.0m) 120 (0.9m x 1.5m) Car parks -Truck delivery car park, automobile/ jeepney car park, etc.
Implementation Schedule	Jan. 1992 ~ Dec. 1992	May 1995 ~ Jun. 1996
Project Cost		
Foreign currency	¥74 million	¥0 million
Local currency	(10 million peso)	¥241 million
Total	¥136 million	(60 million peso) ¥241 million
ODA Loan portion	(22 million peso) ¥105 million	(60 million peso) ¥195 million
Exchange rate	1 peso = ¥6.2	1 peso = ¥4.0

(4) Talisay Public Market

Comparison of Original and Actual Scope

Item	Plan	Actual
Project Scope	Site area (4,100m ²) Market building (3,206m ²) -Shop area: 1,975m ² -No. of occupied shops: 260 Improvement of car parks and roads Filling of low-lying land Improvement of drainage facilities etc.	Site area (4,300m ² , totaling the market buildings and the car parks) Market building (Approx. 3,300m ²) -Fresh food stores: 180 -Other shops Single: 122 Double: 11 Car park area: 1000m ² 13 car parking units
Implementation Schedule	Jan. 1992 ~ Dec. 1992	Feb. 1993 ~ Feb. 1994
Project Cost		
Foreign currency	¥23 million	¥0 million
Local currency	(3 million peso)	¥73 million
Total	¥42 million	(18 million peso)
ODA Loan portion	(7 million peso)	¥73 million
Exchange rate	¥32 million	(18 million peso)
	1 peso = ¥6.2	¥64 million
		1 peso = ¥4.0

(5) Development of solid waste management System

Comparison of Original and Actual Scope

Item	Plan	Actual
Project Scope	Procurement of vehicles, equipment and materials All equipment for collection and transportation	• Procurement of vehicles, equipment and materials Same as left
-Procurement of vehicles, equipment and materials required for the garbage disposal system	All equipment for hygienic burial	Same as left
	-Inayawan disposal site Widening and paving of transportation roads	-Inayawan disposal site Same as left
-Development of the Inayawan disposal site for Cebu City	Fencing on the boundary	Treatment of exudate Embankments
-Development of the Labogon disposal site for Mandaue City	Treatment of rainwater and foul exudates Surrounding embankments and bank protection	Same as left
	Development of the management building and maintenance zone for equipment maintenance etc.	Same as left
	Improvements such as landscaping of previously filled areas	Same as left
	Building of appurtenant facilities such as water supply, telephone and electricity.	
	-Labogon disposal site	-Labogon disposal site The project for Labogon disposal site for Mandaue City was implemented as far as possible with the city's own funds, and was removed from the scope of the ODA loan.
Implementation Schedule	Jan. 1993 ~ Jun. 1994 (Equipment procurement of the main project portion and construction only)	Aug. and Oct. 1994 (Procurement of equipment) Dec. 1995 ~ Aug. 1997 (Construction of the main project)
Project Cost		
Foreign currency	¥539 million	¥418 million
Local currency	¥130 million (21 million peso)	¥828 million (207 million peso)
Total	¥669 million (108 million peso)	¥1,246 million (312 million peso)
ODA Loan portion	¥502 million	¥1,170 million
Exchange rate	1 peso = ¥6.2	1 peso = ¥4.0