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**MINUTES OF MEETING
BETWEEN JAPAN INTERNATIONAL COOPERATION AGENCY
AND THE AUTHORITIES CONCERNED OF THE MUNICIPALITY OF PANAMA
ON THE MID-TERM EVALUATION OF JAPANESE TECHNICAL COOPERATION
FOR THE PROJECT FOR IMPROVEMENT OF SOLID WASTE MANAGEMENT FOR
THE MUNICIPALITY OF PANAMA IN THE REPUBLIC OF PANAMA**

The Japanese Mid-term Evaluation Team (hereinafter referred to as “the Team”), organized by Japan International Cooperation Agency (hereinafter referred to as “JICA”) and headed by Mr. Shiro Amano, visited Panama from August 3rd to August 21st, 2008, for the purpose of conducting the joint mid-term evaluation on Project for Improvement of Solid Waste Management for the Municipality of Panama in the Republic of Panama (hereinafter referred to as “the Project”) on the basis of the Record of Discussions signed on December 21st, 2006 (hereinafter referred to as “the R/D”).

During its stay in the Panama, the Team jointly monitored and evaluated the Project with the Panamanian Mid-term Evaluation Team members and had a series of discussions and exchanged views with the authorities concerned of the Municipality of Panama (hereinafter referred to as “the Panamanian side”) on the achievements of the Project to date and desirable measures to be taken for the remaining period of the Project

As a result of discussions, both sides agreed to recommend to the respective Governments the matters referred to in the document attached hereto.

These texts were done both in English and Spanish, each text being equally authentic. In case of any divergence of interpretation, the English text shall prevail.

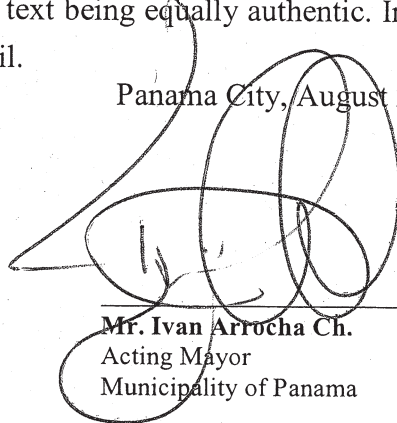
Panama City, August 20, 2008



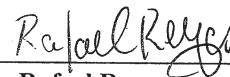
Mr. Shiro Amano
Leader
Japanese Mid-term Evaluation Team
Japan International Cooperation
Agency



Mr. Ikuo Mori
JICA Expert Team Leader
Japan International Cooperation
Agency

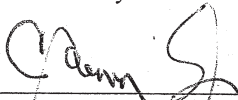


Mr. Ivan Arrocha Ch.
Acting Mayor
Municipality of Panama



Mr. Rafael Reyes
Acting Director
Municipal Bureau for Urban and
Household Cleansing (DIMAUD)

Witnessed by



Ms. Carmen Guevara
Director of International Technical
Cooperation
Ministry of Economy and Finance

1. Modification of the PDM

Based on the joint elaboration on the present Project Design Matrix (hereinafter referred to as "PDM (version No.2)") among Municipal Bureau for Urban and Household Cleansing (hereinafter referred to as "DIMAUD"), the Team and the JICA Expert Team, it was agreed by all parties that some modifications to the present PDM (version No.2) were required for the reasons stated in "5 .Modification of PDM" of the Joint Mid-term Evaluation Report (ATTACHMENT I).

It was further agreed that the revised PDM (version No.3) would be used to monitor the Project for the remaining period of the Project.

2. Transfer and transport system

In accordance with the Minutes of Meetings of the Joint Coordination Committee held on February 27, 2008, DIMAUD, the Team and the JICA Expert Team verified the issue and agreed that the activities of Output 2 should be minimized as indicated in the revised PDM (version No.3) since the site for the transfer and transport system was not secured at the time of the Mid-term Evaluation and construction would be unlikely to be started during the remaining period of the Project. It was therefore confirmed that the important assumption related to these activities be no more applicable and should be removed since Output 2 was based on the construction of a transfer station as scheduled by the Panamanian side at its own expense.

Regardless of the modification of the activities of Output 2, DIMAUD should continue its effort to search a suitable site for the transfer and transport system with the assistance of the JICA Expert Team.

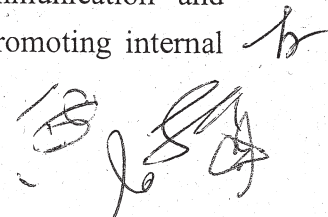
3. Management of the final disposal system

Up until the time of the Mid-term Evaluation, some activities under Output 4 for strengthening capacities of management of final disposal have been implemented based on the assumption that DIMAUD would hold direct responsibility for management and operation of the landfill for the Project period. It was however confirmed that DIMAUD would transfer the responsibility for managing the final disposal system at the landfill (Cerro Patacon) to a private contractor as from September 27, 2008.

DIMAUD, the Team and the JICA Expert Team verified the issue and agreed that modifications to the activities under Output 4 would be necessitated as described in the revised PDM (version No.3) in order to reflect the changed situation. Accordingly, the important assumption related to these activities needed to be altered.

4. Promotion of Cooperation among different departments in DIMAUD

DIMAUD, the Team and the JICA Expert Team agreed that developing a better relationship among various departments in DIMAUD was required through close communication and information sharing in order to have strong cooperation at all levels. While promoting internal

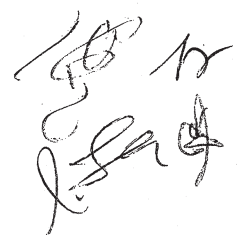


cooperation and communication, DIMAUD agreed to provide more efforts to improve its organizational operation management.

5. Continuous efforts in the latter half of the project to achieve project goal

In order to ensure achievement of the Project Purpose during the remaining project period, DIMAUD should maintain its continuous effort to accomplish objectives as described in PDM (version No.3) with the support from JICA.

ATTACHMENT I JOINT MID-TERM EVALUATION REPORT



ATTACHMENT I

**THE JOINT MID-TERM EVALUATION REPORT
ON
THE PROJECT FOR IMPROVEMENT OF SOLID WASTE
MANAGEMENT IN THE MUNICIPALITY OF PANAMA
IN THE REPUBLIC OF PANAMA**

Panama City, August 20, 2008

Joint Mid-Term Evaluation Team

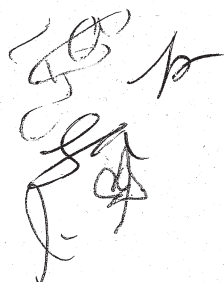


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Abbreviation and Acronyms

ANAM	National Environmental Authority
C/P	Counterpart
DIMAUD	Municipal Bureau for Urban and Household Cleansing
EIA	Environmental Impact Assessment
JICA	Japan International Cooperation Agency
MEF	Ministry of Economy and Finances
MINSA	Ministry of Health
M/M	Minutes of Meeting
M/P	Master Plan
MSW	Municipal Solid Waste
PAMA	Program of Adequacy and Environmental Management
PDM	Project Design Matrix
PO	Plan of Operation
R/D	Record of Discussions
S/W	Scope of Work
SWM	Solid Waste Management
T/S	Transfer Station
TOR	Terms of Reference

1. INTRODUCTION

1-1 Objectives of the Evaluation

The evaluation activities were performed with the following objectives:

- (1) To exchange opinions with counterparts in order to assess the present situations, including achievements, according to the project plan
- (2) To evaluate based on the Five Evaluation Criteria (Relevance, Effectiveness, Efficiency, Impact and Sustainability)
- (3) To discuss together with Panamanian counterparts based on the evaluation and make necessary decisions, including revision of PDM for the remaining period of the project
- (4) To sign on Minutes of Meeting attached with the Joint Evaluation Report

1-2 Method of the Evaluation

The Evaluation Team (hereinafter referred to as "the Team") conducted surveys by questionnaires and interviewed the counterpart personnel (herein after referred to as "C/Ps"), and the Japanese experts as well as those officials concerned with the Project. The Team also made the visit to the project sites. The Team analyzed and evaluated the Project from the viewpoints of evaluation criteria according to the method of Project Cycle Management (PCM).

The Evaluation Team reviewed all activities and achievement, and evaluated the Project based on the following five criteria:

(1) Relevance:

The extent to which the Project Purpose and Overall Goal are consistent with the government development policy of the Republic of Panama as well as the development assistant policy of Japan, and needs of beneficiaries.

(2) Effectiveness:

The extent to which the Project has achieved its purpose, clarifying the relationship between the Project Purpose and Outputs.

(3) Efficiency:

The extent to how economically resources/inputs (funds, expertise, time, etc.) are converted to results/output with particular focus on the relationship between inputs and outputs in terms of timing, quantity and quality.

(4) Impact:

Project effect on the surrounding environment in terms of technical, socio-economic, cultural, institutional and environmental factors. Project impacts are cross-tallied according to positive or negative effects.

(5) Sustainability

Sustainability of the Project is assessed from the standpoint of organizational, financial and technical aspects, by examining the extent to what the achievements of the Project will be sustained or expanded after the assistance is completed.

1-3 Members of the Evaluation Team

<Panamanian side>

1	Mr. Rafael Reyes	Acting Project Manager	Acting Director, DIMAUD
2	Mr. Rene Paniza	Member of JCC	Advisor to the Mayer, Municipality of Panama
3	Ms. Berta de Velasquez	Project Coordinator	Monitoring, Vehicle, DIMAUD

<Japanese side>

1	Mr. Shiro Amano	Leader	Senior Advisor, JICA
2	Mr. Masanobu Kashimura	Cooperation Planning	Environmental Management Team II, Group II, Global Environment Dept. JICA
3	Ms. Shinobu Mamiya	Evaluation Analysis	Consultant, International Development Associates, Ltd.,
4	Ms. Keiko Suzuki	Interpreter	Consultant

1-4 Schedule of the Evaluation

Date		Schedule	
2/Aug.	Sat		(Ms.Mamiya) Departure from Japan
3/Aug.	Sun		(Ms.Mamiya) Arrival at Panama (Ms. Suzuki) Arrival at Panama from Mexico
4/Aug.	Mon	9:30 11:00	Meeting with JICA Panama, Expert Team Courtesy call and Orientation Meeting w/ key C/Ps of DIMAUD Collection of data/ information from Expert
5/Aug.	Tue	8:00	Interview Meeting with C/Ps Preparation of Workshop
6/Aug.	Wed	8:00	Evaluation Workshop with key C/Ps of DIMAUD <ul style="list-style-type: none"> • Presentation on activities by key C/Ps of DIMAUD • Review of the Achievement of activities by WG • Problem Identification • Discussion for countermeasures
7/Aug.	Thu	8:00	Interview and Meeting with C/Ps
8/Aug.	Fri	8:00	Interview and Meeting with C/Ps
9/Aug.	Sat		(Mr. Amano/Mr.Kashimura) Departure from Japan Interpretation of data and information/Data Analysis
10/Aug.	San	13:00	(Mr. Amano/Mr. Kashimura) Arrival at Panama Interpretation of data and information/Data Analysis
11/Aug.	Mon	9:00 10:30 14:00	Courtesy Call to Municipality Meeting with JICA Panama Courtesy Call to MEF
12/Aug.	Tue		Discussion on indicators of PDM with WGs
13/Aug.	Wed		Discussion /Evaluation on achievement with WGs
14/Aug.	Thu		Discussion /Evaluation on achievement with WGs
15/Aug.	Fri		Site visits to Final Disposal
16/Aug.	Sat		Preparation of the draft of the Evaluation Report
17/Aug.	Sun		Preparation of the draft of the Evaluation Report

18/Aug.	Mon	8:00	Joint Coordinating Committee
19/Aug.	Tue		Joint Preparation of Evaluation Report
20/Aug.	Wed	9:00 14:00 16:00	Signing on Minutes of Meeting and Evaluation Report Reporting to JICA Panama Reporting to EOJ
21/Aug.	Thu	8:00 13:50	(Ms. Suzuki) Departure of Panama to Mexico (Mr. Amano/Mr.Kashimura/Ms. Mamiya) Departure of Panama to Huston
22/Aug.	Fri		(Mr. Amano/Mr.Kashimura/Ms. Mamiya)
23/Aug.	Sat		(Mr. Amano/Mr.Kashimura/Ms. Mamiya) Arrival at Japan

2. OUTLINES OF THE PROJECT

2-1 Background of the Project

Through a legislative reform of 1999, the responsibility for solid waste management (SWM) in the Republic of Panama was transferred from the national government to each municipality. Since then, the SWM in Panama City which holds the population of around 800,000 have been carried out independently by the Municipality of Panama. However, the lack of knowledge and techniques in SWM resulted in insufficient collection service or inefficient operation management of the landfill. Therefore, the Republic of Panama requested the cooperation of Japan in the implementation of a development study on solid waste management. In response to this request, JICA conducted the development study named as "The Study on Solid Waste Management for the Municipality of Panama" from November 2001 through March 2003 and developed the Master Plan setting the year 2015 followed by the feasibility studies (F/S) of the priority projects (final disposal site and transfer station).

After conclusion of the development study, the Municipality of Panama has been actively implementing improvement measures with its own financial resources, including the acquisition of 60 new collection vehicles, and the expansion of the final disposal site. However, due to the difficulties in the administrative procedures and coordination among related institutions and the shortage of managerial and technical staff, the implementation of the M/P was delayed. In order to cope with those difficulties, the Municipality of Panama requested, through the Central Government of Panama, the technical cooperation from Japan in the field of the operation and management of final disposal sites, improvement of collection and transport system, and implementation of environmental education.

According to the request on the above, the JICA dispatched the Preliminary Study Mission to Panama in July 2006 and agreed on the contents of the Project signing on the Record of Discussions (R/D) on December 15, 2006, which stipulated the framework of the project. The project was started from January 2007 for the period of three years.

2-2 Objective of the Project

The expected Overall Goal, Project Purpose and Outputs written in the current PDM (PDM2) are as follows:

Overall Goal:

「Sustainable solid waste management in the Municipality of Panama is achieved.」

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Project Purpose:

[Solid waste services in the municipality of Panama are improved.]

Outputs:

- 1) Waste collection service is improved.
- 2) The transfer and transport system is consolidated.
- 3) Collection vehicle management is improved.
- 4) Management of the final disposal system is strengthened.
- 5) Organizational operation is improved.

2-3 Framework of Project Implementation

For the effective implementation, the Panamanian side formed four (4) Working Groups (WGs) to carry out activities under each Output. In order to facilitate the implementation, it was agreed by both sides that it is necessary to promote the collaboration as well as to improve the information sharing among related departments and sections within DIMAUD. For that reason, both sides agreed to newly add the Output Five (5) "Organizational operation is improved" to the project component. The followings are the current list of Outputs with major departments involved in each Output.

Output	WG	Field of Activities	Major Departments responsible for the achievement of each Output
1	WG1	Collection Services	Planning, Operation, Community Relation, Marketing, Public Relations
2	WG2	Transfer and transportation system	Technical Services
3	WG3	Collection vehicle management	Maintenance, Inventory, Procurement, Administration
4	WG4	Management of final disposal system	Technical Services, (Municipal Administration)
5	WG5	Organizational operation management	Planning, Information Management, Human Resources

2-4. Special considerations and limitation of the Evaluation

Affected by the external factors occurred in the first half of the project period, some changes have been brought into the scope of project framework. In this respect, this evaluation study serves a purpose of consultation to the Project which needs to resolve the situation. Changes brought into the scope of project framework are as follows:

- 1) The site for transfer station was not secured by the Panamanian side as scheduled, and it became unlikely to start the construction of transfer station within the project period. The land once proposed by the Municipality for the site has not become available due to the legal restriction by the Panamanian side. And the drastic cost increase of land due to the increasing demands of housings serves to make it difficult to locate the appropriate new site for the transfer station.
- 2) It is determined by the Panamanian side that the construction and operation of the entire final disposal system (Etapa 1 to Etapa 3) is under the consignment of private contractor as of September 27, 2008 and the role of the DIMAUD is to supervise the landfill operation instead of directly operating the landfill.

Such changes affected to the scope of the project framework have not yet been reflected on the current PDM. Therefore, the C/Ps and the Team discussed at the evaluation workshop and at the meetings, and agreed that it would be necessary to modify (add/rephrase/delete) some outputs and activities to reflect the current situation and for the smooth monitoring. It was also agreed that the evaluation study is conducted based on these adjusted items. (PDM3) Details are given in ANNEX1. Modified outputs are shown below and the details of modified activities are shown in the next section, “3. Progress of the Project” as well as “5 .Modification of PDM”.

Modified Outputs:

- 1) Waste collection service is improved in parallel with strengthening the activities for cooperating with community.
- 2) Preparatory work to establish the transfer and transport system is finalized.
- 3) Collection vehicle management is improved.
- 4) Management of the final disposal system is strengthened.
- 5) Organizational operation management is improved.

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3. PROGRESS OF THE PROJECT

The Team reviewed the progress of the Project in accordance with the modified PDM. (PDM3)

3-1 Progress of Activities

Progress of activities has been examined at the Evaluation Workshop by those representing each WG. Progresses of activities carried out up to the Mid-Term Evaluation are summarized as follows:

#	Items of Activity	Current Progress
Output 1: Waste collection service is improved in parallel with strengthening the activities for cooperating with community		
1-1	Updating the information of the waste collection and transportation	Information of the waste collection and transportation was updated as planned.
1-2	Redesigning the routes for waste collection and transportation	Some delays were observed due to the shortage of budget, and vehicles, slow process of decision making, and difficulties of collaboration among related departments.
1-3	Developing the manual for waste collection and transportation	A manual for redesigning the route was completed. The operational manual for waste collection services is to be prepared.
1-4	Monitoring the operation of redesigned routes	Monitoring was conducted as planned.
1-5	Collecting the primary information on activities for cooperating with community	The information was collected as planned. Activities of 1-5 ~ 1-9 were conducted in relation to the waste collection service, but not reflected on the PDM. Therefore, they were newly added to the modified PDM.
1-6	Publicizing the information/advertisement on the waste collection services to the community	Some delays were observed due to the delay of implementation and the slow process of administrative procedure.
1-7	Conducting the satisfaction survey on the waste collection services	
1-8	Preparing the manual for satisfaction survey as well as the publicity activities of waste collection services	A manual for satisfaction survey was completed and a manual for publicity activities is in progress.
1-9	Monitoring the activities for cooperation with communities	This activity is scheduled after the Mid-term Evaluation.
Output 2: Preparatory work to establish the transfer and transport system is finalized.		
2-1	Developing a conceptual design and a cost estimate	Conceptual design was developed with cost estimate and the seminars and meeting with relevant stakeholders were conducted in order to disseminate the concept.
2-2	Conducting site investigation	Site investigations were conducted several times as planned.
2-3	EIA process by the Panamanian side	Due to the changes to the scope of project framework which were affected by the external factors ¹ these activities will not be carried out within the project period. Therefore, these activities are deleted from the PDM.
2-4	Supervision of construction	
2-5	Supervision of operation	
2-6	Monitoring the transfer and transport system	
Output 3: Collection vehicle management is improved.		
3-1	Updating the information of collection vehicle management	Information on current collection vehicle management is collected and formats of repair record were reviewed.

¹ Please refer to 2-4. Special considerations and limitation of the Evaluation

3-2	Planning the collection vehicle management and preparing the manuals	Formats of repair record were revised to simplify the documentation procedure. Draft revised formats have been currently used on a trial basis from May 2007. Final revision will be made in Sep., and application will be filed to the Audit section in order to get official approval. The manual of collection vehicle management was developed as planned. This activity is rephrased to reflect the current situation.
3-3	Improving the inventory management of spare-parts and materials for maintenance through stocktaking	Some delays of activities have been observed due to the fact that the insufficient information was provided by the department concerned. It also needs to purchase the necessary computers and software (the Package No. 2) to further improve the management of inventory as well as procurement process. Activities 3-3 and 3-4 are rephrased to reflect the current situation.
3-4	Improving the procurement management of spare-parts and materials for maintenance through establishing an appropriate order system	
3-5	Studying/discussing the technical key points for placing the maintenance contract with private companies.	Discussions were done internally as planned. This activity is rephrased to reflect the current situation.
3-6	Studying/discussing the workflow of consignment procedure (incl. demarcation of operation, preparation of checklists, etc.)	The workflow of consignment procedure was prepared as planned. This activity is added to reflect the current situation.
3-7	Monitoring the activities 3-2 to 3-6.	Monitoring was conducted as planned. As for the activity 3-6, it was revealed that the contractor has not fully carry out the agreement as expected.
Output 4: Management of the final disposal system is strengthened.		
4-1	Updating the information on the final disposal system.	Information on the final disposal system was collected as planned.
4-2	Upgrading the daily landfill operations (Etapa 2)	Due to the shortage of necessary equipment, spare-parts and supplies, some activities were delayed.
4-3	Developing the manual for supervision and operation of the landfill (Epata2)	The manual for supervision and operation of the landfill (Etapa2) were developed and have already been used in the daily operation.
4-4	Monitoring the landfill operations (Etapa 2)	Monitoring was conducted as planned until the Dec. 2007. Due to the malfunction of equipment, it was suspended since Jan. 2008.
4-5	Preparation for bidding for landfill expansion (Etapa 3)	Completed as planned.
4-6	Bidding & Evaluation for landfill (Etapa3)	Completed as planned and the contractor was selected.
4-7	Carefully examining the management plan of final disposals prepared by the Contractor	These activities are to be carried out after the Mid-term Evaluation. Activities 4-7 and 4-8 are rephrased due to the fact that the landfill operation is determined to go under the consignment.
4-8	Supervising the landfill operation according to the contract made between DIMAUD and contractor.	
4-9	Supervising the operation in the expanded landfill (Etapa3)	These activities are deleted due to the fact that the landfill operation is determined to go under the consignment.
4-10	Monitoring the expanded landfill management (Etapa3)	
Output 5: Organizational operation management is improved.		
5-1	Discussing the mission /vision of the DIMAUD	The vision of the DIMAUD was discussed. (The change of the vision has not been approved.) Activities of 5-1 "Improving the organizational operation" was broken down to 5-1 ~5-3 to reflect the current situation.

5-2	Reviewing the organizational structure	The proposed organizational structure was submitted. (It has not yet been approved.)
5-3	Increasing the awareness and promoting the interrelationship among departments	Due to the resistance toward the organizational change, the lack of staff motivation and the lack of official internal announcement about the project activities, the progress made on the interrelationship among departments has been less than expected.
5-4	Reviewing the current situation of information management	Current information management was reviewed as planned. Activities of 5-2 "Improving the information management" was broken down to 5-4~5-9 to reflect the current situation.
5-5	Developing a plan to improve the information management	The plan was developed as planned.
5-6	Creating a mechanism of information sharing	Information mechanism was created as planned.
5-7	Constructing a mandatory database	Some delays were observed. In order to facilitate the progress, the budget for the necessary computers and software (the Package No. 2) is required.
5-8	Setting management indicators based on the activities from 5-4 ~5-7	
5-9	Preparing the monthly summary report on management indicators (incl. financial indicators)	This activity is planned after the Mid-term Evaluation.

3-2 Inputs

Inputs to the Project up to now since its inception in January 2007 are as follows:

3-2-1 Japanese Side

Most of the inputs from the Japanese side, such as dispatch of experts, training of C/Ps and local cost support, provision of equipment, are executed as planned.

(1) Dispatch of Japanese experts

Eight (8) experts in the eleven (11) fields were dispatched. Details are given in the ANNEX 2.

(2) Counterpart Trainings

Total of three (3) counterparts participated in the counterpart trainings in Japan in 2007 and 2008. In addition, three (3) counterparts participated in the third country trainings held in Chile and Dominican Republic. Details are given in the ANNEX 3.

(3) Provision of Equipment

Equipment used for the technical transfer was provided from Japan. Details are given in the ANNEX 4.

(4) Local cost

In order to carry out the activities, the total amount of US\$187,294.00 (equivalent to the Japanese yen 22,312,170 .-) were disbursed from Japanese side. Details are given in ANNEX 5.

3-2-2 Panamanian Side

(1) Counterparts

The Panamanian side nominated the technical counterparts for conducting project activities in the R/D. Currently, Fifty-five (55) counterparts in the DIMAUD have been carrying out the project activities in five (5) working groups. The list of counterparts is shown in ANNEX 6.

(2) Project Management Cost

In order to carry out the activities, the total amount of US\$160,402.00 was disbursed from Panamanian side. Details are given in ANNEX 7.

(3) Office Space and meetings for the experts

In addition, the Panamanian side has allocated the office space with utilities and some furniture for the Project.

(4) Procurement of sufficient vehicles for the improvement of collection service

The Panamanian side has procured the total number of sixty (60) collection vehicles to meet the increasing demands of collection services. A list of vehicles procured is shown in ANNEX 8.

Due to the fact that unforeseeable incidents happened in the process of the public bidding, the procurement of these collection vehicles was delayed in the first half of the project period.

(5) Expenses for improving the existing landfill and for constructing landfill expansion and transfer station

As stated in 2-4. Special considerations and limitation of the evaluation, the expansion of landfill and construction of transfer station will not happen within the project period. Therefore, these expenses will be eliminated from inputs by the Panamanian side.

ls
J. A. J.

4. RESULTS OF EVALUATION

4-1 Achievement of the Outputs and Project Purpose

The Team evaluated the achievements of Outputs and Project Purpose according to the indicators on PDM (version 3) and summarized as follows:

4-1-1 Achievements of the Outputs

Output 1: “Waste collection service is improved in parallel with strengthening the activities for cooperating with community.”

Waste collection service : Overall, some delays in progress of activities have been observed due to the delay of procurement of collection vehicles which was caused by the unforeseeable factors.² And since the content of activities as well as the members involved in the implementation process was not fully informed to the staff of DIMAUD at the beginning of the Project, different interpretations of the project concept and procedures were prevailed through the DIMAUD, which also contributed to the delays in project implementation. Especially this made it difficult to establish the inter-departmental collaboration between the Planning and the Operation Dept. Much effort was made by Panamanian counterparts through communication and explanation about the advantages of operational improvement. Therefore, the concept of the new work-flow has gradually been understood by those of the Operation Dept., and the mutual cooperation has been gradually increased among departments.

Strengthening the activities for cooperating with community : Also affected by the delay of procurement of collection vehicles, some activities has been delayed. Collaboration with the Operation Dept. has been smoothly conducted.

Further efforts should be continued to increase the inter-departmental cooperation through joint activities, such as seminars and workshops as well as to increase the information sharing in order to achieve the Output 1.

Originally, the indicator “Efficiency of waste collection is improved from about 5.5ton/trip to about 6.0ton/trip.” was set to examine the achievement level of the Output 1. Considering the magnitude of effect of external factors and the remaining project period, both sides agreed to adjust the previous indicator in order to make it feasible to measure the achievement of the Output 1 within the project period. The modified indicators are shown below.

Modified Indicators:

1-1	Improvement tendency in the operation of waste collection services is confirmed by the operation management data. ① Implementation rate (Implemented /Planned Routes), ② tons /hour,③ hours /shift
1-2	Activities contained in the manuals for satisfaction survey as well as the publicity activities of cooperating with community are implemented as the daily work.

² Please refer to the Input, 3-2-2 Panamanian side for detailed explanation.

Output 2: “Preparatory work to establish the transfer and transport system is finalized.”

Activities for 2-1 and 2-2 were conducted. However, it has become unlikely to construct the transfer station within the project period due to the unforeseeable factors.³ Both sides agreed that only the activity for site selection will be continued for the remaining project period.

Originally, the indicator “The number of average trip per vehicle per shift in the eastern region is increased from about 1.0 trip/vehicle/shift to 2.0 trip/vehicle/shift.” was set to examine the achievement level of the Output 2. Considering the magnitude of effect of external factors and the remaining project period, both sides agreed to adjust the previous indicator in order to make it feasible to measure the achievement of the Output 2 within the project period. The modified indicator is shown below.

Modified Indicator:

2	Appropriate procedure of site selection for a transfer station is properly progressed.
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According to the questionnaires, interviews and workshop during the evaluation study, it is confirmed that the knowledge and techniques of site evaluation has been effectively transferred to the counterparts in the process to examine possible transfer and transport sites in the municipality. In that respect, the Output 2 has partly been achieved.

Output 3: “Collection vehicle management is improved.”

Information of current collection vehicle management has been updated as planned. In order to improve the present system, the revised format of repair record has currently been used on a trial basis. Further efforts will be continued to finalize the format by obtaining the approval from the Internal Audit Department. Furthermore, it needs to improve the inter-departmental cooperation, especially with the Ware-house Section as well as the collaboration from the contractor.

Originally, the indicator “Total down-time (time waiting for repair) of all collection vehicles in 36 months becomes 10% less from the present level” was set to examine the achievement level of the Output 3. Considering the magnitude of effect of delay of procurement of collection vehicles, both sides agreed that the original indicator is not applicable to examine the achievement level of the Output 3. Therefore, they decided to adjust the previous indicator in order to make it feasible to measure the achievement of the Output 3 within the project period. The modified indicators are shown below.

Modified Indicators:

3-1	The data of total down-time (time waiting for repair) for all collection vehicles is continuously collected and analyzed. (From baseline at Dec. 2008 to the end of the Project period, Dec. 2009)
3-2	Activities introduced by the Project are incorporated into the daily operations of collection vehicle management.

Output 4: “Management of the final disposal system is strengthened.”

Information on the final disposal system has been updated as planned. And the manual developed by the

³ Please see 2-4. Special considerations and limitation of the Evaluation for detailed explanation.

Project has been introduced and contributed to the improvement of the daily landfill operation. Preparation and Bidding for landfill operation was successfully completed and the contractor was selected. As it was determined by the Municipality that the private consignment was finally adopted for Etapa 1 through 3, the scope of work and project activities under Output 4 needs to be modified. The Project will support the smooth consignment procedure and supervision of landfill operation by the contractor for the remaining project period.

Originally, three indicators, such as “4-1 The ratio of the volume of cover soil to the total amount of waste reaches around designed level of 15%, 4-2 The disposal capacity for the expanded landfill (Etapa3), (1,300,000 m³ for phase I) is secured. 4-3 About 800 m³/day of leachate is treated to satisfy the designated effluent quality established.” were set to examine the achievement level of the Output 4. Considering the magnitude of effect of external factors and the remaining project period, both sides agreed to adjust the previous indicators in order to make it feasible to measure the achievement of the Output 4 within the project period. The modified indicators are shown below.

Modified Indicators:

- | | |
|-----|--|
| 4-1 | Following the developed landfill manual, proper landfill operation is carried out based on the regular measurement of bulk density and the remaining capacity of Etapa 2 landfill site |
| 4-2 | The landfill operation is properly supervised according to the contract. |
| 4-3 | Landfill condition satisfies the requirements of national environmental standards. |

Output 5: “Organizational operation management is improved.”

Output 5, which includes two components as organizational management and information management, was newly added as stipulated on the Minutes of the Meetings on July 26, 2007 for the purpose of facilitating the activities under other four Outputs.

Organizational management: Much efforts and initiative by the C/Ps have been demonstrated, such that the vision was created and the proposed organizational structure was presented for approval. There is still a need to increase the inter-departmental collaboration as well as to improve the information sharing mechanism, in order to further promote the operational improvement of DIMAUD.

Information Management: It is confirmed that the current status of information management within DIMAUD has been reviewed and the information management plan was developed as planned. Information provided by the section has now been well utilized by those concerned. Combined efforts with organizational management should be continued to achieve the Output 5.

Originally, two indicators, such as “5-1 A manner of communication among departments is established” and “5-2. Department of Information Control is established and report(s) that show(s) operation status is/are periodically prepared” were set to examine the achievement level of the Output 5. In order to examine the state of achievement more specifically, both sides agreed to adjust the previous indicators. The modified indicators are shown below.

Modified Indicators:

- | | |
|-----|--|
| 5-1 | Activities for the purpose of strengthening the interrelationship among departments in DIMAUD, such as seminars, workshops are planned and conducted |
|-----|--|

- | | |
|-----|---|
| 5-2 | Necessary database of solid waste management services that needs to be shared among departments is consolidated and properly updated |
| 5-3 | Data on management indicators (incl. financial indicators) are consolidated and reports which summarize those indicators are issued on a regular basis. |

4-1-2 Achievement of the Project Purpose

Project Purpose: Solid Waste services in the Municipality of Panama are improved.

As previously explained in 2-4, some changes have been brought into the scope of project framework. Since the transfer station will not be materialized, the coverage increase of collection services cannot be considered as one of the major outcome of improvement of solid waste services by the Project. Rather, the improvement of its services contributed by the Project can be examined by the consistency during the construction and expansion, of the final disposal services, which may not be widely-recognized by citizens of the Municipality. Therefore, both sides agreed to adjust the indicator #3 "The area, which is not provided collection services diminishes" replacing by "Final disposal services are continuously provided throughout the project period." In addition, other two indicators were rephrased to make it more specific and feasible to measure the achievement of the Project Purpose. The modified indicators are shown below.

Modified Indicators:

- | | |
|---|---|
| 1 | The number of complaints to the 800ASEO is on a declining trend. |
| 2 | The satisfaction survey by DIMAUD shows that the level of satisfaction of the people toward the Solid Waste Services in the Municipality of Panama is improved. |
| 3 | Final disposal services are continuously provided throughout the project period. |

According to the interviews and questionnaires conducted during this evaluation study, it is revealed that the community people have some positive comments toward the collection services by DIMAUD and the number of claims has gradually been decreasing. If continuous efforts are made and the transition of final disposal operation is smoothly progressed, it is likely that the project purpose is to be achieved.

4-2 Project Implementation Process

Due to the delay of procurement of collection vehicles caused by the unforeseeable factors, activities under the Output 1~3 have suffered some delays in the first year. However, once those vehicles were brought into the operation, activities have gradually been progressed in the second year. Other delays in the project implementation is attributable to the different interpretation of project concepts among staff in Operation and the slow decision making process in the organization. Most of C/Ps are actively participating in the project activities and are closely working together with Japanese experts. In order to speed up the implementation of activities, there is a need to reconfirm and familiarize all concerned staff with the purpose and the importance of the project activities, as well as to increase the inter-departmental collaboration in DIMAUD.

4-3 Evaluation under Five Criteria

4-3-1 Relevance

The environmental contamination of seawater and rivers has been a great concern, especially in the

Municipality of Panama. However, the regulation on the environmental protection has not been properly practiced, and there is a pressing need to strengthen the capacity of those public services in the solid waste management. According to the message of the President as of September 2004, the Government of Panama has set the priority on the development of human resources, in which the solid waste management is included. In this respect, the project's overall goal and project purpose have been consistent with the policy of the Government of Panama and its needs of the target people.

The project has also relevant with the policy of Japanese Development Assistance. Japanese ODA policy puts high priority on environmental protection among three pillars in the sustainable development toward the assistance for Panama. According to the JICA's Country-Specific-Assistance Program for Panama, as of March 2007, there is a great need to enhance the administrative capacity to deal with environmental management, especially for those in the Municipality. Furthermore, the Japanese assistance has its comparative advantages in transferring the technologies and her experiences of solid waste management. The strong ownership was taken by the Panamanian side of this Project, who bears the responsibilities to allocate the sufficient collection vehicles as well as to secure the land for transfer station by itself. However, appropriate measures, in case of nonperformance due to the unforeseeable factors, should have been discussed by both sides prior to the initiation of the Project.

4-3-2 Effectiveness

1) Project Purpose

As explained in 4-1-2, it is likely that the project purpose is to be achieved, if continuous efforts are made by the Panamanian side and the transition of final disposal operation is smoothly progressed.

2) Contribution of each output

Five (5) outputs have been contributing to the Project Purpose. Each output has been contributing to the achievement of the Project Purpose in the following manner. Output 1 is consisted of two components. The one component serves to improve the efficiencies of collection services in terms of quality and quantity by renovating the operational procedures at the service sites. The other component serves to furnish the recipients with appropriate information of collection services in timely manner and raise their awareness. Output 2 was intended to facilitate the outcome of the Output 1 by increasing the coverage of collection services. Output 3 also serves to support the Output 1 to increase the utilization of collection vehicles by effective maintenance. Output 4 aims to improve the final disposal system by successfully shifting the operational management under the consignment of private contractor. All these Outputs deal with the technical aspects of solid waste management. On the other hand, Output 5 serves as the catalyst facilitating the implementation of these four Outputs by improving the organizational management as well as the information management.

Since the transfer station will not be materialized, activities under the Output 2 will be removed from the project framework except the one for site investigation. Therefore, combining the efforts of Panamanian and Japanese sides, the Project aims to achieve the Project Purpose by optimizing the outcome of remaining four Outputs for the latter half of project period.

3) Inhibiting factors to achieve the Project Purpose

According to the interviews and questionnaires, it seems that the communication and information sharing among departments have not been conducted effectively. This may be attributable to the conventional top-down decision-making mechanism of the DIMAUD. It is also attributable to the fact that the content of activities as well as the members involved in the implementation process was not officially informed to the DIMAUD staff at the beginning of the Project.

4-3-3 Efficiency

As previously explained, the Project suffered some delays of activities for the first year due to the unforeseeable factors.

1) Japanese Side

Most of the inputs from Japanese side, such as dispatch of experts, training of counterparts in Japan and local cost support, are executed as planned. As for the counterpart trainings in Japan, it greatly served to encourage the Panamanian counterparts to promote their motivation to serve for the public services. According to the interviews during the evaluation study, it reveals that there is a great demand of trainings, especially for those who work in the Operations.

2) Panamanian Side

Currently fifty-five (55) counterparts are allocated to the project and are actively participating in the project activities in five working groups. The timing of procurement of collection vehicles has been delayed and this has caused some delays of implementation process.

3) Management of the Project

Activities have been carried out by five (5) working groups and the project is managed by the collective action of those key counterparts supported by the Japanese experts. Different interpretation of project concepts among staff and the slow decision making process of the organization management have made it difficult to establish the strong and resilient collaboration among concerned departments. In order to speed up the implementation of activities, there is a need to reconfirm and familiarize all concerned staff with the purpose and the importance of the project activities, as well as to further increase the inter-departmental cooperation by joint activities, such as the seminars and workshops.

4-3-4 Impact

The impact of the Project to the Overall Goal cannot be judged at the middle point of the project period. However, following positive impacts by the Project have been observed.

Some counterparts indicate that knowledge and technologies acquired through project activities have greatly contributed to improve their capacities. It even helped them to find the new meanings and implication of "public services" and encouraged them to pursue a more filling targets. In the process of consignment of final disposal system, frequent communication with the Ministry of Health (MINSA) has contributed to improve their undertaking more proactive toward the medical waste management. During the evaluation study, no negative impact has been observed.

4-3-5 Sustainability

1) Organizational aspects

There is a pressing need to strengthen the solid waste management in the Municipality of Panama in which the housing construction is burgeoning. It is very likely for a future administration of the Municipality of Panama to continue to strengthen the solid waste management with high priority. DIMAUD continues to play a major role in solid waste management in the Municipality of Panama. In order to improve their public services, further efforts should be continued to increase the organizational capacities by streamlining the decision making process.

2) Financial aspects

It is difficult to judge the financial sustainability at the middle of the project period.

3) Technical aspects

It is confirmed that most of knowledge and technologies transferred through the project activities are appropriate in the context of Panama and it is very likely to be adopted. If those staff trained under the Project remained after the organizational change brought by the presidential election, the technical sustainability will be secured.

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5. MODIFICATION OF THE PDM

Based on the discussions among the Team and the concerned Panamanian authorities, it was agreed that the revised PDM (PDM3) will be used to monitor the project activities for the remaining period of the Project. Details of modification of the PDM are listed below:

Details of Modification of PDM

Items	Modifications	Reasons
Following Outputs were rephrased in order to reflect the current situation.		
Output 1	- Waste collection service is improved in parallel with strengthening the activities for cooperating with community.	These three Outputs were rephrased reflecting the activities involved in each Output as well as the changes affected by the external factors.
Output 2	- Preparatory work to establish the transfer and transport system is finalized.	
Output 5	- Organizational operation management is improved.	
Following indicators were added and rephrased to reflect the proper state of achievement level.		
Project Purpose	1 The number of complaints to the 800ASEO is on a declining trend.	These indicators were rephrased to examine the state of achievement more specifically.
	2. The satisfaction survey by DIMAUD shows that the level of satisfaction of the people toward the Solid Waste Services in the Municipality of Panama is improved.	
	3. Final disposal services are continuously provided throughout the project period.	This indicator was added to replace the previous indicator to examine the state of achievement to reflect the change brought by the external factor to the project framework.
Outputs	1-1 Improvement tendency in the operation of waste collection services is confirmed by the operation management data. ① Implementation rate (Implemented /Planned Routes), ② tons /hour,③ hours /shift	Considering the magnitude of effect of external factors and the remaining project period, these indicators are adjusted to make it feasible to measure the achievement of the Output 1
	1-2 Activities contained in the manuals for satisfaction survey as well as the publicity activities of cooperating with community are implemented as the daily work.	
	2-1 Appropriate procedure of site selection for a transfer station is properly progressed.	Affected by the external factors, the scope of work for Output 2 has been minimized. Therefore, the indicator to examine the Output 2 has been adjusted to reflect the change.
	3-1 The data of total down-time (time waiting for repair) for all collection vehicles is continuously collected and analyzed. (From baseline at Dec. 2008 to the end of the Project period, Dec. 2009). 3-2 Activities introduced by the Project are incorporated into the daily operations of collection vehicle management.	Affected by the delay of procurement of collection vehicles, the original indicator is not applicable to examine the achievement level of the Output 3. Therefore, the indicator was adjusted in order to make it feasible to measure the achievement

	<p>4-1 Following the developed landfill manual, proper landfill operation is carried out based on the regular measurement of bulk density and the remaining capacity of Etapa 2 landfill site.</p> <p>4-2 The landfill operation is properly supervised according to the contract.</p> <p>4-3 Landfill condition satisfies the requirements of national environmental standards.</p>	<p>It was determined that the final disposal site will go under the consignment of private contractor. Affected by this change, indicators are rephrased to make it feasible to measure the achievement of the Output 4</p>
	<p>5-1 Activities for the purpose of strengthening the interrelationship among departments in DIMAUD, such as seminars, workshops are planned and conducted.</p> <p>5-2 Necessary database of solid waste management services that needs to be shared among departments is consolidated and properly updated.</p> <p>5-3 Data on management indicators (incl. financial indicators) are consolidated and regularly reported in a documented form.</p>	<p>In order to examine the state of achievement more specifically, indicators are rephrased.</p>
Important Assumptions: Following important assumptions were adjusted.		
From Activities to Outputs	- Transfer station is constructed as scheduled by the Panamanian side at its own expense.	Since the transfer station will not be materialized, this assumption is deleted.
	- The landfill expansion is constructed as scheduled according to the contract with private enterprises. Originally phrased as: - The landfill expansion is constructed as scheduled by the Panamanian side at its own expense.	It was determined that the final disposal site will go under the consignment of private contractor. This indicator was rephrased to reflect the change.
	- Personnel assigned as counterparts remain in their institutions throughout the Project period.	This assumption is transferred to the lower level from "Activity to the Outputs] "
From Outputs to Project Purpose	- Personnel assigned as counterparts remain in their institutions throughout the Project period.	This assumption is transferred to the lower level from "Activity to the Outputs] "
From Project Purpose to Overall Goal	- Solid waste services provided by private companies are properly progressed.	In order to achieve the Overall Goal, the progress of solid waste management by private companies needs to be monitored continuously. Therefore, this assumption is newly added.
Following activities were modified to reflect the current situation.		
Activities of Output 1	<p>1-5 Collecting the primary information on activities for cooperating with community</p> <p>1-6 Publicizing the information/advertisement on the waste collection services to the community</p> <p>1-7 Conducting the satisfaction survey on the waste collection services</p> <p>1-8 Preparing the manual for satisfaction survey as well as the publicity activities of waste collection services</p> <p>1-9 Monitoring the activities for cooperation with communities</p>	These activities are added to the PDM to reflect the current situation.
Activities of Output 2	<p>2-3 EIA process by the Panamanian side</p> <p>2-4 Supervision of construction</p> <p>2-5 Supervision of operation</p> <p>2-6 Monitoring the transfer and transport system</p>	Since the transfer station will not be materialized, it was decided that these activities will not be carried out by the Project. Therefore, these activities are deleted from the PDM.

Activities of Output 3	<p>3-2 Planning the collection vehicle management and preparing the manuals</p> <p>3-3 Improving the inventory management of spare-parts and materials for maintenance through stocktaking</p> <p>3-4 Improving the procurement management of spare-parts and materials for maintenance through establishing an appropriate order system</p> <p>3-5 Studying/discussing the technical key points for placing the maintenance contract with private companies.</p> <p>3-6 Studying/discussing the workflow of consignment procedure (incl. demarcation of operation, preparation of checklists, etc.)</p>	<p>Activities 3-2 ~ 3-5 were rephrased to reflect the current situation.</p> <p>Activity 3-6 was added to reflect the current situation.</p>
Activities of Output 4	<p>4-7 Carefully examining the management plan of final disposals prepared by the Contractor</p> <p>4-8 Supervising the landfill operation according to the contract made between DIMAUD and contractor.</p> <p>4-9 Supervising the operation in the expanded landfill (Etapa3)</p> <p>4-10 Monitoring the expanded landfill management (Etapa3)</p>	<p>Due to the fact that the landfill operation is determined to go under the consignment, activities for 4-7 and 4-8 are rephrased and activities for 4-9 and 4-10 are deleted</p>
Activities of Output 5	<p>5-1 Discussing the mission /vision of the DIMAUD</p> <p>5-2 Reviewing the organizational structure</p> <p>5-3 Increasing the awareness and promoting the interrelationship among departments</p> <p>5-4 Reviewing the current situation of information management</p> <p>5-5 Developing a plan to improve the information management</p> <p>5-6 Creating a mechanism of information sharing</p> <p>5-7 Constructing a mandatory database</p> <p>5-8 Setting management indicators based on the activities from 5-4 ~5-7</p> <p>5-9 Preparing the monthly summary report on management indicators (incl. financial indicators)</p>	<p>The activity of 5-1 of PDM version No. 2, "Improving the organizational operation" was broken down to 5-1 ~5-3 to reflect the current situation.</p> <p>The activity of 5-2 of PDM version No. 2, "Improving the information management" was broken down to 5-4 ~5-9 to reflect the current situation.</p>
Following input was deleted to reflect the current situation.		
Input	- Expenses for improving the existing landfill and for constructing landfill expansion and transfer station	As the expansion of landfill and construction of transfer station will not happen within the project period. Therefore, these expenses are eliminated from inputs by the Panamanian side.

6. CONCLUSION

The Project is expected to increase the capacity of the DIMAUD to enhance and facilitate the implementation of the Master Plan formulated under the previous Development Study conducted by JICA so that solid waste management in the Municipality of Panama are improved as indicated in the Project Purpose. The uniqueness of the Project that differentiates from other similar projects is that a great deal of responsibility is shouldered by the Panamanian side at its own expenses such as construction of a transfer station and an expansion of landfill (Etapa3), procurement of a fleet of new collection vehicles, etc. This illustrates that a high level of ownership of the Project is required on the part of the Municipality of Panama. It is, therefore, unfortunate that some of the activities that are due to be conducted by the Panamanian side have been delayed or changed on account of various unforeseeable factors. As a result, the progress of the Project was hindered or slowed down, which necessitated modifying the framework of the Project as explained in the previous chapters. However, it is worth noting that some activities have gradually been progressed or overcome.

From the findings of the joint evaluation study, the Team concludes that the relevance of the Project is high and the efficiency for the first half of the Project is considered as relatively low. It is also recognized by the Team that some positive effects by the Project have been observed.

As to the sustainability of the Project, the Team needs to express its concern for possible significant changes of the personnel resulting from the election next year, though it is likely that a future administration of the Municipality of Panama will continue to place emphasis on improving solid waste management services with high priority.

Although it is premature to judge at this stage whether or not the Project purpose will be achieved, it is likely that the Project purpose will be achieved provided that continuous efforts are made and the transition of final disposal operation is smoothly progressed in the second half of the project period.

7. RECOMMENDATIONS

1. Familiarizing the stakeholders with the Project information should be carried out at all levels in the DIMAUD. Providing essential information on the Project will enable every staff member to better understand the fact that improvement of day-to-day activities through the Project can lead to achieving the Project Purpose and will eventually contribute to providing improved quality of life of the citizens in the Municipality of Panama. It is important to share the common vision and goal within the organization.
2. Delegation of power and authority to each department needs to be considered in order to quickly respond to problems associated with daily operation as well as routine work. Suggestions, recommendations and proposed changes made by the staff should also be taken into account by the top management.
3. Building mutual trust and creating better relation among departments through close communication and information sharing is strongly suggested so that any improvements or proposed changes will be more easily implemented with little resistance. Relationship needs to be improved, especially between the planning and the operation, the vehicle maintenance and the warehouse, etc.
4. Such as work procedures and manuals should be prepared and properly documented in order to minimize the effect of anticipated personnel changes resulting from the presidential election next year.
5. Providing opportunities of workshops and seminars to be held in Japan, third-countries or in-country

for the operational staff will contribute to raising awareness and morale as well as increasing knowledge and technical capacity. As the number of participants from various departments increases, cooperation among different departments will be improved.

6. The Panamanian side should continue its efforts to secure a site for the transfer station to cope with the rapid housing development in the eastern areas.

8. LESSONS LEARNED

1. Familiarization of the important stakeholders with the project at the beginning is essential for the success of the project.
2. Appropriate remedial measures against a risk such as assumptions being unfulfilled should be carefully examined before commencement of the project since land acquisition for waste management facilities becomes extremely difficult.

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