

PART 4 FEASIBILITY STUDY

L. Maintenance Workshop

L. MAINTENANCE WORKSHOP

Table 1 Equipment

A-1 Equipmet

Name of Equipment	Specification	Total				UPPH			DMSC			Model No. (Reference)	Manufacture (Reference)	Price(JY) CIF Havana	Shipping Measurement		Country of Shipping				
		kw/hr/unit	Unis	kwh	Budget	Units	Power (Kw/hr)	Price (JY)	Units	Power (Kw/hr)	Price (JY)			Unite Price	m3 / units	kg / units					
Equipment																					
1	AC Arc Welding Machine	Rated output250A / input 12.7kw 220V60hz, 75-250A,2.6-5.0 steel electrode				12.7	15	190.5	2,250,000	1	12.7	150,000	14	178	2,100,000	YK-256AD2	Panasonic	150,000	0.10	34	Japan
2	Argon Welding Machine	Rated output250A / input220V, 75-250A, 3.0 steel electrode				0	1	0	250,000	1	0.0	250,000	0	0	0	-	-	250,000	1.00	35	Japan
3	Engine Arc Welder	Rated output280A / input220V, 30-300A, 2-6 steel electrode				0	1	0	1,200,000	1	0.0	1,200,000	0	0	0	DAW300S	Denyo	1,200,000	2.00	300	Japan
4	Engine Arc Welder	Rated output 140A / input 25.8V, 30-150A, 2-3.2 steel electrode				0	15	0	6,750,000	1	0.0	450,000	14	0	6,300,000	GAW-150S	Denyo	450,000	1.50	100	Japan
5	Air Compressor	360L/min., 14kg/cm2, 260L Airtank, 3.7kw 220V/60hz w/10m air hose				3.7	9	33.3	4,860,000	1	3.7	540,000	8	30	4,320,000	CM70766	ALTIA	540,000	1.50	250	Japan
6	Engine Generator	Rated output 0.6A / input 100V, 1kw 3600rpm				0	15	0	1,500,000	1	0.0	100,000	14	0	1,400,000	GE-5501I	Denyo	100,000	1.00	50	Japan
7	Oil-changer W/compressor	70L-oil tank,5kg/100L-Min Air, suction capacity 1.2L/min				0	15	0	3,750,000	1	0.0	250,000	14	0	3,500,000	MOC-70	ALTIA	250,000	1.00	60	Japan
8		17 L/min, 6kg/cm2, 1.5kw 220/60hz w/10m air hose				1.5	15	22.5	1,500,000	1	1.5	100,000	14	21	1,400,000	CM7055-00S	ALTIA	100,000	1.50	173	Japan
9	Grease Pump	Manual, 16kg grease Capacity				0	15	0	1,080,000	1	0.0	72,000	14	0	1,008,000	LS5258	ALTIA	72,000	0.10	10	Japan
10	Battery charger	Input 110V/60hz, output 18-24V,charge 60min, w/battery checker, 2.5m cable				0.5	15	7.5	4,500,000	1	0.5	300,000	14	7	4,200,000	BS6566-0001	ALTIA	300,000	1.00	100	Japan
11	Battery Tester handy)	12V, dynamo /battery				0	15	0	3,000,000	1	0.0	200,000	14	0	2,800,000	BS6577	ALTIA	200,000	0.10	3	Japan
12	Tool Kits	Manual Wrench for engine				0	15	0	3,000,000	1	0.0	200,000	14	0	2,800,000	HT6811	ALTIA	200,000	0.10	62	Japan
13	Tiers Changer(1550)	Max size 1550mm Dia, width700mm, Hub size110-480mmdia, oil motor 2.0kw 220V/60hz, w/Disc tool				2	8	16	16,000,000	0	0.0	0	8	16	16,000,000	TC-3300	ALTIA/ONODANI	2,000,000	8.00	700	Japan
14	Tiers Changer(800)	Air 10kg/cm2, tier size 860mm Dia, width320mm, oil motor 0.75kw 200V/60hz, 10kg/cm2 Compressed air				0.75	1	0.75	860,000	1	0.8	860,000	0	0	0	WT-603	ALTIA	860,000	8.00	700	Japan
15	Tiers repair kit	Rubber/glue/tools				0	16	0	1,600,000	2	0.0	200,000	14	0	1,400,000	WS3075/WS3977	ALTIA	100,000	0.10	40	Japan
16	Jack (20t, Manual)	Manual, 20t				0	15	0	5,250,000	1	0.0	350,000	14	0	4,900,000	LM44600035	ALTIA/ONODANI	350,000	1.00	45	Japan
17	Jack(10t, Manual)	Manual 10t-GarageJack, Lifting 400mm				0	15	0	4,500,000	1	0.0	300,000	14	0	4,200,000	LM4485	ALTIA/ONODANI	300,000	1.00	140	Japan
18	Jack for Transmissions	Manual 0.7t				0	1	0	250,000	1	0.0	250,000	0	0	0	LM4485	ALTIA/ONODANI	250,000	2.00	70	Japan
19	Extension type Jack	Manual 1t, 1000mm long				0	2	0	400,000	2	0.0	400,000	0	0	0	-	-	200,000	1.50	2	Japan
20	Impact wrench	Air, bolt size 14mm, torque30-300 N.m				0	16	0	816,000	2	0.0	102,000	14	0	714,000	WS3594	ALTIA	51,000	0.10	5	Japan
21	Impact wrench	Air, bolt size 20mm, torque150-650 N.m				0	2	0	102,000	2	0.0	102,000	0	0	0	WS3598	ALTIA	51,000	0.10	10	Japan
22	Electric Trolley Chain block	Electric, 3.0t, 4m-lifting, wind 3.4 m/min(3.75kw), travel 12-24m/min(0.75kw)				4.5	1	4.5	800,000	1	4.5	800,000	0	0	0	DAM-03040	ELEPHANT	800,000	1.00	210	Japan
23	Car Washer	20 L/min, 5km/cm2, 0.5kw/110V w/hose and gun				0.5	15	7.5	2,250,000	1	0.5	150,000	14	7	2,100,000	-	-	150,000	0.5	30	Japan
	Sub-Total					26.15	238	282.55	66,468,000	26	24	7,326,000	212	258	59,142,000	-	-	-	-	-	-

Table 2 Various Tools

Name of Equipment	Specification	Total				UPPH			DMSC			Model No. (Reference)	Manufacture (Reference)	Quantity Sets	Price(JY) CIF Havana		Shipping Measurement		Country of Shippin g	
		kw/hr/ unit	Units	kwh	Budget	Units	Power (Kw/hr)	Price (JY)	Units	Power (Kw/hr)	Price (JY)				Unite Price	Total	m3 / units	kg / units		
Various Tools																				
1	Hexagon wrenches	5-wenchs	-	16	-	160,000	2	0	20,000	14	0	140,000	TN1026C	marum Kaisaku	16	10,000	160,000	-	-	Japan
2	Spanners	Set	-	16	-	480,000	2	0	60,000	14	0	420,000	-	-	16	30,000	480,000	-	-	Japan
3	Fills	Flat/round/triangle Files set	-	16	-	320,000	2	0	40,000	14	0	280,000	-	-	16	20,000	320,000	-	-	Japan
4	Reamers	straight / tapered reamers set	-	16	-	320,000	2	0	40,000	14	0	280,000	-	-	16	20,000	320,000	-	-	Japan
5	Bits	Set	-	16	-	320,000	2	0	40,000	14	0	280,000	-	-	16	20,000	320,000	-	-	Japan
6	Screw driver	Set	-	16	-	320,000	2	0	40,000	14	0	280,000	-	-	16	20,000	320,000	-	-	Japan
7	Drills	Set	-	16	-	320,000	2	0	40,000	14	0	280,000	-	-	16	20,000	320,000	-	-	Japan
8	Taps	Set	-	16	-	320,000	2	0	40,000	14	0	280,000	-	-	16	20,000	320,000	-	-	Japan
9	Dies	Set	-	16	-	320,000	2	0	40,000	14	0	280,000	-	-	16	20,000	320,000	-	-	Japan
10	Open-end wrenches	Set	-	16	-	320,000	2	0	40,000	14	0	280,000	-	-	16	20,000	320,000	-	-	Japan
11	Nippers	Set	-	16	-	320,000	2	0	40,000	14	0	280,000	-	-	16	20,000	320,000	-	-	Japan
12	Adjustable wench	Set	-	16	-	320,000	2	0	40,000	14	0	280,000	-	-	16	20,000	320,000	-	-	Japan
13	Bench Vises	Set	-	16	-	480,000	2	0	60,000	14	0	420,000	-	-	16	30,000	480,000	-	-	Japan
14	Sledgehammers	Set	-	16	-	160,000	2	0	20,000	14	0	140,000	-	-	16	10,000	160,000	-	-	Japan
15	Hammers	Set	-	16	-	48,000	2	0	6,000	14	0	42,000	-	-	16	3,000	48,000	-	-	Japan
16	Tool Box	Set	-	16	-	240,000	2	0	30,000	14	0	210,000	-	-	16	15,000	240,000	-	-	Japan
17	Cord reel	Standard 220V,20m	-	16	-	256,000	2	0	32,000	14	0	224,000	-	-	16	16,000	256,000	-	-	Japan
18	Shovels	Set	-	16	-	320,000	2	0	40,000	14	0	280,000	-	-	16	20,000	320,000	-	-	Japan
19	Grindstones	Set	-	16	-	320,000	2	0	40,000	14	0	280,000	-	-	16	20,000	320,000	-	-	Japan
20	Hacksaws	Set	-	16	-	320,000	2	0	40,000	14	0	280,000	-	-	16	20,000	320,000	-	-	Japan
21	Instruments (ref.A)	Gauges, tape measures, calipers, revolution meter, compass, etc	-	16	-	3,200,000	2	0	400,000	14	0	2,800,000	-	-	16	200,000	3,200,000	-	-	Japan
22	Safety /health Control (ref.B)	Goggles, Gloves, Stretchers,masks,etc	-	16	-	3,200,000	2	-	400,000	14	-	2,800,000	-	-	16	200,000	3,200,000	-	-	Japan
23	wet materials (Detail of item 2.2.2)	Steel plate, steel round bar, Aluminum round bar, bronze bar, etc	-	4	-	1,200,000	2	-	600,000	2	-	600,000	-	-	16	300,000	4,800,000	-	-	Japan
24	other	Special tools	-	16	-	3,200,000	2	0	400,000	14	0	2,800,000	-	-	16	200,000	3,200,000	-	-	Japan
Sub-Total					0	16,784,000	48	0	2,548,000	324	0	14,236,000	-	-	-	-	-	-	-	-

Table 3 Machine Tools

A-3 Mechanical Tools

Name of Equipment	Specification	Total				UPPH			DMSC			Model No. (Reference)	Manufacture (Reference)	Quantity Sets	Price(JY) CIF Havana		Shipping Measurement		Country of Shipping	
		kw/hr/ unit	Units	kwh	Budget	Units	Power (Kw/hr)	Price (JY)	Units	Power (Kw/hr)	Price (JY)				Unite Price	Total	m3 / units	kg / units		
Machine Tools																				
1	Lathes	Semi-Auto C/C2000mm, 40kw 220V/60hz	40	1	40	18,900,000	1	40	18,900,000	0	0	0	-	Danish	1	21,000,000	18,900,000	15	3,500	Japan
2	Lathe s	Semi-Auto,C/C1500mm, 38kw 220V/60hz	38	1	38	13,500,000	1	38	13,500,000	0	0	0	DL75x150	Danish	1	15,000,000	13,500,000	8	3,500	Japan
3	Radial Drilling	Manual,C/C1000mm, 2.1kw 220/60hz	2.1	1	2.1	14,400,000	1	2.1	14,400,000	0	0	0	TRD-1000C	TOA Machine	1	16,000,000	14,400,000	3	1,200	Japan
4	Precision Surface Grinding Machine	Manual,C/C500mm,10kw 220/60hz	10	1	10	15,300,000	1	10	15,300,000	0	0	0	PSG-105DX	Okamoto Machine Tool Works, LTD.	1	17,000,000	15,300,000	25	4,600	Japan
5	Bench Grinder	Manual, 255mmdia,1kw 220/60hz	0.75	14	10.5	1,386,000	0	0	0	14	10.5	1,386,000	SY-255T	Yodogawa	14	110,000	1,386,000	2	30	Japan
6	Milling cutter (Universal)	Manual, Horizontal, 3.7kw220/60hz	3.7	1	3.7	9,000,000	1	3.7	9,000,000	0	0	0	SUP-CH	shizuoka tetukou	1	10,000,000	9,000,000	12	2100	Japan
7	Electric Saw	Manual, Horizontal, 25mmdia, 3.5kw 220/60hz	3.5	1	3.5	1,170,000	1	3.5	1,170,000	0	0	0	SCH-26Sa	Niko-tech	1	1,300,000	1,170,000	6	1500	Japan
8	Electric Cutter (handy)	Steel 1.6mm, 0.5kw, 110/60hz	0.5	1	0.5	45,000	1	0.5	45,000	0	0	0	GSC-16	Tokyu Hands	1	50,000	45,000	1.5	1.9	Japan
9	Bench Drilling Machine	1-6.5mmdia, 5000rpm 1kw, 110/60hz	1	15	15	607,500	1	1	40,500	14	14	567,000	TSD-6	Tokyu Hands/Toyos	15	45,000	607,500	2	2.0	Japan
10	Electric Drill (handy)	22mmdia, 0.5kw, 110/60hz	0.6	15	9	540,000	1	0.6	36,000	14	8.4	504,000	GBH2-22SRE	Tokyo Hands/Bosch	15	40,000	540,000	2.3	2.3	Japan
11	Electric Drill (handy)	6.5mmdia, 0.4kw, 110/60hz	0.5	15	7.5	202,500	1	0.5	13,500	14	7	189,000	GBH2-6/N	Tokyo Hands/Bosch	15	15,000	202,500	1	1.1	Japan
12	Electric Drill (handy)	10mmdia, 2500rpm 0.5kw, 110/60hz	0.5	15	7.5	270,000	1	0.5	18,000	14	7	252,000	GBM-450RE	Tokyo Hands/Bosch	15	20,000	270,000	1	1.1	Japan
13	Electric Grinder (handy)	180mmdia, 5000rpm 0.4, 110/60hz	0.5	15	7.5	540,000	1	0.5	36,000	14	7	504,000	GWS 20-180/N	Tokyo Hands/Bosch	15	40,000	540,000	1	4.2	Japan
14	Disc Grinder (handy w/Discs)	100mmdia, 0.7kw, 10,000rpm, 110/60hz	0.7	15	10.5	337,500	1	0.7	22,500	14	9.8	315,000	GWS-6-100E	Tokyo Hands/Bosch	15	25,000	337,500	1.4	2.0	Japan
15	Disc Grinder (handy w/Discs)	150mmdia, 9000rpm 1.1kw, 110/60hz	1.1	15	16.5	540,000	1	1.1	36,000	14	15.4	504,000	GWS-10-150C/N	Tokyo Hands/Bosch	15	40,000	540,000	1.6	1.8	Japan
Sub-Total			103	126	182	76,738,500	14	103	72,517,500	112	79	4,221,000	-	-		-	-	-	-	-

Table 4 Cleaning Equipment

A-4 Cleaning Equipment

Name of Equipment	Specification	Total				UPPH			DMSC			Model No. (Reference)	Manufacture (Reference)	Price(JY) CIF Habana	Shipping Measurement		Country of Shipping	
		kw/hr/unit	Units	kwh	Budget	Units	Power (Kw/hr)	Price (JY)	Units	Power (Kw/hr)	Price (JY)			Unite Price	m3 / units	kg / units		
Cleaning Equipment																		
1	Mechanical Equipment	Automatic bins wash with 7500 L Water Tank.	0	3	0	24,000,000	3	0	24,000,000	0	0	0	LW75-4	SinMaywa	8,000,000	-	-	Japan
2	Potable washers	Electric pumps 0.2kw	0.2	18	3.6	2,700,000	4	0.8	600,000	14	2.8	2,100,000	-	-	150,000	-	-	Japan
3	Bins Washers Vehicles	PVC containers, water spray	0	4	0	76,000,000	4	0	76,000,000	0	0	0	-	Commercial H S I	19,800,000	-	-	Japan
4	Dump Trucks	4ton	0	8	0	40,000,000	4	0	20,000,000	4	0	20,000,000	DR4	SinMaywa	5,000,000	-	-	Japan
5	Hand carts	2-160 liter bins and wheels	0	1500	0	22,500,000	1,500	0	22,500,000	0	0	0	-	-	15,000	-	-	Japan
	Sub-Total		-	-	3.6	165,200,000	-	0.8	143,100,000	-	3	22,100,000	-	-	-	-	-	

Table 5 Inspection and Communication Tools

A-5 Inspection and Communication Tools

Name of Equipment	Specification	Total				UPPH			DMSC			Model No. (Reference)	Manufacture (Reference)	Price(JY)	Shipping Measurement		Country of Shipping	
		kw/hr/unit	Units	kwh	Budget	Units	Power (Kw/hr)	Price (JY)	Units	Power (Kw/hr)	Price (JY)			Unite Price	m3 / units	kg / units		
Inspection and Communication Tools																		
1	Motorcycles	50cc	0	19	0	3,800,000	4	0	800,000	15	0	3,000,000	-	-	200,000	-	-	Japan
2	Handy transceiver	Battery-type, Distance 2 to 5km	0	24	0	480,000	10	0.0	200,000	14	0	280,000	-	-	20,000	-	-	Japan
Sub-Total			-	43	0	4,280,000	14	0	1,000,000	29	0	3,280,000	-	-	-	-	-	Japan

Table 6 Office Equipment

A-6 Office Equipment

Name of Equipment	Specification	Total				UPPH			DMSC			Model No. (Reference)	Manufacture (Reference)	Price(JY) CIF Habana	Shipping Measurement		Country of Shipping	
		kw/hr/unit	Units	kwh	Budget	Units	Power (Kw/hr)	Price (JY)	Units	Power (Kw/hr)	Price (JY)			Unite Price	m3 / units	kg / units		
Office Equipment																		
1	Computers	Disk Top	0.1	17	1.7	5,100,000	2	0.2	600,000	15	1.5	4,500,000	-	-	300,000	-	-	Japan
2	Printers	With FAX machine	0.1	17	1.7	1,700,000	2	0.2	200,000	15	1.5	1,500,000	-	-	100,000	-	-	Japan
3	Tachometer	24 hr. recording (mileage and time; 265 units)	0	262	0	39,300,000	140	0	21,000,000	122	0.0	18,300,000	-	-	150,000	-	-	Japan
	Sub-Total		-	296	3	46,100,000	144	0.4	21,800,000	152	3	24,300,000	-	-	-	-	-	

PART 5 CAPACITY DEVELOPMENT

M. First Trial Workshop for Problem Analysis

M. FIRST TRIAL WORKSHOP FOR PROBLEM ANALYSIS

15 February, 2004

1. The proposal of Participants

In order to find and understand the problems associated in the operation of the existing solid waste management system (SWM) in Havana city, the Study Team requested each participant to prepare a card in which described one common aspect caused in workplace and two individual aspects regarding the problematic aspect for SWM.

2. Participants

- Members of Steering Committee
- Members of Counterpart

3. Number of received Cards (opinions)

A total of seventy two cards (opinions) are submitted and identified by Study Team.

4. Analysis of submitted Cards

The submitted cards in the workshop describing the problematic aspects were classified into the following eight categories and analyzed:

- Collection and Transportation
- Landfill
- Equipment
- Reuse and Recycle
- Education and Training
- Management and Institution
- Social Awareness
- Others

These categories were identified as common or individual opinions as shown in the following table.

Category	Aspect identified as	
	Common	Individual
Collection and transportation		✓
Landfill		✓
Equipment		✓
Reuse and recycle		✓
Education and training	✓	
Management and institution	✓	
Social awareness	✓	
Others	✓	✓

The following table shows the main topics for each category.

Category	Main topics
-Collection and transportation	<ul style="list-style-type: none"> ✓ Segregation system is not existing in MSW ✓ Lack of containers caused by shortage of financing ✓ Difficulties of collection and transportation
-Landfill	<ul style="list-style-type: none"> ✓ Limited land space for appropriate use of final disposal site ✓ Insufficient facilities ✓ Operational problems: cover, fences, etc. ✓ Negative environmental impact (leachate, air/water pollution, etc)
-Equipment	<ul style="list-style-type: none"> ✓ Lack of equipment and infrastructures for the MSW ✓ Quality and quantity of equipment (Vehicles, containers, transfer stations) ✓ Lot of manufacturers and models are used for transportation vehicles ✓ Poor resources to maintain vehicles in the work shop ✓ Superannuated equipment resulting to inefficient waste collection
-Reuse and recycling	<ul style="list-style-type: none"> ✓ Lack of practices of the 3R's culture ✓ Lack of segregation system and recycling plants
-Education and training	<ul style="list-style-type: none"> ✓ Need education of people regarding the solid waste generation ✓ Updating of technologies ✓ Necessary to generate an environmental education for workers and residents ✓ There are no trainings for the recycling and reuse

Category	Main topics
-Management and institution	<ul style="list-style-type: none"> ✓ No systematic control of the management for the MSW ✓ Lack of economic and financial resources ✓ Lack of an economic structure to makes sustainable services
-Social awareness	<ul style="list-style-type: none"> ✓ Poor knowledge of residents regarding environmental preservation ✓ A good social behavior is not existing
-Others	<ul style="list-style-type: none"> ✓ Need equipment to improve information system ✓ Integrated system for the solid waste management is not existing

5. Comments

- According to the opinions submitted in the workshop, the main problems facing the MSW system in Havana city is considered related to equipment used for collection, transportation and land filling, reuse and recycling, management and institutional aspects, education and training aspect, and social awareness.
- In the category of landfill, the main problems are considered operational and environmental problems. The potential pollution on ground water is not reported in the workshop, (Conditions of ground water will be clarified by monitoring which will be conducted by Study Team). In addition, a lot of opinions concerning the disposal site were expressed by attendants. The existing landfill site will be reaching its capacity limit in the near future, and it is anticipated that acquisition of new site will be required in the MSW operation.
- Presently, environmental education for local residents is not conducted by concerned government organizations, and also the technical trainings for improvement of MSW operation is not being carried out. A lot of participants express the necessity of technical and environmental training for operational staff of MSW as well as the local residents.
- In connection with the collection and transportation equipment, the opinions are very homogeneous, as all of them mentioned the problems such as shortage of spare parts, use of lot of models and brands, and deterioration of vehicles for transportations. Human resources were not mentioned as a trouble. There are few opinions which mentioned financial and institutional problems regarding the operation of MSW. In addition to above, one of the main problems regarding the waste collection system is the proposed segregation of waste for reuse and recycles. In the recycling category, it mentioned the lack of activities related to the 3R's philosophy.

According to the classifications prepared by Study Team, troubles submitted by participants such as operational, technological, environmental, social, economic and financial aspects, are summarized as per attached Data Sheet.

Data of Collected Cards

Category	Description of card
A	No segregation system of the waste regarding to the collection system
A	Price of storage container is high though it doesn't produced domestically
A	Difficulties of collection and transportation
A	No segregation system to improve reuse and recycling
A	Lack of transfer station to transport solid waste
A	Segregation system of solid waste is not existing
A	Price of storage container is high though it doesn't produced domestically
A	Required establishing of segregation system by established enterprises
A	Lack of containers caused by shortage of financing
B	lechte treatment system is not available
B	External fences is not installed in the dumping sites
B	Lack of controlled landfills system in Havana City
B	Negative environmental effects in the final disposal sites
B	Insufficient spaces of final disposal site for the Urban Solid Waste in the Province
B	No recover system for the gases
B	Limited land space for appropriate use of final disposal site
B	No land for the final disposal
B	Caused atmospheric pollution and global warming in the dumping sites
C	Insufficient equipment of collection and transportation system
C	Transportation vehicles are very old and doesn't have permanent supply of spare parts
C	Lot of manufactures and models are used for transportation vehicles
C	Lack of collection vehicles for solid waste
C	Lack of equipment and infrastructures for the waste management
C	Limited infrastructures for the Urban Solid Wastes in the Province
C	Lack of collection system and infrastructures
C	Poor maintenance of the equipment
C	Poor resources to maintain vehicles in the work shop
C	It is necessary to transport waste with the vehicles of a single manufacturer
C	Lot of manufactures and models are used for transportation vehicles
C	Necessity of resources is increased due to variety of technology and old vehicles
C	Lack of equipment leading low efficiency
C	Transportation vehicles are very old and doesn't have permanent supply of spare parts

Category	Description of card
C	Superannuated equipment leaded inefficient waste collection
C	Only few resource is existing for the solid waste management system
C	Enough equipment is not available in the dumping sites
C	Enough materials to cover wastes operation is not available in the dumping sites
C	Machines for appropriate recycle system is insufficient
D	Lack of reuse and recycling
D	Lack of segregation system and recycling plants
D	Environmental consideration is not available such as recycling, reduction and reuse of the solid wastes
D	Required reuse of the solid wastes
E	There are no trainings for the recycling and reuse
E	There are no training system for leaders and operation stuff
E	Complicated structures of community direction
E	Few training of the human resources
E	Lack of training for leader as environmental, technological and human resource management aspects
E	There are no educational training for the segregation system
E	It is necessary to generate a environmental education for workers and residents
E	Need education of people regarding to the solid waste generation
E	Lack of environmental education
F	No systematic control of the management for the Urban Solid Wastes
F	Complicated management structures
F	Lack of latest technologies for the solid waste management
F	Insufficient management system of the solid waste
G	Environmental conscience is not existing in inhabitants
G	Poor mind of residents regarding to environmental preservation
G	Lack of awareness for reduction on domestic solid wastes by habitants
G	A good social behavior is not existing
G	Social indiscipline
H	Lack of instruments for the sampling to be analyzed
H	Lack of means to transport samples to the laboratory
H	There are no economic organizations to proceed sustainable communal services
H	Insufficient information system for the financial part
H	No information about the scope of the project
H	Lack of knowledge about the composition and generation of the solid waste
H	It is necessary to know physical and chemical characterization of the solid waste

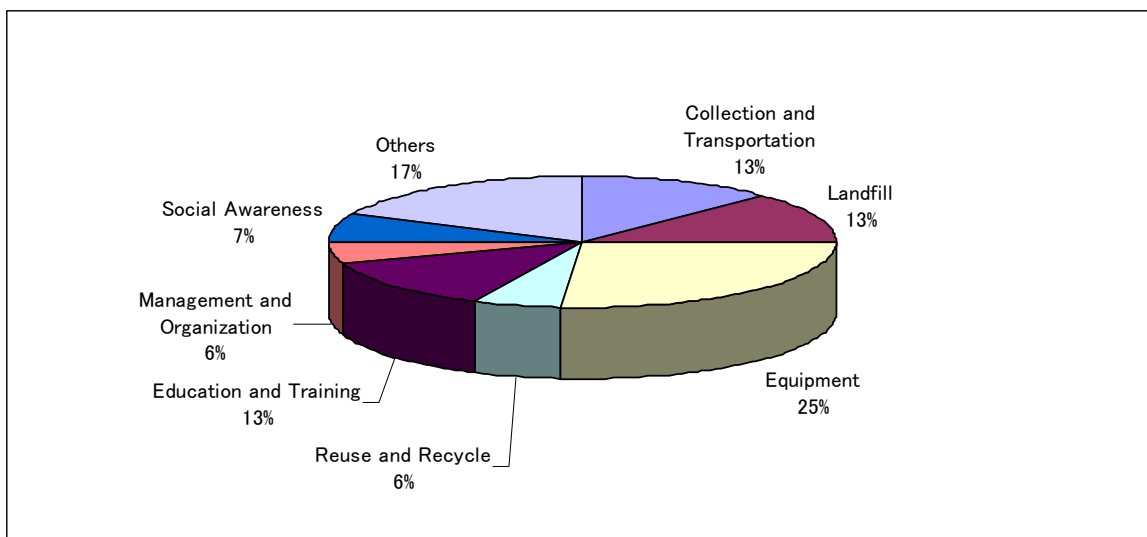
Category	Description of card
H	It is necessary to established rules for the city
H	Integrated system for the solid waste management is not existing
H	Insufficient integration system of the Provincial Entities regarding to solid waste
H	Solid waste management is not carried out with integrated methodology
H	Insufficient computer system and limited communications
H	Need lot of equipment to improve information system

Legend :

- A Collection and Transportation
- B Landfill
- C Equipment
- D Reuse and Recycle
- E Education and Training
- F Management and Organization
- G Social Awareness
- H Others

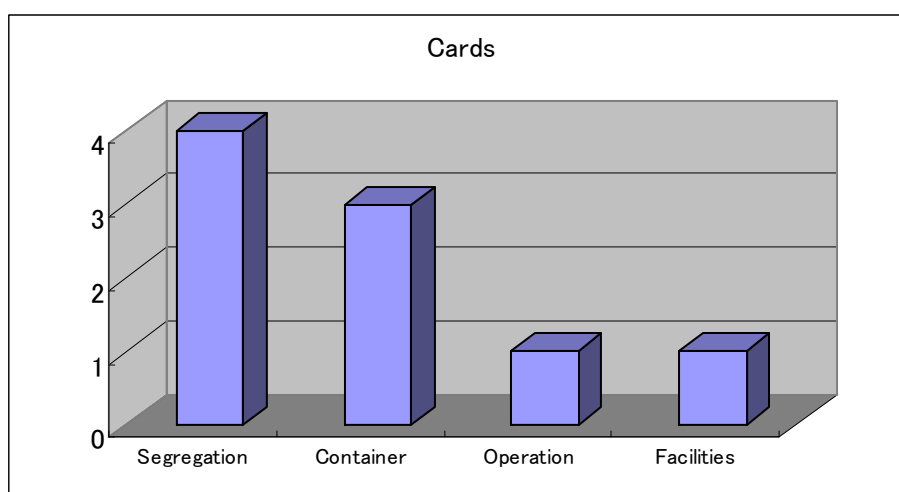
Collected Cards in Workshop

Category of Cards		No.
A	Collection and Transportation	9
B	Landfill	9
C	Equipment	19
D	Reuse and Recycle	4
E	Education and Training	9
F	Management and Organization	4
G	Social Awareness	5
H	Others	13
Total		72



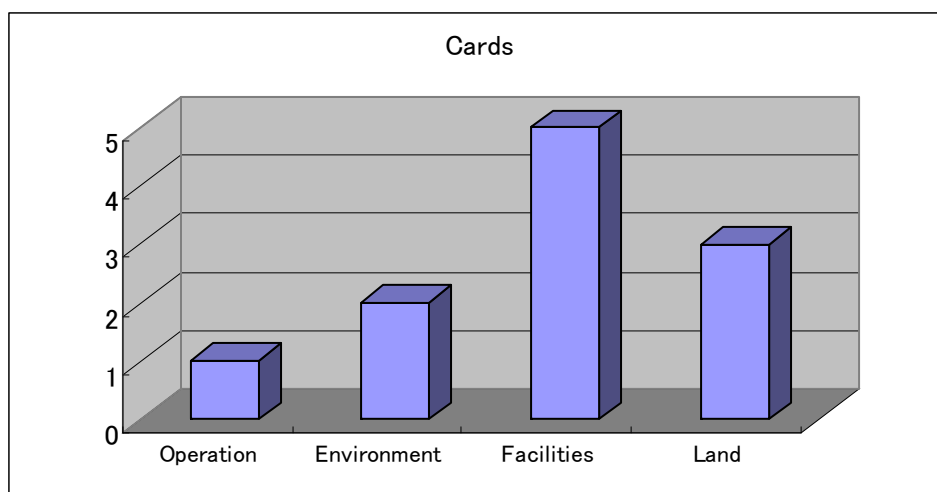
Analysis on Category A

	Description of Cards	Segregation	Container	Operation	Facilities
A	No segregation system of the waste regarding to the collection system	X			
A	Price of storage container is high though it doesn't produced domestically		X		
A	Difficulties of collection and transportation			X	
A	No segregation system to improve reuse and recycling	X			
A	Lack of transfer station to transport solid waste				X
A	Segregation system of solid waste is not existing	X			
A	Price of storage container is high though it doesn't produced domestically		X		
A	Required establishing of segregation system by established enterprises	X			
A	Lack of containers caused by shortage of financing		X		



Analysis on Category B

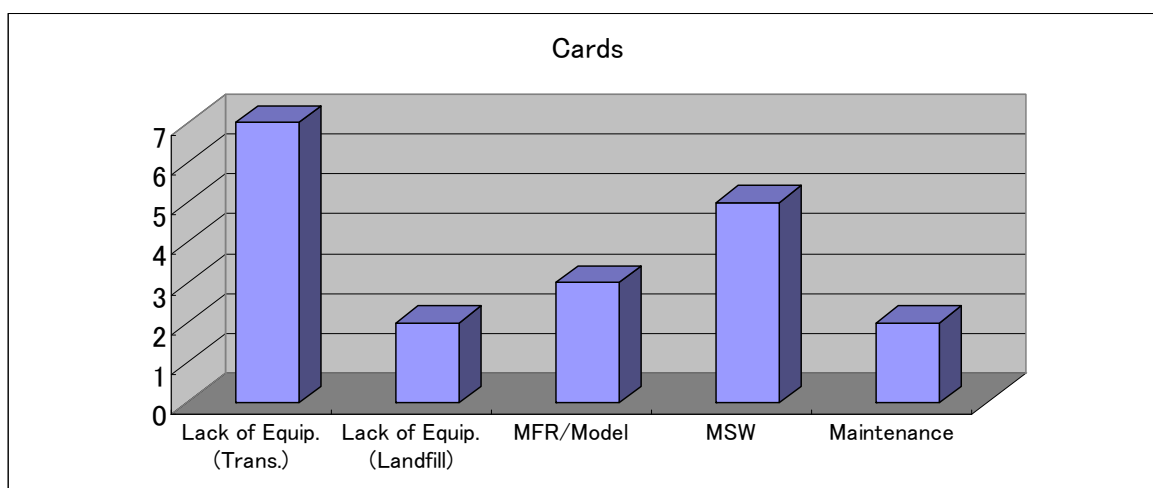
	Description of Cards	Operation	Environment	Facilities	Land
B	lechte treatment system is not available			X	
B	External fences is not installed in the dumping sites			X	
B	Lack of controlled landfills system in Havana City	X			
B	Negative environmental effects in the final disposal sites		X		
B	Insufficient spaces of final disposal site for the Urban Solid Waste in the Province				X
B	No recover system for the gases			X	
B	Limited land space for appropriate use of final disposal site			X	X
B	No land for the final disposal			X	X
B	Caused atmospheric pollution and global warming in the dumping sites		X		



Analysis on Category C

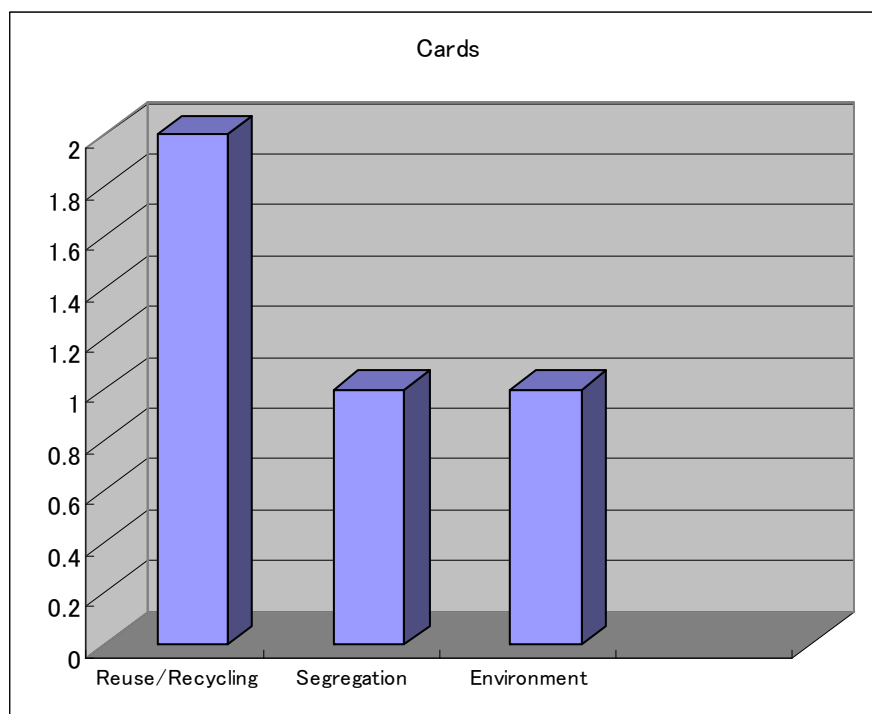
	Description of Cards	Lack of Equip. Transportation	Lack of Equip. Landfill	MFR/Model	MSW	Maintenance
C	Insufficient equipment of collection and transportation system	X				
C	Transportation vehicles are very old and doesn't have permanent supply of spare parts	X				
C	Lot of manufactures and models are used for transportation vehicles			X		
C	Lack of collection vehicles for solid waste	X				
C	Lack of equipment and infrastructures for the waste management	X				
C	Limited infrastructures for the Urban Solid Wastes in the Province				X	
C	Lack of collection system and infrastructures	X				
C	Poor maintenance of the equipment					X
C	Poor resources to maintain vehicles in the work shop					X
C	It is necessary to transport waste with the vehicles of a single manufacturer			X		
C	Lot of manufactures and models are used for transportation vehicles			X		
C	Necessity of resources is increased due to variety of technology and old vehicles				X	
C	Lack of equipment leading low efficiency				X	
C	Transportation vehicles are very old and doesn't have permanent supply of spare parts	X				
C	Superannuated equipment leaded inefficient waste collection	X				

	Description of Cards	Lack of Equip. Transportation	Lack of Equip. Landfill	MFR/Model	MSW	Maintenance
C	Only few resource is existing for the solid waste management system				X	
C	Enough equipment is not available in the dumping sites		X			
C	Enough materials to cover wastes operation is not available in the dumping sites		X			
C	Machines for appropriate recycle system is insufficient				X	



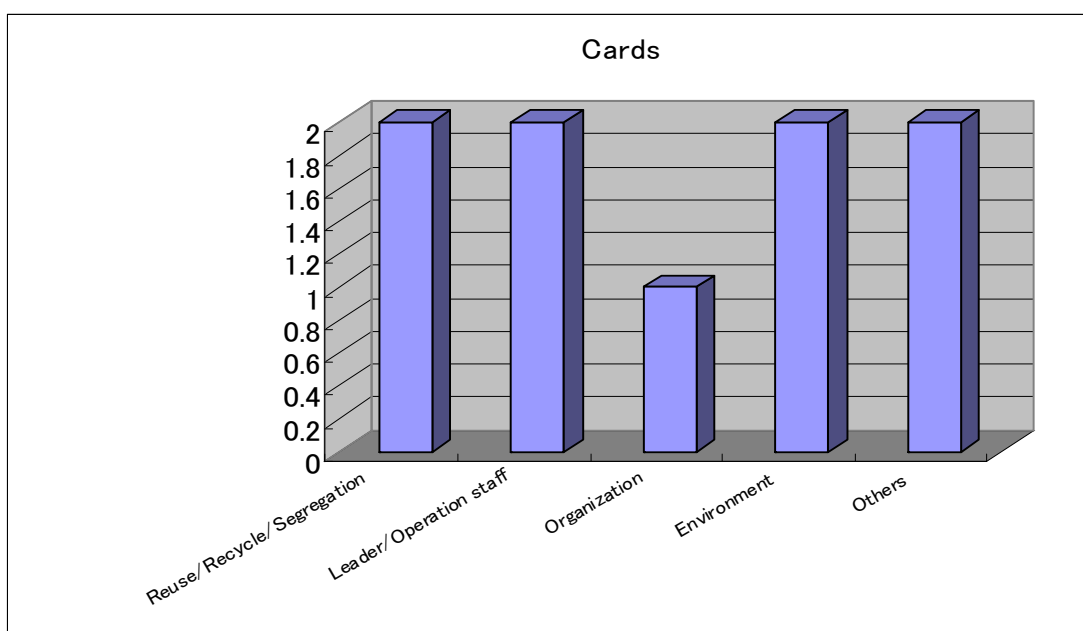
Analysis on Category D

	Description of Cards	Reuse/ Recycling	Segregation	Environment
D	Lack of reuse and recycling	X		
D	Lack of segregation system and recycling plants		X	
D	Environmental consideration is not available such as recycling, reduction and reuse of the solid wastes			X
D	Required reuse of the solid wastes	X		



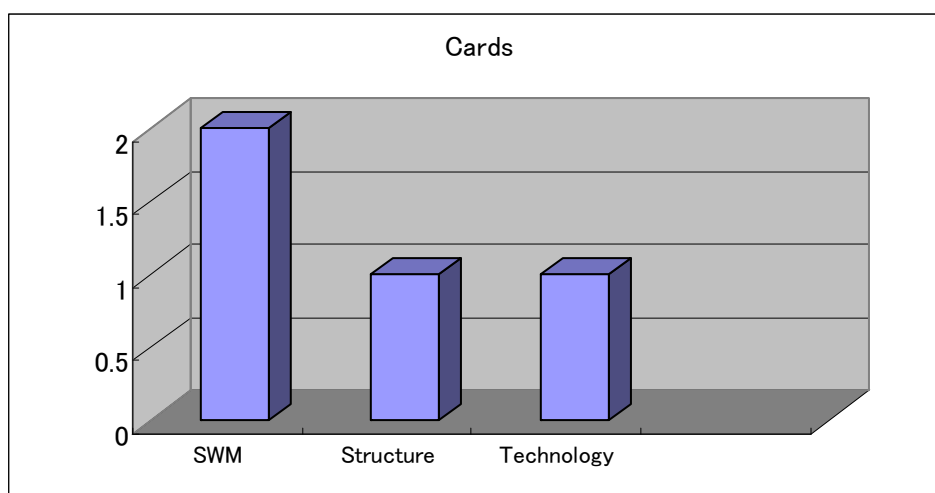
Analysis on Category E

	Description of Cards	Reuse/Recycle Segregation	Leader/Operation staff	Organization	Environment	Others
E	There are no trainings for the recycling and reuse	X				
E	There are no training system for leaders and operation staff		X			
E	Complicated structures of community direction			X		
E	Few training of the human resources					X
E	Lack of training for leader as environmental, technological and human resource management aspects		X			
E	There are no educational training for the segregation system	X				
E	It is necessary to generate a environmental education for workers and residents				X	
E	Need education of people regarding to the solid waste generation					X
E	Lack of environmental education				X	



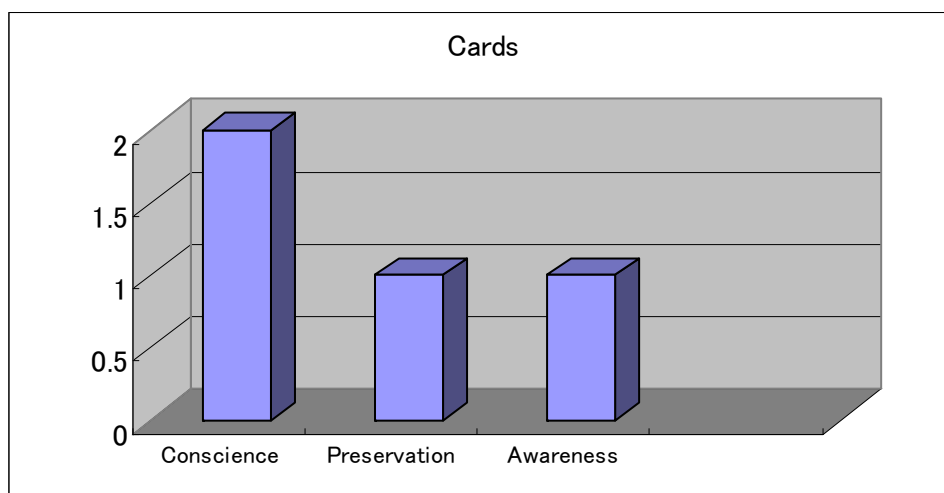
Analysis on Category F

	Description of Cards	SWM	Structure	Technology
F	No systematic control of the management for the Urban Solid Wastes	X		
F	Complicated management structures		X	
F	Lack of latest technologies for the solid waste management			X
F	Insufficient management system of the solid waste	X		



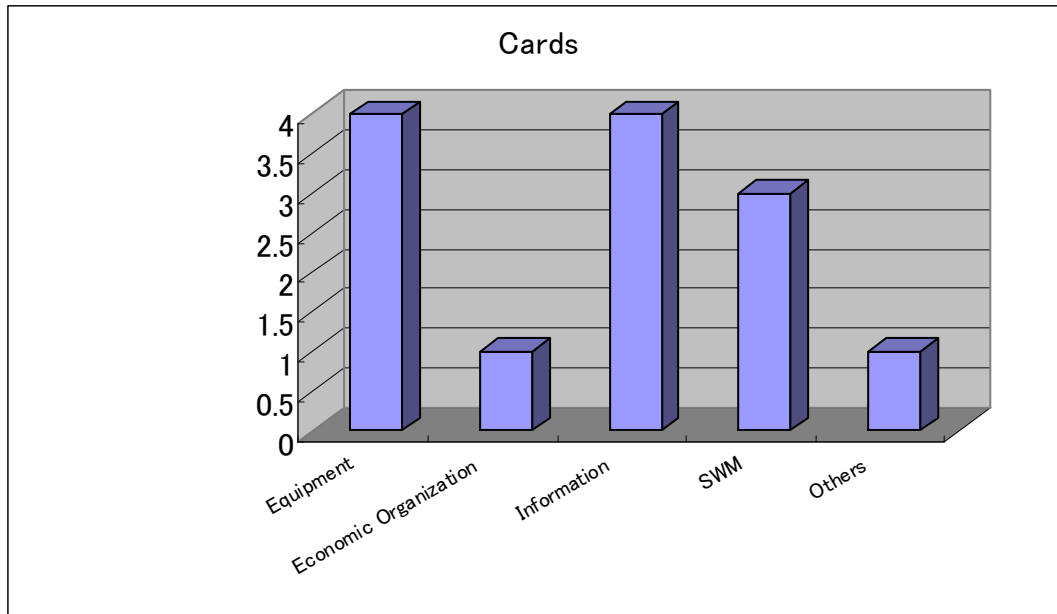
Analysis on Category G

	Description of Cards	Conscience	Preservation	Awareness	Indispline
G	Environmental conscience is not existing in inhabitants	X			
G	Poor mind of residents regarding to environmental preservation		X		
G	Lack of awareness for reduction on domestic solid wastes by habitants			X	
G	A good social behavior is not existing	X			
G	Social indisipline				X



Analysis on Category H

	Description of Cards	Equipment	Economic Organization	Information	SWM	Others
H	Lack of instruments for the sampling to be analyzed	X				
H	Lack of means to transport samples to the laboratory	X				
H	There are no economic organizations to proceed sustainable communal services		X			
H	Insufficient information system for the financial part			X		
H	No information about the scope of the project			X		
H	Lack of knowledge about the composition and generation of the solid waste			X		
H	It is necessary to know physical and chemical characterization of the solid waste			X		
H	It is necessary to established rules for the city					X
H	Integrated system for the solid waste management is not existing				X	
H	Insufficient integration system of the Provincial Entities regarding to solid waste				X	
H	Solid waste management is not carried out with integrated methodology				X	
H	Insufficient computer system and limited communications	X				
H	Need lot of equipment to improve information system	X				



N. Record of Workshops

N. RECORD OF WORKSHOPS

1. Capacity Development Workshops

1.1 First Capacity Development Workshop

1.1.1 Agenda

Date: Mar.15, 2004

Master of Ceremony: Ms. Odalys Goicochea

Time	Activities	Presenters
09:00~09:30	Registration	
09:30~10:00	Introduction to Capacity Building Program (CBP) <ul style="list-style-type: none">• Objective of the Workshop• Capacity Building Program• Evaluation of the achievement	Mr. Akagawa, Team Leader
10:00~10:15	Questions & Answers	
10:15~10:35	Individual CBP (Chief C/P)	Ms. Odalys Garcia
10:35~10:55	Individual CBP (Vice Chief C/P)	Mr. Juan Herrera
10:55~11:15	Individual CBP (Collection & Transport)	Mr. Almeida
11:15~11:25	Coffee Break	
11:25~12:15	Workshop <ul style="list-style-type: none">• Discussion on CBP• Evaluation method• Presentation of each group summarizing the opinions	Discussion in 3~4 groups
12:15~12:20	Inviting C/P for Discussion Meeting on Future MSWM in Havana city	Mr. Kanaya, Vice Team Leader
12:20~12:30	Closing Remarks	Ms. Odalys Garcia

1.2 Second Capacity Development Workshop

1.2.1 Agenda

Date: Nov.13, 2004

Place: Melia Cohiba

Time	Activities	Presentators
09:00~09:10	Opening speech	Dr. Roberto Castellanos, SC Chairman
09:10~09:25	Introduction of the Second Capacity Building Workshop - Objective of the workshop - Agenda for workshop	Ms. Odalys Garcia, Chief C/P
09:25~10:10	Lecture: - Methodology for midterm evaluation of CBP achievement - Evaluation of Master Plan	Mr. Masatoshi Akagawa, Team Leader
10:10~10:25	Coffee Break	
10:25~11:15	Brief presentation of capacity building achievements by each C/P to date	Each C/P
11:15-11:30	Discussion of the achievement - Group A: Planning group - Group B: Evaluation group	Mr. Juan Herrera, Vice Chief C/P & Ms. Goicochea, C/P
11:30~11:45	Evaluation of the achievement	
11:45~12:00	Closing remarks	Dr. Roberto Castellanos, SC Chairman

1.2.2 Grouping

Group	Responsibility	C/P	Team
A/B	1. Leader	Odalys Garcia	Masatoshi Akagawa
A	2. Sub Leader	Juan Herrera	Shigeru Kanaya
A	3. Collection & Transport	Wladimir Fragueta	(Satoshi Shibasaki)
A	4. Recycle/Quantity & Quality Analysis	Odalys Goicochea	(Takahiro Kamishita)
B	5. Final Disposal	Aymara Infante	(Tetsuo Izawa)
A	6. Cost Estimation	Marilyn Diaz	Koichi Iwamoto
B/A	7. Organization/Institution	Odalys Garcia	(Costa Leite)
B	8. Economic/Financial Analysis	Teresita Recio	(Mitsuhiro Doya)
B	9. Social Considerations	Elida Rosa	(Michiel)
B	10.Environmental Considerations	Barbara Cordoves	(Tetsuo Kuyama)

1.2.3 Evaluation Committee

- Chairman: Dr. Roberto Castellanos, SC Chairman
- Vice Chairman: Mr. Masatoshi Akagawa, Team Leader
- Vice Chairman: Ms. Odalys Garcia, Chief C/P
- Member: Shigeru Kanaya, Vice Team Leader

1.3 DMSC Capacity Development Workshop

1.3.1 Agenda

Date: July 12, 2005

Time	Activities	Presenters
09:00~09:30	Registration	
09:30~09:40	Introduction to DMSC Capacity Development Workshop	Mr. Akagawa, Team Leader
09:40~10:30	Master Plan <ul style="list-style-type: none"> ● Objectives and formulation of M/P ● Collection and transport ● Recycling and composting ● Final disposal ● Organization and financing ● Awareness raising 	<ul style="list-style-type: none"> ● Ms. Odalys Garcia ● Mr. Almeida ● Ms. Odalys Goicochea ● Ms. Aymara ● Ms. Odalys Garcia ● Ms. Elida
10:30~11:00	Pilot Project <ul style="list-style-type: none"> ● Objective and outline of the Pilot Project (PLP) ● Individual achievements of PLP 	<ul style="list-style-type: none"> ● Mr. Juan Herrera ● Ms. Elida, Mr. Almeida, Ms. Goicochea, Mr. Andres
11:00~11:15	<i>Coffee Break</i>	
11:15~11:30	Feasibility Study <ul style="list-style-type: none"> ● Selection of the Priority Project and outline of F/S 	<ul style="list-style-type: none"> ● Mr. Juan Herrera
11:30~12:00	Questions & answers	
12:00~12:10	Summarization of the Workshop	Ms. Odalys Garcia

1.4 Third Capacity Development Workshop

1.4.1 Agenda

Time	Activities	Presentators
09:00~09:15	Introduction to the Third Capacity Development Workshop - Objective of the workshop - Agenda for workshop	Mr. Juan Herrera, Vice Chief C/P
09:15~09:30	Methodology for the evaluation of CBP achievements	Mr. Masatoshi Akagawa, Team Leader
09:30~09:40	<i>Coffee Break</i>	
09:40~10:30	Brief presentation of the capacity development achievements by each C/P	Each C/P
10:30~10:50	Discussion of the achievement & conclusion - Group A: Planning group - Group B: Evaluation group	- Ms. Odalys Garcia - Ms. Goicochea, C/P
10:50~11:10	Evaluation of the achievement	Evaluation Committee
11:10~11:20	Closing remarks	Ms. Odalys Garcia, Chief C/P

2. Dissemination Workshops

2.1 First Dissemination Workshop

2.1.1 Agenda

Date: Mar.19, 2004

Master of Ceremony: Ms. Odalys Goicochea

Time	Activities	Presenters
13:30~14:00	Registration	
14:00~14:20	Introduction <ul style="list-style-type: none">• Objective of the Workshop• Introduction of Capacity Building Program	Mr. Akagawa, Team Leader
14:20~14:55	Study Framework <ul style="list-style-type: none">• Necessity of Master Plan Formulation• Study components and work flow• Contents of master plan	Ms. Odalys Garcia, Chief C/P
14:55~15:10	Questions & Answers	
15:10~15:25	Coffee Break	
15:25~15:55	Selection Criteria and Candidates for the Pilot Projects <ul style="list-style-type: none">• Selection criteria• Candidate projects	Mr. Juan Herrera, Vice Chief C/P
15:55~16:10	Questions & Answers	
16:10~16:40	Study outputs up to now <ul style="list-style-type: none">• Problems identified up to now	Mr. Almeida, C/P in charge of collection/transportation
16:40~16:55	Questions & Answers	
16:55~17:00	Closing Remarks	Mr. Juan Herrera, Deputy Chief C/P

2.2 Second Dissemination Workshop

2.2.1 Agenda

Date and Time: Oct. 29, 2004; 0900~1300

Place: Hotel Atlantico, Santa Maria del Mar, Habana del Este

Time	Activity	Presenter /Participants
09:30~10:00	Registration	
10:00~10:10	Opening speech	Dr. Castellanos, SC Chairman
10:10~10:25	Introduction to PLP - Project outline - Implementation and operation schedule - Implementing organization	Mr. Juan Herrera, Co-Leader of PLP
10:25~10:40	Brief outline of PLP - Objectives and selection criteria - Equipment procurement - Video/photos introducing SWM in Japan	Mr. Akagawa, Team Leader/Co-Leader of PLP
10:40~10:55	Component A: Segregate collection - Role of segregated collection for SWM in Havana - Segregate collection component of PLP	Mr. Almeida: C/P for collection
10:55~11:05	Coffee Break	
11:05~11:20	Component B: Sanitary landfill - Role of sanitary landfill for SWM in Havana - Sanitary landfill component of PLP	Ms. Aymara: C/P for landfill
11:20~11:35	Component C: Composting and recycling - Role of composting and recycling for SWM in Havana - Composting and recycling component of PLP	Ms. Goicochea: C/P for composting and recycling
11:35~11:50	Component D: Awareness Raising - Role of awareness raising activities for SWM in Havana - Awareness raising component of PLP	Ms. Elida: C/P for awareness raising
11:50~12:30	Group discussion - Group 1: Public participation in segregated collection - Group 2: Promotion/acceptance of sanitary landfill and awareness raising - Group 3: Public participation in composting and recycling	3 groups
12:30~12:50	Summarization of group discussion	1 from each group
12:50~13:00	Summary and conclusion	Mr. Luis, Acting General Director of DPSC

2.2.2 List of Invitees

Cuban and Japanese Sides

1. Steering Committee members (16)
2. Mr. Tagami of JICA
3. JICA Study Team members (9), Translators (4)
4. Cuban Counterpart (13)
5. Habana del Este Municipal Government (3)
 - President
 - Vice President
 - CITMA's municipal expert
6. DPSC Head Office (2)
7. DPSC's Habana del Este Branch (1)
8. Habana del Este's DPSC community offices (9, one from each district)
9. CDR* provincial level (1)
10. Habana del Este's municipal CDR branches (1)
11. FMC* provincial level (1)
12. Habana del Este's municipal FMC branch (1)
13. EPRMP* (1)
14. Habana del Este's municipal ERMP* branch (1)
15. Habana del Este's Museum (1)
16. Habana del Este's Tourism Training School (1)
17. Guanabo-Peñas Altas Council (14)
 - President
 - Vice President
 - Secretary
 - Delegates (3)
 - Representatives (8) (CDR, MP*, FMC, Education, Public Health, Army Veterans' Association, PCC*, UJC*)
 - Campo Florido Council (21)
 - President
 - Vice President
 - Secretary
 - Delegates (10)
 - Representatives (8) (CDR, MP, FMC, Education, Public Health, Army Veterans' Association, PCC, UJC)

Aid Organizations

18. UNDP/UNIDO

19. PAO

CDR: Committees for the Defense of the Revolution. *FMC*: Federation of Cuban Women. *EPRMP*: Provincial Enterprise for Raw Materials Recovery. *ERMP*: Municipal Branch of EPRMP. *MP*: Raw Materials (Recyclables). *PCC*: Communist Party of Cuba. *UJC*: Young Communists' League., *PAO*: Pan American Health Organization

2.3 Post-Implementation Workshop for the Improvement of Municipal Waste Management

2.3.1 Agenda

Date: June 11(Sat), 2005

Place: Hotel National, Plaza de Revolution

Cession	Time	Activities	Presenter
	09:00~09:30	Registration	
1st Cession		Speech and Summary	
	09:30~09:40	Opening speech	Dr.Castellanos, SC Chairman
	09:40~09:50	Welcome speech	President of Havana del Este municipality
	09:50~10:00	Introduction to Today's Workshop	Mr. Akagawa, Leader of Study Team
	10:00~10:10	Summary of PLP achievement	Mr. Herrera, Leader of C/P for PLP
	10:10~10:20	Summary of PLP achievement	Mr. Akagawa, Leader of Study Team
	10:20~10:30	Coffee Break	
2nd Cession		Verification & Evaluation of Achievement	
	10:30~10:50	Segregated discharge	Elida/Kanaya
	10:50~11:00	Segregated collection & transport	Almeida/Shibazaki
	11:00~11:10	Recycling	Goicochea/Kanaya
	11:10~11:20	Community composting	Andres/Kanaya
	11:20~11:30	Home composting	Goicochea/Hosono
	11:30~11:40	Measurement of waste weight	Aymara/Izawa
	11:40~11:50	Landfill operation	Andres/Iwamoto
	11:50~12:00	Awareness raising	Elida/Akagawa

	12:00~13:00	Lunch	
3rd Cession		Group Discussion & Summarization	
	13:00~13:30	Questions and clarifications	Attendants
	13:30~15:00	Group discussions Grouping Group A: Segregated discharge Group B: Home Composting Group C: Environment-friendly landfills Group D: Awareness raising	Residents Facilitators Goicochea/Almeida Goicochea Andres/Aymara Elida
	15:00~16:00	Presentation of the opinions of each group & discussion by attendants	Group members, WS attendants
	16:00~16:15	Summarization of WS	Ms. Garcia, Chief C/P
	16:15~16:30	Summarization of WS	Mr. Akagawa, Leader of Study Team

2.3.2 List of Participants

Attendants	Number of Invitees
Penas Altas residents: For the stations #27, #33,#34	5
Penas Altas residents: For the other stations	5
Campo Florido residents: Those who participated in home composting	5
Campo Florido residents: Those who didn't participate in home composting	5
Community Leaders	
- Penas Altas: CDR, Women's Union	3
- Campo Florido: CDR, Women's Union	2
Schools	
- Campo Florido: Primary, secondary school teachers	2
- Campo Florido: Pupils who cooperated for home composting	5
Concerned people of Ministries/organizations	2
JICA(Mr. Tagami)	1
Sub-total	35
Steering Committee	3
C/P	10
Study Team	12
Total	60

3. Awareness-Raising Workshop for Primary School Children and Teachers

3.1 Agenda

Date: 27 October, 2004, 9:30 am

Venue: Museo de Guanabo

Time	Activity	Presenter
09:30 – 9:40	Opening remarks	director of education in La Ciudad de La Habana
09:40 – 9:55	General Introduction to the Pilot Project	Mrs Elida Romero (C/P for Environmental Awareness Raising)
09:55 – 10:10	Description of Project activities with population: <ul style="list-style-type: none"> • 3Rs (Recycling, Re-use, Reduction) • Segregated Collection • Compost making 	Ms Odalys Goicochea (C/P for Recycling and Composting)
10:10 – 10:25	Sanitary Landfills	Ms Aymara Infante (C/P for Landfill)
10:25 – 10:40	Coffee Break	
10:40 – 12:00	Activity for the School Children: Elaboration of a 10 minute theatre play on the theme “Solid Waste”, in two groups	
10:40 – 11:40	Activity for Adults: Discussion on “how to involve schools in the improvement of SWM”, in three groups	Ms Odalys Goicochea Mrs Elida Romero Mr Michiel Meijer (Environmental Awareness Expert)
11:40 – 12:00	Group presentations	Mrs Elida Romero
12:00 – 12:20	Theatre play presentation	
12:20 – 12:30	Closing remarks	Ms Odalys Goicochea

3.2 Participants List

- 1) Coordinator of Environment Network – MES (Ministry of Tertiary Education) (1)
 - 2) Responsible for Environmental Education – MINED (Ministry of Education) (1)
 - 3) Members of the Environmental Training Network (2)
 - 4) Provincial Education Director (1)
 - 5) Provincial authority responsible for Environmental Education (1)
 - 6) Municipal Education Directorate (Methodologists for Environment) (15)
 - 7) Provincial authority responsible for the “pioneros” (2)
 - 8) Provincial and Municipal representative of FEEN (National Students Federation) (2)
 - 9) JICA Study Team counterparts (2)
 - 10) Translator (1)
 - 11) Cuban counterparts (4)
 - 12) Vice-President and Environmental Specialist of Government of Habana del Este (2)
 - 13) Museum of Habana del Este (2)
 - 14) Habana del Este Teacher’s College (1)
 - 15) President of the Peñas Altas local Government (1)
 - 16) Delegates of Peñas Altas popular council (3)
 - 17) Representative for Education in Peñas Altas (1)
 - 18) Delegates of Campo Florido popular council (10)
 - 19) Representative for Education in Campo Florido (1)
 - 20) Two schools of Peñas Altas (2 pupils and 2 adults per school) (8)
 - 21) Three Schools of Campo Florido (2 pupils and 2 adults per school) (12)
- Total of 75 invitees.

4. Program for Counterpart Training in Japan

Date	Program	Place/Lecturer
7/21(Wed)	Arrival in Japan	
22(Thu)	<ul style="list-style-type: none"> ● Briefing of the training program ● Courtesy call to JICA 	<ul style="list-style-type: none"> ● TIC ● JICA Global Environment Dept.
23(Fri)	<ul style="list-style-type: none"> ● SWM and legal framework in Japan 	<ul style="list-style-type: none"> ● Dr. Yoshida (JICA Senior Advisor)
24(Sat)	Holiday	
25(Sun)	Holiday	
26(Mon)	<ul style="list-style-type: none"> ● Site visit: Solid waste transfer and intermediate treatment facility ● Lecture: Current situation of SWM in developing countries 	<ul style="list-style-type: none"> ● Shinjuku Transfer Station ● Nippon Koei Co. Ltd.
27(Tue)	<ul style="list-style-type: none"> ● Site visit: Recycling plant 	<ul style="list-style-type: none"> ● Recycling Plaza in Kashiwa city
28(Wed)	<ul style="list-style-type: none"> ● Site visit: Sanitary landfill ● Site visit: Sewage treatment plant 	<ul style="list-style-type: none"> ● Central Breakwater landfill in Tokyo ● Ariake Water Reuse center
29(Thu)	<ul style="list-style-type: none"> ● Lecture: Methodology for master plan formulation and waste collection and transport planning 	<ul style="list-style-type: none"> ● Nippon Koei Co. Ltd.
30(Fri)	<ul style="list-style-type: none"> ● Lecture: Management and legal framework for industrial waste ● Site visit: Final disposal site for industrial waste 	<ul style="list-style-type: none"> ● Japan Industrial Waste Technology Center ● Takeei Cooperation, etc.
31(Sat)	Holiday	
8/1(Sun)	Move from Tokyo to Fukuoka	
2(Mon)	<ul style="list-style-type: none"> ● SWM by Municipality 	<ul style="list-style-type: none"> ● Fukuoka City Administration
3(Tue)	<ul style="list-style-type: none"> ● Site visit: Recycling center, Sanitary landfill site, sewage treatment plant, Post-closure land use for sanitary landfill 	<ul style="list-style-type: none"> ● Fukuoka City Administration
4(Wed)	<ul style="list-style-type: none"> ● Lecture: Solid waste collection operation ● Lecture: Solid waste management issues in developing countries 	<ul style="list-style-type: none"> ● Fukuoka City Administration ● Fukuoka City Administration
5(Thu)	<ul style="list-style-type: none"> ● Site visit: Example of environmental business ● Site visit: Example of zero emission 	<ul style="list-style-type: none"> ● ATC Green Eco Planza ● Asahi Beer Company
6(Fri)	<ul style="list-style-type: none"> ● Site visit: Incineration plant ● Site visit: Sanitary landfill site 	<ul style="list-style-type: none"> ● Maishima Incineration Plant ● Yumeshima Final Disposal Site
7(Sat)	Holiday	
8(Sun)	Move from Osaka to Tokyo	
9(Mon)	<ul style="list-style-type: none"> ● Reporting of the training achievement to JICA 	<ul style="list-style-type: none"> ● JICA Global Environment Dept.
10(Tue)	<ul style="list-style-type: none"> ● Compilation of the data/information obtained 	
11(Wed)	Departure	

Remarks: SWM stands for solid waste management.

O. Capacity Development Program

O. CAPACITY DEVELOPMENT PROGRAM

1. Odalys Garcia

Profile of C/P

1. Personal profile
2. Field of Interest
 - Overall planning for M/P formulation
 - Organization & institution planning
 - Economic and financial analysis

Capacity Building Program for C/P

PDM structure is given below.

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
1. Overall Goal of CBP			
2. Target of CBP for C/P			
3. Outputs			
4. Activities	5. Inputs 5.1 C/P 5.2 Team		6. Preconditions

(1) Super Goal

Note: This is not a must.

Efficiency of MSWM in Havana City is much improved and cost reduction is attained.

(2) Overall Goal of CBP

DPSC becomes able to revise the MSWM M/P for the Havana City as well as to assist other cities in Cuba to formulate a MSWM M/P.

(3) Target of CBP for C/P

C/P becomes able to play the leading role in revising the MSWM M/P for the Havana City as well as to play the role of the Leader of a team to formulate MSWM M/P for other cities in Cuba.

(4) Outputs

- 1) C/P acquires wider knowledge of MSWM in collection, transportation, final disposal, reduction/reuse/recycle as well as organization/institution and economic/financial analysis.
- 2) C/P acquires the technology to formulate an integrated MSWM M/P.

(5) Activities

1. Lecture/Workshop/Seminar		
Learning	On-the-job Training (Joint Work)	Self-Reliant
- Attending all the lectures on MSWM given by the Team	- Organize WS in cooperation with the Team	- Prepare and give presentation in the WS: <ul style="list-style-type: none"> ■ Overall Capacity Building WS No.1, No.2 ■ First, Second, Third Dissemination WS ■ WS for Integrated planning methodology for MSWM M/P ■ WS for Organization and institution ■ WS for Economic and financial analysis ■ Seminar

2. Pilot Project		
Learning	On-the-job Training (Joint Work)	Self-Reliant
-	- Make preparation for the implementation in cooperation with the Team	-

3. M/P, F/S		
Learning	On-the-job Training (Joint Work)	Self-Reliant
Learn from the Advisors of the Team in relation to: <ul style="list-style-type: none"> ■ Integrated planning methodology for MSWM M/P ■ Organization and institution ■ Economic and financial analysis 	Discuss the methodologies in relation to: <ul style="list-style-type: none"> ■ Integrated planning methodology for MSWM M/P ■ Organization and institution ■ Economic and financial analysis 	Write the first draft manuscripts in relation to: <ul style="list-style-type: none"> ■ Integrated planning methodology for MSWM M/P ■ Organization and institution ■ Economic and financial analysis in the reports of: <ul style="list-style-type: none"> ● PR/R No.1 ● IT/R ● PR/R No.2 ● DF/R

(6) Inputs

1) C/P

- In order to coordinate the overall Study works as Chief C/P, devote 25 % of the total working hours for the Study throughout the Study period including when the Study Team is out of Cuba
- To acquire the capacity for the integrated planning for MSWM including M/P and F/S, devote 50 % of the total working hours for the Study throughout the Study period including when the Study Team is out of Cuba

2) Team

Advisors/Team members to work with C/P

- Principal Advisor, Team Leader, Masatoshi Akagawa
Give advice and assist during the 8.5 month stay in Cuba
About 1/4 of the Study works in Cuba is devoted for the assistance for Chief C/P
- Advisor for Organization/Institution, Costa Leite
Give advice and assist during the 5.0 month stay in Cuba
About 1/10 of the Study works in Cuba is devoted for the assistance for Chief C/P
- Advisor for Economic/Financial Analysis, Mitsuhiro Doya
Give advice and assist during the 6.0 month stay in Cuba
About 1/15 of the Study works in Cuba is devoted for the assistance for Chief C/P

(7) Preconditions

Ministries/Organizations continue to allow the C/P to participate in the Study.

DATA SHEET OF C/P

1	Name and Position as C/P	
	Name	Odalys Garcia
	Position as C/P	Chief Counterpart
2	Personal Data	
	Date of Birth (Age)	October 25, 1965 (38)
	Organization	DPSC
	Position	Head of the Development Department
	Professional Background	Architect
	Years of Experience	11 years as of 2004
	Education	University, Architect Cuba, 1993
	Language	English : Basic level Spanish : Native
	Membership of Professional Society	
3	Career and Job Description	
1)	Worked as the Leader of the Development and Investment Team of DPSC for the last 6 years.	
2)	Carried out cooperation projects and technical studies.	
3)	Carried out investment and evaluation control.	
4	Field of Interest	
	- Integrated planning for M/P formulation	
	- Organization & institution planning	
	- Economic and financial analysis	

2. Juan Herrera

Profile of C/P

1. Personal profile
2. Fields of Interest
 - General planning and formulation of M/P
 - Environmental Strategic Assessment for M/P
 - Assessment of viable environmental approaches for integrated management of MSW in Havana City
 - Environmental legal framework for MSWM

Capacity Building Program for C/P

PDM structure is given below.

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
1. Overall Goal of CBP			
2. Target of CBP for C/P			
3. Outputs			
4. Activities	5. Inputs 5.1 C/P 5.2 Team		6. Preconditions

(1) Super Goal

To contribute to the improvement of urban management and the sustainable development of Cuba's capital city.

(2) Overall Goal of CBP

To ensure that water, soil and air pollution risks are brought down as much as possible by improving MSWM anagement.

(3) Targets of CBP for C /P

- To assist in formulating the Master Pan.
- To coordinate the implementation of the pilot projects.
- To disseminate -as a sound environmental practice- the formulation of the M/P and to replicate this experience in other Cuban cities and in Latin America and the Caribbean at large.

(4) Outputs

- 1) To consolidate my knowledge before proceeding to formulate the M/P and be able to ultimately update it in compliance with Cuba's environmental policy and requirements.
- 2) The C/P acquires the skill to implement the PLP.
- 3) The C/P develops new approaches and solutions to MSW in Havana City.

(5) Activities		
1. Lecture/Workshop/Seminar		
Learning	On-the-job Training (Joint Work)	Self-reliance
<ul style="list-style-type: none"> To attend all MSWM lectures given by the Team 	<ul style="list-style-type: none"> To organize workshops in coordination with the Study Team To support the organization of workshops, lectures and meetings 	<ul style="list-style-type: none"> To prepare and make presentations at the workshops: <ul style="list-style-type: none"> General CBP workshops No. 1, No.2, No. 3 First and Second Dissemination WS Workshop on integrated planning methodology for M/P Economic-financial Seminars
2. Pilot Project		
Learning	On-the-job Training (Joint Work)	Self-reliant
<ul style="list-style-type: none"> To coordinate the successful completion of PLP 	<ul style="list-style-type: none"> Training on the implementation of the pilot projects in conjunction with the C/P and the Study Team 	<ul style="list-style-type: none"> As the leader of the C/P for the Pilot Project, supervise the implementation and operation activities.
3. Master Plan (M/P), Feasibility Study (F/S)		
Learning	On-the-job Training (Joint Work)	Self-reliant
Learn from the Advisors of the Team in relation to: <ul style="list-style-type: none"> Environmental planning and strategy Treatment and disposal methods Environmental monitoring methodologies 3R 	Discuss the methodologies in relation to: <ul style="list-style-type: none"> Environmental planning and strategy Environmental monitoring methodologies 3R 	Write the first draft manuscripts of DF/R in relation to: <ul style="list-style-type: none"> Environmental planning and strategy

(6) Inputs

1) C/P

- To devote 25% of the total working hours to the coordination of the general works of the Study in my capacity as Vice-Chief Counterpart during the realization of the Study, including the periods when the Team is in Japan, as well as to the coordination of the Pilot Projects and the future replication thereof.
- To acquire the knowledge enabling me to develop an adequate urban management in accordance with the integrated planning for MSWM, including the M/P, the Pilot Projects and the F/S; to devote to such Works 25% of the total working hours throughout the Study term as well as during the periods when the Study Team is in Japan.

2) Team

Advisors and members of the Study Team to work with the C/P

- Main Advisor, Vice Team Leader, Mr. KANAYA
- To advise and assist the C/P during his 7.5 months stay in Cuba
- Approximately ¼ of the Study works in Cuba will be devoted to assist the Vice Chief Counterpart

(7) Preconditions

Example: The ministries/organizations will enable continuous participation of the C/P in the Study.

DATA SHEET OF C/P

1	Name and Position as C/P	
	Name	Juan Nepomuceno Herrera Cruz
	Position as C/P	
2	Personal Data	
	Date of Birth (Age)	16 May 1953 (50)
	Organization	CITMA-Havana City
	Position	Head of Environmental Unit
	Professional Background	Bachelor of Biochemistry, Expert in Forensic Toxicology, and Expert in Hygiene
	Years of Experience	33 years
	Education	University degree
	Language	English: Read: Fluently Speak: Not fluently French: Read: Fluently Speak: Not fluently Spanish (Mother tongue)
	Membership of Professional Society	Cuban National Union of Construction Architects and Engineers
3	Career and Job Description	
1)	Centro Habana Municipality Health Authority: Head of Hygiene Dept. (2 years)	
2)	San Jose de las Lajas Health Authority: In charge of the Industry and Labor Health Program, and Head of Hygiene Dept. (2 years)	
3)	Military Unit 3219 as Head of Medical Services (5 years)	
4)	Centro Habana Health Authority: Head of the Community Hygiene and Children's Institutions Dept. (2 years)	
5)	Professor-trainee of Medicine at Reina Teaching Polyclinic (1 year)	
6)	Head of Hygiene and Epidemiology at Carlos J. Finlay Polytechnic School (8 years)	
7)	Director of Community Services' Lab (DPSC) (2 years)	
8)	Head of Sweeping and Bulk Collection with DPSC's Provincial Unit of Hygiene	
9)	CITMA-Havana City. Environmental Expert (1 year); Head of Environmental Unit (8 years, up to date)	

3. Valdimir Fraguela Almeida

Profile of C/P

1. Personal profile
2. Fields of Interest
 - Collection and transportation
 - Final Disposal
 - Recycling of Municipal Solid Waste

Capacity Building Program for C/P

PDM structure is given below.

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
1. Overall Goal of CBP			
2. Target of CBP for C/P			
3. Outputs			
4. Activities	5. Inputs 5.1 C/P 5.2 Team		6. Preconditions

(1) Super Goal

Note: This is not a must.

Efficiency of MSWM in Havana City is much improved and cost reduction is attained.

(2) Overall Goal

To strengthen the planning abilities for the DPSC regarding the Urban Solid Waste Management in Havana City.

(3) Target of CBP for C/P

To acquire planning abilities for the preparation of the Master Plan on the Urban Solid Waste Management in Havana City, and at the same time, to be able to offer my knowledge on the preparation of Master Plans as well as preparation and implementation of pilot projects in other provinces and countries.

(4) Outputs

- 1) Development and strengthening of technical knowledge on Urban Solid Waste Management.
 - Collection and transportation
 - Transfer Station
 - Final Disposal
- 2) Strengthening of the Knowledge on the 3Rs: Reduce, Reuse and Recycling.
- 3) Strengthening of the evaluation methodology for projects on Urban Solid Waste Management.
- 4) Capacity acquisition on planning for the Urban Solid Waste Management.

(5) Activities

● Studies

To attend all the Workshops and Lectures on Urban Solid Waste Management given by the Study Team.

● Training in the work places

● Pilot Projects management: Collection and transportation, Urban Solid Waste Segregation and Final Disposal.

● Planning methodologies for the Master Plan.

PILOT PROJECT		
Learning Knowledge	Work Training	Independence
Participate in all the workshops, seminars, studies and research given and celebrated by the experts.	Organize and execute pilot projects regarding collection, transportation and segregation of Urban Solid Waste, together with the Team.	<ul style="list-style-type: none"> • Implementation of the Pilot Projects. • Apply the Pilot Projects in accordance with the necessary equipments and means. • Monitoring, analysis and evaluation of the progress of Pilot Projects. • Economical and Financial Evaluation
Training regarding the established routes normalization	Time and motion study together with my counterpart, member of the Team.	<ul style="list-style-type: none"> • To point out the collection and transportation routes on the map.

M/P, F/S		
Learning Knowledge	Work Training	Independence
To learn from the Team member regarding: <ul style="list-style-type: none"> - Methodology for the implementation of the Urban Solid Waste Management. - Planning and organization of the collection and transportation system, final disposal and Urban Solid Waste segregation (selective collection). 	<ul style="list-style-type: none"> - To carry out environmental studies and research. - To compile all the information and data regarding the studies on the issue of Urban Solid Waste Management (characterization of the city, sample group, organizational and functional system of the UPPH and the DMSC). - To pass on the methodologies of the Master Plan to the managers and involved staff. - Study the loading and transport time of the collection equipments. 	<ul style="list-style-type: none"> • To give seminars and training to the DMSC technicians and UPPH technicians and specialists, and expand my knowledge to colleagues of other provinces of Cuba. • To attend to courses regarding comprehensive management of Urban Solid Waste. • To have a proper methodology for the comprehensive management of Urban Solid Waste (PM).

(6) Inputs

1) C/P

- To implement the Pilot Project and Study works, also as member of the C/P devote minimum 30 % of the total working hours to the Comprehensive Study of the Management of the Urban Solid Waste.
- To obtain a wider understanding and knowledge of the planning of the Comprehensive Management of the Urban Solid Waste by means of a field study on a systematic basis and with the assistance of the counterparts.
- Insert new technology as to the equipments to be able to strengthen the communal and hygiene activities on the basis of a joint work and cooperation of JICA in different aspects: collection, transport, final disposal, selective collection at the original source, and recycling of waste.

2) Team

Advisers/members of the team that will work with the Cuban party.

- Adviser for the Collection and Transport and also for Sorting out of Waste (Segregation): Mr. SATOSHI SHIBAZAKI
- Adviser for Final Disposal: Mr. SHIGERU KANAYA

(7) Preconditions

DPSC and UPPH continue to allow the C/P to participate in the Study.

DATA SHEET OF C/P

Name and Surnames	Vladimir Eusebio Fraguela Almeida
Birth date (age)	March 5 th , 1963 (41)
Enterprise	UPPH
Post	Deputy Director of Hygiene of the Provincial Division
Professional Training	Bachelor of Chemistry
Years of Experience	12 years until 2004
Schooling level	University. Bachelor of Chemistry, Cuba, 1987
Knowledge of Languages	Mother tongue
Member of a Professional Association	No
Post: Deputy Director of Hygiene in the Provincial Division	

Remarks about the tasks:

The Provincial Deputy Director of Hygiene controls the proper use of the existing human resources. He prepares the work schedule to support the fulfilment of the task assigned to the different departments, units and municipalities. He controls the garbage collection, manual and mechanical sweeping, final disposal and the proper exploitation of all equipments. He fulfils and demands his subordinates the most strict fulfilment of the tasks, missions, planned and non planned objectives, Laws, Decree-Laws, resolutions, guidelines, etc. He takes part in the preparation and checking of the economical technical plans. He prepares reports at the request of the Higher Organizations. He's in charge of the executives, technicians and other staff who needs orientation for the execution of their work or specific tasks.

4. Odalys Goicochea

Profile of C/P

1. Personal profile
2. Field of Interest
 - Appropriate Material Recovery from Solid Waste
 - Environmental Consideration and Monitoring
 - Environmental Impact Assessment
 - Utilization of Organic Waste

Capacity Building Program for C/P

PDM structure is given below.

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
1. Overall Goal of CBP			
2. Target of CBP for C/P			
3. Outputs			
4. Activities	5. Inputs 5.1 C/P 5.2 Team		6. Preconditions

(1) Super Goal

Note: This is not a must.

Efficiency of MSWM in Havana City is much improved and cost reduction is attained.

(2) Overall Goal of CBP

C/P can revise the MSWM M/P especially about part of reduction/reuse/recycling considering change of predicted condition in target year.

(3) Target of CBP for C/P

C/P realizes the importance of material recovery and necessity of establishment of its system in order not only to save resource and to reduce waste disposed of vainly.

(4) Outputs

C/P properly understands the waste generation in Havana City

- C/P can estimate the possibility of reduction/reuse/recycling of waste
- C/P can examine countermeasures to advance reduction/reuse/recycling activities in Havana City.

(5) Activities

1. Lecture/Workshop/Seminar		
Learning	On-the-job Training (Joint Work)	Self-Reliant
- Attending all the lectures on MSWM given by the Team	- Organize and chair WS in cooperation with the Team	- Prepare and give presentation in WS: <ul style="list-style-type: none"> ■ Overall Capacity Building WS No.1, No.2 ■ Dissemination WS ■ WS for “Recycling and Waste Quality & Quantity Analysis”, “Environmental Consideration” ■ Seminar

2. Understanding of Current Situation		
Learning	On-the-job Training (Joint Work)	Self-Reliant
Learn the necessary information and data to be collected for the purpose from the Advisors of the Team in relation to: <ul style="list-style-type: none"> ■ Waste Generation ■ Recycling ■ Natural/Social Conditions ■ Environmental Quality (air, water, soil, etc.) 	- Data Collection and data processing for making plan - Discussion for evaluation of data validity	- Collection of existing data including law and regulation relating to natural environmental quality and recycling - Explanation of actual condition of waste management facility to others including the Team

3. Site Survey		
Learning	On-the-job Training (Joint Work)	Self-Reliant
Learn the method way of the surveys from the Advisors of the Team in relation to: <ul style="list-style-type: none"> ■ Waste Quality and Quantity Analysis ■ Water Quality 	- Planning of the surveys based on existing data - Preparation for the implementation in cooperation with the Team	- Arrangement of necessary item and manpower for implementation of surveys - Preparation of record sheet for survey - Data check and processing of survey results

4. Pilot Project		
Learning	On-the-job Training (Joint Work)	Self-Reliant
- Learn the case of application of technology in planning of pilot projects	- Planning of the pilot projects - Monitoring and evaluation of the effect - Feed back and revision of the project	- Continuous monitoring of the concerned projects - Public relations

5. M/P, F/S		
Learning	On-the-job Training (Joint Work)	Self-Reliant
Learn from the Advisors of the Team in relation to: <ul style="list-style-type: none"> ■ Recycling and Waste Quality and Quantity Analysis ■ Environmental Consideration 	Discuss the methodologies in relation to: <ul style="list-style-type: none"> ■ Recycling and Waste Quality and Quantity Analysis ■ Environmental Consideration 	Write the first draft manuscripts in relation to: <ul style="list-style-type: none"> ■ Recycling and Waste Quality and Quantity Analysis ■ Environmental Consideration in the reports of: <ul style="list-style-type: none"> ● PR/R No.1 ● IT/R ● PR/R No.2 ● DF/R

(6) Inputs

1) C/P

- Joint work with the Team in 3 days a week at least while the advisor is in Havana City
- Devotes 25 % of the total working hours for the Study throughout the Study period including when the Study Team is out of Havana City
- To acquire the capacity of responsible fields as a C/P, devote 25 % of the total working hours for the Study throughout the Study period including when the Study Team is out of Havana City

2) Team

Advisors/Team members to work with C/P

- Advisor, Recycling System, Takahiro KAMISHITA
 - Give advice and assist during the 6.0 month stay in Cuba
 - About 1/3 of the Study works in Cuba is devoted for the assistance for Chief C/P
- Advisor, Environmental Consideration, Tetsuo KUYAMA
 - Give advice and assist during the 3.5 month stay in Cuba
 - About 1/5 of the Study works in Cuba is devoted for the assistance for Chief C/P

(7) Preconditions

Ministries/Organizations continue to allow the C/P to participate in the Study.

DATA SHEET OF C/P

1	Name and Position as C/P	
	Name	Odalys Caridad Goicochea Cardoso
	Position as C/P	Main C/P for Recycle/ Quantity & Quality Analysis, Vice C/P for Environmental Consideration
2	Personal Data	
	Date of Birth (Age)	8 September 1974 (29)
	Organization	CITMA's Havana City Branch
	Position	Head of CITMA-Havana City's Project Management Office
	Professional Background	Bachelor of Biology
	Years of Experience	6 years
	Education	University degree
	Language	English: Read: Fluently; Speak: Not fluently

		Spanish: (Mother tongue)
	Membership of Professional Society	----
3	Career and Job Description	
1)	<p>1997-2000: CITMA's Havana City Branch as Environmental Specialist in the fields of:</p> <ul style="list-style-type: none"> • Environmental Impact Assessment • Environmental Government Inspections • Governmental inspections • Environmental Management – Environmental Education • Integrated Management of Solid Wastes • Reforestation Strategies and Plans • Management of protected areas, marshes, etc • Wet and dry waste treatment • Environmental legislation • Treatment of hydrocarbon-contaminated soil and water • Combat against hydrocarbon spillage <p>Am accredited by CITMA* as Professional Environmental Inspector</p> <p>* Ministry of Science Technology and Environment</p>	
2)	<p>2001 to date: CITMA's Havana City Branch</p> <ul style="list-style-type: none"> • Formulation of international cooperation projects. Advisory for formulation • Issue of project certificates • Havana City's National Environmental Fund Management • Project Manager for CUB/99G31: Heavily Contaminated Bays. Project financed by Global Environment Facilities (GEF) • Havana City's GEO Project Coordinator. UNEP • Work carried out jointly with international experts on hydrocarbon-contaminated soil and water; contingency plans against hydrocarbon spillage; integrated management of municipal solid wastes and fluid waste treatment • Diploma on Environmental Management 	

5. Aymara Infante Sigler

Profile of C/P

1. Personal profile
2. Fields of Interest
 - Planning of Final Waste Disposal Sites
 - Cost Estimate of Final Waste Disposal Sites
 - Operation and Maintenance of Final Waste Disposal Sites

Capacity Building Program for C/P

PDM structure is given below.

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
1. Overall Goal of CBP			
2. Target of CBP for C/P			
3. Outputs			
4. Activities	5. Inputs 5.1 C/P 5.2 Team		6. Preconditions

(1) Super Goal

Not a must.

Efficiency of MSWM in Havana City is much improved and cost reduction is attained.

(2) Overall Goal of CBP

DPSC becomes able to revise the MSWM M/P for Havana City as well as to assist other cities in Cuba to formulate a MSWM M/P.

(3) Target of CBP for C/P

C/P becomes able to play the leading role in revising the MSWM M/P for Havana City as well as to play the role of the Leader of a team to formulate MSWM M/P for other cities in Cuba.

(4) Outputs

- 1) C/P acquires wider knowledge of MSWM planning and designing with the consideration of environmental aspects and related laws and regulations, cost estimation and institution/organization including operation and maintenance of the final waste disposal site.
- 2) C/P acquires the technology to involve in formulating an integrated MSWM M/P relating to final waste disposal site with the consideration of collection, transportation and reduction/reuse/recycle policy and plan as well as organization/institution.

(5) Activities

1. Lecture/Workshop/Seminar		
Learning	On-the-job Training (Joint Work)	Self-Reliant
- Attending all the lectures on MSWM given by the Team	- Organize and chair WS in cooperation with the Team	Prepare and give presentation in WS: <ul style="list-style-type: none"> - Overall Capacity Building WS No. 1, No. 2 - First, Second, Third Dissemination WS - WS for Integrated planning and designing methodology for MSWM M/P related to final waste disposal site - WS for Organization and institution including relevant laws and operation and maintenance - WS for cost estimation - Seminar

2. Pilot Project		
Learning	On-the-job Training (Joint Work)	Self-Reliant
- Learn from the Advisors of the Team in relation to: <ul style="list-style-type: none"> • Gradually planning and designing methodology for rehabilitation of final waste disposal site • Operation and maintenance of the final waste disposal site • Cost estimation 	- Make preparation for the implementation in cooperation with the Team	- Clarification of the site selection - Current situation of the selected pilot project site - Idea of Level of final waste disposal site as the pilot project - Preparation of basic data for cost estimation - Related laws and regulations

3. M/P, F/S		
Learning	On-the-job Training (Joint Work)	Self-Reliant
Learn from the Advisors of the Team in relation to: <ul style="list-style-type: none"> • Integrated planning and designing methodology for MSWM M/P related to final waste disposal site including leachate treatment with the consideration of collection, transportation, reduction/reuse/recycle policy and plans 	Discuss the methodologies in relation to: <ul style="list-style-type: none"> • Integrated planning and designing methodology for MSWM M/P related to final waste disposal site including leachate treatment with the consideration of collection, transportation, reduction/reuse/recycle policy and plans 	Write the first draft manuscripts of DF/R in relation to: <ul style="list-style-type: none"> • Current conditions of the existing final waste disposal sites • Future plans of final disposal sites • Integrated planning and designing methodology for MSWM M/P related to final waste disposal sites including leachate treatment with the consideration of collection, transportation, reduction/reuse/recycle policy and plans

(6) Inputs

1) C/P

- In order to perform the Study works as a key person in charge of final disposal site, devote 25% of the total working hours for the Study throughout the Study period including when the Study Team is out of Cuba
- To acquire the capacity for the integrated planning for MSWM including M/P and F/S related to final disposal site, devote 50 % of the total working hours for the Study throughout the Study period including when the Study Team is out of Cuba

2) Team

Advisors/Team members to work with C/P

- Advisor for Planning and designing Final waste Disposal Site Expert, Tetsuo IZAWA
 - Give advice and assist during the 7.5 month stay in Cuba
 - About 3/10 of the Study works in Cuba is devoted for the assistance for the key C/P in charge of final waste disposal site
- Advisor for Facility Designing/Cost estimation, *Koichi IWAMOTO*
 - Give advice and assist during the 6.0 month stay in Cuba
 - About 3/10 of the Study works in Cuba is devoted for the assistance for the assistance

(7) Preconditions

Ministries/Organizations continue to allow the C/P to participate in the Study.

DATA SHEET OF C/P

1	Name and Position as C/P	
	Name	Aymara Francisca Infante Sigler
	Position as C/P	Planning of Final Waste Disposal Sites
2	Personal Data	
	Date of Birth (Age)	4 October 1974
	Organization	DPSC
	Position	Specialist
	Professional Background	<ul style="list-style-type: none"> ● <u>1977-1999</u>: Worked with the Maritime Projects Building Enterprise on technical support for the execution of works and production of precast members. Also worked at the Contract Dept. on budgeting and cost index cards. ● <u>1997 to date</u>: Specialist with DPSC's development and Investment Technical Group. My first assignment was in investments at Havana's Monte Barreto Ecological Park and then an appointed development specialist for the preparation and execution of cooperation projects. Began working on the mapping of information, particularly landfill sites.
	Years Experience	7 years
	Education	University
	Language	English: Elementary level Spanish: Mother tongue
	Membership of Professional Society	Cuba's National Union of Construction Architects and Engineers
3	Career and Job Description	
1)	Field of Interest	<ul style="list-style-type: none"> ● Planning of Final Waste Disposal Sites ● Cost Estimate of Final Waste Disposal Sites ● Operation and Maintenance of Final Waste Disposal Sites

6. Marilyn Díaz Ruíz

Profile of C/P

Personal profile

Field of Interest

- Overall planning for M/P formulation
- Organization & institution planning
- Economic and financial analysis

Capacity Building Program for C/P

PDM structure is given below.

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
1. Overall Goal of CBP			
2. Target of CBP for C/P			
3. Outputs			
4. Activities	5. Inputs 5.1 C/P 5.2 Team		6. Preconditions

(1) Super Goal

Note: This is not a must.

Efficiency of MSWM in Havana city is much improved and cost reduction is attained.

(2) Overall Goal of CBP

DPSC becomes able to revise the MSWM M/P for the Havana city as well as to assist other cities in Cuba to formulate a MSWM M/P.

(3) Target of CBP for C/P

C/P becomes able to play the leading role in revising the MSWM M/P for the Havana city as well as to play the role of the Specialist of Estimation of a team to formulate MSWM M/P for other cities in Cuba.

(4) Outputs

- 1) C/P acquires wider knowledge of MSWM in final disposal, construction of land fill site.
- 2) C/P acquires the technology to formulate an integrated MSWM M/P with Local Consultant.

(5) Activities

1. Lecture/Workshop/Seminar		
Learning	On-the-job Training (Joint Work)	Self-Reliant
<ul style="list-style-type: none"> - Comprehend estimation system about Sanitary Landfill from technical aspect. - Attending the lectures on Sanitary Landfill MSWM given by the Team - Comprehend important structure of Sanitary Landfill 		<ul style="list-style-type: none"> - Prepare and give presentation in the WS: <ul style="list-style-type: none"> ■ Have technical knowledge about sanitary landfill. ■ Have knowledge how to construct sanitary landfill.

2. Pilot Project		
Learning	On-the-job Training (Joint Work)	Self-Reliant
<ul style="list-style-type: none"> - Understand how to make cost estimation and construction plan. 	<ul style="list-style-type: none"> - Make preparation for the implementation in cooperation with the Team - Make a estimation and cost survey jointly with Ms.Aymara and Local Consultant. 	<ul style="list-style-type: none"> Write the first draft manuscripts in relation to: <ul style="list-style-type: none"> ■ Construction and coordination for the project implmentation ■ Technical experience about new method of sanitary landfill in Cuba

3. M/P, F/S		
Learning	On-the-job Training (Joint Work)	Self-Reliant
<ul style="list-style-type: none"> Learn from the Advisors of the Team in relation to: <ul style="list-style-type: none"> ■ Make a cost estimation of construction y maintenance. ■ Association method of construction and cost estimation. 	<ul style="list-style-type: none"> - Discuss the methodologies in relation to: <ul style="list-style-type: none"> ■ Collection of basic information about construction and maintenance cost about existing landfill site, joined by Ms.Aymara(C/P of design part) and Local Consultant ■ Make a estimation construction and maintenance landfill site, joined by Ms.Aymara(C/P of design part) and Local Consultant 	<ul style="list-style-type: none"> Write the first draft manuscripts for DF/R in relation to: <ul style="list-style-type: none"> ■ Cost survey and estimation for MSWM M/P ■ Construction plan and scheduling

(6) Inputs

1) C/P

- In order to coordinate the overall Study works as C/P, devote 80 % of the total working hours for the Study throughout the Study period including when the Study Team is out of Cuba
- To acquire the capacity for the integrated planning for MSWM including M/P and F/S, devote 80 % of the total working hours for the Study throughout the Study period including when the Study Team is out of Cuba

2) Team

Advisors/Team members to work with C/P

- Advisor for Design / Cost estimation, Koichi Iwamoto
- Give advice and assist during the 2.5 month stay in Cuba

(5) About 50% of the Study works in Cuba is devoted for the assistance for C/P, because the C/P of designing part is Ms. Aymara.

DATA SHEET OF C/P

1	Name and Position as C/P (Part of Cost Estimation)	
	Name	Marilyn Díaz Ruíz
	Position as C/P	Cost Estimation
2	Personal Data	
	Date of Birth (Age)	21 May 1951 (52)
	Organization	U.P.P.H.
	Position	Senior Specialist in community hygiene
	Professional Background	Industrial Engineer
	Years of Experience	29 years
	Education	University degree
	Language	English : Not Spanish : Native
	Membership of Professional Society	----
3	Career and Job Description	
1)	<ul style="list-style-type: none"> ● In charge of formulating projects enabling the improvement of the hygiene-sanitary situation of the province in so far as solid waste is concerned. ● Sets the methodological guidelines for household waste collection, manual and mechanical curb sweeping and bulk collection ● Carry out inspections at municipal level to check for compliance with the relevant regulations ● Supervise, control and demand the different provincial and municipal units to carry out the cleaning of spaces before, during and after the holding of every mass event 	

1. Teresita Recio Garcia

Profile of C/P

1. Personal profile
2. Field of Interest
 - Economic and financial analysis
 - Tariff analysis

Capacity Building Program for C/P

PDM structure is given below.

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
1. Overall Goal of CBP			
2. Target of CBP for C/P			
3. Outputs			
4. Activities	5. Inputs 5.1 C/P 5.2 Team		6. Preconditions

(1) Super Goal

Note: This is not a must.

Efficiency of MSWM in Havana city is much improved and cost reduction is attained.

(2) Overall Goal of CBP

The cost information system on MSWM in the Havana City is not designed to be accountable to me DPSC becomes able to evaluate the financial viability a MSWM project as well as to assist other cities in Cuba to evaluate a MSWM M/P.

(3) Target of CBP for C/P

C/P becomes familiar with the method of financial and economic analyses of a MSWM M/P project, as well as to account for cost structure of MSWM in Havana City.

(4) Outputs

- 1) C/P acquires general knowledge of MSWM in collection, transportation, final disposal, reduction/reuse/recycle as well as economic/financial analysis.
- 2) C/P acquires the skill to develop a financing plan of an integrated MSWM M/P.

(5) Activities

1. Lecture/Workshop/Seminar		
Learning	On-the-job Training (Joint Work)	Self-Reliant
- Attending important meetings on MSWM given by the Team	- Organize WS in cooperation with the Team	- Prepare and give presentation in the economic and financial WS and seminars
2. M/P, F/S		
Learning	On-the-job Training (Joint Work)	Self-Reliant
Learn from the Advisors of the Team in relation to economic and financial analysis. <ul style="list-style-type: none"> ■ Integrated planning methodology for MSWM M/P ■ Organization and institution ■ Economic and financial analysis 	<ul style="list-style-type: none"> ■ Discuss the methodologies in relation to economic and financial evaluation. Perform a review of MSWM tariff structure in comparison with other utility services and capacity of residents to pay for MSWM. 	Write the first draft manuscripts in relation to: <ul style="list-style-type: none"> ■ Economic and financial analysis in the reports of: <ul style="list-style-type: none"> ● PR/R No.1 ● IT/R ● PR/R No.2 ● DF/R

(6) Inputs

1) C/P

- In order to coordinate the overall Study works as Chief C/P, devote 25 % of the total working hours for the Study throughout the Study period including when the Study Team is out of Cuba
- To acquire the capacity for the financial and economic analysis of a MSWM project including M/P and F/S, devote 10 % of the total working hours for the Study throughout the Study period including when the Study Team is out of Cuba

2) Team

Advisor/Team member to work with C/P

- Advisor for Economic/Financial Analysis, Mitsuhiro Doya
 - Give advice and assist during the 6.0 month stay in Cuba
 - About 1/5 of the Study works in Cuba is devoted for the assistance for Chief C/P

(7) Preconditions

Ministries/Organizations continue to allow the C/P to participate in the Study.

DATA SHEET OF C/P

1	Name and Position as C/P	
	Name	Teresita Recio García
	Position as C/P	Counterpart in Finance and Economics
2	Personal Data	
	Date of Birth (Age)	January 10, 1966 (38)
	Organization	DPSC
	Position	Staff of Department of Economics, Section of Hard Currency Computation
	Professional Background	Economist
	Years of Experience	13 years as of 2004
	Education	University, International Relations, 1991
	Language	English : Basic level Spanish : Native
	Membership of Professional Society	
3	Career and Job Description	
	1)	Worked as a staff of the department above mentioned for the last 8 years.
	2)	Carried out hard currency control of community services in Havana City.
4	Field of Interest	
		- Financial and economic analysis of a MSWM project
		- Tariff analysis
		- Economic and financial analysis

8. Èlida Rosa Romero Labañino

Profile of C/P

Personal profile

Fields of Interest

- Environmental Awareness.
- Implementation of Community Environmental Projects.
- Visual devices for environment publicity campaigns.
- Participatory methods for social-environmental diagnosis and practical application thereof.

Capacity Building Program for C/P

PDM structure is given below.

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
1. Overall Goal of CBP			
2. Target of CBP for C/P			
3. Outputs			
4. Activities	5. Inputs 5.1 C/P 5.2 Team		6. Preconditions

(1) Super Goal

Improvement of social aspects relating to MSWM along with effective community participation.

(2) Overall Goal of CBP:

CITMA-Havana and DPSC are able to provide solid waste treatment services to the satisfaction of the population with due regard to social considerations and promoting their participation.

(3) Target of CBP for C/P

The C/P is able to properly promote the people's participation at all stages of the solid waste management process including planning and such practical aspects as collection, separation, recycling and reduction.

(4) Outputs

The Counterpart enhances their knowledge and abilities relating environmental awareness, participatory methods for socio-environmental diagnosis, and planning.

(5) Activities		
1. Lectures/Workshops/Seminars		
Learning	On-the-job training (Joint Work)	Self-reliant
To attend all lectures on MSWM given by the Team	To organize workshops in coordination with the Team	<ul style="list-style-type: none"> • To prepare and make presentations at the workshops. • General CB workshops. • Dissemination workshops. • Workshops on integrated planning methodology for the MP of MSWM. • Organization/institution workshop. • Economic-financial analysis workshop. • Seminars
2. Pilot Projects		
Learning	On-the-job Training (Joint Work)	Self-reliant
	<ul style="list-style-type: none"> • Preparation for the implementation of environmental awareness raising program 	
3. Master Plan (M/P), Feasibility Study.		
Learning	On-the-job Training (Joint Work)	Self-reliant
To learn from the Team's advisors about: <ul style="list-style-type: none"> • Integrated planning methodology for the M/P of MSWM • Environmental awareness • Development of environmental community projects • Visual devices for launching environmental publicity campaigns • Participatory methods for social-environmental diagnosis and practical application thereof. 	To discuss methodologies for the following issues: <ul style="list-style-type: none"> • Integrated planning methodology for the M/P of MSWM • Environmental awareness • Development of environmental community projects • Visual devices for launching environmental publicity campaigns • Participatory methods for social-environmental diagnosis and practical application thereof. 	To write first drafts of DF/R in relation to the environmental awareness raising and methodology for social survey.

(6) Inputs

1) The C/P

- To devote 50% of the total working hours to general coordination of the Study works in my capacity as responsible for social considerations during the Study period, including the periods when the Team is outside Cuba.
- To acquire the required knowledge for carrying out the Study Works and to devote 25% of the working time during the Study period, including the period when the Team is outside Cuba.

2) The Team

- The social considerations advisor, Mr. Michiel Meijer, will devote 100% of his time in Cuba to assist his counterpart.

(7) Preconditions

CITMA-Havana will continue to allow participation of the C/P in the Study.

DATA SHEET OF C/P

1	Name and Position as C/P	
	Name	Élida Rosa Romero Labañino
	Position as C/P	
2	Personal Data	
	Date of Birth (Age)	25 March 1957 (47)
	Organization	CITMA-Havana City
	Position	Specialist
	Professional Background	Bachelor of Education (Biology)
	Years of Experience	29 years
	Education	University degree
	Language	English: Read: Not fluently Speak: Not fluently Spanish (Mother tongue)
	Membership of Professional Society	National Society for Botanic Amateurs
3	Career and Job Description	
	1)	Professor of Biology at high school (8 years)
	2)	Specialist in museology. National Museum of Natural History (14 years)
	3)	CITMA-Havana City. Have worked for 7 years now as senior specialist in science and technology with the Havana City's Environmental Unit responsible for coordinating the city's Environmental Education Program.

9. Barbara Mireya Cordovez Rodriguez

Profile of C/P

1. Personal profile
2. Field of Interest
 - Environmental Consideration
 - Initial Environmental Examination
 - Environmental Impact Assessment

Capacity Building Program for C/P

PDM structure is shown below.

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
1. Overall Goal of CBP			
2. Target of CBP for C/P			
3. Outputs			
4. Activities	5. Inputs 5.1 C/P 5.2 Team		6. Preconditions

(1) Super Goal

Note: This is not a must.

The improvement of environment pollution on MSWM in Havana city is attained.

(2) Overall Goal of CBP

The Environmental consideration system on MSWM becomes able to be established in Havana city as well as to assist other cities in Cuba to evaluate a MSWM M/P.

(3) Target of CBP for C/P

C/P becomes able to develop MSWM M/P on environmental consideration as well as to manage the environmental consideration activities in Havana city as a central role.

(4) Outputs

- 1) C/P acquires the general knowledge on MSWM.
- 2) C/P acquires the skill to evaluate the environmental impact of the project on MSWM.
- 3) C/P acquires the skill to develop an environmental management plan of the project on MSWM.
- 4) C/P acquires the skill to manage the relevant organization on environmental consideration of MSWM.

(5) Activities

1. Lecture/Workshop/Seminar		
Learning	On-the-job Training (Joint Work)	Self-Reliant
- Attending important meetings on MSWM given by the Team	- Organize WS in cooperation with the Team	- Prepare and give presentation in the environmental WS and seminars

2. M/P, F/S		
Learning	On-the-job Training (Joint Work)	Self-Reliant
Learn from the Advisors of the Team in relation to environmental consideration. <ul style="list-style-type: none"> ■ Methodology and data analysis on water quality survey and chemical analysis survey ■ Initial Environmental Examination ■ Environmental Impact Assessment ■ Environmental management plan 	<ul style="list-style-type: none"> ■ Implementation of Initial environmental examination, Environmental Impact Assessment. ■ Preparation of Environmental Management Plan 	Write the first draft manuscripts in relation to: <ul style="list-style-type: none"> ■ Initial Environmental Examination, Environmental Impact Assessment and Environmental Management Plan in the reports of: <ul style="list-style-type: none"> ● PR/R No.1 ● IT/R ● PR/R No.2 ● DF/R

(6) Inputs

1) C/P

- In order to coordinate the overall Study works as Environmental consideration C/P, devote 20 % of the total working hours for the Study throughout the Study period including when the Study Team is out of Cuba
- To acquire the capacity for Environmental Consideration of a MSWM project including M/P and F/S, devote 10 % of the total working hours for the Study throughout the Study period including when the Study Team is out of Cuba

2) Team

Advisor/Team member to work with C/P

- Advisor for Environmental Consideration, Tetsuo Kuyama
 - Give advice and assist during the 4.0 month stay in Cuba
 - About 1/5 of the Study works in Cuba is devoted for the assistance for Chief C/P

(7) Preconditions

Ministries/Organizations continue to allow the C/P to participate in the Study.

DATA SHEET OF C/P

1	Name and Position as C/P	
	Name	Bárbara Mireya Cordovés Rodríguez
	Position as C/P	
2	Personal Data	
	Date of Birth (Age)	25 June 1954 (49)
	Organization	CITMA-Havana City
	Position	Specialist
	Professional Background	Chemical Engineer
	Years of Experience	29 years (2004)
	Education	University degree
	Language	English: Read: not fluently; Speak: not fluently Spanish (Mother tongue)
	Membership of Professional Society	----
3	Career and Job Description	
1)	<ul style="list-style-type: none"> • Researcher with the National Center for Scientific Research (CENIC): 4 years • Chemical research in the field of cane sugar and its derivatives 	
2)	<ul style="list-style-type: none"> • Researcher with Cuban Institute of Sugar Research (ICINAZ): 7 years • Chemical research in the field of cane sugar and its derivatives (pilot plant work) 	
3)	<ul style="list-style-type: none"> • Refinery shift boss at Camilo Cienfuegos sugar mill (6 years); worked on refined cane sugar production, and on research for solving production problems 	
4)	<ul style="list-style-type: none"> • Researcher-producer with the Pharmaceutical Chemistry Center (CQF): 8 years • Medicine development research (pilot plant trials) and waste treatment 	
5)	CITMA-Havana City (4 years) as specialist with the Environmental Unit in charge of the regulatory process for EIA at all city's 15 municipalities; responsible for regulation and management of solid wastes for the city; responsible for the implementation of the Cleaner Production Scheme at the city's industries, and for the Company Environmental Management; CITMA-Havana City's representative before Government Group IX for Supporting Community Services headed by the Ministry of Economy and Planning.	

P. Interim Evaluation of Capacity Development

P. INTERIM EVALUATION OF CAPACITY DEVELOPMENT

1. Odalys Garcia

Name of C/P: Ms. Odalys Garcia

Position: Chief C/P & Organization/Institution

1. Set Targets

Targets are those which were set at the end of the first Study in Cuba considering the achievement during the first Study. Priority issues are those set also at the end of the first Study in Cuba similarly.

(1) Overall targets

- Acquire the planning capacity for the formulation and revision of a MSWM M/P as a leader of the planning team. Taking advice of the experts from a developed country is a prerequisite to the M/P formulation.

(2) Priority issues

- Strengthen the basic knowledge of MSWM with the emphasis on concepts and methodologies rather than detailed knowledge of technologies.
- Strengthen the knowledge of environment-friendly/sanitary landfill and environmental protection.
- Obtain the planning capacity for the formulation of middle and long term MSWM.
- Obtain the report preparation capacity for the effective presentation and publicizing of the MSWM plans.

2. Participation/Contribution to the Study Perceived by C/P

	Formulation of M/P	Planning and Implementation of PLP	Others
1.	To provide data, criteria and necessary information	Participation in planning and execution of workshops	Meetings with municipality authorities and councils involved in PLP
2.	Review of the Plan	Participation in coordination of projects and designs	To participate in several discussions about procurement and acquisitions for the project
3.	Discussion and approval of the Plan	Participation in the evaluation of the master plan	Collaboration with several members of the C/P
4.	Coordination of workshops technical meetings	Coordination between design and execution ordinations	Inter-institutional coordination

3. Transferred Technology Perceived by C/P

	Item 1	Item 2
Overall target		
1. Acquire the planning capacity for the formulation and revision of a MSWM M/P as a leader of the planning team.	Capacity for planning and formulation of a M/P was acquired.	Leadership capacity was acquired.
Priority issues		
1. Strengthen the basic knowledge of MSWM with the emphasis on concepts and methodologies rather than detailed knowledge of technologies.	Strengthening of basic knowledge of MSWM was achieved	
2. Strengthen the knowledge of environment-friendly/sanitary landfill and environmental protection.	Knowledge for design of environment-friendly/sanitary landfills was acquired.	Information about leachate was acquired.
3. Obtain the planning capacity for the formulation of middle and long term MSWM.	Planning and formulation capacity for MSWM plans for medium- and long-terms has to some extent acquired.	
4. Obtain the report preparation capacity for the effective presentation and publicizing of the MSWM plans.	I become capable of preparing effective information to be disseminated.	

4. Evaluation of the Interim Achievement

Remarks 1: Up to the former half of the Second Study in Cuba(till the end of November, 2004)

Remarks 2: A: excellent, B: good, C: fair, D: not sufficient

	Evaluation		
	Own	Team member	Evaluation Committee
Overall target	B	B	B
1. Acquire the planning capacity for the formulation and revision of a MSWM M/P as a leader of the planning team.	B	B	B
Priority issues	B	B	B
1. Strengthen the basic knowledge of MSWM with the emphasis on concepts and methodologies rather than detailed knowledge of technologies.	B	B	B
2. Strengthen the knowledge of environment-friendly/sanitary landfill and environmental protection.	B	B	B
3. Obtain the planning capacity for the formulation of middle and long term MSWM.	B	C	C
4. Obtain the report preparation capacity for the effective presentation and publicizing of the MSWM plans.	B	B	B
Overall	B	B	B

2. Juan Herrera

Name of C/P: Mr. Juan Herrera

Position: Vice Chief C/P

1. Set Targets

Targets are those which were set at the end of the first Study in Cuba considering the achievement during the first Study. Priority issues are those set also at the end of the first Study in Cuba similarly.

(1) Overall targets

- Strengthen the capacity for working out the counter-measures for the environmental problems including those in MSWM in the Havana city.
- Strengthen the capacity for improving the legal framework for environmental protection and MSWM.

(2) Priority issues

- Obtain the wide knowledge of solid waste disposal technologies and solid waste management system.
- Augment the knowledge of environmental monitoring.
- Augment the knowledge of 3R, in particular from the economic viewpoint.

2. Participation/Contribution to the Study Perceived by C/P

	Formulation of M/P	Planning and Implementation of PLP	Others
1. Data collection	X	X	X
2. Planning of tasks for Pilot Projects	X	X	X
3. Organization of tasks related to the Pilot Projects	X	X	X
4. Revision of progress reports	X	X	X
5. Participation in meetings and workshops to interchange criteria and prepare agreement	X	X	X
6. Selection of pilot projects and for feasibility study	X	X	X

3. Transferred Technology Perceived by C/P

	Item 1	Item 2	Item 3
Overall target			
1. Strengthen the capacity for working out the counter-measures for the environmental problems including those in MSWM in the Havana city.	Interchange of experiences with the experts of the Study Team. Strengthen the capacity through the training for 21 days in Japan (Fukuoka, Osaka, Tokyo)	Planning, organization and management Control and evaluation activities	
2. Strengthen the capacity for improving the legal framework for environmental protection and MSWM.	Interchange of experiences with the Cuban C/P and Mr. Costa Leite		
Priority issues			
1. Obtain the wide knowledge of solid waste disposal technologies and solid waste management system.	Obtain knowledge through the training for 21 days in Japan (Fukuoka, Osaka, Tokyo)		
2. Augment the knowledge of environmental monitoring.	Training for 21 days in Japan (Fukuoka, Osaka, Tokyo)		
3. Augment the knowledge of 3R, in particular from the economic viewpoint.	Training for 21 days in Japan (Fukuoka, Osaka, Tokyo)		

4. Evaluation of the Interim Achievement

Remarks 1: Up to the former half of the Second Study in Cuba (till the end of November, 2004)

Remarks 2: A: excellent, B: good, C: fair, D: not sufficient

	Evaluation		
	Own	Team member	Evaluation Committee
Overall target	B	B	B
1. Strengthen the capacity for working out the counter-measures for the environmental problems including those in MSWM in the Havana city.	B	B	B
2. Strengthen the capacity for improving the legal framework for environmental protection and MSWM.	B	C	B
Priority issues	B	B	B
1. Obtain the wide knowledge of solid waste disposal technologies and solid waste management system.	A	B	B
2. Augment the knowledge of environmental monitoring.	B	C	B
3. Augment the knowledge of 3R, in particular from the economic viewpoint.	B	B	B
Overall	B	B	B

3. Valdimir Fraguela Almeida

Name of C/P: Vladimir Fraguela

Position: Collection/Transportation

1. Set Targets

Targets are those which were set at the end of the first Study in Cuba considering the achievement during the first Study. Priority issues are those set also at the end of the first Study in Cuba similarly.

(1) Overall targets

- Acquire the overall solid waste management capacity, including the efficient collection/transportation, environment-friendly landfill and 3R.

(1) Priority issues

- Acquire the planning capacity and operation and maintenance technology for environment-friendly landfill.
- Strengthen the knowledge of 3R.

2. Participation/Contribution to the Study Perceived by C/P

	Formulation of M/P	Planning and Implementation of PLP	Others
1. Data collection	X		
2. Knowledge of the MSWM systems	X	X	X
3. Investigation of generation and composition and volume of MSW in 14 landfills	X	X	X
4. Time and movement investigation	X	X	X
5. Forecast of recycling activities		X	X
6. Knowledge about population awareness	X	X	
7. Group work .	X	X	X
8. Workshops called by the experts		X	X
9. Coordination meetings	X	X	X
10. Visits and consultation to landfills, households, hotels, institutions, urban areas, tourism places, commercial places.	X	X	

3. Transferred Technology Perceived by C/P

Overall target	
1. Acquire the overall solid waste management capacity, including the efficient collection/transportation, environment-friendly landfill and 3R.	Various knowledge.
Priority issues	
1. Acquire the planning capacity and operation and maintenance technology for environment-friendly landfill.	Various knowledge.
2. Strengthen the knowledge of 3R.	Various knowledge.

4. Evaluation of the Interim Achievement

Remarks 1: Up to the former half of the Second Study in Cuba(till the end of November, 2004)

Remarks 2: A: excellent, B: good, C: fair, D: not sufficient

	Evaluation		
	Own	Team member	Evaluation Committee
Overall target	B	A	B
1. Acquire the overall solid waste management capacity, including the efficient collection/transportation, environment-friendly landfill and 3R.	B	A	B
Priority issues	B	B	B
1. Acquire the planning capacity and operation and maintenance technology for environment-friendly landfill.	C	B	C
2. Strengthen the knowledge of 3R.	B	A	B
Overall	B	A	B

4. Odalys Goicochea

Name of C/P: Odalys Goicochea

Position: Recycling/Quantity & Quality Analysis

1. Set Targets

Targets are those which were set at the end of the first Study in Cuba considering the achievement during the first Study. Priority issues are those set also at the end of the first Study in Cuba similarly.

(1) Overall targets

- Work out an environmental strategy including MSWM for the Havana city as a core member of the Team.

(2) Priority issues

- Strengthen the knowledge of overall MSWM from the viewpoints of recycling promotion and cleaner production.
- Strengthen the knowledge of environmental impact standards and alleviation measures.
- Strengthen the knowledge of environment-friendly landfill

2. Participation/Contribution to the Study Perceived by C/P			
	Formulation of M/P	Planning and Implementation of PLP	Others
1.	Collection, processing and analysis of data about the current situation of recycling and composting in Havana City	Planning of Pilot Project based on three-types segregation of MSW for recycling and composting	Overall coordination of Development Study
2.	Carry out study of generation and composition of MSW in dry and rainy seasons	Preparation of Pilot Project for Home and Community Composting	Participation in lectures and technical meetings with the Study Team
3.	Projection of generation of MSW in Havana City	Participation in environmental awareness raising workshops in the Popular Councils of Campo Florido and Peñas Altas in Habana del Este municipality	
4.	Evaluation of possibilities for recycling of useful solid waste	Elaboration of implementation plan of Pilot Project including monitoring and evaluation for feedback of proposed Master Plan	
5.	Establishment of objectives for recuperation of useful waste		
6.	Evaluation of possibilities to produce compost from organic waste from several generation sources of MSW, mainly households and agricultural markets		
7.	Establishment of objectives for composting		
8.	Planning of promotion measures for composting		
9.	Preparation of reports about recycling and composting		

3. Transferred Technology Perceived by C/P

	Item 1	Item 2	Item 3	Item 4	Item 5
Overall target					
1. Work out an environmental strategy including MSWM for the Havana city as a core member of the Team.	Aspects to be considered for preparation of Master Plan for integrated management of MSW				
Priority issues					
1. Strengthen the knowledge of overall MSWM from the viewpoints of recycling promotion and cleaner production.	Methodology to determine the generation and composition of MSW	Formulas and equations necessary to determine the generation projections	Implementation of 3R principle	Rules and instructions for preparation of compost and determination of its quality for use	Methodology for study of water resources (surface, underground and leachate) in order to evaluate the environmental impact of final disposal sites
2. Strengthen the knowledge of environmental impact standards and alleviation measures.	Acquisition of knowledge about screening				
3. Strengthen the knowledge of environment-friendly landfill	Design of sanitary landfills. Aspects to be considered for its implementation, operation and maintenance	Operation methods for sanitary landfills	Leachate treatment	Aspects to be considered for monitoring of sanitary landfills	

4. Evaluation of the Interim Achievement

Remarks 1: Up to the former half of the Second Study in Cuba(till the end of November, 2004)

Remarks 2: A: excellent, B: good, C: fair, D: not sufficient

	Evaluation		
	Own	Team member	Evaluation Committee
Overall target	B	B	B
1. Work out an environmental strategy including MSWM for the Havana city as a core member of the Team.	B	B	B
Priority issues	B	A	B
1. Strengthen the knowledge of overall MSWM from the viewpoints of recycling promotion and cleaner production.	B	A	A
2. Strengthen the knowledge of environmental impact standards and alleviation measures.	B	A	B
3. Strengthen the knowledge of environment-friendly landfill	B	B	B
Overall	B	B	B

5. Aymara Infante Sigler

Name of C/P: Aymara Infante

Position: Final Disposal

1. Set Targets

Targets are those which were set at the end of the first Study in Cuba considering the achievement during the first Study. Priority issues are those set also at the end of the first Study in Cuba similarly.

(1) Overall targets

- Work out an environmental strategy including MSWM for the Havana city as a core member of the Team.

(2) Priority issues

- Strengthen the knowledge of the design and operation and maintenance of the environment-friendly landfill.
- Strengthen the knowledge of the monitoring of leachate.
- Acquire the knowledge of the feasibility study methodology for the priority project.

2. Participation/Contribution to the Study Perceived by C/P

	Formulation of M/P	Planning and Implementation of PLP	Others
1.	Collection and delivery of information	Collection of information.	
2.	Review of Progress Report (1)	Site visits to the area of pilot landfill	
3.	Participation in 1st Capacity Building Workshop	Contracting companies for design and construction works of landfill	
4.	Coordination meetings	Technical councils with EPOT and Japanese C/P for design works of the landfill	
5.		Participation in the workshops with the residents in the area where the projects will be developed	

3. Transferred Technology Perceived by C/P

	Item 1	Item 2	Item 3
Overall target			
1. Work out an environmental strategy including MSWM for the Havana city as a core member of the Team.	- Basic knowledge about the steps to formulate a Master Plan was acquired		
Priority issues			
1. Strengthen the knowledge of the design and operation and maintenance of the environment-friendly landfill.	- Elementary knowledge for design of an environment-friendly landfill was acquired.	- Technology of an environment-friendly landfill has been learnt.	- Design of ditch sections for liner facility was learned.
2. Strengthen the knowledge of the monitoring of leachate.	- General knowledge of leachate treatment was acquired.	- Strengthen the knowledge of this subject will be done when the operation of the pilot landfill starts.	
3. Acquire the knowledge of the feasibility study methodology for the priority project.	- General aspects for implementation of a landfill were learned.		

4. Evaluation of the Interim Achievement

Remarks 1: Up to the former half of the Second Study in Cuba(till the end of November, 2004)

Remarks 2: A: excellent, B: good, C: fair, D: not sufficient

	Evaluation		
	Own	Team member	Evaluation Committee
Overall target	B	C	C
1. Work out an environmental strategy including MSWM for the Havana city as a core member of the Team.	B	C	C
Priority issues	B	C	C
1. Strengthen the knowledge of the design and operation and maintenance of the environment-friendly landfill.	B	B	B
2. Strengthen the knowledge of the monitoring of leachate.	B	C	C
3. Acquire the knowledge of the feasibility study methodology for the priority project.	B	C	C
Overall	B	C	C

6. Marilyn Díaz Ruíz

Name of C/P: Marilyn Diaz

Position: Cost Estimation

1. Set Targets

Targets are those which were set at the end of the first Study in Cuba considering the achievement during the first Study. Priority issues are those set also at the end of the first Study in Cuba similarly.

(1) Overall targets

- As one of the necessary knowledge for the continuation of the works in UPPH, acquire the basic knowledge of cost estimation.

(2) Priority issues

- Acquire the basic concept and knowledge for cost estimation.

2. Participation/Contribution to the Study Perceived by C/P

	Formulation of M/P	Planning and Implementation of PLP	Others
1.	Participation in capacity building workshops	Site visits (Campo Florido landfill)	Attendance to the lecture about leachate given by Mr. Izawa.
2.	To participate in revision of Progress Report	Technical meetings with designers	
3.	Collection of information.	Collection and delivery of information.	

3. Transferred Technology Perceived by C/P

	Item 1	Item 2	Item 3
Overall target			
1. As one of the necessary knowledge for the continuation of the works in UPPH, acquire the basic knowledge of cost estimation.	Knowledge about design of environment-friendly landfill was acquired.	Some information of MSW, which is not usually available, was obtained.	Updated data on MSW of the City were obtained.
Priority issues			
1. Acquire the basic concept and knowledge for cost estimation.	Knowledge about design of landfills was acquired.	Little work about cost subject was done.	

4. Evaluation of the Interim Achievement

Remarks 1: Up to the former half of the Second Study in Cuba(till the end of November, 2004)

Remarks 2: A: excellent, B: good, C: fair, D: not sufficient

	Evaluation		
	Own	Team member	Evaluation Committee
Overall target	B	C	C
1. As one of the necessary knowledge for the continuation of the works in UPPH, acquire the basic knowledge of cost estimation.	B	C	C
Priority issues	C	C	C
1. Acquire the basic concept and knowledge for cost estimation.	C	C	C
Overall	B	C	C

7. Teresita Recio Garcia

She couldn't join Interim Evaluation Workshop because of sick.

8. Èlida Rosa Romero Labañino

Name of C/P: Elida Rosa Romero

Position: Social Considerations

1. Set Targets

Targets are those which were set at the end of the first Study in Cuba considering the achievement during the first Study. Priority issues are those set also at the end of the first Study in Cuba similarly.

(1) Overall targets

- Strengthen the knowledge of environmental awareness raising methodologies.

(2) Priority issues

- Strengthen the knowledge of environmental awareness raising methodologies.
- Strengthen the knowledge of the communication methodologies with communities and residents with a view to reflecting more social consideration into project planning and implementation.

2. Participation/Contribution to the Study Perceived by C/P

	Formulation of M/P	Planning and Implementation of PLP	Others
1.	Collection, processing and analysis of data about current situation of environmental education	Organization and participation in environmental awareness raising workshops with the Popular Councils of Campo Florido and Peñas Altas in Habana del Este municipality	Attendance to lectures and technical meetings with the Study Team
2.	Provision of the information about structures for implementation of environmental education in the province	Preparation of design of environmental awareness raising campaign	Collaboration to provide information requested by the JICA Study Team experts
3.	Preparation and implementation of questionnaires for awareness survey	Evaluation of impacts generated by the implementation of pilot projects	Preparation of design and invitations to scheduled workshops
4.	Development of training workshops		
5.	Revision, discussion and approval of master Plan		

3. Transferred Technology Perceived by C/P

	Item 1	Item 2	Item 3	Remarks
Overall target				
1. Strengthen the knowledge of environmental awareness raising methodologies.	Aspects to be considered for formulation of a M/P for MSWM	Acquisition of knowledge about recycling and composting	Acquisition of knowledge about recollection	As it can be noted, some set targets were not achieved in this period
Priority issues				
1. Strengthen the knowledge of environmental awareness raising methodologies.	Design of sanitary landfills. Aspects to be considered for its implementation, operation and maintenance	Methods for operation of sanitary landfills		
2. Strengthen the knowledge of the communication methodologies with communities and residents with a view to reflecting more social consideration into project planning and implementation.				

4. Evaluation of the Interim Achievement

Remarks 1: Up to the former half of the Second Study in Cuba(till the end of November, 2004)

Remarks 2: A: excellent, B: good, C: fair, D: not sufficient

	Evaluation		
	Own	Team member	Evaluation Committee
Overall target	B	B	B
1. Strengthen the knowledge of environmental awareness raising methodologies.	B	B	B
Priority issues	B	B	B
1. Strengthen the knowledge of environmental awareness raising methodologies.	B	B	B
2. Strengthen the knowledge of the communication methodologies with communities and residents with a view to reflecting more social consideration into project planning and implementation.	B	C	C
Overall	B	B	B

9. Barbara Mireya Cordovez Rodriguez

Name of C/P: Barbara Cordoves

Position: Environmental Considerations

1. Set Targets

Targets are those which were set at the end of the first Study in Cuba considering the achievement during the first Study. Priority issues are those set also at the end of the first Study in Cuba similarly.

(1) Overall targets

- Strengthen the knowledge of EIA methodologies.
- Acquire the basic knowledge of the operation and maintenance of the environment-friendly landfill including the leachate treatment.

(2) Priority issues

- Strengthen the knowledge of EIA methodologies.
- Acquire the basic knowledge of the operation and maintenance of the environment-friendly landfill including the leachate treatment.

2. Participation/Contribution to the Study Perceived by C/P

	Formulation of M/P	Planning and Implementation of PLP	Others
1.	Collection, processing and analysis of data related to current situation of industrial and hospital waste disposal. Surveys at the centers.	Participation in environment awareness workshops with the Popular Councils at Campo Florido and Peñas Altas in Habana del Este municipality.	Attendance to conferences and technical meetings with the Study Team.
2.	Information about studies and environmental impact assessment in Cuba.	To participate in evaluation of pilot projects.	To provide information requested by the experts of the Study Team.
3.	Preparation of a baseline for environmental impact evaluation in Havana City.	Preliminary assessment of impacts generated by the implementation of pilot projects.	
4.	Review and discussion of Master Plan.		

3. Transferred Technology Perceived by C/P

	Item 1	Item 2	Item 3	Item 4
Overall target				
1. Strengthen the knowledge of EIA	Acquisition of knowledge about screening.	Acquisition of knowledge about initial environmental evaluation.		
2. Acquire the basic knowledge of the operation and maintenance of the environment-friendly landfill including the leachate treatment.	Design of sanitary landfills. Aspects to be considered for its implementation, operation and maintenance.	Methods for operation of a sanitary landfill.	Treatment of leachate.	Aspects to be considered for monitoring of sanitary landfills.
Priority issues				
1. Strengthen the knowledge of EIA methodologies.	Same as above.			
2. Acquire the basic knowledge of the operation and maintenance of the environment-friendly landfill including the leachate treatment.	Same as above.			

4. Evaluation of the Interim Achievement

Remarks 1: Up to the former half of the Second Study in Cuba(till the end of November, 2004)

Remarks 2: A: excellent, B: good, C: fair, D: not sufficient

	Evaluation		
	Own	Team member	Evaluation Committee
Overall target	B	B	B
1. Strengthen the knowledge of EIA methodologies.	B	B	B
2. Acquire the basic knowledge of the operation and maintenance of the environment-friendly landfill including the leachate treatment.	B	C	C
Priority issues	B	B	B
1. Strengthen the knowledge of EIA methodologies.	B	B	B
2. Acquire the basic knowledge of the operation and maintenance of the environment-friendly landfill including the leachate treatment.	B	C	C
Overall	B	B	B

Q. Final Evaluation of Capacity Development

Q. FINAL EVALUATION OF CAPACITY DEVELOPMENT

1. Odalys Garcia

Name of C/P: Ms. Odalys Garcia

Position: Chief C/P & Organization/Institution

1. Set Targets

Targets are those which were set at the end of the first Study in Cuba considering the achievement during the first Study. Priority issues are those set also at the end of the first Study in Cuba similarly.

(1) Overall targets

- Acquire the planning capacity for the formulation and revision of a MSWM M/P as a leader of the planning team. Taking advice of the experts from a developed country is a prerequisite to the M/P formulation.

(2) Priority issues

- Strengthen the basic knowledge of MSWM with the emphasis on concepts and methodologies rather than detailed knowledge of technologies.
- Strengthen the knowledge of environment-friendly/sanitary landfill and environmental protection.
- Obtain the planning capacity for the formulation of middle and long term MSWM.
- Obtain the report preparation capacity for the effective presentation and publicizing of the MSWM plans.

2. Participation/Contribution to the Study Perceived by C/P

	Formulation of M/P	Planning and Implementation of PLP	Feasibility Study on the Priority Project
1	Providing data, criteria and necessary information	Meetings with municipality authorities and councils involved in PLP	Participation in the selection of the priority project including setting up a selection criteria
2	Review of the Plan	To participate in several discussions about procurement and acquisitions for the project	Participation in the evaluation of the priority project
3	Discussion and approval of the Plan	Participation in coordination for PLP of project design and implementation	
4	Participation in the formulation of the new tariff system		
5	Participation in the formulation of the new organizational structure for SWM		
6	Participation in the evaluation of the master plan		

3. Transferred Technology Perceived by C/P

	Item 1	Item 2	Item 3
Overall target			
1. Acquire the planning capacity for the formulation and revision of a SWM M/P as a leader of the planning team.	Capacity for planning and formulation of a M/P for the municipal solid waste management	Leadership capacity for coordinating the overall planning works	
Priority issues			
1. Strengthen the basic knowledge of SWM with the emphasis on the concepts and methodologies rather than detailed knowledge of technologies	Planning methodology including the formulation of the objectives, strategies, concepts of environment-friendly MSWM	Wider knowledge of MSWM including segregated collection, 3R and intermediate treatment and final disposal	
2. Strengthen the knowledge of environment-friendly/sanitary landfill and environmental protection	Basic knowledge for the design of environment-friendly/sanitary landfills	Knowledge about the characteristics and quality of leachate of landfills	
3. Obtain the planning capacity for the formulation of middle and long term SWM	Planning capacity for medium- and long-term SWM plans, including setting future socio-economic framework and phased development	Planning capacity for working out an effective organizational structure	Planning capacity for working out an effective tariff system
4. Obtain the report preparation capacity for the effective presentation and publicizing of the SWM plans	Basic knowledge about report preparation	Capacity of preparing power point presentation paper	Capacity of presentation of the report contents to a sizable number of audience

4. Evaluation of the Interim Achievement

Remarks: A: excellent, B: good, C: fair, D: not sufficient

	Evaluation		
	Own	Team member	Evaluation Committee
Overall target	B	B	B
1. Acquire the planning capacity for the formulation and revision of a MSWM M/P as a leader of the planning team.	B	B	B
Priority issues	B	B	B
1. Strengthen the basic knowledge of MSWM with the emphasis on concepts and methodologies rather than detailed knowledge of technologies.	B	A	A
2. Strengthen the knowledge of environment-friendly/sanitary landfill and environmental protection.	B	A	A
3. Obtain the planning capacity for the formulation of middle and long term MSWM.	B	B	B
4. Obtain the report preparation capacity for the effective presentation and publicizing of the MSWM plans.	B	B	B
Overall	B	B	B

5. Utilization for the Future Career

1) Basic job design

I would like to continue the current job in the coming years.

2) Utilization of the knowledge and experience obtained in the Study

I would like to utilize the knowledge and experience obtained in the Study for:

- Improvement of the 3R (Reduce, reuse and recycling)
- Finding an appropriate site for the landfill 1 which should replace the existing Calle 100 in the near future, paying due consideration for both natural conditions and socio-economic conditions.
- Setting up proper standards for SWM including the standards for compost to be produced by kitchen waste by segregated collection.
- Revision and updating of SWM master plan in the future.
- Helping the preparation of SWM master plan in other cities of Cuba.

2. Juan Herrera

Name of C/P: Mr. Juan Herrera

Position: Vice Chief C/P

1. Set Targets

Targets are those which were set at the end of the first Study in Cuba considering the achievement during the first Study. Priority issues are those set also at the end of the first Study in Cuba similarly.

(1) Overall targets

- Strengthen the capacity for working out the counter-measures for the environmental problems including those in MSWM in the Havana city.
- Strengthen the capacity for improving the legal framework for environmental protection and MSWM.

(2) Priority issues

- Obtain the wide knowledge of solid waste disposal technologies and solid waste management system.
- Augment the knowledge of environmental monitoring.
- Augment the knowledge of 3R, in particular from the economic viewpoint.

2. Participation/Contribution to the Study Perceived by C/P

	Formulation of M/P	Planning and Implementation of PLP	Feasibility Study on the Priority Project
1	Giving instruction to CITMA C/P for data collection	Planning of the contents of PLP in order to verify the effectiveness of the projects to be recommended in the master plan	Contribution to working out the criteria for selecting the priority project for F/S
2	Contribution to working out phased development plan for segregated collection	Contribution to the selection of the appropriate site/area for PLP implementation	
3	Contribution to the determination of the appropriate levels of the environment-friendly landfills, taking into consideration their benefits and costs relative to the adopted levels	Explanation of the purpose and outline of PLP to the local government and community leaders in order to secure their cooperation for PLP	

3. Transferred Technology Perceived by C/P			
	Item 1	Item 2	Item 3
Overall target			
1. Strengthen the capacity for working out the counter-measures for the environmental problems including those in SWM in the Havana city.	Knowledge about various alternative facilities for SWM with their relative environmental effects and costs		
2. Strengthen the capacity for improving the legal framework for environmental protection and SWM.	Knowledge about the legal frameworks for the prevention of environmental pollution associated with SWM	Knowledge about the organizational frameworks for the prevention of environmental pollution associated with SWM	
Priority issues			
1. Obtain the wide knowledge of solid waste disposal technologies and solid waste management system.	Knowledge about various types/levels of environment-friendly final disposal methods/facilities	Knowledge about segregated collection/discharge as a means of reducing the load for the environment and for final disposal	Knowledge about composting at the composting yard using the segregated organic materials and that about composting at home
2. Augment the knowledge of environmental monitoring.	Knowledge about water quality monitoring by means of laboratory analysis	Knowledge about water quality analysis and gas detection at the landfills on the spot	
3. Augment the knowledge of 3R, in particular from the economic viewpoint.	Knowledge about the overall cost/benefit of 3R		

4. Evaluation of the Interim Achievement

Remarks: A: excellent, B: good, C: fair, D: not sufficient

	Evaluation		
	Own	Team member	Evaluation Committee
Overall target	B	B	B
1. Strengthen the capacity for working out the counter-measures for the environmental problems including those in MSWM in the Havana city.	B	A	A
2. Strengthen the capacity for improving the legal framework for environmental protection and MSWM.	B	B	B
Priority issues	B	B	B
1. Obtain the wide knowledge of solid waste disposal technologies and solid waste management system.	A	A	A
2. Augment the knowledge of environmental monitoring.	B	B	B
3. Augment the knowledge of 3R, in particular from the economic viewpoint.	B	B	B
Overall	B	B	B

5. Utilization for the Future Career

1) Basic job design

- I would like to continue the current job: Director for Environment of CITMA Havana branch and concurrently the assistant professor of the CITMA University, in the coming years.
- Also I would like to continue to assume the positions of the Executive Secretary of Provincial Environmental Commission, Executive Secretary of Provincial Council for Watershed.
- I have a plan to submit a thesis on “Sustainability of Urban Environmental Management” in 2007 for obtaining Ph.D and obtain the full professor position.

2) Utilization of the knowledge and experience obtained in the Study

I would like to utilize the knowledge and experience obtained in the Study for:

- Keeping on contribution to the current jobs and positions.
- In particular, utilization of the management skills obtained in the Study, specially by PLP implementation, for obtaining the stronger understanding and support of the political decision makers about the importance of environment conservation including the achievement of environment-friendly SWM.

3. Valdimir Fraguela Almeida

Name of C/P: Vladimir Fraguela

Position: Collection/Transportation

1. Set Targets

Targets are those which were set at the end of the first Study in Cuba considering the achievement during the first Study. Priority issues are those set also at the end of the first Study in Cuba similarly.

(1) Overall targets

- Acquire the overall solid waste management capacity, including the efficient collection/transportation, environment-friendly landfill and 3R.

(1) Priority issues

- Acquire the planning capacity and operation and maintenance technology for environment-friendly landfill.
- Strengthen the knowledge of 3R.

2. Participation/Contribution to the Study Perceived by C/P

	Formulation of M/P	Planning and Implementation of PLP	Feasibility Study on the Priority Project
1			Provision of data for the estimation of the required number of collection vehicles for segregated collection

3. Transferred Technology Perceived by C/P

	Item 1	Item 2
Overall target		
1. Acquire the overall solid waste management capacity, including the efficient collection/transportation, environment-friendly landfill and 3R.	Basic knowledge about SWM including the concept and objectives of the segregated collection	Basic knowledge about 3R, in particular recycling and composting
Priority issues		
1. Acquire the planning capacity and operation and maintenance technology for environment-friendly landfill.	Basic knowledge about the concept of environment-friendly landfill including its structure and functions	Knowledge about the cell method and soil covering
2. Strengthen the knowledge of 3R.	Basic knowledge about 3R, in particular recycling and composting	

4. Evaluation of the Interim Achievement

Remarks: A: excellent, B: good, C: fair, D: not sufficient

	Evaluation		
	Own	Team member	Evaluation Committee
Overall target	A	B	B
1. Acquire the overall solid waste management capacity, including the efficient collection/transportation, environment-friendly landfill and 3R.	A	B	B
Priority issues	A	B	B
1. Acquire the planning capacity and operation and maintenance technology for environment-friendly landfill.	A	B	B
2. Strengthen the knowledge of 3R.	A	A	A
Overall	A	B	B

5. Utilization for the Future Career

1) Basic job design

- I will be shifted to the Ministry of Planning and Economy from the middle of 2005. Position will be a specialist of community hygiene and will continue to be concerned with SWM.

2) Utilization of the knowledge and experience obtained in the Study

I would like to utilize the knowledge and experience obtained in the Study for:

- Giving advice to the ministry about various issues related to SWM
- Giving advice to other provinces in the country about various issues related to SWM
- Participation in the formulation of SWM master plan

4. Odalys Goicochea

Name of C/P: Odalys Goicochea

Position: Recycling/Quantity & Quality Analysis

1. Set Targets

Targets are those which were set at the end of the first Study in Cuba considering the achievement during the first Study. Priority issues are those set also at the end of the first Study in Cuba similarly.

(1) Overall targets

- Work out an environmental strategy including MSWM for the Havana city as a core member of the Team.

(2) Priority issues

- Strengthen the knowledge of overall MSWM from the viewpoints of recycling promotion and cleaner production.
- Strengthen the knowledge of environmental impact standards and alleviation measures.
- Strengthen the knowledge of environment-friendly landfill

2. Participation/Contribution to the Study Perceived by C/P

	Formulation of M/P	Planning and Implementation of PLP	Feasibility Study on the Priority Project
1	Collection, processing and analysis of data about the current situation of recycling and composting in the Havana City	Planning of recycling and composting components of PLP	Contribution to working out the criteria for selecting the priority project for F/S
2	Carrying out the generation and composition study on MSW in dry and rainy seasons	Preparation of the home composting program and giving instruction how to produce compost to the participated homes	
3	Contribution to the projection of generation of MSW in Havana City	Carrying out the monitoring of home composting and giving necessary instructions to the households	
4	Evaluation of possibilities for recycling of useful solid waste	Participation in the awareness raising activities	
5	Evaluation of possibilities to produce compost from organic waste from several generation sources of MSW, mainly households and agricultural markets		
6	Planning of promotion measures for composting		
7	Preparation of reports about recycling and composting		

3. Transferred Technology Perceived by C/P

	Item 1	Item 2	Item 3	Item 4
Overall target				
1. Work out an environmental strategy including SWM for the Habana city as a core member of the Team	Contribution to working out the environment-friendly strategy for MSWM of the Havana city			
Priority issues				
1. Strengthen the knowledge of overall SWM from the viewpoints of recycling promotion and cleaner production.	Methodology to determine the generation and composition of MSW	Methodology to estimate the future generation of MSW	Deepened knowledge of 3R including the concept of waste reduction by recycling/composting By means of segregated collection	Rules and instructions for preparation of compost and determination of its quality for use
2. Strengthen the knowledge of environmental impact standards and alleviation measures.	Knowledge about screening of projects for further detailed environmental impact evaluation (IEE)	Methodology for study of water resources (surface, underground and leachate) in order to evaluate the environmental impact of final disposal sites		
3. Strengthen the knowledge of environment-friendly landfill	Concept, functions and benefits of environment-friendly landfills.	Operation methods for sanitary landfills	Basic knowledge of the leachate treatment	Aspects to be considered for monitoring of sanitary landfills

4. Evaluation of the Interim Achievement

Remarks: A: excellent, B: good, C: fair, D: not sufficient

	Evaluation		
	Own	Team member	Evaluation Committee
Overall target	A	A	A
1. Work out an environmental strategy including MSWM for the Havana city as a core member of the Team.	A	A	A
Priority issues	B	A	A
1. Strengthen the knowledge of overall MSWM from the viewpoints of recycling promotion and cleaner production.	B	A	A
2. Strengthen the knowledge of environmental impact standards and alleviation measures.	A	A	A
3. Strengthen the knowledge of environment-friendly landfill	B	B	B
Overall	B	A	A

5. Utilization for the Future Career

1) Basic job design

- I plan to continue to work in CITMA.
- In the future, I would like to obtain Ph.D in environmental field.

2) Utilization of the knowledge and experience obtained in the Study

I would like to utilize the knowledge and experience obtained in the Study for:

- Working out a environmental strategy for the Havana City as a core member of the Team
- Dissemination and promotion of environmental/SWM policies
- Effective work of the Environmental Inspection and Control Group which is a cooperating body between CITMA and other ministries concerned with environment
- Making presentation and lectures in the Faculty of Environment, CITMA University
- Preparation of papers/thesis for obtaining Ph.D

5. Aymara Infante Sigler

Name of C/P: Aymara Infante

Position: Final Disposal

1. Set Targets

Targets are those which were set at the end of the first Study in Cuba considering the achievement during the first Study. Priority issues are those set also at the end of the first Study in Cuba similarly.

(1) Overall targets

- Work out an environmental strategy including MSWM for the Havana city as a core member of the Team.

(2) Priority issues

- Strengthen the knowledge of the design and operation and maintenance of the environment-friendly landfill.
- Strengthen the knowledge of the monitoring of leachate.
- Acquire the knowledge of the feasibility study methodology for the priority project.

2. Participation/Contribution to the Study Perceived by C/P

	Formulation of M/P	Planning and Implementation of PLP	Feasibility Study on the Priority Project
1	Collection and provision of information	Collection of information	Collection of information
2	Coordination of meetings with the company engaged in the planning of the new landfill	Cooperation for planning the soil covering practice at the Campo Florido landfill	
3	Participation in the meeting for discussing the plan and design of the New Guanabacoa landfill	Supervision of the landfill operation	
4	Participation in the identification of the candidate sites of Landfill 1 which should replace the existing Calle 100 landfill	Supervision of the weight measurement of the municipal solid waste	

3. Transferred Technology Perceived by C/P

	Item 1	Item 2
Overall target		
1. Work out an environmental strategy including SWM for the Havana city	Knowledge about the MSWM strategy adopted in the SWM Master Plan	
Priority issues		
1. Strengthen the knowledge of the design and operation and maintenance of the environment-friendly landfill	Basic knowledge for design of an environment-friendly landfill	Basic knowledge about the operation and maintenance of the environment-friendly landfill
2. Strengthen the knowledge of the monitoring of leachate	Basic knowledge about monitoring of leachate	
3. Acquire the knowledge of the feasibility study methodology for the priority project	Basic knowledge about the concept of the feasibility study	

4. Evaluation of the Interim Achievement

Remarks: A: excellent, B: good, C: fair, D: not sufficient

	Evaluation		
	Own	Team member	Evaluation Committee
Overall target	B	C	C
1. Work out an environmental strategy including MSWM for the Havana city as a core member of the Team.	B	C	C
Priority issues	B	C	C
1. Strengthen the knowledge of the design and operation and maintenance of the environment-friendly landfill.	B	B	B
2. Strengthen the knowledge of the monitoring of leachate.	C	C	C
3. Acquire the knowledge of the feasibility study methodology for the priority project.	C	C	C
Overall	B	C	C

5. Utilization for the Future Career

1) Basic job design

- I plan to continue the current work of final disposal planning in DPSC

2) Utilization of the knowledge and experience obtained in the Study

I would like to utilize the knowledge and experience obtained in the Study for:

- Planning and design of environment-friendly landfills

6. Marilyn Díaz Ruíz

Name of C/P: Marilyn Diaz

Position: Cost Estimation

1. Set Targets

Targets are those which were set at the end of the first Study in Cuba considering the achievement during the first Study. Priority issues are those set also at the end of the first Study in Cuba similarly.

(1) Overall targets

- As one of the necessary knowledge for the continuation of the works in UPPH, acquire the basic knowledge of cost estimation.

(2) Priority issues

- Acquire the basic concept and knowledge for cost estimation.

2. Participation/Contribution to the Study Perceived by C/P

	Formulation of M/P	Planning and Implementation of PLP	Feasibility Study on the Priority Project
1	Collection of relevant information	Collection of relevant information	Collection of information about the prices of the required equipment
2	Participation in the identification of the candidate sites of Landfill 1 which should replace the existing Calle 100 landfill	Collection of information about the prices of the required equipment	

3. Transferred Technology Perceived by C/P

	Item 1	Item 2
Overall target		
1. As one of the necessary knowledge for the continuation of the works in UPPH, acquire the basic knowledge of cost estimation	Basic knowledge about cost estimation	Basic knowledge about the concept of environment-friendly landfill
Priority issues		
1. Acquire the basic concept and knowledge for cost estimation	Basic knowledge about cost estimation	Basic knowledge about the concept of environment-friendly landfill

4. Evaluation of the Interim Achievement

Remarks: A: excellent, B: good, C: fair, D: not sufficient

	Evaluation		
	Own	Team member	Evaluation Committee
Overall target	B	C	B
1. As one of the necessary knowledge for the continuation of the works in UPPH, acquire the basic knowledge of cost estimation.	B	C	B
Priority issues	B	C	B
1. Acquire the basic concept and knowledge for cost estimation.	B	C	B
Overall	B	C	B

5. Utilization for the Future Career

1) Basic job design

- I plan to continue the current coordination work in DPSC

2) Utilization of the knowledge and experience obtained in the Study

I would like to utilize the knowledge and experience obtained in the Study for:

- Cost estimation of other projects of DPSC
- Coordination of various projects as a basic knowledge of project planning

7. Teresita Recio Garcia

Name of C/P: Teresita Recio Garcia

Position: Economic and Financial Analysis

1. Set Targets

Targets are those which were set at the end of the first Study in Cuba considering the achievement during the first Study. Priority issues are those set also at the end of the first Study in Cuba similarly

(1) Overall targets

- Acquire the knowledge of the methodology for the economic and financial analysis in the feasibility study.

(2) Priority issues

- Acquire the knowledge of the methodology for the economic and financial analysis in the feasibility study.
- Acquire the basic knowledge of market-oriented economics.

2. Participation/Contribution to the Study Perceived by C/P

	Formulation of M/P	Planning and Implementation of PLP	Feasibility Study on the Priority Project
1	Collection of relevant information		Collection of relevant information

3. Transferred Technology Perceived by C/P

	Item 1
Overall target	
Acquire the knowledge of the methodology for the economic and financial analysis in the feasibility study	Basic knowledge of the methodology for the economic and financial analysis in the feasibility study
Priority issues	
Acquire the knowledge of the methodology for the economic and financial analysis in the feasibility study	Basic knowledge of the methodology for the economic and financial analysis in the feasibility study
Acquire the basic knowledge of market-oriented economics	Basic knowledge of market-oriented economics

4. Evaluation of the Interim Achievement

Remarks: A: excellent, B: good, C: fair, D: not sufficient

	Evaluation		
	Own	Team member	Evaluation Committee
Overall target	C	C	C
1. As one of the necessary knowledge for the continuation of the works in UPPH, acquire the basic knowledge of cost estimation.	C	C	C
Priority issues	C	C	C
1. Acquire the basic concept and knowledge for cost estimation.	C	C	C
Overall	C	C	C

5. Utilization for the Future Career

1) Basic job design

- I plan to continue the current work in DPSC.

2) Utilization of the knowledge and experience obtained in the Study

I would like to utilize the knowledge and experience obtained in the Study for:

- Carrying out economic and financial analysis for the projects including SWM projects.
- Apply the concept of market-oriented economics for the related works.

8. Èlida Rosa Romero Labañino

Name of C/P: Elida Rosa Romero

Position: Social Considerations

1. Set Targets

Targets are those which were set at the end of the first Study in Cuba considering the achievement during the first Study. Priority issues are those set also at the end of the first Study in Cuba similarly.

(1) Overall targets

- Strengthen the knowledge of environmental awareness raising methodologies.

(2) Priority issues

- Strengthen the knowledge of environmental awareness raising methodologies.
- Strengthen the knowledge of the communication methodologies with communities and residents with a view to reflecting more social consideration into project planning and implementation.

2. Participation/Contribution to the Study Perceived by C/P

	Formulation of M/P	Planning and Implementation of PLP	Feasibility Study on the Priority Project
1	Collection, processing and analysis of data about current situation of environmental education and awareness raising	Organization and participation in environmental awareness raising workshops with the Popular Councils of Campo Florido and Peñas Altas in Habana del Este municipality	
2	Provision of the information about organizational structure for implementation of environmental education and awareness raising in the city	Formulation of the environmental awareness raising program and campaign	
3	Contribution to working out a awareness raising program for the master plan	Monitoring and keeping records of the segregated discharge conditions at the waste discharge stations	
4	Contribution to the estimation of the cost required for the awareness raising program for the master plan	Preparation, implementation and analysis of the pre and post implementation awareness surveys	
5		Verification of the effectiveness of the awareness raising program carried out for PLP	
6		Obtaining the feedback to the finalization of the master plan with regard to the awareness raising	

3. Transferred Technology Perceived by C/P

	Item 1	Item 2
Overall target		
1. Strengthen the knowledge of environmental awareness raising methodologies.	Participatory approach for the awareness raising workshops to stimulate the discussion among the attendants	Interactive approach for the awareness raising workshops between the presenters and the attendants
Priority issues		
1. Strengthen the knowledge of environmental awareness raising methodologies.	Participatory approach for the awareness raising workshops to stimulate the discussion among the attendants	Interactive approach for the awareness raising workshops between the presenters and the attendants
2. Strengthen the knowledge of the communication methodologies with communities and residents with a view to reflecting more social consideration into project planning and implementation.	Visual communication by means of drawings, video, digital photos, power point	

4. Evaluation of the Interim Achievement

Remarks: A: excellent, B: good, C: fair, D: not sufficient

	Evaluation		
	Own	Team member	Evaluation Committee
Overall target	A	B	B
1. Strengthen the knowledge of environmental awareness raising methodologies.	A	B	B
Priority issues	A	B	B
1. Strengthen the knowledge of environmental awareness raising methodologies.	A	B	B
2. Strengthen the knowledge of the communication methodologies with communities and residents with a view to reflecting more social consideration into project planning and implementation.	A	A	A
Overall	A	B	B

5. Utilization for the Future Career

1) Basic job design

- I plan to continue the current work as awareness raising specialist of CITMA

2) Utilization of the knowledge and experience obtained in the Study

I would like to utilize the knowledge and experience obtained in the Study for:

- Working out awareness raising programs for promoting environment-friendly SWM for the city, including those for segregated collection/discharge, environment-friendly landfill and home composting
- Raising the environmental awareness of the people including that for SWM

9. Barbara Mireya Cordovez Rodriguez

Name of C/P: Barbara Cordoves

Position: Environmental Considerations

1. Set Targets

Targets are those which were set at the end of the first Study in Cuba considering the achievement during the first Study. Priority issues are those set also at the end of the first Study in Cuba similarly.

(1) Overall targets

- Strengthen the knowledge of EIA methodologies.
- Acquire the basic knowledge of the operation and maintenance of the environment-friendly landfill including the leachate treatment.

(2) Priority issues

- Strengthen the knowledge of EIA methodologies.
- Acquire the basic knowledge of the operation and maintenance of the environment-friendly landfill including the leachate treatment.

2. Participation/Contribution to the Study Perceived by C/P

	Formulation of M/P	Planning and Implementation of PLP	Feasibility Study on the Priority Project
1	Collection, processing and analysis of data related to current situation of industrial and hospital waste disposal	Participation in environment awareness workshops with the Popular Councils at Campo Florido and Peñas Altas in Habana del Este municipality.	
2	Information about studies and environmental impact assessment in Cuba.	Participation in the evaluation of PLP	
3	Preparation of a baseline for environmental impact evaluation in the Havana City	Preliminary assessment of impacts generated by the implementation of PLP	
4	Review and discussion of Master Plan		

3. Transferred Technology Perceived by C/P

	Item 1	Item 2
Overall target		
1. Strengthen the knowledge of EIA	Knowledge about screening of projects for further detailed environmental impact evaluation (IEE)	Knowledge about the EIA systems which is adapted to the environment-friendly SWM
2. Acquire the basic knowledge of the operation and maintenance of the environment-friendly landfill including the leachate treatment.	Basic knowledge for design of an environment-friendly landfill	Basic knowledge about the operation and maintenance of the environment-friendly landfill
Priority issues		
1. Strengthen the knowledge of EIA methodologies.	Knowledge about screening of projects for further detailed environmental impact evaluation (IEE)	Knowledge about the EIA systems which is adapted to the environment-friendly SWM
2. Acquire the basic knowledge of the operation and maintenance of the environment-friendly landfill including the leachate treatment.	Basic knowledge for design of an environment-friendly landfill	Basic knowledge about the operation and maintenance of the environment-friendly landfill

4. Evaluation of the Interim Achievement

Remarks: A: excellent, B: good, C: fair, D: not sufficient

	Evaluation		
	Own	Team member	Evaluation Committee
Overall target	B	B	B
1. Strengthen the knowledge of EIA methodologies.	B	B	B
2. Acquire the basic knowledge of the operation and maintenance of the environment-friendly landfill including the leachate treatment.	B	C	C
Priority issues	B	B	B
1. Strengthen the knowledge of EIA methodologies.	B	B	B
2. Acquire the basic knowledge of the operation and maintenance of the environment-friendly landfill including the leachate treatment.	C	C	C
Overall	B	B	B

5. Utilization for the Future Career

1) Basic job design

- I plan to continue the current work as a specialist of environment and awareness raising of CITMA

2) Utilization of the knowledge and experience obtained in the Study

I would like to utilize the knowledge and experience obtained in the Study for:

- Carrying out IEE and EIA more comprehensively utilizing the knowledge of environment-friendly SWM.
- Raising the environmental awareness of the people including that for SWM

10. Andrés Ruíz

Name of C/P: Andrés Ruíz

Position: Final Disposal (Operation)

1. Set Targets

Targets are those which were set at the end of the first Study in Cuba considering the achievement during the first Study. Priority issues are those set also at the end of the first Study in Cuba similarly

(1) Overall targets

- Acquire the practical knowledge of landfill operation, in particular soil covering operation.
- Acquire the practical knowledge of community composting by means of kitchen waste obtained through segregated collection.

(2) Priority issues

- Acquire the practical knowledge of landfill operation, in particular soil covering operation.
- Acquire the practical knowledge of community composting by means of kitchen waste obtained through segregated collection.

2. Participation/Contribution to the Study Perceived by C/P

	Formulation of M/P	Planning and Implementation of PLP	Feasibility Study on the Priority Project
1	Cooperation in the Quality and Quantity survey of Municipal Solid Waste	Supervision of the landfill operation including dike construction, cell formation and soil covering.	
2	Cooperation in the estimation of municipal solid waste quality and quantity in the future	Supervision of the final segregation of the kitchen waste for community composting	
3		Supervision of the community composting	
4		Monitoring of the compost	
5		Cooperation in giving instruction about segregated discharge	

3. Transferred Technology Perceived by C/P

	Item 1	Item 2
Overall target		
1. Acquire the practical knowledge of landfill operation, in particular soil covering operation	Practical knowledge about basic structure of elementary level environment-friendly landfill	Practical knowledge about landfill operation based on the cell method with proper soil covering
2. Acquire the practical knowledge of community composting by means of kitchen waste obtained through segregated collection	Practical knowledge about final segregation of the kitchen waste as raw material for compost	
Priority issues		
1. Acquire the practical knowledge of landfill operation, in particular soil covering operation	Practical knowledge about basic structure of elementary level environment-friendly landfill	Practical knowledge about landfill operation based on the cell method with proper soil covering
2. Acquire the practical knowledge of community composting by means of kitchen waste obtained through segregated collection	Practical knowledge about final segregation of the kitchen waste as raw material for compost	

4. Evaluation of the Achievement

Remarks: A: excellent, B: good, C: fair, D: not sufficient

	Evaluation		
	Own	Team member	Evaluation Committee
Overall target			
1. Acquire the practical knowledge of landfill operation, in particular soil covering operation	A	A	A
2. Acquire the practical knowledge of community composting by means of kitchen waste obtained through segregated collection	A	B	B
Priority issues	A		
1. Acquire the practical knowledge of landfill operation, in particular soil covering operation	A	A	A
2. Acquire the practical knowledge of community composting by means of kitchen waste obtained through segregated collection	A	B	B
Overall	A	B	B

5. Utilization for the Future Career

1) Basic job design

- I plan to continue the current work of recycling of final disposal as a Technical Manager in DPSC/UPPH

2) Utilization of the knowledge and experience obtained in the Study

I would like to utilize the knowledge and experience obtained in the Study for:

- Promotion and improved recycling of recyclables
- Achieving environment-friendly final disposal at the city

R. Overall Achievement of Capacity Development
of Counterpart Groups

R. OVERALL ACHIEVEMENT OF CAPACITY DEVELOPMENT OF COUNTERPART GROUPS

The 10 counterparts are appointed by DPSC and CITMA: 6 by DPSC and 4 by CITMA. Besides the targets set for individual C/P, they set targets as group. Set targets and the evaluation results are shown below. As seen in the table below, achievements of the set targets are evaluated either A: Excellent or B: Good, and in total it was evaluated the set targets are satisfactory achieved.





Set Targets	Evaluation		
	Own	Team members	Evaluation Committee
DPSC	Odalys Garcia	Akagawa /Kanaya	Evaluation Committee
Upgrading of the management capacity for MSWM	A	B	B
Strengthening of the basic knowledge of MSWM	B	A	A
Acquiring the capacity for planning, design and operation and maintenance of environment-friendly landfill	A	B	B
Acquiring the planning capacity for efficient collection and transport	A	B	B
Acquiring the planning capacity for segregated collection	B	B	B
Acquiring the planning capacity for middle and long term planning for MSWM	B	B	B
Acquiring the basic knowledge of 3R	B	A	A
Overall	B	B	B
CITMA	Juan Herrera	Akagawa /Kanaya	Evaluation Committee
Capacity building toward the integration of fragmented legal system for MSWM	B	B	B
Capacity building toward the promotion of the research and implementation of 3R	A	A	A
Capacity building for working out an environment-friendly technology of landfill fit for Cuba	B	B	B
Capacity building for working out the criteria for the establishment of the environment-friendly landfill	B	A	A
Capacity building for working out the criteria for the leachate treatment	B	B	B
Overall	B	B	B

S. Photographs

S. PHOTOGRAPHS

1 Present Condition of MSWM in Havana City

	
<p>Condition of MSW Disposal</p>	<p>Contents of Container in Urban Area</p>
	
<p>Typical Situation of Waste Bin</p>	<p>Waste Collection by Horse Cart</p>
	
<p>Waste Collection by Compactor Vehicle</p>	<p>Maintenance Workshop</p>

	
<p>Calle 100 Landfill Site</p>	<p>Calle 100 Landfill Site</p>
	
<p>Composting at Calle 100 Landfill Site</p>	<p>Campo Florid Special Period Landfill Site</p>

2 Surveys



Meeting for Waste Quality/Quantity Survey



Scenery of Waste Quality/Quantity Survey



Scenery of Waste Quality/Quantity Survey



Scenery of Time & Motion Study



Scenery of Time & Motion Study



Scenery of Time & Motion Study



Scenery of Waste Quality Survey



Scenery of Water Quality Survey



Compressed Can for Recycling



Scenery of Bottle Washing



Composting at Recycling Center



Card Board Storage

3. Pilot Projects

	
<p>Discussion with C/Ps and JICA Study team</p>	<p>Home Composting Bin</p>
	
<p>Segregated Organic Waste</p>	<p>Home Composting (after 1 month)</p>
	
<p>Dead Leaves for Moisture Control</p>	<p>Scenery of Waste Weighing Operation</p>



Discussion about Weighing Data Collection



Inspection of Segregated Collection



Scenery of Soil Covering



Landfill Operation



PLP Inspection with Supporting Committee



PLP Inspection with Supporting Committee

4. Workshops



Presentation by C/P in Steering Committee



St/C with Supporting Committee Members



Discussion with C/P and JICA Study Team



Scenery of Workshop for Residents



Questioner in Residents Workshop



Presentation by C/P in Workshop



Scenery of Dissemination Workshop



Discussion in Dissemination Workshop



Lecture by JICA Study Team



Capacity Development Workshop for C/Ps



Presentation of Group Discussion Results



Scenery of Brainstorming Work