

**People s Republic of Bangladesh
Dhaka North City Corporation
Dhaka South City Corporation**

Project for Strengthening of Solid Waste Management in Dhaka City (Extension)

Project Completion Report

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**JAPAN INTERNATIONAL COOPERATION AGENCY
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**People's Republic of Bangladesh
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Dhaka South City Corporation**

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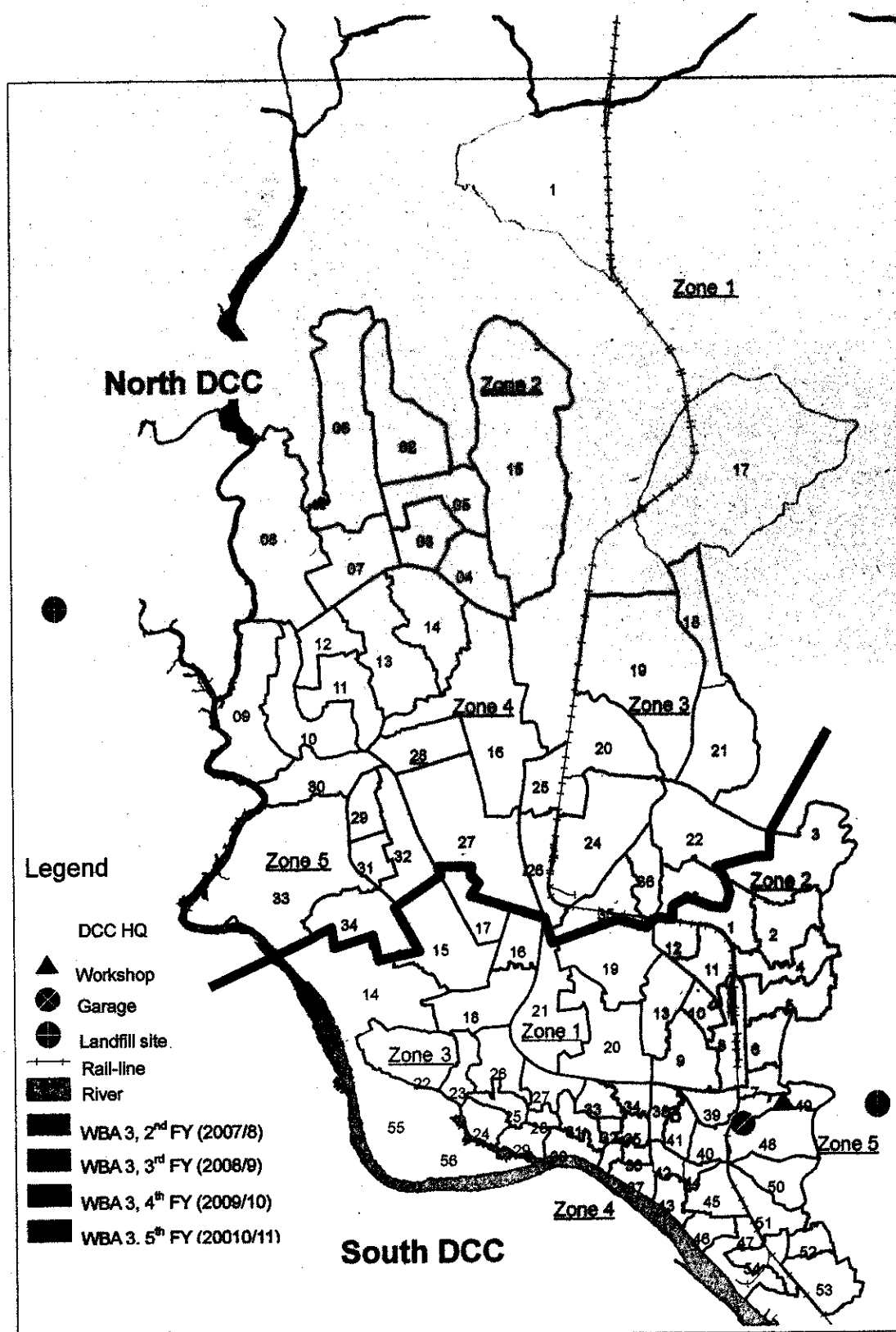
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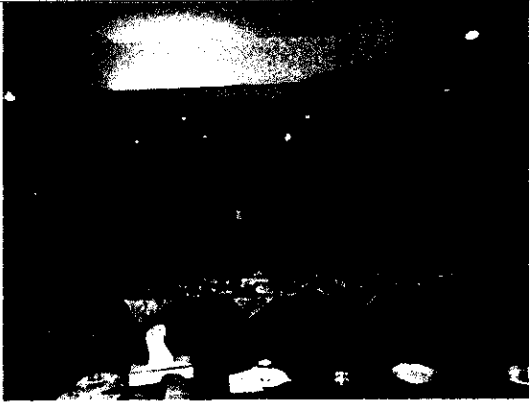


Map of Dhaka City and WMD Facilities

Photographs of Project Activities

	
Kick off iftar Party	Inspection of collection vehicles
	
Drainage cleaning	Illegal dumping
	
Drainage cleaners workshop of DSCC	Special cleaning of DNCC (Ward 2)
	
Eid-festival special wastes	Third country Training, Indonesia

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1 st WMD Directives Seminar	2 nd WMD Directives Seminar
	
Focus group meeting of Law seminar	Counter part Training
	
Kick off Meeting of DSCC	Meeting with PCSP in DSCC
	
EGAP collection vehicle reinforcement	PCSP training, DNCC

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Training in Dhaka University	Special Cleaning of Dhanmondi lake by high school students
	
Joint evaluation meeting	Joint evaluation meeting
	
Sudan and South sudan trainees	Sudan and South sudan trainees
	
Final Seminar	Administrative procedure book meeting

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of
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Abbreviations

AAP	Annual Activity Plan
BUET	Bangladesh University of Engineering and Technology
CAP	Community Action Plan
CBO	Community-based Organization
CCO	Chief Conservancy Officer
CD	Capacity Development
CEO	Chief Executive Officer
CI	Conservancy Inspector
CO	Conservancy Officer
CSI	Conservancy Supervising Inspector
CTG	Collection and Transportation Group
CUWG	Community Unit Working Group
CWMO	Chief Waste Management Officer
C/P	Counterpart
DCC	Dhaka City Corporation
DOE	Department of Environment
ECNEC	Executive Committee of National Economic Council
EIA	Environmental Impact Assessment
FMG	Financial Management Group
FY	Financial Year
HH	Household
JFY	Japanese Financial Year
JICA	Japan International Cooperation Agency
JDCF	Japan Debt Cancellation Fund
JET	JICA Expert Team
JOCV	Japan Overseas Cooperation Volunteer
LMU	Landfill Management Unit
MoEF	Ministry of Environment and Forests
MoLGRD&C	Ministry of Local Government, Rural Development and Cooperation
M/P	Master Plan
NGO	Non-Governmental Organization
OFF-JT	Off-The-Job Training
OJT	On-The-Job Training
OVI	Objectively Verifiable Indicator
O&M	Operation and Maintenance
PD	Project Director
PDM	Project Design Matrix
PCSP	Primary Collection Service Provider

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PR	Public Relations
PRA	Participatory Rural Appraisal
R/D	Records of Discussion
RV	Rickshaw Van
SE	Superintending Engineer
SSC	Safety and Sanitation Committee
SWM	Solid Waste Management
TOT	Training of Trainers
WBA	Ward-Based Approach
WMD	Waste Management Department
WOOA	Ward Offices Owners Association

Chapter 1. Introduction

1.1 Introduction and Background of the Project

The People's Republic of Bangladesh (hereinafter referred to as "Bangladesh") has been experiencing rapid urban population growth and rapid urban expansion. This rapid growth and expansion has made the implementation of measures against the deterioration of urban environments caused by solid waste, air pollution, and the expansion of slum areas an urgent task for the country. Among all the urban areas in Bangladesh, the capital, Dhaka City, with its population of more than twelve million residents and growing, is facing a serious social problem of how to manage its solid waste. The Dhaka City Corporation (hereinafter referred to as "DCC") is responsible for solid waste management (hereinafter referred to as "SWM") in the city. However, DCC had not been able to appropriately manage its solid waste because of a lack of institutional capacity to implement SWM activities. There has been a lack of planning, a shortage of equipment, and a lack of awareness of sanitation issues among the residents. This situation led the Government of Bangladesh to acknowledge the need for appropriate SWM in Dhaka City to ensure sound development, and for its residents to enjoy a safe urban life. This led to a request in 2002 to the Government of Japan for the implementation of a survey and formulation of a SWM plan for the city. In response, the Japan International Cooperation Agency (hereinafter referred to as "JICA") implemented a development study, "Solid Waste Management Study in Dhaka City" (hereinafter referred to as "D/S"), from November 2003 to March 2006, and formulated the "Clean Dhaka Master Plan" (hereinafter referred to as "M/P") with a target completion year of 2015 on the basis of the results of the D/S.

Since the completion of the D/S, DCC has actively implemented its own measures, including the collection and disposal of medical waste in cooperation with a local NGO, in accordance with recommendations identified in the M/P. Since the completion of the D/S, JICA has provided supplementary assistance to the measures taken by DCC. In 2006, JICA provided technical assistance to manage and improve the existing waste disposal sites. From 2006 onwards, JICA has introduced sanitary disposal methods to existing sites and worked towards the expansion of sites through the Japan Debt Cancellation Fund (hereinafter referred to as "JDCF"), and the dispatch of the Japan Overseas Cooperation Volunteers (hereinafter referred to as "JOCVs"). The JOCVs have been working in the area of environmental education to raise awareness among residents, and support to the implementation of participatory waste collection activities. In addition, JICA had implemented a technical cooperation project, "Project for Strengthening of Solid Waste Management in Dhaka City" (hereinafter referred to as "the Main Project") for four years from February 2007 to February 2011. The purposes of the Main Project were the capacity development of DCC staff members, and the establishment of an effective SWM system in Dhaka City in response to general technical and managerial problems in SWM, including the collection and transport of solid waste. The Terminal Evaluation was conducted in October 2010 and confirmed that the project purposes were nearly completely achieved, and DCC's capacity in SWM had been sufficiently developed. The DCC's SWM capacity had been developed partly through the contribution of hardware assistance, such as the provision of waste collection vehicles, under an Environmental Grant Aid Program, "the Programme for Improvement of Solid Waste Management in Dhaka City toward the Low Carbon Society," (hereinafter referred to as "EGAP") which began in 2009. However, the Terminal Evaluation report also raised doubts about the "sustainability" of the project because DCC had failed to assign a sufficient number of counterparts (hereinafter referred to as "C/P"), including those who should have been newly employed to WMD during the project period. In the end, the report recommended extending only parts of the project wherein the need for the continuation of assistance had been recognized, for the main purpose of guaranteeing the sustainability of the project activities.

In accordance with the above-mentioned recommendation, the Governments of Japan and Bangladesh concluded the record of discussions (hereinafter referred to as "R/D") in February

2011 to extend the project for two years.

1.2 Project Framework

Figure 1.2-1 shows the purposes and outputs of this project (hereinafter referred to as “the Project”). The Project aimed at “guaranteeing sustainability,” for which a need for the continuation of assistance was recognized in the Main Project, through implementation of its various activities.

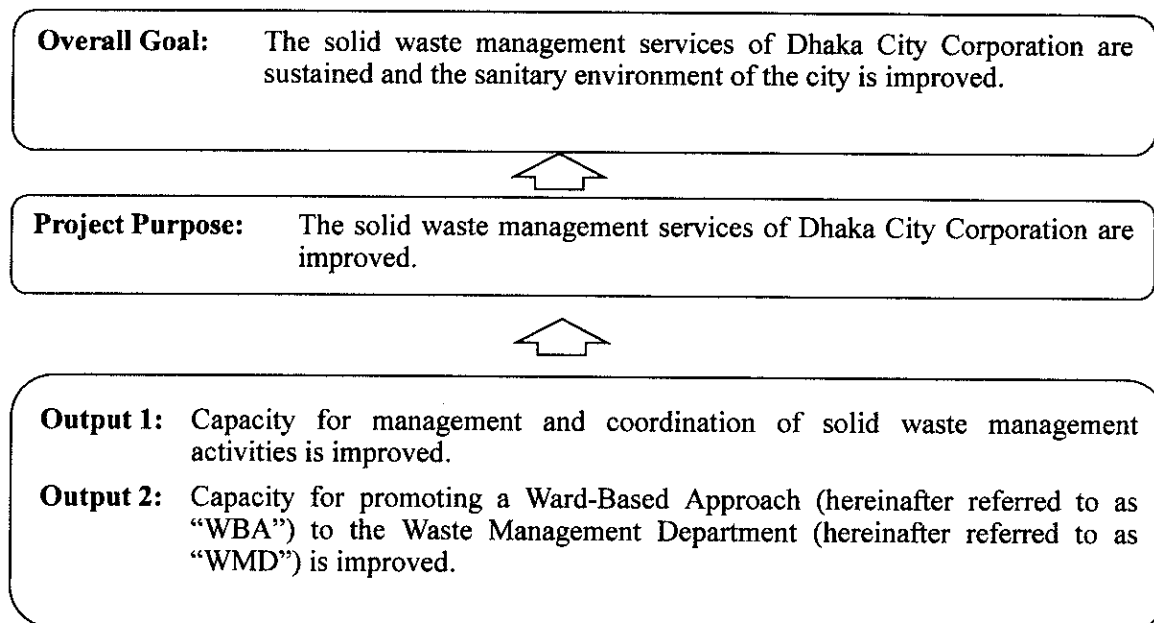


Figure 1.2-1 Project purposes and outputs

The Project Design Matrix (hereinafter referred to as “PDM”) of the Project is shown in Table 1.2-1.

Table 1.2-1 Project Design Matrix (PDM) of the Project

[Project Title] The Project for Strengthening of Solid Waste Management in Dhaka City of Bangladesh				[Target Groups] ① Waste Management Department, ② Concerned Department, ③ City residents		[Date] February 2011	
[Project Period (extension)] February 2011 - February 2013 (2 years)				[Target Area] Under the jurisdiction of Dhaka City Corporation		[PDM Version] Extension	
Narrative Summary		Objectively Verifiable Indicators		Means of Verification		Important Assumptions	
Overall Goal							
The solid waste management services of Dhaka City Corporation are sustained and the sanitary environment of the city is improved.		More than 66% (or 3054 ton/day) of wastes is transported to landfill sites and disposed properly by 2015.		1 Reports of WMD Project Evaluation Report		National policy to give priority to solid waste management is sustained	
Project Purpose							
The solid waste management services of Dhaka City Corporation are improved		More than 2,540 ton/day (or 58 % of total amount of waste) of wastes is transported to landfill sites and disposed properly by the end of extension period.		1 Project Progress Report Project Annual Report		Commitment to attainment of Clean Dhaka Master Plan from Dhaka City Corporation and other stakeholders is sustained	
Outputs							
1	Capacity for management and coordination of WMD is improved	1.1	WMD can formulate SWM Activity Plans (annual) for SWM	Interview 1.1 Project Progress Reports Project Annual Reports	Necessary cooperations and supports from WMD, other department in DCC and concerned ministry (LGRD and MoE) are secured		
		1.2	Proper monitoring system of SWM activities by WMD is established and managed	Interview 1.2 Project Progress Reports Project Annual Reports			
		1.3	Periodically collecting and analyzing landfill weighbridge data in the WMD's Headquarters for SWM operational management	Interview 1.3 Project Progress Reports Project Annual Reports			
		1.4	Framework for promoting WBA including personnel assignment and duties in WMD is clarified and institutionalized as WMD order	Interview 1.4 Project Progress Reports Project Annual Reports			
2	Capacity for promoting WBA of WMD is improved	2.1	Functions of more than 10 newly constructed or renovated "Ward Office" are successfully strengthened by the end of project (WBA1)	Project Progress Reports 2.1 Project Annual Reports Physical observations	Recruitment of 120 WMD staff are completed in the first half of extension period		
		2.2	Data for number of traffic accident of cleaners are periodically collected and analyzed (WBA2)	Interview/Field survey 2.2 Project Progress Reports Project Annual Reports			
		2.3	More than 3 wards (3 units) composes "Community Action Plan (CAP)" (WBA3)	Project Progress Reports 2.3 Project Annual Reports			
		2.4	More than 3 wards (3 units) improve conventional collection	Interview/Field survey 2.4			

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[Project Title] The Project for Strengthening of Solid Waste Management in Dhaka City of Bangladesh

[Target Groups] ① Waste Management Department, ② Concerned Department, ③ City residents

[Target Area] Under the jurisdiction of Dhaka City Corporation

[Date] February 2011

[Project Period/extension] February 2011- February 2013(2 years)		[Target Groups] ① Waste Management Department, ② Concerned Department, ③ City residents		[Target Area] Under the jurisdiction of Dhaka City Corporation		[Date] February 2011	
Narrative Summary		Objectively Verifiable Indicators		Means of Verification		Important Assumptions	
		system(WBA4)		Project Progress Reports Project Annual Reports		[PDM Version] Extension	
Activities		Inputs					
1-1	To promote WMD staff recruitment (by DCC)	Japanese Side				1 Frequent transfer of trained counterpart personnel does not occur	
1-2	To collect necessary data and information for SWM Activity Plans(annual)	1 Dispatch of experts				2 Staff whose capacity has been developed in the Project and the Development Study are properly assigned.	
1-3	To formulate SWM Activity Plans(annual) based on 1-2	(1) Chief Adviser/Organizational Management				3 DCC allocates appropriate budget to conduct the Project activities.	
1-4	To confirm present situation of collecting and analyzing weighbridge data	(2) Community Solid Waste Management					
1-5	To improve the collection and analysis based on 1-4	2 Provision of equipment					
1-6	To formulate the trainings/seminars(WBA, TOT, PRA etc.) plan for WMD staffs, PCSP, Community and others	3 Training of counterparts					
1-7	To hold trainings/seminars based on 1-6	4 Dispatch of study team(when necessary)					
1-8	To discuss on establishing proper external monitoring system for SWM activities	5 Allocation of operational costs for the Project					
1-9	To implement monitoring based on 1.8						
1.10	To discuss and set proper framework for promoting WBA including duties and personnel assignment in WMD among all WBA related staffs including WBA core group members						
1.11	To prepare and issue WMD order of framework on 1.11						
1.12	To discuss on framework of researching city residence's needs and satisfaction for collection services based on the experience of the Project(2007-11)						
1.13	To monitor the activities of Output 4 (landfill management) of the PDM3 (by DCC)						
1.14	To monitor the activities of Output 5 (financial management) of the PDM3(by DCC)						
2-1	To discuss and revise Ward SWM Guideline						

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【Project Title】 The Project for Strengthening of Solid Waste Management in Dhaka City of Bangladesh
 【Target Groups】 ①Waste Management Department, ②Concerned Department, ③City residents
 【Date】February 2011

【Project Period(extension)】February 2011- February 2013(2years)		【Target Area】Under the jurisdiction of Dhaka City Corporation		【PDM Version】Extension	
Narrative Summary		Objectively Verifiable Indicators	Means of Verification	Important Assumptions	
2.2	To discuss and confirm the strategy for introducing and managing WBA under the ownership of WMID	Bangladesh Side 1 Assignment of counterpart personnel 2 Provision of land, building, and other necessary facilities(including "Ward Office") 3 Allocation of operational costs for the Project			
2.3	To develop the annual plan for expanding WBA(WBA1-4)				
2.4	To confirm present situation of WBA activities at targeted area introduced in the Project(2007-11)				
2.5	To newly construct or renovate "Ward office"(by DCC)				
2.6	To discuss and confirm functions at each ward office				
2.7	To enhance functions at each ward office				
2.8	To establish safety and sanitation committee				
2.9	To disseminate a "Cleaner's working manual"				
2.10	To distribute sanitary and safety working materials(safety gears, mask, first aid kit box) to cleaners				
2.11	To hold a "Cleaners Workshop"				
2.12	To compile data for number of traffic accident of cleaners in safety and sanitation committee				
2.13	To hold a "Kickoff Meeting" and exchange opinions for local SWM with community with possible cooperation of JOCV				
2.14	To support organizing a "Community Unit Working Group(CUWG)" with possible cooperation of JOCV				
2.15	To support CUWG for implementing community SWM activities including formulation of "Community Action Plan(CAP)" with possible cooperation of JOCV				
2.16	To support and manage "Primary Collection Service Provider(PCSP)" utilizing PCSP permission and monitoring system				
2.17	To conduct surveys for present collection system in each ward				
2.18	To coordinate among community people, primary collection service providers and DCC				
2.19	To improve collection system based on 2-18 and 2-19				

1.3 Division of Dhaka City Corporation

(1) Background of Splitting DCC

On the 29th of November 2011, the parliament passed a bill to split Dhaka City Corporation into two city corporations – North and South – with a view to ensuring ‘better service delivery’ to approximately 1.2 crore persons living in the metropolis. The bill brought about some major changes to the Local Government (City Corporation) Act, 2009, and the President signed the bill making the amendment effective from December 1st 2011.

With the changes to the law taking effect, the incumbent DCC Mayor and all DCC councillors could no longer remain in their posts. The government appointed two administrators to run the two corporations. Under the 2009 act, representatives were able to stay in office until newly elected representatives were sworn in.

Dhaka became the capital of Bangladesh after its independence in 1971. The city area was initially divided into 50 wards, and the election of ward commissioners was held in 1977 with the introduction of the Pourashava Ordinance of 1977. In 1978, Dhaka Municipality was made a corporation and its chairman became the mayor. In 1982, two adjacent municipalities, Mirpur and Gulshan, were merged with Dhaka Municipality and the number of wards increased to 56. In 1990, Dhaka Municipal Corporation became Dhaka City Corporation and was divided into zones to fulfil the objectives of decentralization.

(2) Profile of both City Corporations:

The city corporation, with an area of 380 sq. kilometres is now divided into 92 wards. Dhaka North City Corporation (hereinafter referred to as “DNCC”) is composed of 36 wards; wards 1 - 23 and 37 - 45, and Dhaka South City Corporation (hereinafter referred to as “DSCC”) is composed of 56 wards; wards 24 - 36, 48 - 53, 56 - 66 and 68 - 92. Uttara, Gulshan, Badda, Mohakhali, East Rampura, Tejgaon, Mohammadpur, Mirpur, Pallabi and Kafrulare wards are under the jurisdiction of DNCC while Dhanmondi, Ramna, Motijheel, Sabujbagh, Demra, Khilgaon, Sutrapur, Gandaria, Wari, Kotwali, and Lalbagh wards are under the jurisdiction of DSCC.

Table 1.3-1 Wards of Dhaka South City Corporation

Old Numbering		New Numbering		Area	Old Numbering		New Numbering		Area
Zone	Ward	Zone	Ward	km ²	Zone	Ward	Zone	Ward	km ²
4	24	2	1	0.774	2	66	4	30	0.415
4	25	2	2	1.039	2	67	4	31	0.436
4	26	2	3	1.758	2	68	4	32	0.313
4	27	2	4	0.824	2	69	4	33	0.434
4	28	2	5	0.907	2	70	4	34	0.353
4	29	2	6	0.544	2	71	4	35	0.263
1	30	5	7	0.328	2	72	4	36	0.189
4	31	2	8	0.983	2	73	4	37	0.353
4	32	2	9	1.149	2	74	4	38	0.409
4	33	2	10	0.421	1	75	5	39	0.482
4	34	2	11	0.736	1	76	5	40	0.467
4	35	2	12	0.498	1	77	5	41	0.42
4	36	2	13	1.081	2	78	4	42	0.297
3	48	3	14	2.505	2	79	4	43	0.381
5	49	1	15	2.049	1	80	5	44	0.16

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Old Numbering		New Numbering		Area
Zone	Ward	Zone	Ward	km ²
5	50	1	16	0.689
5	51	1	17	0.825
5	52	1	18	1.361
5	53	1	19	1.825
5	56	1	20	1.967
5	57	1	21	1.882
3	58	3	22	1.221
3	59	3	23	0.503
3	60	3	24	0.453
3	61	3	25	0.367
3	62	3	26	0.915
3	63	3	27	0.585
3	64	3	28	0.182
3	65	3	29	0.394

Old Numbering		New Numbering		Area
Zone	Ward	Zone	Ward	km ²
1	81	5	45	0.693
1	82	5	46	0.412
1	83	5	47	0.802
1	84	5	48	1.129
1	85	5	49	0.551
1	86	5	50	0.767
1	87	5	51	0.757
1	88	5	52	0.36
1	89	5	53	0.976
1	90	5	54	0.556
1	91	3	55	
1	92	3	56	

Source: DSCC and DNCC

Table 1.3-2 Wards of Dhaka North City Corporation

Old Numbering		New Numbering		Area
Zone	Ward	Zone	Ward	km ²
10	1	1	1	5.203
8	2	2	2	1.955
8	3	2	3	1.043
8	4	2	4	0.945
8	5	2	5	1.088
8	6	2	6	2.953
8	7	2	7	1.606
8	8	2	8	3.379
7	9	4	9	1.936
7	10	4	10	1.668
7	11	4	11	1.28
7	12	4	12	0.879
7	13	4	13	2.284
7	14	4	14	1.929
8	15	2	15	4.842
7	16	4	16	4.118
9	17	1	17	7.033
9	18	3	18	0.961

Old Numbering		New Numbering		Area
Zone	Ward	Zone	Ward	km ²
9	19	3	19	4.302
9	20	3	20	1.752
9	21	3	21	1.718
4	22	3	22	1.721
4	23	3	23	0.713
9	37	3	24	2.487
9	38	3	25	1.053
6	39	5	26	0.945
6	40	5	27	3.615
6	41	5	28	1.006
6	42	5	29	0.628
6	43	5	30	1.162
6	44	5	31	0.531
6	45	5	32	1.363
6	46	5	33	4.249
6	47	5	34	1.083
5	54	3	35	1.055
5	55	3	36	0.505

Source: DSCC and DNCC

(3) Organization of DSCC, DNCC and WMD

1) Organization of the Zones and Wards after the Split

Before splitting Dhaka City Corporation, there were 10 zones under one Mayor. After the split, the ten zones were divided between the two City Corporations, five to each city corporation. The Number of zones and wards also changed. To run as an individual city corporation, both city corporations are structurally similar yet independently run under two Mayors and 92 councillors (56 for DSCC and 36 for DNCC) chosen by elections.

Table 1.3-3 Zones of each DCC

DSCC	Total Number of Wards	DNCC	Total Number of Wards
Zone 1	7	Zone 1	2
Zone 2	12	Zone 2	8
Zone 3	11	Zone 3	10
Zone 4	11	Zone 4	7
Zone 5	15	Zone 5	9
Total	56	Total	36

Source: DSCC and DNCC

2) Organization chart of both DNCC and DSCC

Both DNCC and DSCC began to function individually from December 2011. On May 7th 2012, the Ministry of Finance proposed the organogram as below:

Table 1.3-4 Proposed Organization Chart of both DNCC and DSCC

Department/Office	Proposed Number	
	DNCC	DSCC
Store and Purchase Department	16	16
Office of the Chief Store and Purchase Officer	16	16
Audit Department	6	6
Accounts Department	31	31
Office of the Chief Accounts Officer	6	6
Budget Division	5	5
Bill and Income/Expenditure Division	9	9
Salary Division	11	11
Central Transport Pool	94	101
Estate Department	26	26
Revenue Department	13	13
Office of the Chief Revenue Officer	6	6
Revenue Inspection Division	7	7
Engineering Department	172	177
Office of the Chief Engineer	10	10
Civil Circle	4	4
Electrical Circle	29	34
Mechanical Circle	4	4
Mechanical Workshop Division	4	4
Transportation Maintenance Branch	34	34
Asphalt plant Branch	53	53
Heavy Equipment Maintenance Branch	34	34
Waste Management Department	232	327

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Department/Office		Proposed Number	
		DNCC	DSCC
	Office of the Chief Waste Management Officer	44	64
	Office of the Additional Chief Waste Management Officer	3	3
	Office of the Deputy Chief Waste Management Officer	7	7
	Office of the Superintending Engineer (Waste Management)	4	4
	Office of the Executive Engineer (Waste Collection & Transport)	4	4
	Waste Collection and Transportation related Vehicle/Equipment of Purchase Division	6	6
	Waste Collection and Transportation related Vehicle /Equipment operation and Maintenance	121	196
	Office of the Executive Engineer (Disposal)	4	4
	Waste Disposal Branch	39	39

Source: DSCC and DNCC

3) Facilities and equipment related to SWM

The SWM related assets of the former Dhaka City Corporation were divided between two City corporations according to their usage. Waste collection vehicles were allocated to the two city corporations as shown below:

Table 1.3-5 List of Vehicles According to Types

No.	Vehicle Type	Capacity (ton)	DNCC	DSCC
1	Container Carrier	5	30	24
2	Container Carrier	3	46	53
3	Arm Roll	7	8	12
4	CNG CC	5	11	19
5	CNG CC	3	3	12
6	Compactor	5	18	7
7	Compactor	2	5	10
8	Open Truck	1.5	18	71
9	Open Truck	3	36	68
10	Open Truck	5	13	8
Total			188	284

Notes: This list was reported to LGD at that time of division

Source: DSCC and DNCC

Chapter2 Progress of the Project

2.1 Achievement of Project Purpose

Indicator: More than 2,540 ton/ day (or 58% of total amount of waste) of wastes is transported to landfill sites and disposed properly by the end of extension

Past records on the number of trips by waste collection vehicles and waste amounts transported to the two landfills of Amin bazar and Matuail are shown in the figures below. Even though there are weighbridges at both landfills, drivers still refuse to measure their waste using the weighbridge. Therefore, both DCCs and JICA Expert Team (hereinafter referred to as “JET”) conducted a series of surveys to count incoming vehicles at both landfills (Waste Amount Survey) in July 2010, February 2012, June 2012 and September 2012. The waste amounts transported to the landfill sites were estimated by the number of trips and the unit loading amount. It is estimated that there was a total of 2,385 tons per day in September 2012. The estimation shows an upward trend and the latest estimation is almost the same amount as the Indicator of the Project Purpose.

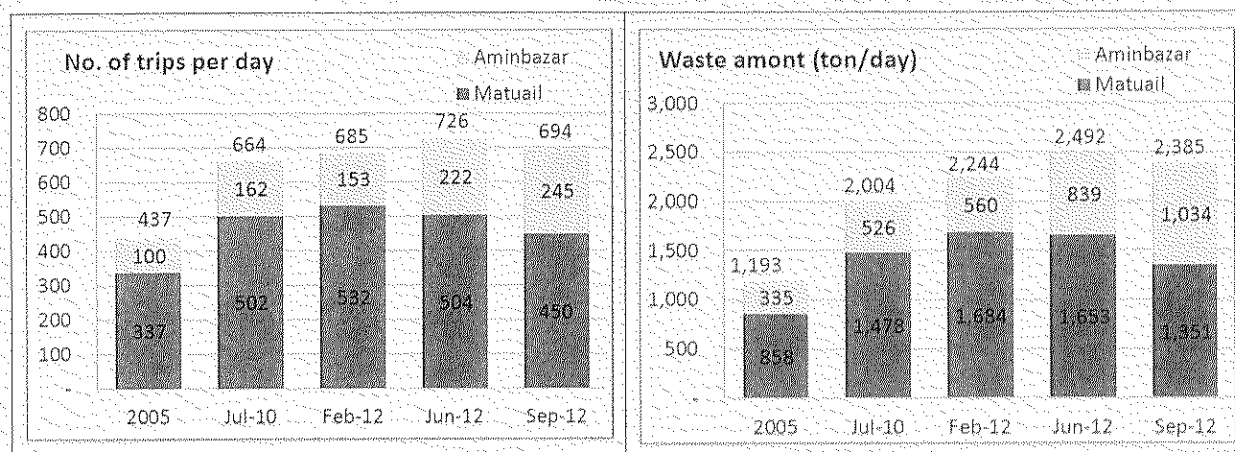


Figure 2.1-1 Past record on the number of the trips and waste amount

Past records on the number of the existing, retired, and procured waste collection vehicles are shown in the table below. One hundred waste collection vehicles were provided by the Japanese Government through EGAP. In 2011, 50 deteriorated waste collection vehicles, 32 open trucks, and 26 container carriers were retired. For the both DCCs to retire these vehicles in line with official procedures is a significant outcome, since these vehicles are usually the source of vested interest for the drivers. In comparison with the waste amount in February, June and September 2012, trip numbers and waste amounts demonstrate an upward trend in spite of no new procurement of vehicles. Besides, the procurement of 20 waste collection vehicles (ten vehicles for each DCC) are planned in 2012. DSCC has ordered ten open trucks with 3ton capacity on December 2nd, 2012 and the vehicles will be delivered by early March, 2013.

Table 2.1-1 Past records on the number of existing, retired, and procured waste collection vehicles

	2010	2011	2012
Existing vehicles			
Open Truck	198	203	171
Container Carrier	130	175	149
Arm Roll	0	20	20
Compactor	0	40	40

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	2010	2011	2012
Subtotal	328	438	380
Procured vehicles			
Open Truck	5	0	20
Container Carrier	45	0	0
Arm Roll	20	0	0
Compactor	40	0	0
Subtotal	105	0	0
Retired vehicles			
Open Truck	0	32	0
Container Carrier	0	26	27
Arm Roll	0	0	0
Compactor	0	0	0
Subtotal	0	58	27

Source: Record from DSCC and DNCC

After the division of DCC, 69 staffs had been recruited and assigned to their posts in November 2012. The rest of the vacant staffing positions, including Additional CWMO, Deputy CWMO, Executive Engineer and Assistant CWMO are expected to be fulfilled by the end of February, 2013 under strong pressure from LGD. Finally organization of both WMDs will be significantly strengthened and the capacity of both WMDs for solid waste management will be drastically enhanced.

2.2 Achievement of Outputs

(1) Output 1

The achievements of Output 1 are outlined in the table below.

1) Output 1.1

Indicator:
WMD can formulate SWM Activity Plan (annual) for SWM
Status:
The Project has continuously supported Waste Management Department (hereinafter referred to as "WMD") to formulate their annual budget since the beginning of the Main Project. In particular DCCs have newly applied bottom up budgeting system since 2011. The budget for WBA activities was formulated by headquarters based on the activity plan in each zone and its cost estimation through the system. The new system enables a more transparent and accountable budgeting than that of top-down budgeting. C/P and JET prepared an Annual Activities Report on SWM in Year 2010/2011 in the first JFY. In the second JFY, the Annual Activities Plan on SWM for Year 2012-2013 were formulated based on the Report. This indicator has been achieved.
Issues:
For the further improvement of the next Annual Activities Plan, it is very important to analyze the relationship between the budget and activities

2) Output 1.2

Indicator:
Establish and manage a proper monitoring system of SWM activities for the WMD
Status:
JET proposed the idea of a SWM Council (or Committee) to DCC as a monitoring body with an official letter dated 27 October, 2011 (LTO 11-10-01), in order to evaluate SWM activities of the WMD by outside specialists. In particular, JET hoped that the Council would make some recommendations for revising WMD Directives through evaluating WMD's activities. However, the council was not established due to an announcement of plans to divide the DCC into Northern and Southern bodies. Eventually, instead of the council, JET proposed DCC to hold a series of seminars to revise the WMD Directives through the evaluations of WMD's activities together with outside specialists. The first seminar was held with three outside specialists, two from Bangladesh University of Engineering and Technology (hereinafter referred to as "BUET") and the third from an NGO, who is a local government expert and civil society representative, in March 2012. In the seminar, the participants evaluated the WMD's activities based on the existing WMD Directives and prepared a preliminary revision. In the second seminar in August 2012, earnest discussions on the draft revision were made. No outside specialist could participate in the seminar due to serious administrative problems of BUET. In the 3rd Seminar hold on November 29th, the CWMOs of both city corporations explained the final draft of the revision and two outside specialists from BUET and NGO provided some advises to realize the revision. Although the council could not be established due to the splitting

up of DCC, the evaluation and monitoring with outside specialists was actually conducted in the seminars. The original goal of this indicator has been achieved.

Issues:

DCC and JET have evaluated and monitored the activities in the seminars with the aim of revising the WMD Directives. The revised WMD directives were circulated in the third seminar. These seminars or meetings should be periodically held by both DCCs in future.

Eight prioritized directions or works are stipulated in the revised directives but for the directives of No. 5 (Study on new waste treatment system) and No. 7 (Expansion of WBA considering 3R's) more efforts are necessary for tangible outputs since similar jobs have not been carried out by DCCs before.

3) Output 1.3

Indicator:

Collect and analyze landfill weighbridge data in the WMD's Headquarters for SWM operational management.

Status:

Both WMDs staffs have measured the waste amounts transported to landfill sites via the weighbridge procured through the JDCF over a span of 24 hours. Although many drivers have refuse to measure the transported amount of waste at the sites, most of drivers transporting waste to Matuail landfill site measure the weight now. On the other hand, the drivers transporting wastes to Amin Bazar landfill site still refuse to measure the weight. According to estimation, the number of trips measured by the weighbridge at Amin Bazar landfill site is around 10%. DNCC have collected and managed the waste collection operation by using surveys to estimate the waste amounts.

Issues:

DNCC should resolve this problem in consideration of experience of DSCC. DSCC also should not satisfied present situation and try to make all collection vehicles pass the weighbridge.

4) Output 1.4

Indicator:

Institutionalize a WMD order to create a WBA promoting framework including personnel assignment and duties.

Status:

DCC had issued some office orders to promote and expand WBA activities, such as an order to stipulate Ward Based Approach (hereinafter referred to as "WBA") as WMD's official work. In order to monitor the activities and share the experience of WBA, a WBA core group was established and held WBA meetings. An office order which mentioned the establishment of the WBA core group, core group meetings, and meetings twice a month was circulated in July 2012. Daily and monthly monitoring formats for the WBA which had been formulated during the Main Project were revised, and earnest monitoring with the use of these formats was discussed in the

WBA meetings. The indicator regarding institutional framework may have been achieved. With regard to the duties of the WMD, C/P and JET have studied the laws, city acts, and regulations in order to smoothly implement the daily operations including WBA activities. Even though DCC has implemented daily operations and some procedures in accordance with standards such as city acts and office orders, there are many problems for the operation due to insufficient standards. C/P and JET are carrying out a study to clarify the ambiguous standards for each specific operation, such as the "Procurement of safety gears for cleaners", or the "Procurement of new containers", and so on. Furthermore, if there is no standard for some particular operation, C/P and JET will study the conventional method and authorize them as standards. First and second interview meetings were held in March and June 2012, respectively. C/P and JET have studied existing procedures questioned and requested by WMD staff. These methods are compiled as Administrative Procedure Book and explained Cos and CIs of both DCCs. With regard to recruiting WMD's staff, 69 staffs were newly recruited and assigned to their posts in November 2012 and the remaining vacant staffing positions will be also assigned by the end of February, 2013, as mentioned in 2.2.
Issues: The remaining vacant staffs should be assigned as planned. WMD orders to create a WBA promoting framework have been issued. WMD should implement and promote WBA in line with these orders.

(2) Output 2

The achievements of Output 2 are outlined in the table below.

1) Output 2.1

Indicator: Strengthen the functions of more than 10 newly constructed or renovated "Ward Offices" by the end of the project (WBA1)
Status: Almost all (13) of the Ward SWM offices are functional and being used by the Conservancy Inspectors (hereinafter referred to as "CI") and Conservancy Officers (hereinafter referred to as "CO") regularly. Each of the Ward SWM offices is frequently being used as a meeting place of CIs and COs of neighboring wards. There are two more wards SWM offices in wards 2 and 12 in DNCC under construction. Since the beginning of January 2013, in total, 15 ward SWM offices will be functional in both DCCs. Cleaners are using the ward SWM offices to rest, use the washroom, and maintain cleaning equipment. Standby cleaners are found in some ward offices to respond to emergency calls or complaints from the community. Community meetings, Primary Collection Service Providers' meetings, and Cleaners Discussion meetings are usually arranged in ward offices. High officials also visit ward offices to monitor and guide the WMD field staff (CIs & COs).
Issues: Water and Electricity connections and billing are not yet formalized.

2) Output 2.2

Indicator:
Collect and analyze data of the number of traffic accidents amongst the cleaners (WBA2)
Status:
The WBA reporting system has been introduced in both City Corporations with official orders. The occupational hazard and risk information was included in the reporting format. However, after several weeks it was stopped as a dispute arose from the cleaners' union. After a series of negotiations with the union, the information keeping systems have been resumed from December 2012 and January 2013 respectively in DSCC and DNCC.
Issues:
Due to a dispute from the Scavengers' Union, the Official Reporting System had been suspended. Continuation of record keeping based on the monitoring of WBA is very important and high officials should check the record periodically.

3) Output 2.3

Indicator:
Compose more than 3 "Community Action Plans (CAP)" by separate wards (WBA3)
Status: Community Action Plans (hereinafter referred to as "CAP") for wards 2, 9 and 14 in DNCC were formulated in the Community Unit Working Group (hereinafter referred as to "CUWG") Training Workshop on March 10th, 2012. CAPs for Ward 48 and Ward 49 in DSCC were formulated through a day- long CUWG Training Workshop on Sept 29th, 2012.
Preparation to formulate CAP for the other wards is in progress. According to the functional steps of Community SWM, after the kickoff meetings wards must form a CUWG, hold meetings, and undergo training and finally CAP shall be prepared as ultimate planning decisions to improve SWM situation of the community. DCC had stipulated WBA whose mainstream is WBA3, as regular official work of WMD and WMD has allocated some budget for WBA3 activities, such as community meetings, trainings, forming CAPs and so on. In November 2012, a kickoff meeting in ward 6 was organized by the DSCC's own budget with the presence of 200 community people. The activities of WBA 3 are now underway with initiatives of CIs and Cos.
From commencement of the Project, all scheduled activities have been done and this indicator has been achieved.
Issues:
The budget disbursement process was slow to implement CAP of previous years, which had consequently discouraged some of the CIs and Cos.

4) Output 2.4

Indicator:

Improve the conventional collection system of more than 3 wards (3 units)(WBA 4)
Status: The conventional collection system has improved in various ways at over 3 wards. In ward 9 of DNCC, narrow street primary collections have been enhanced with the introduction of hand trolleys and harmonized container collection. Street sweeping waste collection has also increased (with better efficiency and effectiveness) with newly introduced rickshaw vans in wards 2, 9, and 19 of DNCC. Waste transfer from RVs has been harmonized with open truck collection. Two containers have been allocated in ward 2 (ceramic road) and Primary Collection Service Providers (hereinafter referred to as "PCSP") have been directed. Regular hauling is ensured under the monitoring of CIs and the community. Open dumping is being halted with the enhancement of primary collection, open trucks, and container collection that is underway in wards 48 and 49 of DSCC. This indicator has been achieved.
Issues: Timing of Open Trucks, PCSP, and Street sweeping is not well coordinated in some of the wards of DNCC and DSCC

2.3 Progress of Capacity Building in each activity

A series of support to Solid Waste Management in Dhaka from Japanese Government has been implemented for totally thirteen years from dispatch of a short-term Expert in 2000 to the Project in 2013, as shown in Table below. The Main Project had been implemented from 2011 for realizing M/P, and then the Project has been carried out for strengthen the sustainability of the Main Project from 2011. In addition, both LFs, Matuail and Amin Bazar, were improved with the use of JDCF, and procurement of 100 collection vehicles and construction of mechanical workshop for the vehicles had been done through EGAP.

Table 2.3-1 A series of support to Solid Waste Management in Dhaka from Japanese Government

Activity	Term	Remark
Dispatch of a short-term Expert	From March 2000 to August 2000	
Development study	From November 2003 to March 2005	Formulation of M/P
Follow-up study	From April 2005 to March 2006	Preparation of implementing M/P
LFs improvement (through JDCF) ➤ Matuail LF ➤ Amin Bazar LF	From July 2005 to July 2009	Including support on the detailed design from short-term expert
The Main Project (Technical Corporation Project)	From February 2007 to March 2011	Capacity development of DCC
Dispatch of JOCVs	From June 2006 to now	At present, totally eleven JOCVs
EGAP	From February 2009 to now	Procurement of collection vehicles and construction of mechanical workshop
The Project (Extended Technical	From August 2011 to March 2013	Capacity development of both

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Activity	Term	Remark
Corporation Project)		DCCs

Progress and present status of capacity development from the development study, 2003 and challenges for further development are summarized in table below.

Table 2.3-2 Progress of Capacity Building

	Target	Current Status	Challenges/ Countermeasures
1.	CWMO	✓ CWMO, three generations up to now, has been appointed from the Navy. They usually do not have any experience SWM. ✓ They kindly cooperate with the project specially establishing WMD, promotion of WBA and coordinating with Transport Department at that time of compactors introduction. ✓ They do not have long-term vision on SWM due to three years tenure. WMD Directives was formulated for securing its consistency. ✓ They recognize the importance of decentralization and promote word office construction.	✓ Due to lack of lower officers, any sort of works is concentrating to both CWMOs. ✓ Labor management is depending on instruction by CWMOs, and therefore consistency of the management is required.
	Management level officers SE or Ad. CWMO	✓ SE or Ad. CWMO who committed the project from beginning of the Main Project left WMD. ✓ SEs newly appointed are leading SWM.	✓ Ad. CWMO of DNCC is still vacant. SE of DSCC is appointed as Ad. CWMO concurrently. full-time Ad. CWMOs as leader of conservancy wing should be appointed as soon as possible.
	Engineers (Waste Collection)	✓ Only one executive engineer is properly working on SWM. He can also coordinate with other officials, other departments in DCC, and internal WMD nicely. He can provide his own ideas to improve SWM. ✓ Waste collection is implemented very well due to much accumulation of skills and experiences on the waste collection on both WMDs.	✓ Lower engineers should quickly be trained and appointed under him. ✓ DSCC should appoint an engineer to this position. ✓ There are a lot of issues to be solved such as coordination with driver's union.
	Engineers (Landfill Management)	✓ Only one sub-assistant engineer is working on O&M of the Landfill. He understands almost all of necessary processes and can communicate and coordinate with other officers in WMD. ✓ He can plan and secure a budget for Landfill O&M from DCC. ✓ DNCC appointed an executive engineer to this position.	✓ Leachate treatment should be developed with the use of experience in current pilot facility. ✓ Operation in rainy seasons should be strengthened.
	Assist. CWMO	✓ A CI had once appointed as Assist. CWMO. Full-time Assist. CWMO had once appointed temporary. At present, however, this position is still vacant.	✓ Both DCCs should appointed capable person as Assist. CWMO who lead CIs and then expand WBA activity.

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	CO	✓ They cooperate with the project actively. ✓ WBA core group is authorized by WMD order and some COs are appointed as members. ✓ SMW is changing day by day in Dhaka, and it is difficult for some of them to understand the new approach of work introduced by the Project.	✓ Capable COs and/or Assist. CWMO who lead CIs for implementing SWM in zones are necessary.
	CI	✓ Many CIs reformed their understandings of their work, and they are making full efforts to ward level SWM. Once the CIs are promoted, they can fulfill their business successfully. ✓ WBA core group is authorized by WMD order and some CIs are appointed as members. ✓ Mainly WBA core group members have matured and can instruct other CIs. ✓ The WBA core group is taking a main role to promote community participation in SWM. ✓ Booklet of administrative procedure is prepared for CIs to implement their business with confidence.	✓ System for utilizing and promoting the capable CIs is necessary. Capable officers who utilize and promote the experienced CIs is also necessary ✓ It is time for CIs to be promoted. ✓ WBA reporting system is resumed and CIs will report their activity to the zone office. However the system is stagnate due to opposition from cleaner's union. ✓ There is no clear ideas to motivate and train CIs who do not have any experience in WBA activity
	Cleaners	✓ Ideas and lessons of safety and sanitary working have spread to almost all cleaners. On the main road, cleaners are working as a group and are following the manual. ✓ No improvement of ghost cleaners. ✓ Cleaner's contest was held and some capable cleaners were granted an award. There is some movements to appreciate cleaners	✓ CIs should implement continuous training to the cleaners. ✓ Expendable supplies should be provided by the DCC budget regularly. * ✓ Capable cleaners should be more appreciated by officers.
2.	Participatory SWM wing	✓ Communities in WBA ward recognized the importance of participatory SWM, and the communities by themselves corporate to DCCs	✓ Management lever officers for participatory SWM and primary collection are necessary in WMDs headquarters. ✓ WBA activities should be spread further ✓ CIs should improve by themselves for respects from residents.
3.	Waste Collection Wing	✓ Collection vehicles and containers are appropriately allocated. Proper supply for containers is taken. ✓ Waste collection rate is improving increasing even though the equipment is not sufficient. ✓ The Drivers Union is non-cooperative. They are refusing to scale the amount of transported waste. ✓ DCC is repairing collection vehicles by themselves.	✓ Current work should be done on a regular basis and more improvement is necessary. ✓ Driver should be involved in SWM more. However it is not easy in consideration of background of SWM and nationality.

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4.	Zone office and Ward office	✓ Any expenses for office management like safety gears, first aid boxes, office supplies, electricity charges etc., are not provided by the both DCCs budget. ✓ Authority of the zone offices and word offices are provided in accordance with their long custom and tradition.	✓ Necessary expenses should be covered by the DCC budget. * ✓ Decentralization to zone and ward offices should accelerate.*
5.	Final disposal	✓ Matuail landfill was transformed into a sanitary landfill, and operated by Landfill Management Unit (hereinafter "LMU"). ✓ Amin Bazar landfill was also made into a sanitary landfill, but the management system is weak due to lack of staff. ✓ Capacity of both landfills will be full in the near future (by 2016 for Matuail, by 2017 for Amin Bazar)	✓ Leachate should be treated properly. ✓ Operational staff should be appointed in Amin Bazar. ✓ Both DCCs should try to secure new land for landfill sites.
6.	Cooperation with surrounding cities	✓ To have looser relationships among other cities and NGO.	✓ Considering regional management of SWM, inter-city cooperation should be promoted.
7.	WMD organization	✓ Relation between staff in Conservancy Wing and engineers in both WMDs improved and cohesion was generated. ✓ Coordination among WMD and other departments of each DCC such as Transport Department and Engineering Department has been gradually improved. ✓ Not enough staff appointed in both WMDs.	✓ Personnel allocation does not follow the organogram. ✓ It is ideal to have personnel exchange between Conservancy wing and Engineers. ✓ It is time that more engineers for design, O&M, leachate treatment for landfill and new technology are required.
8.	Understanding for technical corporation by WMD	✓ Many of the staffs in both WMDs understand the Project, but the zone level personnel are unfamiliar with the project, making it difficult to cooperate with them. ✓ Neutral understanding with cleaners union has somehow been established. However, not yet with drivers' union.	✓ Both WMDs should be focus on becoming an administrative organization, setting up personnel, financial, and policy management.*
8	Understanding for technical corporation by Mass media and society	✓ Compactors procured by EGAP are running in Dhaka city and SWM is gaining attention from the public through the media. ✓ Effectiveness of PR activity by both DCCs is low sustainability and low attention from media. ✓ Academic interest for SWM in Dhaka is still low, with few researchers involved.	✓ A long time is required to establish the ideas of SWM in society. Both DCCs should work for it continuously. ✓ Opinion leaders who can encourage SWM through public opinion are necessary. ✓ Periodicals such as Annual SWM Plan and Report must be published constantly. *

* : Documents of administrative procedure is including the items.

Chapter3 Activities of Output 1

3.1 Strengthening WMD Organization and DCC efforts

This activity includes the following activities mentioned in the PDM.

- 1-1: To promote WMD staff recruitment (by DCC)
- 1-10: To discuss and set proper framework for promoting WBA including duties and personnel assignment in WMD among all WBA related staff including WBA core group members
- 1-11: To prepare and issue WMD order of framework on 1-11

Both DCCs are trying to realize effective and efficient management systems for SWM in Dhaka City. Generally, a lot of problems occur due to lack of coordination among each department in DCC. In order to overcome these difficulties, WMD is trying to coordinate with various departments of City Corporation.

(1) Staffing of WMD

There was significant improvement of WMD staffing from before the splitting of Dhaka into north and south city corporations, and there was significant progress on the recruitment of many of the junior staff. In terms of the first class officers, positions and posts have been approved by the ministry. However, after splitting, the recruitment process lost its momentum as both city corporations were directly controlled by the ministry and two administrators were appointed. The staff became busy with the establishment of the new set-ups and formation of the corporation. It has been found that even though leadership from WMD was good, it could not ensure the organizational leadership to make the staffing process go quickly. However, very recently, initiatives on service rules, recruitment rules, the meeting of selection committees, and continuous liaison among different entities (CWMO, CEO, Secretary, Administrator and Ministry) have been introduced in both city corporations. In this condition DNCC was supposed to deploy a Sub-assistant Engineer (1 person), Machine Operators (8 persons) and helpers (3 persons) for Amin Bazar and support to the executive engineers in October 2012. Finally both WMDs had kept themselves trying to recruit staff and consequently following staff are going to be recruited on both CCs in December 2012.

Table 3.1-1 Newly recruited staff

Designation of Staff	DNCC (Number)	DSCC (Number)	Workstation
Sub Assistant Engineer	Total 4 SAE (Civil): 1 SAE (Mechanical): 2 SAE (Electrical): 1	Total 4 SAE (Civil): 1 SAE (Mechanical): 1 SAE (Electrical): 1	Mainly Landfill and Workshop
Machine Operator	Total 5	Total 5	Landfills
Helper	Total 3	Total 3	Landfills
MLSS*	Total 4 WMD HQ	Total 6 WMD HQ: 5 LF: 1	WMD HQ and Landfills
Account Assistant	Total: 1		WMD HQ
Store Keeper	Total : 1		WMD HQ
UDA**	Total: 1	Total: 1	WMD HQ

Designation of Staff	DNCC (Number)	DSCC (Number)	Workstation
Dispatch and Receiver	Total : 1	Total: 1	WMD HQ
Grand Total	20	19	

* Member of the Lower Subordinate Service: Those who take care of the office

** Upper Divisional Assistant (Head Clerk): Those who manage papers

The updated organogram of WMDs of both City Corporations are shown in appendix.

(2) Vehicle maintenance

Even though all the waste collection vehicles are still not under the control of WMDs of DNCC and DSCC, there are significant improvements in the operation and maintenance (hereinafter referred to as “O&M”) of vehicles. Currently 99 (one is out of order because of an accident) of the 100 vehicles provided by EGAP are fully functional and operational. Functionality and efficiency of EGAP vehicles, both are much higher than other vehicles engaged in SWM activity in both CCs. Functionality of vehicles is measured as the ratio of active vehicles to total number of the allocated vehicles, and the efficiency is measured in various parameters such as trips/day, ton/day etc. Since WMD has more control on O&M of EGAP vehicles, it is considered as the most important factor for this success. The following success factors are identified as the most promising reasons for current and future improvements regarding the O&M of vehicles:

- Appointment of senior JOCV and start smooth collaborative works among Asst. Engineer, Mechanics and Helpers.
- There is one mechanic and three skilled helpers in the workshop who can provide service on-time.
- Yearly contract agreement with NAVANA CNG for regular checkup aiming to run CNG vehicles smoothly has been extended for additional one year i.e., till 2013. Each of 45 CNG carriers will be in one time monthly routine checkup under this contract agreement at the cost of 2,750 TK/carrier/month.
- Regular discussion meetings among engineers, mechanics, and helpers are taking place in the workshop with the presence of Senior JOCV.
- Engineering Department of DNCC is in the process of procuring 20 Open Trucks, 5 Dump Trucks to improve collection and transportation capacity.
- To improve the car washing facility and efficiency 4 high speed spray nozzles have been installed in Amin Bazar LF and 1 spray nozzle installed in EGAP workshop.
- A Quality Circle, which is a kind of meeting to share information and opinions, has been developed among the drivers for better service delivery in EGAP workshop with the presence of Senior JOCV

Through these efforts, the mechanics and engineers of the workshop have developed skills for common repair work for the compactor trucks and arm roll containers. Both of

them are able to solve these problems individually. The vehicles are not being taken to the NAVANA Workshop as frequently as before the project.

On the other hand, more efforts mentioned below to achieve the appropriate maintenance and operations of collection vehicles are necessary.

- Upgrading the workshop with the help of surplus money from EGAP.
- To make spare parts available from Toyota Tsusho which are not found in local markets and establish close communication and coordination with Toyota Tsusho
- Ensure regular and periodic maintenance of vehicles for trouble free operation while ensuring the availability of spare parts. This can be done through direct purchasing and the use of high quality lubricants. There is sufficient stock (enough for approximately 2 years) of air filters, tires, and tubes also recently purchased by direct tender by DNCC. DNCC budget should be available for purchasing spare parts at any time. Until next year, there is no battery problems expected.

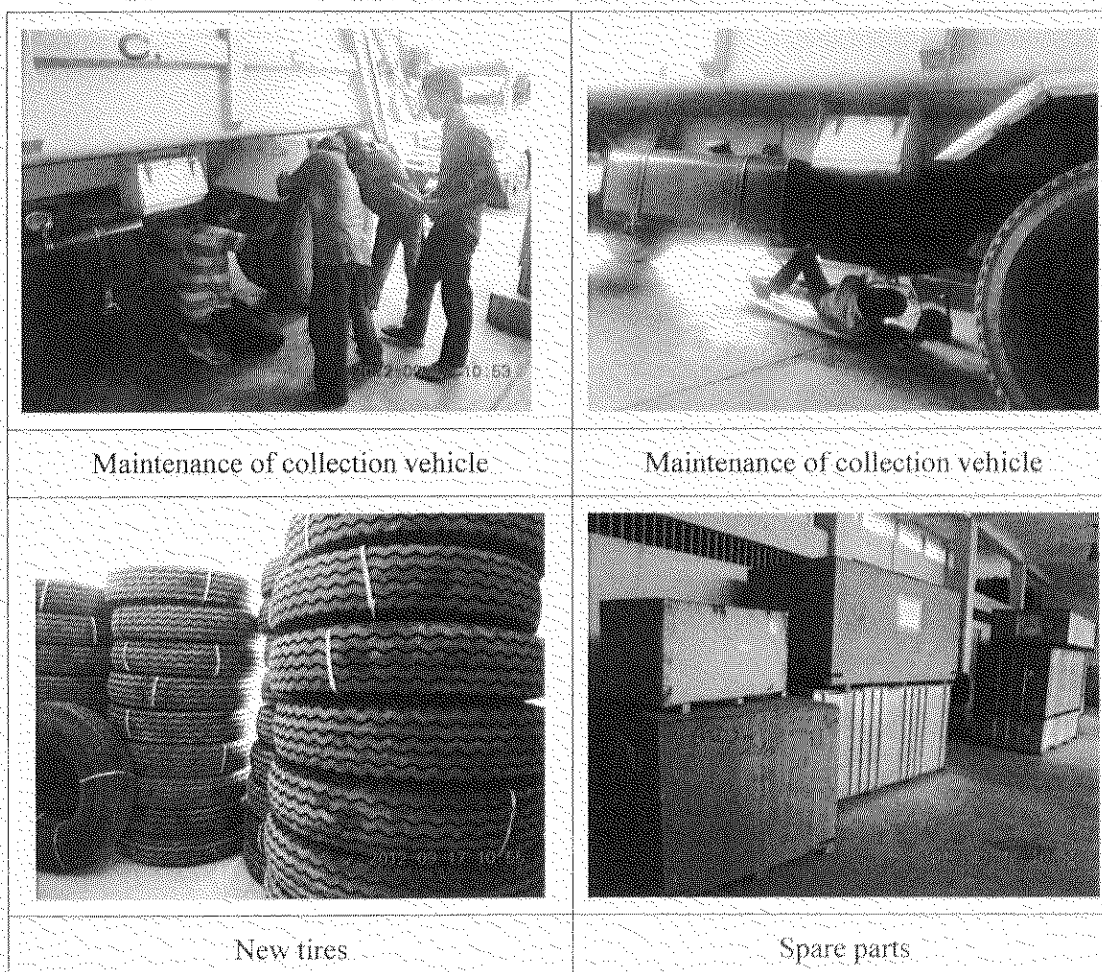


Figure 3.1-1 O&M of Collection Vehicles procured by EGAP

(3) Disposal Operation

Both Dhaka North and South City Corporations are making efforts to sustain landfill

operation and management. DNCC has recruited one Sub Assistant engineer and several heavy equipment operators at the Amin Bazar Disposal Site. DNCC has allocated 1.5 crore taka from their budget for landfill operations for the 2012/13 fiscal year. In December, DNCC procured 2 pay loaders from its own budget for Amin Bazar LF and 1 tire dozer and one more additional pay loaders procurements is underway from Engineering Department of DNCC.

Since the existing operational logistics, particularly, heavy machines are not sufficient enough to meet the current requirement of service in LFs, DNCC initially outsourced heavy machines for one month and recently DNCC is working to continue the contract. DNCC feels that the outsourcing service in Amin Bazar LF operation has improved the performance of operation of existing heavy equipment and their operators. A competitive service delivery attitude has been developed between the government's owned traditional service and outsourced service.

Initial budget allocation for the Matuail LF was 1.5 crore taka (15 million taka) which was not sufficient enough for operation and management of LFlandfills round the year. However, very recently with the initiatives of CWMO, Superintending Engineer and Asst. Engineer of WMD of DSCC, WMD was successful to revise the budget and proper administrative approval was taken places including CEO and Administrator. According to revised budget (it is not included in the budget book for 2012/13), WMD of DSCC has budgeted an amount of 7.5 core taka (75 million taka).

To secure additional 50 acres of land (the eastern side of extension) after approval from ministry, WMD is now preparing DPP (Development Project Proposal).

WMD of DSCC has took full control for O&M of Leachate Treatment Pond in Matuail LF by their own staff and additional 200 units of air bubble diffuser installation is underway and other updating of LFlandfill is going on. The main road (access road) from Dhaka Demra to Matuail LFlandfill is going to be renovated with rigid pavement and Bio Gas Plant is functional to supply cooking gas facility to the landfill staffLF.

(4) Promotion of separation at source

Dhaka North and South City Corporations have begun 3R activities in collaboration with the department of environment, with the assistance of the Climate Change Trust Fund in Azimpur Conoly, Dhanmodi R/A, Lalmatia and Gulshan Areas. The studies on evaluating the rate of community participation and the degree of separation with forward linking flow to the junk traders or recycling industries are yet to be carried out.

DNCC with the assistance of JET has started programs for the small scale separation of waste at its source in Gulshan Areas (mainly hotels and restaurants). Since the hotels and restaurants generate large amounts of recyclables, it is necessary to maintain their freshness and adequate forward linkage. With this intention, pilot projects have begun in Gulshan Area.

Mr. Abul Hasnat Md. Ashraful Alam, Executive Engineer of WMD of DNCC has been appointed as Monitoring Project Director for the promotion of 3R in Dhaka City for the project of Department of Environment, financed from Climate Change Trust Fund.

DSCC is thinking on introducing 3R activities. However, it is at the very initial stage of consideration at this moment and no concrete plan or activities have been sorted out yet to start separation at source or promotion of 3R.

(5) Outsourcing Waste Collection and Transportation of DNCC

Aiming to improve the accountability and service of waste workers and reducing

operational cost, DNCC started outsourcing the service and in the initial stage (by December 2012) 4 wards services have been outsourced by private contractor. The detail tendering, tender evaluation and the process of issuing work order have been completed for 4 wards of DNCC which are wards 17, 18, 1 and 24 and for additional 3 wards (19, 20, 25) bidding process is now underway.

(6) Construction of Small Transfer Stations (STS) by ADB funds

Both DNCC and DSCC are now securing lands for constructing STS to accommodate the containers and compactors to reduce the number of Secondary Collection Points. DNCC selected 5 locations and additional location selection is under way. DSCC already selected 7 locations and confirmation has been made. Additional 2 locations are under the process of securing as they are belonging to other ministries.

3.2 Revision of WMD Directives and WMD Council

This activity includes the following activities mentioned in the PDM.

- 1-8: To discuss establishing proper external monitoring system for SWM activities
 1-9: To implement monitoring based on 1-8

(1) Background of WMD Council and WMD Directives

1) WMD Council

At the commencement of the second Fiscal Year (hereinafter referred to as “FY”), formation of the WMD council as a monitoring body of WMD’s activities was discussed among the high officials of DCC. The stipulation in this regard in the Local Government Act 2009 (amended 2011) was also analyzed. It was found that a SWM Standing Committee is recommended in the Act. It was thought that the WMD Council can be formed through the process of a SWM Standing Committee. According to the terms and conditions of committee formations, its member composition prioritized ward councilors.

Even though JET and WMD tried to formulate the council, after splitting DCC into two, the formation process became practically impossible. Eventually instead of the council, JET proposed DCC to hold a series of seminars (WMD Directive Seminars) to revise the directives through evaluations of the WMD’s activities with external specialists.

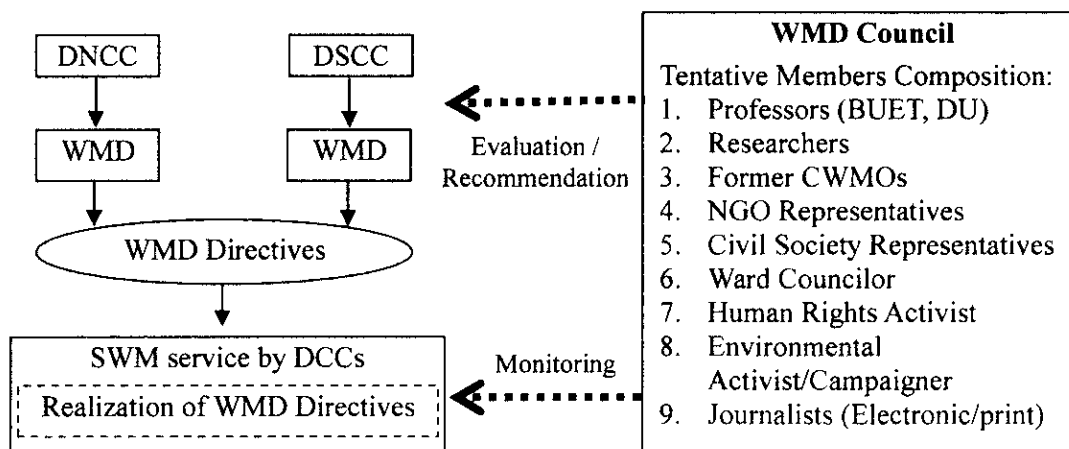


Figure 3.2-1 Conceptual Framework of WMD Council to improve SWM Service

2) WMD Directives

The directives represent a number of immediate and high priority activities of WMDs for SWM of Dhaka North and South City Corporations. The first directives were developed in 2008 based on directions stipulated in the Clean Dhaka M/P 2015. The objective was to foster citizen's satisfaction on waste management services of DCC on a sustainable basis. With the passage of time, the pattern and priority of WMD had changed though not significantly, and JET and WMD decided to improve the old directives. Eventually, the Second WMD Directives was formulated through series of discussions in the seminars with the active participations of civil society representatives, local government specialists, professors, WMD officials, DNCC and DSCC high officials, field level staff and JICA Experts.

(2) WMD Directives Seminars

1) First WMD Directives Seminar

The first seminar's aim was to gather opinions regarding SWM activities carried out by Dhaka North and South City Corporations and to discuss the revision of the existing WMD Directives (First Directives).

The Chief Executive Officer (hereinafter referred as to "CEO") of DNCC, CWMO of DSCC and DNCC, Administrator of DNCC, Chief Health Officer, Chief Estate Officer and Chief Engineer of DNCC, Superintending Engineers (hereinafter referred to as "SE"), Executive Engineer (hereinafter referred to as "EE"), Assistant Engineer, Zonal Executive Officer, CO and CI (core group members) from DNCC and/or DSCC, Representatives from JICA Bangladesh Office, and a JET joined the seminar. In addition, three specialists, one representative of an NGO and two BUET professors participated as resource specialists.

The first seminar was held on 14th March 2012 according to the following program schedule.

Time	Program	Facilitator
10:20 – 10:30	Registration and taking seats	CI and CO of DNCC and DSCC
10:30 – 10:35	Recitation from the Holy Quran	Mr. Abdul Motalib, CI, DSCC
10:35 – 11:00	Opening Speeches	CEO of DSCC CEO of DNCC Chief Representative, JICA Honorable Administrator of DSCC
11:00 – 11:20	Tea	
11:20 – 11:30	Concept of WMD Directives Framework and purpose of WMD Directive seminars	Resource person, Professor, Civil Engineering Dept. BUET
11:30 – 12:00	Sharing present SWM situation and analysis of achievement of existing WMD Directives	Social Aspect: Additional CWMO Technical Aspect: EE (Collection and Transport) & EE (Disposal) Management Aspect: Team Leader, JET

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Time	Program	Facilitator
12:00- 12:20	Preparation of tentative WMD directives (2nd edition) through group discussion Group 1: Management aspect Group 2: Technical aspect Group 3: Social aspect	3 resource persons (from BUET, International NGO and Local Government Specialist) for three groups
12:20 – 12:35	Presentation of the draft directives (group by group)	3 resource persons of 3 groups
12:35 – 13:15	Law Seminar	Resource person, WMD officers
13:15 – 13:30	Closing Speeches with vote of thanks	Chief Waste Management Officer, DNCC and DSCC Honorable Administrator, DNCC
13:30- 14:15	Refreshments	

In the first seminar there were three groups among the participants based on the broader three aspects of WMD Directives i.e., Managerial, Social, and Technical aspects. Participants discussed and clarified the original Directives and developed new directives as a preliminary draft. The framework of the discussion is attached in Appendix 4.

2) Second WMD Directives Seminar

The 2nd WMD directive seminar was held on 7th August 2012. The Administrator of DSCC, CWMOs of DNCC & DSCC, CEO of DNCC and Chief Health Officer of DNCC, Additional CWMO of DSCC, Executive Engineer and Superintending Engineer of DNCC along with WBA core group members of DNCC and DSCC joined the program. The program schedule of the second WMD directive seminar is shown below:

Time	Program	Facilitator
4:00 – 4:05	Recitation from the Holy Quran	Mr. Abdul Motalib, CI, Ward 13, DSCC
4:05 – 4:30	Opening Speeches	CEO of DSCC CEO of DNCC Dr. Takao Toda, Chief Representative, JICA Bangladesh Office Administrator of DNCC, Chief Guest
4:30 – 4:35	Concept of WMD Directives	Mr. Takatoshi Arai, JET
4:35 – 4:50	Presentation-1 WMD Directives: Management Aspect	Bipan Kumar Saha, Captain, BN, Chief Waste Management Officer, DNCC
Praying break		

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Time	Program	Facilitator
5:30 – 5:45	Presentation-2 WMD Directives: Technical Aspect	Mr. AbulHasnat Md. AshrafulAlam, Executive Engineer, WMD, DNCC
5:45 – 6:00	Presentation-3 WMD Directives: Social Aspect	Commander AnamulHaque, psc, BN Chief Waste Management Officer, DSCC
6:00 – 6:30	Closing remarks	Administrator of DSCC, Chairperson



Figure 3.2-2 Photo of the Seminar

The final draft of the revised WMD Directives was formulated through the seminar discussion.

3) Third WMD Directives Seminar

The 3rd WMD directive seminar was held on 29th November 2012. The CWMOs of DNCC & DSCC, Additional CWMO of DSCC, Assistant Engineers, Executive Engineers and Superintending Engineer of DNCC and DSCC along with WBA core group members joined the program. Three outside specialists as resource persons participated in the seminar and provide some suggestion to realize the WMD Directives.

4) The program schedule of the 3rd WMD directive seminar is shown below:

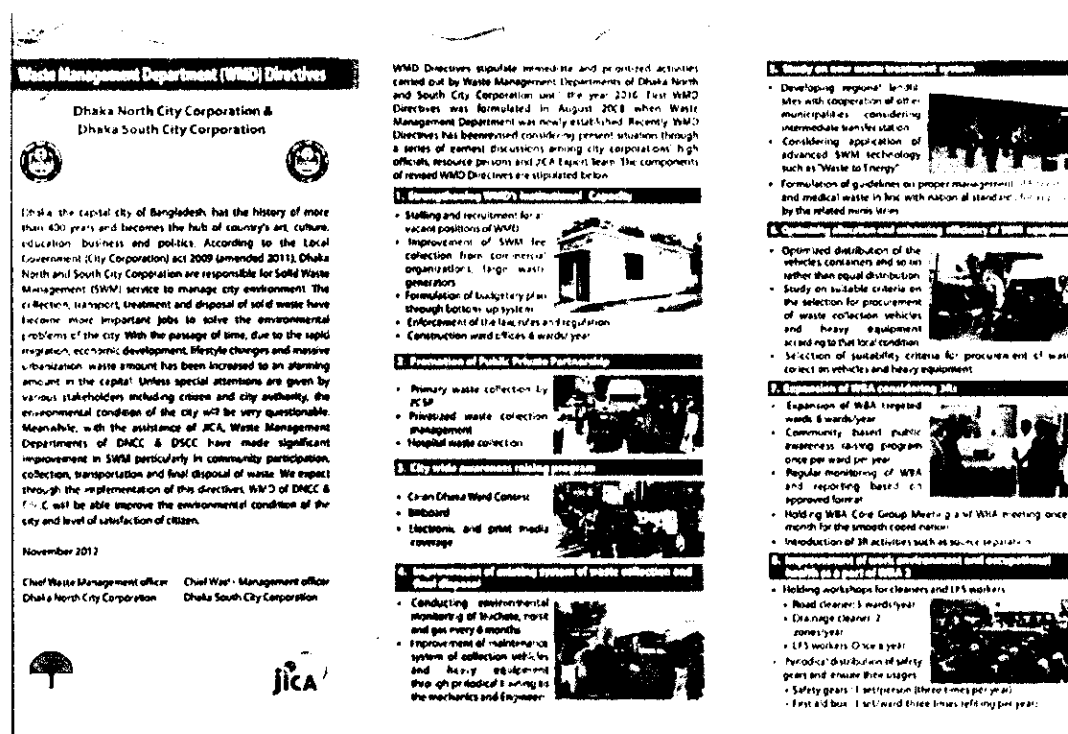
Time	Program	Facilitators/Speakers
10:00~10:30	Tea & Registration	Core group COs
10:30~10:35	Recitation from the Holly Quran	Abul Hasnat Md. Ashraful Alam, EE, WMD, DNCC
10:35~10:50	Opening Speeches	Dr. Mitsou Youshida, Team Leader of Evaluation Mission Chief Waste Management Officer, DSCC Mr. Akio Ishii, Chief Advisor, JICA Expert Team
10:50~11:10	Presentation of 2 nd WMD Directives	Chief Waste Management Officer of DSCC
11:10~11:55	Advise for implementation and realization of the Directives	Dr. A. B. M. Badruzzaman Dr. M. A. Jalil Professors, Dept. of Civil Engineering, BUET, Dhaka

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		Dr. Badiul Alam Majumder, Local Govt. Expert & Representative from Civil Society
11:55 ~ 12:00	Closing	Chief Waste Management Officer, DNCC

5) Second WMD Directives

The leaflet of the Second WMD Directives revised from original WMD Directives through series of the seminars is shown below



The contents of the 2nd WMD directives are described below:

1. Strengthening WMD's Institutional Capacity

- Staffing and recruitment for all vacant positions of WMD
- Improvement of SWM fee collection from commercial organizations, large waste generators
- Formulation of budgetary plans through bottom-up system
- Enforcement of the law, rules, and regulation
- Construction of ward offices: 6 wards/ year

2. Promotion of Public Private Partnership

- Primary waste collection by PCSP
- Privatized waste collection management
- Hospital waste collection

3. City wide awareness raising program

- Clean Dhaka Ward Contest
- Billboard
- Electronic and print media coverage

4. Improvement of existing system of waste collection and final disposal

- Conducting environmental monitoring of leachate, noise, and gas every 6 months
- Improvement of maintenance systems of collection vehicles and heavy equipment through periodical training the mechanics and Engineers

5. Study on new waste treatment systems

- Developing regional landfill sites with the cooperation of municipalities considering intermediate transfer station
- Considering application of advanced SWM technology such as “Waste to Energy”
- Formulation of guidelines on proper management of hazardous and medical waste in line with national standards for approval by the related ministries

6. Optimizing allocation and enhancing efficiency of SWM equipment

- Optimized distribution of the vehicles, containers and so on rather than equal distribution
- Study on suitable criteria on the selection for procurement of waste collection vehicles and heavy equipment according to local conditions.
- Selection of suitability criteria for procurement of waste collection vehicles and heavy equipment

7. Expansion of WBA considering 3Rs

- Expansion of WBA targeted wards: 6 wards/year
- Community based public awareness raising program once per ward per year
- Regular monitoring of WBA and reporting based on approved format
- Holding WBA Core Group Meeting and WBA meeting once a month for smooth coordination
- Introduction of 3R activities such as source separation

8. Improvement of work environment and occupational health as a part of WBA 2

- Holding workshops for cleaners and landfill site workers:
 - Road cleaners: 5 wards/year
 - Drainage cleaners: 2 zones/year
 - Landfill site workers: Once a year
- Periodical distribution of safety gear and ensure their usages
 - Safety gear: 1 set/person(three times per year)
 - First aid box: 1 set/ward(three times refilling per year)

3.3 WMD Annual Report and Plan

This activity includes the following activities mentioned in the PDM .

- 1-2: To collect necessary data and information for SWM Activity Plans (annual)
- 1-3: To formulate SWM Activity Plans (annual) based on 1-2

(1) WMD Annual Report and Plan

WMD prepared the annual report for their activities for 2010-11. The purpose of this report is to inform local and central governments, residents, and other departments of their activities in the previous year. A summary of this report is shown below.

1) Collection and Transportation

Out of all transported wastes, the Matuail landfill site has received 68%, while the remaining 32% went to Amin Bazar. Out of the 415 vehicles of the DCC, 350 vehicles had worked every day. The Japanese Government provided 100 waste collection vehicles through the EGAP in 2010. Many vehicles of the DCC were out of order at that time, so these additional vehicles increased the efficiency of waste collection. DCC also bought 5 Indian compactors with their own budget.

2) Final Disposal

DCC used two landfill sites at that time: Matuail and Amin Bazar. Both the sites are official landfill sites owned by DCC. The Landfill Management Unit (hereinafter referred to as "LMU") has been preparing plans for dumping operations and is executing accordingly. However, the shortage of manpower for the LMU at each landfill was a basic problem at that time.

3) WBA Activities

WBA activities are being integrated with a comprehensive methodology in order to effectively improve SWM in Dhaka. At this FY, WBA approaches were implemented at wards 26, 27, 31 of DCC north and 18, 27, 33, 39 of DCC South.

4) Financial Analysis

The total cost of FY 2010-11 increased 10.6% compared to FY 2009-10. The total budget of FY 2011-12 increased 6.5% compared to FY 2010/2011.

(2) Summary of Annual Plan in year 2012-2013

This year DNCC and DSCC formulated the annual activity plans for 2012 and 2013. The plans reflect individual targets to contribute at the field of SWM. Here is a short summary of the plans undertaken by both DCCs in 2012-13.

Annual Plan of DNCC

1) Waste Generation and Collection Amount

Waste generation amounts for DNCC are predicted to be 2,263 ton/day. The target collection amount during 2012-13 of DNCC is 60% (1,347 ton) of the generated amount according to MP. However, DNCC targeted 1,400 ton/day of waste collection in this period.

2) Collection and Transportation capacity

DNCC has 188 different types of vehicles for secondary waste collection and transportation. Among these vehicles, more than 50% are container carriers. At present, DNCC has 180

containers. The storage capacity of the containers in DNCC is estimated to be approximately 876 tons.

3) Privatization of DNCC Waste Management

This year DNCC is going to collect waste from wards 1, 17, 18, 19, 20, 21, and 24 using private contractors. Wards 1 and 20 have already selected contractors (after tender) and tender processes for wards 17, 18, 19, 21, and 24 are underway. According to the contract, DNCC will pay according to the weight of the transported wastes to the contractors.

4) Plan for New Procurement

DNCC has approximately 20 million BDT to purchase new collection vehicles. At this moment, DNCC is planning to buy 10 open trucks for morning waste collection. Among the containers, DNCC has already begun to fabricate 27 containers. DNCC also ordered the fabrication of 300 hand trolleys and some rickshaw (hereinafter referred to as "RV") vans to collect morning waste.

5) Final Disposal Site

DNCC is using the Amin Bazar landfill for final disposals. The Amin Bazar landfill accepts waste from different wards at any time of the day. However, heavy equipment officially operates from 8AM to 4PM for 8 hours. Hopefully by fiscal year 2012-13, Amin Bazar will have permanent landfill staff and their operations will continue more smoothly.

6) WBA target wards

During 2012-13 DNCC targeted 4 wards (9, 14, 27, 29) for WBA works. To improve the sanitary condition of the drainage cleaners, 1 awareness raising workshop will be done zone-wise.

7) Financial planning for waste management

The budget of WMD for the 2012-13 is 970 million BDT.

Annual Plan of DSCC

1) Waste Generation and Collection Amount

Waste generation amounts for DSCC are predicted at 2,006 ton/day. The target collection amount of waste during 2012-13 of DSCC is 60% (1,204 ton) of the generated amount according to M/P. However, DSCC targeted 1,560 ton/day of waste collection in this period.

2) Collection and Transportation capacity

DSCC has more than 250 different types of vehicles for secondary waste collection. Among these vehicles, around 50% are container carriers. At present, DSCC has 269 containers. The total storage capacity of the containers in DSCC is estimated at approximately 1,165 tons at present.

3) Plan for New Procurement

At this FY, DSCC has approximately 20 million BDT to purchase new collection vehicles. DSCC plans to buy some open trucks with this budget.

4) Final Disposal Site

DSCC uses the Matuail landfill site for solid waste disposal. Matuail landfill accepts waste

from different wards at any time of the day. However, heavy equipment officially operates from 8AM to 4PM for 8 hours only.

5) WBA target wards

In 2012-13, DSCC targeted 2 wards (6, 49) for WBA works. To improve the sanitary condition of the drainage cleaners, 3 awareness raising workshop will be done zone-wise.

Financial planning for waste management

DSCC already prepared a budget composed of different essential activities. The budget of WMD for 2012-13 is 1 billion BDT.

3.4 Laws collection and analysis

This activity includes the following activities mentioned in the PDM.

- | |
|--|
| 1-10: To discuss and set proper framework for promoting WBA including duties and personnel assignment in WMD among all WBA related staffs including WBA core group members |
| 1-11: To prepare and issue WMD order of framework on 1.11 |
| 2-2: To discuss and confirm the strategy for introducing and managing WBA under the ownership of WMD |

The purpose of this activity is to upgrade SWM practices implemented during the Project to more administrative works. In order to accomplish this, it is ideal that SWM practices are regulated in the DCC and JET is attempting to use laws and regulations to promote efficient SWM.

In this FY, DCC and JET are preparing documents for administrative procedures which describe the detailed procedures for specific cases of daily work. This will hopefully become the guideline for field level officers in their daily work.

(1) The schedule of the activity and its progress

Based on further research on existing laws and regulations for SWM in Dhaka city by a specialist of laws and regulations, a Law Seminar was organized in January 2012, on the same day of the Directives Seminar. The seminar was for knowledgeable persons outside DCC and high officials not only at the WMD, but also included other departments of DNCC and DSCC. In this seminar, we shared the current status of laws and regulations for SWM, and pointed out problems which can be solved through improving these laws and regulations.

The next day of the seminar, another seminar for CIs and COs was held. In that seminar, we shared the laws and regulations that are mentioned in their daily work, and how they are stipulated. It was found that almost all of their work was not stipulated properly. The discussion then focused on how to address those situations.

In June 2012, in order to collect and share further opinions from CIs and COs, the specialist and JET organized a focus group workshop. Intensive discussions were held about the inconvenient situations surrounding their daily work, and the bottle necks that need to be addressed. Participants mainly requested comprehensive rules and its strict enforcement by authorities.

C/P and JET are now working on documents that outline such administrative procedures. Items picked up in the documents address the key issues identified in the last two seminars and the workshop. C/P is working very actively and trying to organize SWM works using these documents. It was found that most necessary stipulations for SWM

are missing from existing laws and regulations, and this gap must be addressed by developing new procedures. The document will be completed in the middle of November this year.

Discussion points shared in each seminar and the workshop are mentioned below.

(2) Law and regulations Seminar

We shared the current status of existing laws and regulations below.

- (a) Roles of each department and its coordination in DCC
- (b) Roles of each wing in WMD and its coordination
- (c) DCC, waste generators and citizens' responsibilities for SWM
- (d) Fines in SWM

Discussions about (a) revealed that the current system of SWM in DCC is not well-coordinated. For example, when cleaners need brooms or other small materials, WMD needs to ask the department of Store and Purchasing. Management of collection vehicles and their fuel costs are controlled by the Department of Transport. Dispatch and maintenance of collection vehicles is controlled by the Department of Engineering. As SWM demands prompt work, this complicated system was seen to cause many problems. Please see Appendix 5 to find details of other discussion points.

In the seminar for CIs and COs, discussion mainly focused on the problems faced in their daily work. They also insisted on the necessity for improving their working environment.

(3) Focus group workshop

In the workshop held in June 2012, we collected intensive opinions from CIs and COs based on the seminar in March. Discussion points were the following four points.

- (a) Ward Office matters
- (b) CIs and COs working environment
- (c) How to involve the community
- (d) Salary and benefits for CIs and COs

Participants shared many opinions and details about problems that they often face. There was significant concern and disapproval concerning their working environment and benefit packages. It was explained that even in at midnight or early in the morning, they are expected to rush to a site when any problems occur, but no allowances are supplied for such services. There was also concern about the lack of a promotion system for the workers. Under such a harsh working environment, it is difficult for them to keep their motivation.

(4) Progress documents for administrative procedures

C/P and JET are currently working on documents for administrative procedures. As far as we know, DCC officials tend to work independently in their own way, and there are several differences in procedure and quality among officials even on the same job. To avoid such situations, the documents guide will decide on one procedure and instruct workers on the conditions and details for each job.

Table 3.4-1 shows contents of administrative procedure.

Table 3.4-1 Contents of Administrative Procedure

	Check Points		Check Points
1	WMD Management	(a)	For the CO's, CI's, Drivers and landfill staffs
1.1	Enactment and amendment of WMD rules, regulation	(b)	For the Cleaners
1.2	Publicity of WMD rules, regulation	5.3	Transport facilities
1.3	Formulating WMD Annual Plan	(a)	HQ personnel
1.4	Formulation Waste Management Department Directives	(b)	CO's and CI's
2	Waste Management Budget Preparation	(c)	Cleaners
2.1	Overall Waste Management Budget Preparation	5.4	Accommodation facilities
2.2	Budget Preparation within WMD	(a)	HQ personnel
2.3	Budget Preparation of related departments	(b)	CO's, CI's & drivers
3	Budget Disbursement and receives money or materials	(c)	Cleaners
3.1	Certain Procurement Processed are required	6	WBA Activities
(a)	Estimation of Procuring Vehicles and Containers	6.1	WBA 1
(b)	Container, Hand trolley and RV Procurement Method of DNCC	(a)	To keep the daily records at ward SWM office
(c)	Container Hand trolley Procurement Method of DSCC	(b)	Receive complains at ward office
3.2	Purchased through Store and Purchase Department	6.2	WBA 2
(a)	Small Cleaning Materials, blooms, dustpans etc.,	(a)	Formulate Safety and Sanitation Committee
(b)	Safety gears	6.3	WBA 3
3.3	Request by each officials	(a)	Plan community programs
(a)	Ward Office Construction	(b)	Community involvement meeting
(b)	Ward Office Rental	6.4	WBA 4
(c)	Ward Office Maintenance bills	(a)	PCSP permission
(d)	Community Meetings	7	Special wastes management
(e)	Office supplies, PC and, Photocopier	7.1	Medical Waste
3.4	Repair and Maintenance of heavy cleaning equipment	7.2	Industrial and Commercial wastes
3.5	Improvement of SWM work	7.3	Construction and demolishing wastes
(a)	Request to dispatch collection vehicles temporarily	8	Penalty
(b)	How cleaning equipment improve better	8.1	DCC Executive Magistrate
(c)	Request to fabricate rickshaw van and hand trolley	8.2	Court of Metropolitan Judicial Magistrate
4	Staffing	8.3	Enforcement wing - DOE
4.1	Direct recruitment	9	Landfill Management
4.2	Promotion	9.1	Management of weigh bridge
4.3	Deputation	9.2	Management of leachate treatment facility
4.4	Outsourcing, temporary	9.3	Operation and maintenance of landfill site
5	Benefit package	9.4	Heavy equipment operation and maintenance with fuel
5.1	Allowance	9.5	Staff Allocation

	Check Points		Check Points
(a)	Different types of allowances for the staffs: Overtime Allowance	9.6	Waste picker
(b)	Approval of Risk Allowances	9.7	Maintenance of civil works such as road, bank, car washing facility and office.
(c)	How to apply for risk allowances: Landfill Staffs	9.8	New Landfill acquisition and improvement of LF
(d)	Financial Support from office in case of injury/ sick	10	Privatization
5.2	Leaves	11	Introduce new technology

(5) Explanation of Administrative procedure in Seminars

Administrative procedure book was explained in the Field staff seminar. Also, detail explanation was done in each WMD separately by DCC high officials. Administrative procedure book covers not only SWM works but also benefit packages and their staffing for WMD officials. Based on the book, both WMDs are trying to fulfill the rules for better SWM.

3.5 Implementation of Training Programs

This activity includes the following activities mentioned in the PDM.

- 1-6: To formulate the trainings/seminars (WBA, TOT, PRA etc.) plan for WMD staff, PCSP, Community and others.
- 1-7: To hold trainings/ seminars based on 1-6

Various training programs have been organized, targeting CIs and COs, Road Cleaners and Drainage Cleaners, PCSP managers and workers, and CUWG members. Most of the training programs were developed in the previous project; however, C/P and the JET have been continuously reviewing and improving the contents and methods of the trainings.

Drainage Cleaner Workshops were newly introduced in the Project. The objectives of this training were similar to the Cleaners Workshop, but the training methods were completely modified. It was designed for a smaller number of participants (approx. 50). Methods of interactive discussions and group workshops were applied to encourage participatory approaches, in hopes that the participants would generate a better understanding of the importance of safety and sanitation and attitude towards citizen.

Since the C/Ps have been organizing the various types of trainings several times, some C/Ps developed their skills as good facilitators, and have become very proficient trainers. The number of trainers increased, by involving more C/Ps in the training implementation. Even after separation of DCC, they can organize trainings by using available human resources in each City Corporation.

A list of training programs organized in the Project is shown in Table 3.5-1. Outlines of the training programs are described below, except Cleaners Workshop, Drainage Cleaners Workshop and Drivers Workshop, of which the programs are explained in detail in Chapter 4.

WBA Training and Zone-Wise Training

DCC had already eighteen WBA target wards at the beginning of the project and there were many CIs who had knowledge and experience of WBA activities. Those CIs can perform WBA activities by themselves and train other CIs of new WBA target wards. Those CIs played key roles to design and implement the WBA Training.

The WBA training consists of not only lectures, but also visiting sites to understand WBA activities at the field level, by discussing with related people such as cleaners, PCSPs, community people as well as CIs and COs among themselves. For example, in the program of WBA Training organized in September 2011, the participants visited ward 84 (present ward 48 of DSCC) to understand community activity and environmental education through discussion

with CUWG members and PCSP. The participants also visited ward 36 (present ward 13 of DSCC) to observe compactor collection (WBA4), and the Office of Ward 45 (present ward 32 of DNCC) to recognize functions of ward office (WBA1) as well as activities for improvement of cleaners work by using safety gears and first aid box, and the Workers Manual (WBA2).

Zone-Wise Training was developed in order to promote the WBA implementation by strengthening the Zone level management and monitoring. The training program dealt with specific issues in each zone, in consideration of the available human resources and management capacity of the particular zone.

PRA Training

The project has been providing PRA Trainings to CIs and COs, who are expected to play central roles in WBA implementation, especially promotion of participatory community-based SWM (WBA 3). The training program was designed specially for WBA. It has been improved as practical as possible through the main project so that the participants could use the knowledge and skills obtained in the training for daily works of WBA. Contents of the program include the concept of participatory approach, facilitation skills, methods of PRA, field practice of PRA tools, reporting, etc.

PCSP Training

PCSPs collect waste from each household and bring them to containers or compactor collection points. Waste collection performed by PCSPs forms an important part of the waste collection system of DNCC and DSCC. Therefore it is important for both City Corporations to improve the performance of PCSPs. The main issues are the lack of awareness of hygiene and safety in their works, improvement of the effectiveness of the collection, as well as coordination among PCSPs, City Corporations and the community.

High officials of WMD including CWMOs, SEs and EE as well as field level staff such as CIs and COs, and members of JICA Expert Team conduct the sessions as trainers, and explained roles of PCSPs, City Corporations and the community, WBA activities, PCSP permission system, etc. Preparation of action plans is also included in the program, and the plans were implemented after the training.

CUWG Training

The project has been promoting community level participatory solid waste management (SWM), in order to involve community people in improvement of SWM.

In Dhaka City, there are no area-based community organizations established for specific areas, therefore the project encourages citizens to formulate Community Unit Working Group (CUWG), representing community to coordinate with WMD as well as with PCSPs. CUWGs are expected to formulate community action plans (CAP) and implement them in coordination with WMD. Through the approach, WMD successfully introduced fixed time station collection with compactors.

The contents of the training include overall municipal solid waste management, waste collection system, roles of community organizations, analysis of stakeholders, and CAP preparation and implementation. CIs conducted sessions in various ways such as lectures, discussions, DVD presentation and group works.

Training on Participatory Monitoring and Evaluation

The training was held in 2nd FY according to the demand of C/Ps. They realized the importance of monitoring and evaluation (M&E), to sustain and improve the activities of WBA. The program provided the concept of M&E, the methodology of development of a system of M&E as well as the concrete tools to conduct M&E by applying participatory approach. The program was designed carefully in order that the participants could apply what they learnt to the actual WBA activities immediately.

Project for Strengthening of Solid Waste Management in Dhaka City (Extension)
Project Completion Report

Table 3.5-1 Summary of Trainings & Workshops Organized in the Project

Training	Date of Training	Venue	Target Ward/Zone	Participants
WBA training	17-18 September, 2011	ITN- BUET	CIs: Wards 2&5, 22, 33, 36, 39, 40, 42, 44, 49, 50, 52, 53, 57, 58, 63, 75, 76, 84, 12, 14, 19, 34, COs: Zones 1, 2, 3, 4, 6, 7, 10	32
	3 October, 2012	JET meeting Room	COs: Zones 1, 2, 3, 4, 5, total 6 persons of DSCC CIs of Wards: 06, 10, 13, 16, 18, 19, 20, 21, 22, 27, 48 of DSCC	17
Zone-wise Training	27 September, 2011	Zone 5 office, DSCC	Wards 39, 40, 48 and 49, DSCC	15
	17 October, 2011	Zone 3 office, DSCC	Ward 27, DSCC	10
	27 September, 2011	Zone 5 office, DNCC	5 WBA wards (26, 27, 45, 29, 31) and CO of Zone 5, DNCC	15
	18 October, 2011	Zone 4 office, DNCC	2 WBA wards (9, 14) and CO of Zone 4, DNCC	15
	12 February, 2012	Caritash, Mipur	CO and CIs of Zone 2, 4, 5, DNCC	35
Participatory Rural Appraisal (PRA) Training	8-12 October, 2011	ITN- BUET	20 COs and CIs in total CIs: Wards 14, 73, 74, 34, 44, 5&2, 9, 19, 22, 45, 50, 52, 53, 65, 84 COs: Zones 3 & 7 Observers: CIs of wards 33, 36, CO of Zone 2 and JOCVs	20
PCSP Training	23 October, 2011	DAM	WBA target wards (Wards 2, 9, 14, 42, 50, 39, 40, 44, 45, 52)	PCSPs' managers & workers: 38
	26 October, 2011	CARITAS at Malibagh	WBA target wards (Wards 63, 69, 34, 76, 75, 84, 69, 33, 34, 36, 49, 22, 53)	PCSPs' managers & workers: 35
	8 October, 2012	PANSHI at Dhanmondi	Zones 2 and 5, DNCC	PCSPs' managers & workers: around 30
	9 October, 2012	CARITAS at Malibagh	WBA target wards of all zones, DSCC	PCSPs' managers & workers: around 30
	17 October, 2012	PANSHI at Dhanmondi	Zones 1, 3 and 4, DNCC	PCSPs' managers & workers: around 30
CUWG Training	10 March, 2012	CARITAS at Mirpur	Wards 2, 9, 14, DNCC	CUWG members: around 50
	29 September, 2012	CARITAS at Malibagh	Wards 48 and 49, DSCC	CUWG members: around 40
Cleaners Workshop	1 March, 2012	Shaid Saidur Rahman neutron Community Centre	Wards 2, 3, 4, 13 and 15 of DNCC	Cleaners of 5 wards: around 300
	17 December, 2012	Basabo Community Centre	Wards 1, 2, 3, 4, 5 of DSCC	Cleaners of 5 wards: around 300
Drain Cleaner Workshop	21 November, 2011	CARITAS at Malibagh	Zone 2, DSCC	Drain Cleaners: 47
	12 February, 2012	CARITAS at Malibagh	Zone 4, DSCC	Drain Cleaners: 47
	27 February, 2012	CARITAS at Mirpur	Zone 2, DNCC	Drain Cleaners: 50
	28 February, 2012	CARITAS at Mirpur	Zone 4, DNCC	Drain Cleaners: 50
	7 June, 2012	CARITAS at Malibagh	Zone 5, DSCC	Drain Cleaners: 38
	12 June, 2012	CARITAS at Mirpur	Zone 5, DNCC	Drain Cleaners: 69

Training	Date of Training	Venue	Target Ward/Zone	Participants
	9 September, 2012	CARITAS at Malibagh	Zone 3, DSCC	Drain Cleaners: 50
Drivers Workshop	4 December 2012	Anand, Mohakhali	All EGAP drivers, WMD and Transport related person of DNCC	80
	6 December 2012	Xindian, Dhanmondi	All EGAP drivers, WMD and Transport related person of DNCC	60
Training on Participatory Monitoring & Evaluation	10-14 November, 2012	Institute of Microfinance, Lalmatia, Dhaka	COs and CIs	16

3.6 WBA monitoring council

This activity includes the following activities mentioned in the PDM.

- 1-8: To discuss on establishing proper external monitoring system for SWM activities
- 1-9: To implement monitoring based on 1-8

Formation of WBA Monitoring Council is proposed to sustain the WBA activities. Since there is significant staff deficit in the Zone offices and WMD HQs, CIs and COs face difficulties (uneasiness) to communicate and convey the real issues continuously to the high officials. Aiming to overcome such crisis WBA Monitoring Council can be formed to make bridges with related stakeholders of WBA among community, PCSP and different levels of officials.

The composition of WBA monitoring council can be 2 to 3 outside resource persons similar to the specialists invited in WMD Directive Seminars.

It is thus suggested that WBA monitoring systems should be improved and continued by introducing a WBA monitoring council in the following manner:

- ① Zone COs can identify ward level SWM problems through WBA reports.
- ② The WBA monitoring council should be organized to support WBA activities. The members should consist of professors, a manager of a private company, citizens, and journalists.
- ③ WBA monitoring council meeting should be held several times a year to discuss WBA good practices, desired results and support systems. The secretaries are WBA core group members and organization is under way.

The WBA manual describes the “WBA monitoring sheet and system”. The first trial of WBA monitoring system was run by CIs in wards 33, 3658, 63, and 69, using ward offices. They were organizing a “Ward office users’ association” and discussed the reporting system, but the system was not continued.

In September of 2011, DCC issued an official order on “WBA Reporting System” and all CIs were required to report daily SWM data to the Zone office. Every new ward can learn WBA activities from other experienced wards based on SWM data like this. WBA expansion can also proceed easily through the use of WBA data.

Through zone wise meetings with the participation of CIs and COs, CWMO of DSCC reintroduced WBA monitoring/reporting system from first December 2012. Based on the proposal of CIs and COs, project formulated monthly monitoring book (combining daily monitoring sheets of a month) and handed over to CWMO of south. CWMO south distributed

them through organizing series of zone level meetings. The similar process continued in DNCC from 1st January 2012.

3.7 Analysis on Waste Collection Amount

This activity includes the following activities mentioned in the PDM.

- 1-4: To confirm present situation of collecting and analyzing weighbridge data
- 1-5: To improve the collection and analysis based on 1-4

(1) Problem on weighing by weighbridges

Collection and analysis of waste amount measured by the weighbridge at both landfill sites have been continuously conducted in the Project. Ratio of vehicles measured by the weighbridges in each landfill site is shown in Figure below. The ratios are calculated that the number of total measured vehicles is divided by one of total vehicles transported the wastes to each landfill site (Matuail LF: 450 vehicles, Amin Bazar LF: 245 vehicles) in accordance with waste amount survey in September 2012. The ratio in Matuail LF is 90% (total 405 vehicles), as of February 2013. Most of vehicles had measured their hauled waste amounts in Matuail LF before July 2011. However, weighbridges in the landfill had been out of order from August 2011 to July 2012, and then the work discipline has been disappeared. With strong instruction to drivers from CWMO and C/P as well as re-arrangement of access from the entrance to the dumping station in the LF, DSCC solved this problem, dramatically.

On the other hand, the ratio in Amin Bazar LF are only 13% (total 31 vehicles), as of November 2012. The problem is still not solved. Main reason of this problem is that the drivers refuse to measure the amount by the weighbridges. In addition, the other reasons are that DNCC authority has not strongly instructed the drivers to pass through weighbridge and that permanent staffing of the Amin Bazar landfill is not yet completed.

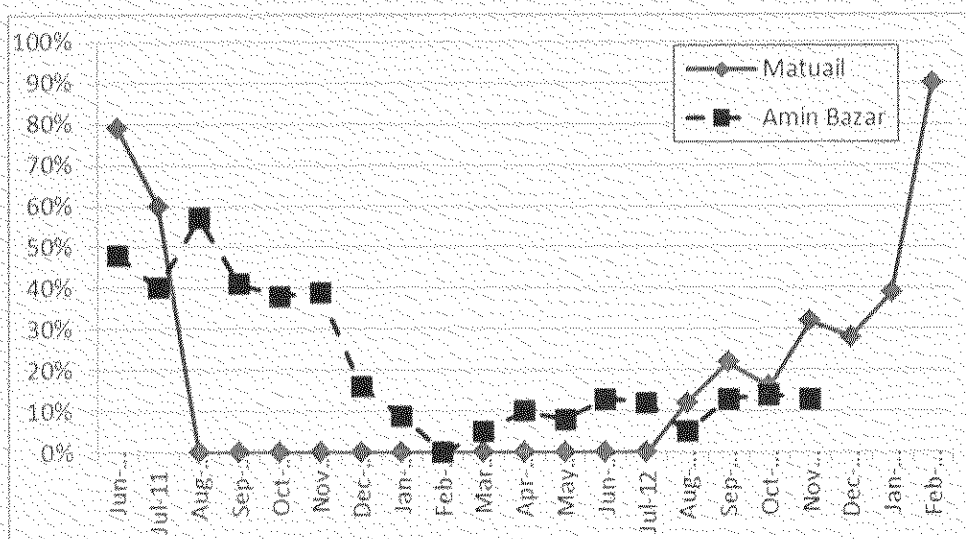


Figure 3.7-1 Ration of vehicles measured by the weighbridges in each landfill site

(2) Record of Waste amount and No. of Trips

JET and DCC have jointly conducted waste amount surveys from 2010 to determine the

waste amount transported to landfills, because the amount has not been measured by the weighbridges. The record of waste amount and the number of trips are shown in Figure below.

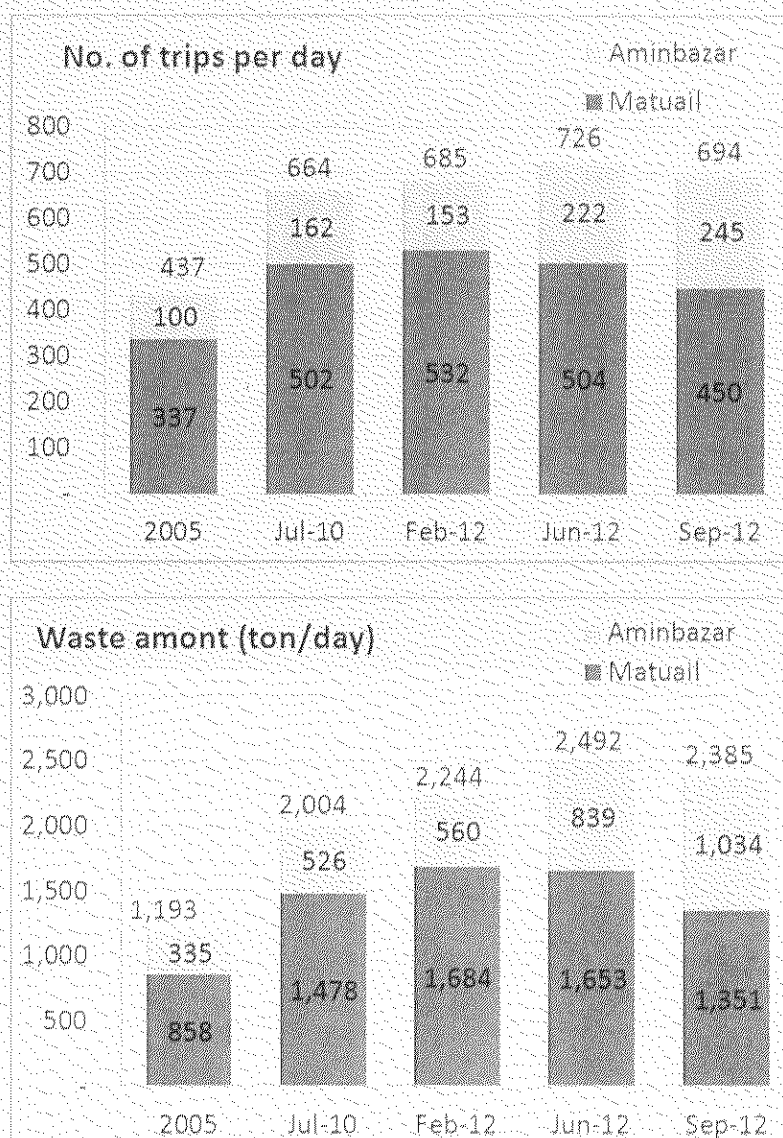


Figure 3.7-2 Record of Waste amount and No. of Trips (Same as Figure 2.1-1)

Past records on the number of the existing, retired, and procured waste collection vehicles are shown in the table below. One hundred waste collection vehicles were provided from the Japanese Government through EGAP. In 2011, 50 deteriorated waste collection vehicles, 32 open trucks, and 26 container carriers were retired. For the DCC to retire these vehicles in line with official procedures is a significant outcome, since these vehicles are usually the source of vested interest for the drivers. In comparison with the waste amount in February, June and September 2012, trip numbers and waste amounts demonstrate an upward trend in spite of no newly procured vehicles. The latest survey, September 2012, reveals that 2,388 ton of wastes were collected and transported to landfill sites.

Waste amount transported to Amin Bazar LF has increased gradually since February 2012. After the splitting-up of DCC in December 2011, DNCC and DSCC have managed Amin Bazar LF and Matuail LF, respectively. DNCC has ordered their collection vehicles to transport the wastes to Amin Bazar LF regardless of the transportation distance.

Table 3.7-1 Past records on the number of existing, retired, and procured waste collection vehicles (Same as Table 2.1-1)

	2010	2011	2012
Existing vehicles			
Open Truck	198	203	171
Container Carrier	130	175	149
Arm Roll	0	20	20
Compactor	0	40	40
Subtotal	328	438	380
Procured vehicles			
Open Truck	5	0	20
Container Carrier	45	0	0
Arm Roll	20	0	0
Compactor	40	0	0
Subtotal	105	0	0
Retired vehicles			
Open Truck	0	32	0
Container Carrier	0	26	27
Arm Roll	0	0	0
Compactor	0	0	0
Subtotal	0	58	27

Source: Record from DSCC and DNCC

(3) Performance of each type of vehicle

Based on data collected by the weighbridge, the average load of waste amount for each vehicle type is shown in Table below. 5ton compactor and private consigning 5ton open truck are usually overloading. The private consigning trucks are apt to collect wastes more than their capacities due to remuneration system depending on the collected waste weight. Besides the 5ton compactors are also apt to overload due to advance compaction system of the hopper.

Table 3.7-2 Average waste amount per trip for different types of Collection vehicles

Type	Capacity (Ton)	Loading Waste Amount (ton/trip)	Source
Open Truck (Private)	5	7	Amin Bazar weighbridge Data (2012); provided by DNCC
Open Truck	3	2.98	Matuail Weighbridge Data (June 2010)
Open Truck	5	3.92	Matuail Weighbridge Data (June 2010)
Compactor	2	2.33	Matuail Weighbridge Data (January – August 2011)
Compactor	5	6.30	Matuail Weighbridge Data (January – August 2011)
Arm Roll	7	5.07	Matuail Weighbridge Data (April-July 2011)
Container Carrier	3	2.52	Matuail Weighbridge Data (June 2010)

Type	Capacity (Ton)	Loading Waste Amount (ton/trip)	Source
Container Carrier	5	3.57	Matuail Weighbridge Data (June 2010)
Container Carrier-CNG	3	2.36	Matuail Weighbridge Data (April-July 2011)
Container Carrier-CNG	5	4.50	Matuail Weighbridge Data (April-July 2011)

The number of vehicles and trips per each vehicle type and waste amount transported to landfill sites are shown Table below. Out of 380 collection vehicles owned by both DCCs, however ratio of the open truck is 45% (171 units), and the vehicles collected only 23% (480 ton/day) of total waste amount (2,105 ton/day) collected by the DCCs' own vehicles. The number of compactors is 40 units (11%), and the vehicles collected 250 ton/day (12%). Both vehicle types contribute less to waste collection service than the other vehicles due to smaller capacity and due to lower trip numbers because of long loading work time and daytime operation.

On the other hand, container could collect 1,047ton/day (50%) of wastes despite 39% (149 units) of the total number. Furthermore, arm roll reveals significant efficiency that the vehicle could collect 328 ton/day (16%) despite the number is 20 units (5%). Comparing with compactor, arm roll collect more wastes despite representing half the number due to bigger capacity and more trip.

Table 3.7-3 Number of the vehicles, the trips and collected waste amount in each vehicle

Owner	Type	Capacity (ton)	No. of vehicles		Trip per vehicle		Waste amount (ton/day)	
DCCs	Open Truck	1.5 ton	62	171 (45%)	1.42	1.20	158	480 (23%)
		3 ton	92		1.09		260	
		5 ton	17		1.06		61	
	Compactor	2 ton	15	40 (11%)	1.13	1.30	40	250 (12%)
		5 ton	25		1.40		210	
	Container Carrier - CNG	3 ton	15	149 (39%)	3.53	2.21	132	1047 (50%)
		5 ton	30		2.67		285	
	Container Carrier	3 ton	67		1.03		173	
		5 ton	37		3.46		456	
	Arm Roll	7 ton	20 (5%)		3.10		328 (16%)	
Sub-total			380 (100%)		-		2,105 (100%)	
Private company	Open truck		12		3.08		258	
Others			-		-		23	
Total			392		-		2,385	

Source: Waste Amount Survey in September 2012

3.8 Final Disposal

This activity includes the following activities mentioned in the PDM.

1-13: To monitor the activities of Output 4 (Landfill Management) of the PDM 3(by DCC)

(1) Current Landfill operation

After the division of DCC, DNCC was given the Amin Bazar Landfill and DSCC the Matuail Landfill. Before the split, both landfills were under the supervision of the LMU.

1) Outline of Landfill

Matuail landfill was constructed through the finance of the JDCF. The Amin Bazar landfill was also designed as a sanitary landfill and was constructed with the same fund. Both landfills have surrounding embankments and solid waste is filled inside the embankment. Currently, waste dumping and construction work are taking place simultaneously at Amin Bazar Landfill.

2) Operating hours

Both landfills accept wastes from different wards at any time of the day. Therefore, the weighbridge must run constantly. But the percentage of number of vehicles passing through weighbridge is not satisfactory at all. In the case of heavy equipment at Matuail, the operators operate them from 7AM to 3PM for 8 hours officially. The operators at Amin Bazar operate from 8AM to 4PM for 8 hours officially. However, there are some exceptions as the waste amount and weather is changing from time to time.

3) Number of staff and equipment

Necessary staff for the LMU was temporarily arranged at the Matuail landfill to operate the landfill appropriately. However, required staff– someone in charge of management in particular have not yet been fully posted according to the WMD organogram. Recently some persons are recruited to WMD, so the numbers of vacancies have decreased. For Amin Bazar, although an EE was appointed, WMD HQ is taking necessary steps for allocation of the other staff posts. Hopefully by FY 2012-13, Amin Bazar will have adequate permanent landfill staff and operations will continue more smoothly. Currently Amin Bazar have some temporary manpower that has no idea about landfill operation. All experienced landfill persons belong to Matuail landfill.

The number of landfill unit members working at each landfill site is provided in Table 3.8-1.

Table 3.8-1 Present Number and Necessary Number of Landfill Staffs

Posts	Matuail Landfill		Amin Bazar Landfill	
	Actual Number	Existing Number	Actual Number	Existing Number
Executive Engineer (Disposal)	1	1	1	1
UDA cum Accountant	1	1	1	0
LDA cum Computer operator	1	0	1	0
M.L.S.S.	1	1	1	0
Assistant Engineer	1	1	1	0
Sub Assistant Engineer (Civil)	2	2	2	0
Sub Assistant Engineer (Electrical)	1	1	1	0
Sub Assistant Engineer (Mechanical)	1	1	1	0
LDA cum Computer operator	6	0 (6)	6	0 (2)
Waste Management Inspector	3	0 (3)	3	0 (2)
Assistant Store Keeper	1	0	1	0
Assistant Mechanic	1	0	1	0
Machine Operator	9	5	9	8
Pump Operator	2	2	2	0
Electrician	2	2	2	0
Helper	9	3	9	4
M.L.S.S.	1	1	1	0
Total	43	21	43	14

Source: WMD, Disposal wing, DSCC/DNCC; December 22, 2012; at bracket temporary people are indicated

Currently, Matuail landfill site is equipped with a sufficient number of heavy machinery. But Amin Bazar is still lacking in heavy equipment. DNCC has already processed a tender for the procurement of heavy equipments for Amin Bazar. Heavy Equipment Workshops do not have sufficient expertise to repair and maintain the landfill machineries. So DNCC engaged some heavy equipment for 1 month in Amin Bazar to dress the wastes quickly. Heavy equipment present at each landfill site are provided at Table 3.8-2.

Table 3.8-2 Present Allocation of Landfill Equipment

Matuail:

Equipment	Number	Owner	Working time	Weekly Working days
Bulldozer	2	Mechanical Division	8 hours	7 days

Equipment	Number	Owner	Working time	Weekly Working days
Excavator	3	Mechanical Division	8 hours	7 days
Wheel Dozer	1	Mechanical Division	9 hours	7 days

Amin Bazar:

Equipment	Number	Owner	Working time	Weekly Working days
Wheel Dozer	1	Mechanical Division	8 hours	7 days
Excavator	2	Mechanical Division	10 hours	7 days

Source: WMD, Disposal wing, DSCC/DNCC, December 15, 2012

(2) Operational Budget in 2012-13:

This fiscal year, both DNCC and DSCC have approved budgets for the maintenance of the landfills. The details of the budgets and expenditures for 2012-13 are provided in table 3.8-3.

Table 3.8-3 Operational Budget of the landfills at 2012-13

Total Budget of Matuail Landfill	7,50,00,000 BDT
Construction of Temporary Road, Temporary Platform, RCC Road, Final Soil Cover and other Maintenance Works at Matuail Landfill.	1,53,77,399 BDT
Construction of Connecting Road, Drain & Footpath from Dhaka - Demra Road to Matuail Landfill	1,80,97,043 BDT
Construction of R.C.C Road & Repairing work at Matuail (Extension) Landfill.	1,99,85,040 BDT
Installation of Leachate Collection pipe, Gas Vent pipe, 20 units diffuser, Temporary Plat form at Matuail (Extension) Landfill	2,15,40,518 BDT
Remaining budget	0 BDT

Total Budget of Amin Bazar Landfill	1,50,00,000 BDT
Repair and maintenance of the periphery road of the landfill	50,00,000 BDT
Remaining budget	1,00,00,000 BDT

(3) Progress of the Operation

At the Matuail landfill, operation is continuing daily and the features are:

- Dumping operations taking place at the top of old landfill area.
- Repairing work of the south platform & connecting roads at the existing landfill site are complete.
- Soil cover over the old wastes will begin from January 2013.
- Car washing facilities are running 24 hours.
- Adequate leachate treatment is taking place including chemical dosing by JICA financing.
- Heavy equipment support is normal.
- Making of the new platforms and RCC road at whole periphery of the Matuail Extension area will be done by this fiscal year.
- DSCC started to procure the chemicals for the operation of leachate treatment plant.

At the Amin Bazar landfill, the features of regular operation are:

- Construction work of sanitary landfills is complete.
- Soil cover & some RCC road construction almost complete.
- Wastes are dumped in an unorganized manner.
- Temporary arrangement for weigh bridge operation.
- Vehicle washing facilities are set up

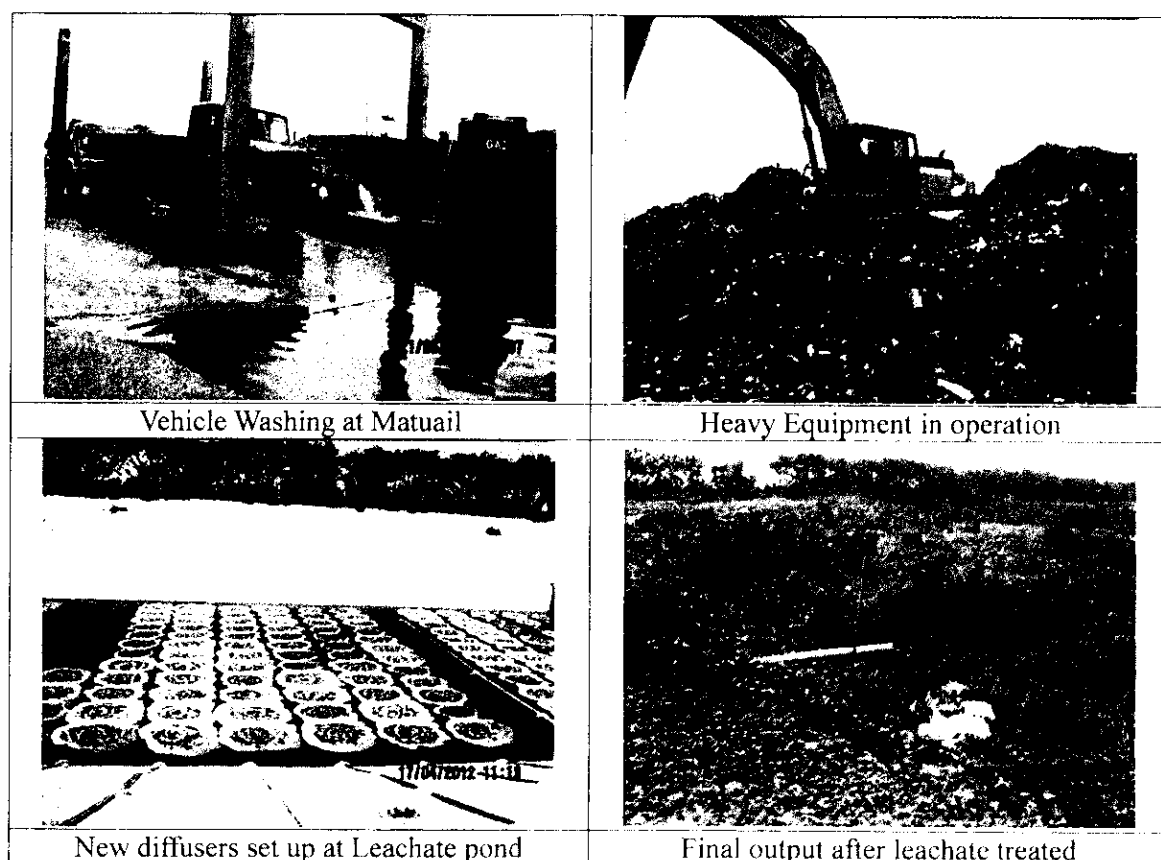


Figure 3.8-1 Recent Features of Matuail Operation

(4) Issues of both Landfills

At Matuail the issues that are creating obstacles for proper operations are:

- The weighbridge cannot be operated for the vehicles in full phase. Manual records of the vehicles are being taken.
- Staffing for all posts is not yet complete. Many posts are fulfilled by temporary workers and they are not feeling happy to work for landfill as the job is not permanent.

Issues handled by the Amin Bazar Landfill site are:

- Landfill staffing is yet to be completed. Stagnant water/leachate is a serious threat for the embankment. Low cost leachate treatment must be constructed on-site immediately.
- Heavy equipment support is not satisfactory.
- Leachate pipe is not working properly.
- Due to absence of gas vent pipes, fire and smoke are observed in several occasions.
- Due to unavailability of vehicles of Executive Engineers, proper supervision is hampered.
- Eventually the drivers dump waste as they want; occasionally beside the leachate pond, and sometimes beside the embankment. Thus the surrounding landfill is under serious threat of leachate contamination.
- Embankment of periphery is broken at few locations.

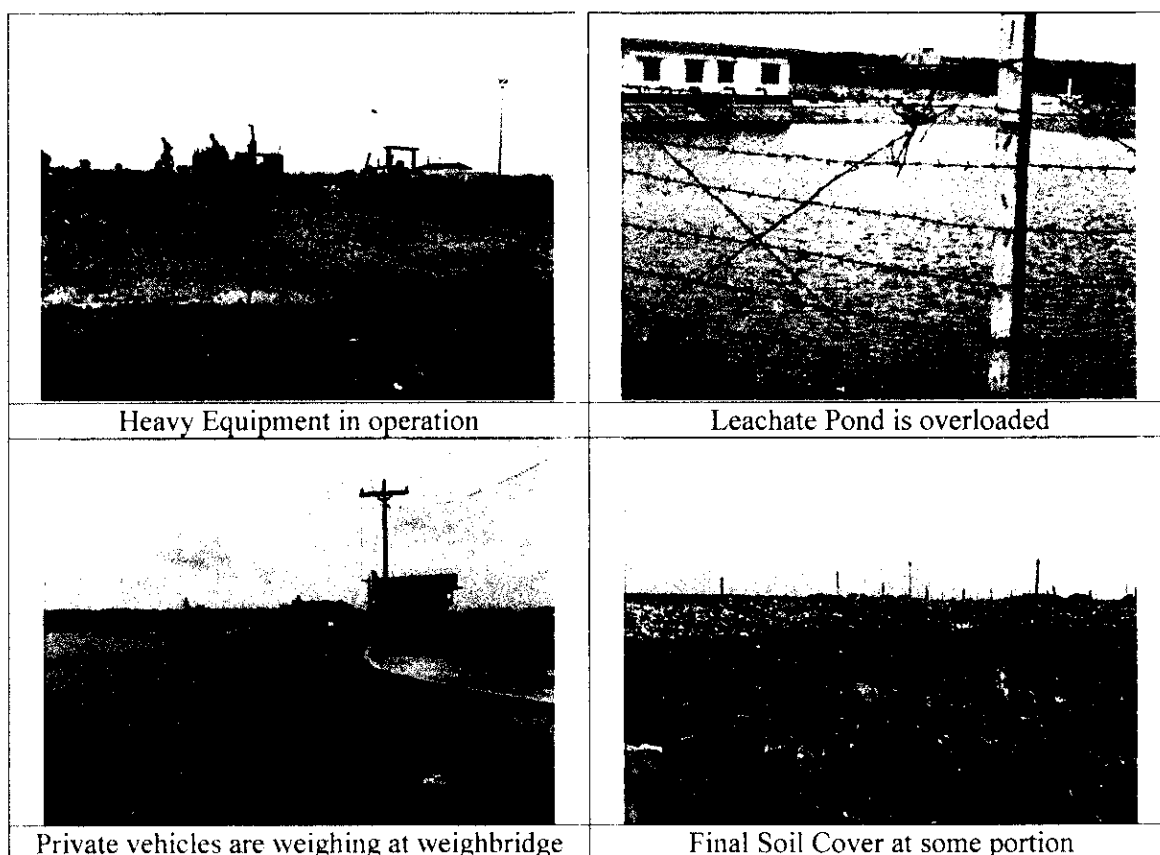


Figure 3.8-2 Recent Features of Amin Bazar Operation

(5) Introducing new leachate treatment facility and operation

A Leachate Treatment Facility was set up at Matuail through funding from JICA in March 2012. After completion of the civil works, the company began operation in May.

1) Treatment System

Raw leachate is released into Pond 1, where an anaerobic pond and anaerobic bacteria are cultured. The bacteria are fed cow dung and urea fertilizer daily. The treated leachate is transferred through pumps to a primary clarifier. At this point some chemicals (Polymer, Ferrous Sulfate, and Lime) are added with purified water. The leachate is then transferred to Pond 2 (an aerobic unit using 24 hour aeration) to keep the aerobic bacteria alive. The leachate is again transferred to a secondary clarifier and the treated leachate is discharged to a sump. The total flow of leachate treatment is shown here at Figure 3.8.3.

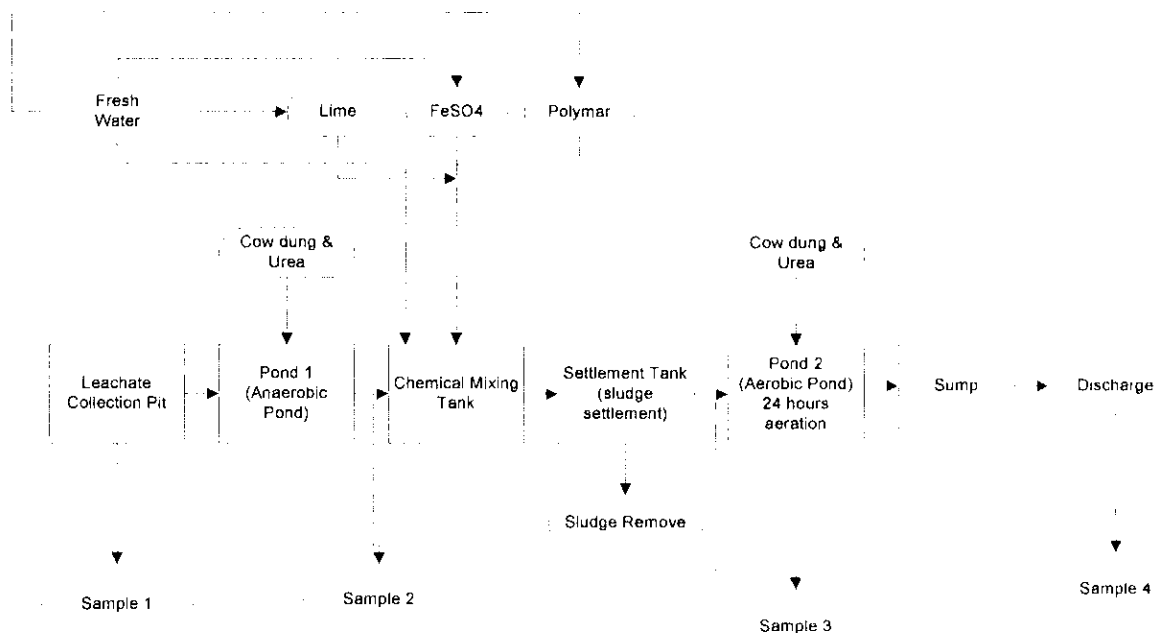


Figure 3.8-3 Recent Basic Flow of Leachate at the Treatment Plant

Results of water quality tests are shown in table below. LMU with support from contractor had studied the operation method and finally the treated waste was satisfied with target quality.

Table 3.8-4 Summary of the results of Leachate treatment

	31- July				25- Aug	18-Oct	
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 4	Sample 4	
Parameters	Raw Leachate / Inlet of anaerobic pond	Anaerobic pond	After Chemical Mixing / inlet of Aerobic Pond	Treated water	Treated water	Treated water	Target Quality
PH	7.23	8.01	8.58	7.72	7.84	7.4	5.5 - 9.0
COD	11830	3264	819	576	295	116	250
BOD5	5800	1440	360	48	24	12	30
TSS	3051	225	59	42	40	25	100

DSCC nominated 4 persons who were trained by the company on the leachate treatment. Now DSCC is trying to operate the plant by this manpower. DSCC already submitted

the budget to buy regular chemicals for the operation of the plant.

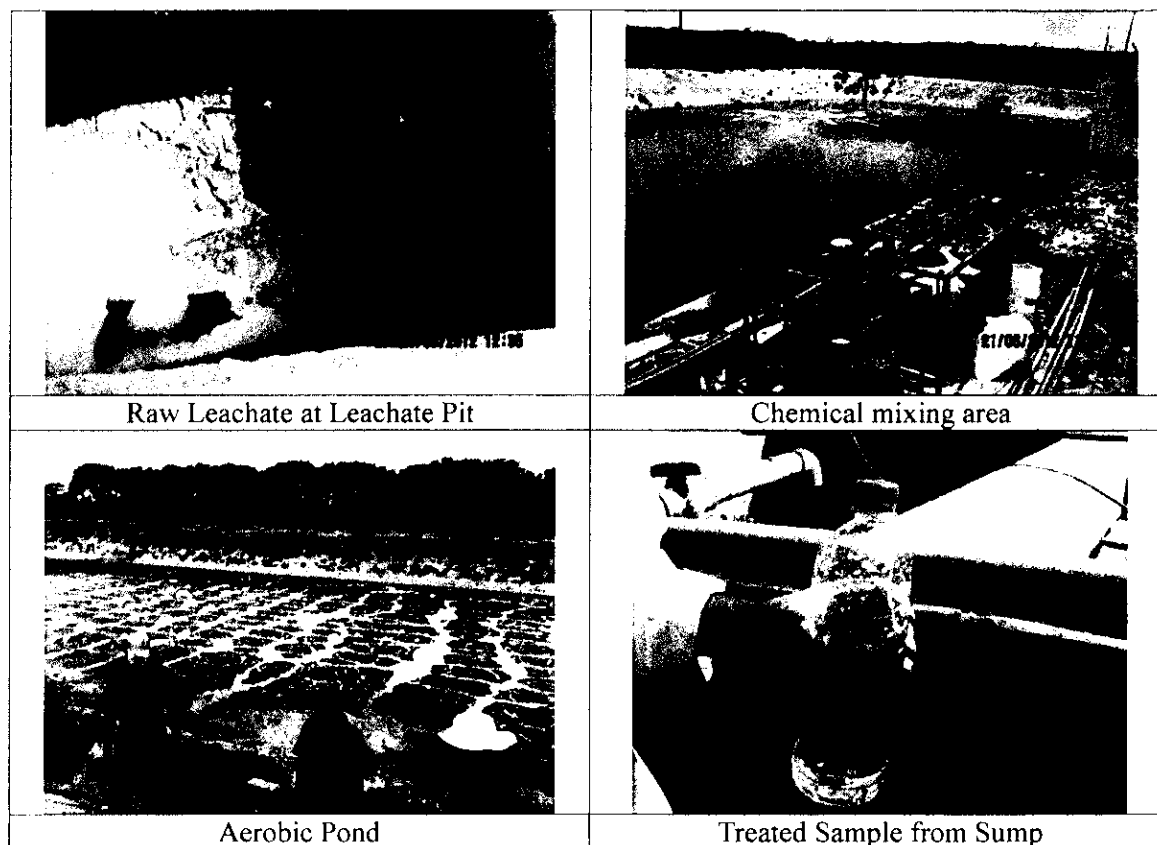


Figure 3.8-4 Some steps of Leachate Treatment

(6) Issues for Proper Operation

One important issue for proper operation is reliable 24 hour energy supply. The DSCC is trying their best to provide a secure electricity supply with the help of generators. For aerobic bacteria, even a small shortage of electricity can create problems. These shortages occasionally result in dead bacteria. This creates significant time loss to nurture and recover the bacteria. DSCC needs to consider using a separate automatic generator for future operations.

However treated waste was satisfied the standard, DSCC could not discharge the waste due to red-ish color caused by the added chemical (Ferrous Sulfate). Activated carbon adsorption equipment was equipped at the facility for mitigating the color. A post treatment plant is needed to be installed to create transparent water. Also a separator generator should be installed to ensure the uninterrupted service.

(7) Future landfill site

1) Remaining capacity and life span of Sanitary landfill (LF)

- Existing Matuail LF
 Remaining capacity of the existing Matuail LF is about 480,000m³ in which the volume of disposal waste is about 410,000m³, and the volume of daily and final soil cover is about 70,000m³.
 Therefore, the lifespan of the existing Matuail LF is about 5 months.
- Extension Matuail LF
 Remaining capacity of the extension Matuail LF is about 2,469,000m³ in which the

volume of disposal waste is about 2,189,000m³ and the volume of daily and final soil cover is about 280,000m³.

Therefore, the lifespan of the extension Matuail LF is about 2 years and 7 months.

- **Amin Bazar LF**

Remaining capacity of Amin Bazar LF is about 2,117,000m³ in which the volume of disposal waste is about 1,857,000m³, and the volume of daily and final soil cover is about 260,000m³.

Therefore, the lifespan of Amin Bazar LF is about 5 years and 6 months.

Table 3.8-5 Remaining capacity and life span of Existing LF

(As of Dec. 2012)

	Remaining Capacity			Life span
	Waste	Soil cover	Total	
Existing Matuail LF	410,000m ³	70,000m ³	480,000m ³	5months
Extension Matuail LF	2,189,000m ³	280,000m ³	2,469,000m ³	2years and 7months
Amin Bazar LF	1,857,000m ³	260,000m ³	2,117,000m ³	5years and 6months

2)Future Plan of Sanitary LF

- **Existing Matuail LF**

The existing Matuail LF will be completed by May, 2013. After completion, a survey for landfill gas (LFG) will be implemented. If LFG can be used as fuel, it is desirable to collect and utilize LFG effectively. If LFG cannot be used as fuel, it is desirable to prepare a plan for safety closure and reuse.

- **Extension Matuail LF**

The extension Matuail LF started to operate from June, 2011 which will continue up to December 2015. It means DSCC needs to prepare a new landfill and to start its operation from January, 2016. Therefore, it is necessary that DSCC starts the preparation from January, 2012 considering necessary periods for land acquisition (0.5 year), surveys (topographic survey, geological survey, EIA, etc.: 0.5 years in total), design (1 year) and construction (2 years).

- **Amin Bazar LF**

Amin Bazar LF will be completed by June, 2018. It means DNCC needs to prepare a new landfill and to start its operation from July, 2018. Therefore, it is necessary that DCC starts the preparation from July, 2014 considering necessary periods for land acquisition (0.5 year), surveys (topographic survey, geological survey, EIA, etc.: 0.5 years in total), design (1 year) and construction (2 years)

The future Landfill plan of Matuail is already one year late.

Therefore, DSCC has to examine countermeasure such as piling up the waste height of the existing disposal ground higher than the original waste filling plan. At present, DSCC is preparing DPP (Draft Project Plan) to apply to LGD to prepare sites for new landfills adjacent to Matuail Extension. This DPP will be submitted in January 2013.

In parallel, due to scarcity of land inside Dhaka, DNCC and DSCC also started to consider developing a regional landfill site about 50 kilometers from central Dhaka.

By setting up this kind of regional landfill, the cost of waste transportation can be decreased. At that time, the existing landfills (Matuail and Amin Bazar) can be used as transfer station and composting can be done inside these sites. This proposal now is being discussed within LGD as well.

This plan will cover the small puroshovas nearby Dhaka as well. They can use this

landfill directly as this will be adjacent to them. Separate segregation spots will be created inside the landfill for them.

This will be a comprehensive landfill which will collect the segregated wastes from Transfer Station.

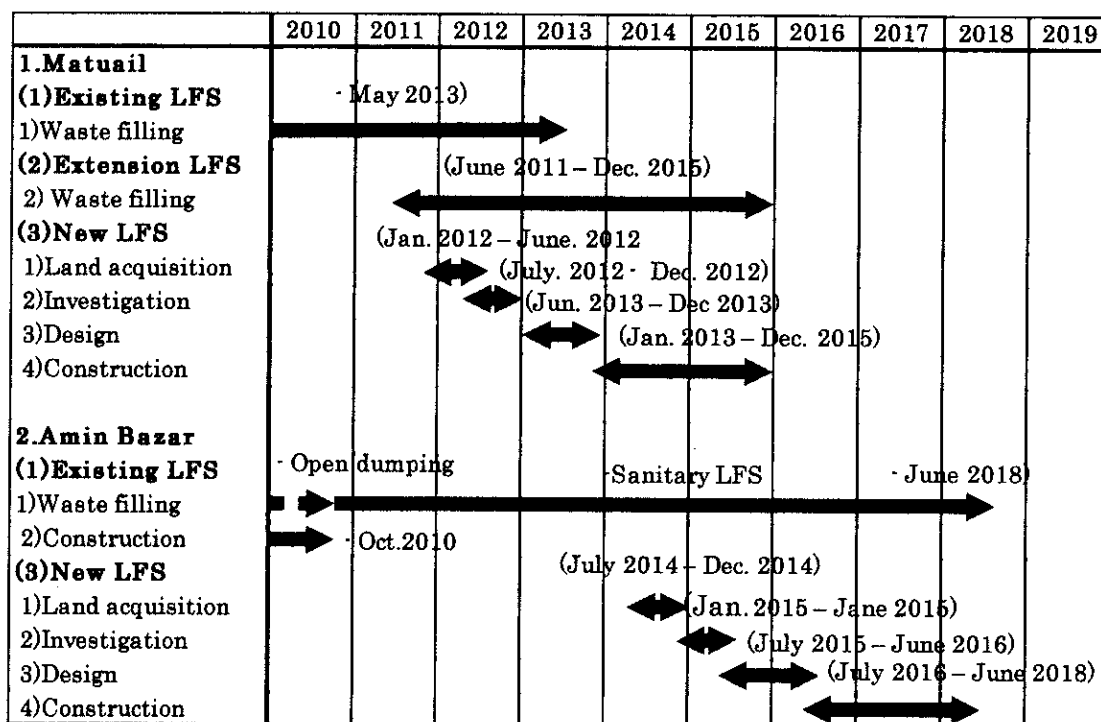


Figure 3.8-5 Future plan of Sanitary landfill site

3) Heavy equipment

- **Matuail (Existing and Extension) LF**

In the Matuail LF (Existing and Extension), there are 2 units of bulldozer, 3 units of excavator, 2 units of wheel dozer. Table 3.8-6 shows the renewal time of the heavy equipment (1 unit of bulldozer: by 2021, 1 unit of bulldozer: by 2022, 3 units of excavator: by 2018 and 1 unit of Wheel dozer: by 2021). Only the Wheel dozer for standby should be renewed urgently because its service life span is over.

- **Amin Bazar LF**

In Amin Bazar LF, there are 2 unit of bulldozers (both are out of order), 3 unit of excavators (1 is out of order), 2 units of Wheel dozers (1 unit is standby). Table 3.8-6 shows the renewal time of the heavy equipment. (2 units of bulldozer: by 2021, 3 units of excavator: by 2017 and 1 unit of Wheel dozer: by 2021). Only the wheel dozer should be renewed urgently because the service life span of them is over.

Mechanical Division is managing the heavy equipment for landfill operation. However, the equipment break down is very frequent because their maintenance is poor. In addition, they did not provide enough fuel some times. So it is very difficult to continue landfill operation with heavy equipment support from Mechanical Division.

Therefore, it is necessary to examine opportunity for the outsourcing of the operation of the heavy equipment in the future. In this year, Mechanical Division, DNCC has a plan

to purchase 2 units of heavy equipment. In addition, WMD engineering wing of DNCC and DSCC both are considering purchasing their own heavy equipment. In case of repair and maintenance, they want to have some fixed contract

Table 3.8-6 List of heavy equipment for landfill operation

Matuail landfill

Type	Capacity	Purchase year	Budget from	Service life	Renewal time	Remarks
①Bulldozer	Komatsu D65-EX W=19t	2009	JDCF	12.0year	2021	Working at MT
②Bulldozer	Komatsu D85-EX W=28t	2010	DCC	12.0year	2022	Working at MT
①Excavator	CAT 345-G	2010	DCC	8.5year	2018	Working at MT
②Excavator	CAT 345-G	2010	DCC	8.5year	2018	Working at MT
③Excavator	CAT 345-G	2010	DCC	8.5year	2018	Working at MT
①Wheel Dozer	Komatsu WD420 W=20t	2010	DCC	11.5year	2021	Working at MT
②Wheel Dozer	CAT-814	1980	DCC	11.5year	Urgent	Working at MT

Amin Bazar landfill

Type	Capacity	Purchase year	Budget from	Service life	Renewal time	Remarks
①Bulldozer	Komatsu D65-EX W=19t	2009	JDCF	12.0year	2021	Out of order
②Bulldozer	Komatsu D65-EX W=19t	2009	JDCF	12.0year	2021	Out of order
①Excavator	Komatsu PC-300 V=1.4m ³	2009	JDCF	8.5year	2017	Out of order
②Excavator	Komatsu PC-300 V=1.4m ³	2009	JDCF	8.5year	2017	Working at AB
③Excavator	Komatsu PC-300 V=1.4m ³	2009	JDCF	8.5year	2017	Working at AB
①Wheel Dozer	Komatsu WD420 W=20t	2010	DCC	11.5year	2021	Working at AB
②Wheel Dozer	China ZL-50	1997	DCC	11.5year	Urgent	Stand by

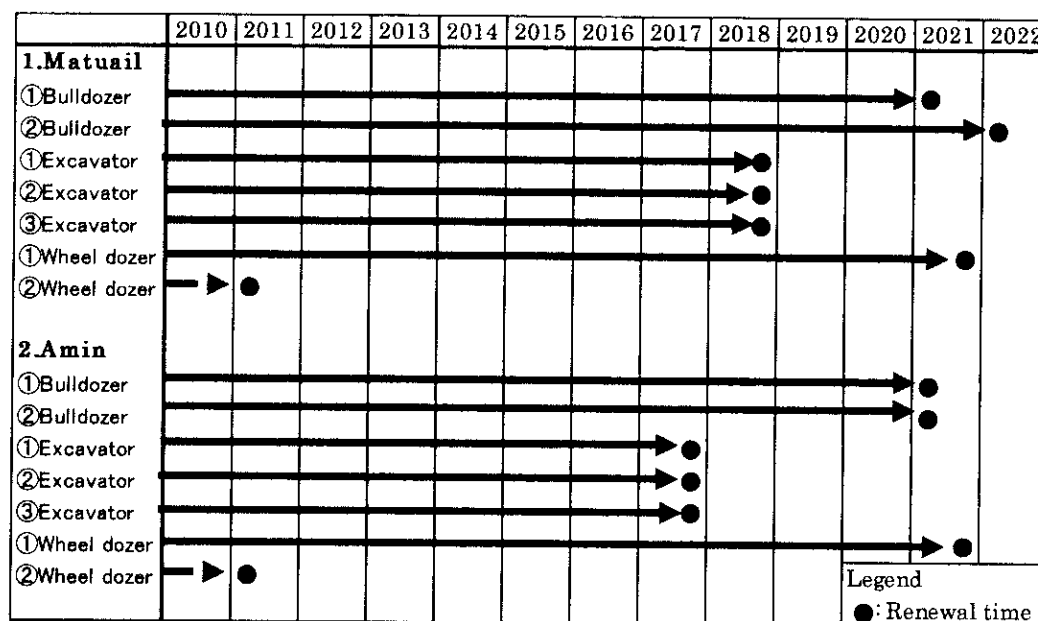


Figure 3.8-6 Purchase plan of heavy equipment for landfill operation

3.9 Financial Assessment

This activity includes the following activities mentioned in the PDM.

1-14: To monitor the activities of Output 5 (financial management) of the PDM 3 (by DCC)

The Financial Management Group (FMG) focused primarily on the following 2 activities: 1) collection and compilation of actual SWM costs of FY 2011/12, and 2) formulation of assessment tools for WMD budgeting. The so-called “bottom-up” budgeting request, done for WMD’s FY 2011/12 budget for the first time, could not be used for the FY 2012/13 budget because of DCC’s split in December 2012, as well as the dissolution of WMD budget committees.

The respective activities are described below.

(1) Actual SWM Cost of FY 2011/12

The SWM cost of DCC has been collected and compiled since FY 2006/07 by FMG in cooperation with the SWM related departments and sections of DCC. The cost is classified into the following categories and sectors as shown in Table-3.9-1, and the detailed data is stored in the WMD PC server giving access to all staff.

Table 3.9-1 Actual SWM Cost Classification

Categories	Sectors
Department-wise	1) WMD, 2) Transport Dept., 3) Mechanical Div.-1, and 4) Mechanical Div.-2
Operation-wise	1) Road Cleaning, 2) Drain Cleaning, 3) Collection and Transport, and 4) Disposal

Table 3.9-2 summarizes the history of integrated actual SWM costs and revenue of DCC from FY 2006/07 up until FY 2011/12. However, it must be carefully noted that the figures of FY 2011/12 contain only 5 months from July to November. This is because DCC was split in December 2012 effectively into two independent organizations. The cost and revenue divided into DNCC and DSCC will be challenged respectively from FY 2012/13.

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Table 3.9-2 Integrated Actual SWM Cost and Revenue of DCC (1000Taka)

Cost & Revenue Items	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12 ²⁾ (July/Nov.)
1. Cost						
1) Personnel	446,141	479,757	604,869	682,556	840,919	361,183
2) Fuel	245,957	248,062	284,825	312,461	291,537	128,188
3) Repair	33,717	56,113	36,557	93,147	58,542	23,165
4) Material	10,431	5,022	13,218	18,536	16,423	5,751
5) Equipment	22,019	13,703	0	9,677	12,760	0
Subtotal	758,265	802,657	939,469	1,116,377	1,220,181	518,287
6) Depreciation ¹⁾	0	0	104,270	131,540	155,864	72,441
Total	758,265	802,657	1,043,739	1,247,917	1,376,045	590,731
7) Outsourcing (Privatization)	48,152	49,452	35,521	20,356	27,765	16,929
Grand Total	806,417	852,109	1,079,260	1,268,273	1,403,810	607,660
2. Revenue:						
1) Conservancy Tax	242,235	285,912	314,349	359,235	398,330	192,473

Note: 1) FMG started to calculate the depreciation cost from FY 2008/09. 2) Only 5 months for FY 2011/12 because of DCC split in December 2012

Source: DCC

Table 3.9-3 presents the SWM unit cost of FY 2011/12 that is analyzed based on Table 3.9-2. The total SWM unit cost is estimated at 1,775 Taka/ton or 23.1 US\$/ton. The cost fell by 7.5% and 9.4% respectively, compared with 1,919 Taka/ton or 25.5 US\$/ton in FY of 2010/11; the main reasons are the decrease in purchases of sweeping materials, the non-purchase of equipment such as hand trolleys and container boxes, and the devaluation of the Taka exchange rate particularly for USD.

Table 3.9-3 SWM Unit Cost of FY 2011/12 (5 months from July to November)

Items	Unit	Collection & Transport ²⁾	Disposal	Total
Final Disposed Amount	Ton / Year	341,300 ton ¹⁾		
Unit Cost	Taka/ Year	564,744,000	42,915,000	607,659,000
	Taka / Ton	1,650	125	1,775 ⁴⁾
	US\$ / Ton ³⁾	21.5	1.6	23.1 ⁴⁾
For reference: FY 2002/03 Unit Cost estimated in Master Plan	US\$ / Ton	-	-	16 ⁴⁾

Note: 1) The amount that was actually surveyed at Matuail and Amin Bazar landfill sites by JET in February 2012 disregarding recycled amount within the disposal site.

2) The sum of 3 operations; that is, road cleaning, drain cleaning and collection/transport

3) Foreign exchange rate is assumed to be TK. 77 = US\$ 1 (Bangladesh Bank information as of November end 2011).

4) The cost did not include the depreciation cost because of no data at that time.

Source: elaborated by JET based on DCC data

(2) WMD Budget Plan

The objectives of this activity are to analyze and break down the costs that are derived from the ongoing SWM operations, and to assess the SWM budget request with reference to the findings. The concept is illustrated in Figure 3.9-1, which was decided upon among

FMG members through intensive discussions.

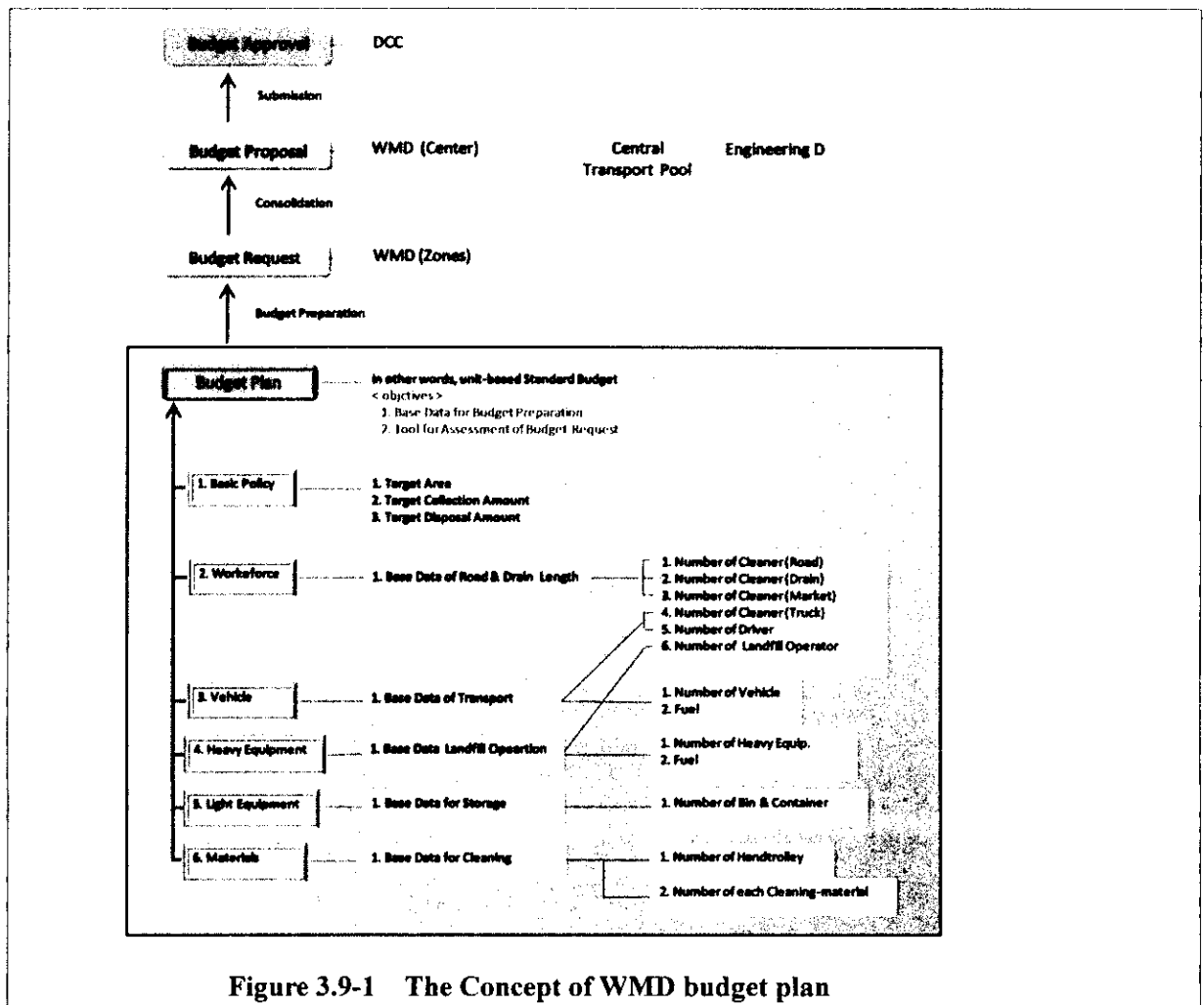


Figure 3.9-1 The Concept of WMD budget plan

This section shows example of financial assessment.

Financial assessment sample basic data are showed as follows which is calculated from DCC financial data in this year, not calculated from actual price in Dhaka city. Therefore this financial assessment data is not isolated from DCC financial data.

However these financial assessment basic data can be used as one of the standard financial assessment data. These financial assessment data also needs duplication time so DCC must decides each duplication time of equipment or ward office

For example DCC can check 2012/2013 financial data by using these financial assessment basic data.

Amount of worker, cleaner, collection trucks and fuel would be calculated from target collection amount automatically. And construction ward offices number, public relation materials, staff training content and awareness raising activity cost should be added.

Basic financial assessment data are shown as following,

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Table 3.9-4 Basic financial assessment data

Items	Cost		
Unit work for road cleaning, drain cleaning	0.31 km/road cleaner 0.23 km/drainage cleaner (Drainage clean-up 30days cyclic. $3.55/30=0.23$)		
Safety gear cost	Unit cost : Musk(10 tk/ pic), Glove(185 Tk/ pair), Scoop (250 Tk/ pic), Bowl(1800 Tk/ pic) , boots (300 Tk/ pair)		
Container collection	Arm Roll:5.3 ton/vehicle 5t-Diesel: 3.6 ton/vehicle 5t-CNG: 4.5 ton/vehicle 3t-Diesel: 2.5 ton/vehicle 3t-CNG:2.4 ton/vehicle		
Compactor collection	5t-Diesel: 6.6 ton/vehicle 2t-Diesel: 2.5 ton/vehicle		
Compactor collection per trip	<u>Arm Roll</u> 1726 BDT/ day	<u>Container</u> 5t-Diesel: 3472 BDT/ day 5t-CNG: 1067 BDT/ day 3t-Diesel: 896 BDT/ day 3t-CNG: 938 BDT/ day	<u>Compactor</u> 5t-Diesel: 2185 BDT/ day 2t-Diesel: 1013 BDT/ day 5t-Diesel: 1040 BDT/ trip 2t-Diesel: 675 BDT/ trip
Collection vehicle operation	<u>Arm Roll</u> 46 km/day	<u>Container</u> 5t-Diesel: 62 km/day 5t-CNG: 46 km/day 3t-Diesel: 16 km/day 3t-CNG:53 km/day	<u>Compactor</u> 5t-Diesel: 47 km/day 2t-Diesel: 27 km/day
Vehicle Fuel mileage	<u>Arm Roll</u> 1.5 km/liter	<u>Container</u> 5t-Diesel: 1.0 km/liter 5t-CNG: 1.3 km/liter 3t-Diesel: 1.0 km/liter 3t-CNG:1.7 km/liter	<u>Compactor</u> 5t-Diesel: 1.2 km/liter 2t-Diesel: 1.5 km/liter
Hand trolley	12,000 BDT/unit		
Rickshaw van	40,000BDT/unit		
Landfill site unit cost	2,16,886 BDT/day		
Landfill site heavy equipment operation unit cost	Number of equipment : Matail 5unit, A.Bazar 3unit Operation hour : Matail 8.2hr /unit, A.Bazar 8hr /unit Mileage : 35liter/hr		
WBA report/	36BDT/office month		
Cleaners manual	130BDT/book		
Eco Bag	300BDT/unit		
WBA word kick off meeting	51,463BDT/time		
News letter printing	20BDT/unit		
CUWG training	51,463/time		
PCSP training	51,463BDT/time		
WBA training	51,463BDT/time		
Private collection contract (Zone10)	490TK/t Waste Transportation cost from Zone 10 to landfill 490 BDT/ ton	Contract condition (Transportation with collection vehicles rental, Amin Bazar dumping cost is free, road cleaning is not including) , 5 year contract	
Toilet construction	120,000BDT / toilet 240,000 BDT/unit (One unit has both for man and woman toilet..		
Ward office Sewerage connection	40,000BDT/office		

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Items	Cost	
Ward office Electric wiring (BDT/office)	20,000BDT/office	
Ward office maintenance cost	1200BDT/office	
Cleaner workshop	51,463/time one time for 400 cleaners with safety gears and equipment	
Drainage Cleaner workshop	51,463/time one time 30 drainage cleaners with safety gears and equipment.	
PRA training	160,000/time including venue cost, trainers fee, text book,	
Ward office construction	655,655BDT(office)	
Ward office renovation	250,000BDT/office	
Landfill construction	accumulated amount Matuail Landfill site: 114 crore Amin Bazar Landfill site: 57 crore	Cost of per ton in dumping site: Matuail Landfill site= 7.68 Kg/ BDT Amin Bazaar Landfill site = 9.22 Kg/ BDT

3.10 Final Seminar and Field Staff Seminar

JET and C/P hold a Final Seminar and Field Staff Seminar on 13th February, 2013. JET and C/P jointly shared the SWM activities and their results implemented in whole supports from Japan. The Secretary of LGD, North and South administrators, and the chief representative of JICA Bangladesh office were joined and gave the speech. Programs are below.

Table 3.10-1 Program of Final Seminar

Time	Activity	Speakers/Presenters
9:00 – 9:30	Registration	Counterpart (CI & CO)
9:30 – 9:35	Recitation from the Holly Quran	Mr. Md. Bengir Ahmed, CI, Ward 29, DNCC
9:35 – 9:40	Opening Speech of Chief Waste Management Officer	Captain Md. Anamul Haque, CWMO, DSCC
Outline of Project Activities and Achievement		
9:40 – 10:00	1) Ward Based Approach (WBA)	Mr. RokibHasan, CI, Ward 26, DNCC Mr. Md. Shafikul Islam, CI, Ward 10, DSCC
10:00 – 10:10	2) Collection and Transportation	Md. Mesbahul Karim, Superinending Engineer, WMD, DNCC
10:10 – 10:20	3) Development and Management of Sanitary Landfill	Mr. Abdullah Harun, AE, WMD, DSCC Dr. Abur Razzak, Executive Engineer, WMD, DNCC
10:20 – 10:40	Questions and Answers	As above
10:40 – 11:00	Tea Break	
Recommendations, Lessons Learned, Issues and Future Visions		
11:30 – 11:50	Outline of support from Government of Japan , Existing Issues, Future Visions and WMD Directives	Captain Bipan Kumar Saha Chief Waste Management Officer, DNCC
11:50 – 12:00	Recommendations and lessons learned from the project	Mr. Akio Ishii, Chief Advisor, JET Captain Md. Anamul Haque, CWMO, DSCC
12:10 – 12:15	Speech by Special Guest	Mr. Md. Mahmud Reza Khan, the Administrator of DNCC
12:15 – 12:20	Speech by Special Guest	Dr. Takao Toda, the Chief Representative, JICA Bangladesh Office
12:20 – 12:25	Speech by Chief Guest	Mr. Abu Alam Md. Shahid Khan, the Secretary of LGD

12:25 – 12:30	Closing Speech by Chairperson	Mr. Md. Nazrul Islam, the Administrator of DSCC
12:30 – 13:30	Lunch and DVD Screening	

Table 3.10-2 Program of Field Staff Seminar

Time	Activities	Person in charge
13:30 – 13:40	Speech from JICA Expert Team	Mr. Akio Ishii Chief Advisor, JICA Expert Team
13:40 – 14:00	Explanation of “Administrative Procedure Book” Q & A	Md. Meshabul Karim, Superintending Engineer, WMD, DNCC
14:00 – 14:20	• Presentation on future plans of WBA • Presentation on future plans of Collection Improvement • Presentation on future plans of Final Disposal Improvement	Mr. Md. Abdul Motalib, CI, ward 13, DSCC Mr. Md. Bengir Ahmed, CI, ward 29, DNCC Dr. Abdur Razzak, EE, WMD, DNCC Mr. Abdullah Harun, AE, WMD, DSCC
14:20 – 14:30	Presentation on the contribution of field staffs	Ms. Junko Okamoto, JET Mr. Takatoshi Arai, JET
14:30 – 14:40	JOCV activities (present and future)	Ms. Miyuki Oku, JOCV
14:40 – 15:15	Sharing experience of field staff	Open forum including National Staff of JICA Expert Team and JICA Experts
15:15 – 15:20	Speech of JICA	Mr. Zaki Md. Ziaul Islam, Sr. Program Officer, JICA Bangladesh Office
15:20 – 15:25	Closing Speech	Captain Bipan Kumar Saha, CWMO, DNCC
15:25 – 15:30	Photo session	
15:30 – 16:00	Tea	

In Field Staff Seminar, especially for CIs and COs shared their experiences through the project and they insisted how they keep trying further activities.

3.11 The Plan of Regional Solid Waste Management of Dhaka City area

(1) The problems of SWM in Dhaka city

Now, we are estimating around 4,000t/day of waste will be generated due to a growth of the city day by day. But, the lifetime of the existing landfills are very limited, approximately three years to Matuail, six years to Amin Bazar. Dhaka city should arrange new landfill sites urgently. Therefore, Dhaka city is now procuring 50 acres land to extend the Matuail landfill site which is one of the two existing landfill sites, to manage upcoming problems. However, this is not addressing the fundamental issue. New landfill sites cannot be created within 30 or 40 km of the city center, which is the normal range of waste transportation due to the appreciating price of land.

Table 3.11-1 Background of regional SWM

View point	Present condition	Issues	New project idea	To prepare training facility and
Waste Collection	● Amount of Waste collection: 2500t/day Collection ratio 55%)	● To strengthen waste collection capacity.	● To procure collection vehicles and containers.	
		● To improve citizens awareness raising.	● To conduct PR and environmental education.	
Good treatment	● Remaining landfill site capacity	● To prepare new landfill site	● To make regional treatment and	

	● Matuail Landfill site: until August 2016 ● Amin Bazar Landfill site: Until December 2017 ● No landfill site near Dhaka	● To introduce intermediate treatment technology and waste reduction technology.	regional landfill site.	
	● To introduce waste reduction technology. ● To introduce incinerators.			

(2) The plan of regional SWM of Dhaka city area

Discussions have begun concerning “regional SWM of the Dhaka city area”. Gazipur, Munshigonj, Narshindi, Manikgonj and Narayagonj – some of the Dhaka area cities – do not have any formal landfill sites, and cannot manage their waste properly. The discussion involves such cities, and plans to construct common landfill sites with cooperative management. The details are planned as followed:

- ① Around 100 ha. of land within 50 km of Dhaka city will be secured to construct a new landfill site and will be utilized together.
- ② Matuail and Amin Bazar landfill sites can be a transfer station to transport waste to a new landfill site.
- ③ To organize the “regional SWM union” to manage a new landfill site together and to collect charges from each involved city. Charges will be decided by the amount of waste.
- ④ Sufficient collection vehicles will be supplied to the involved cities in preparation to join this plan.
- ⑤ Technical support from Japan will be provided to the involved cities. Also, support to universities and institutions to transfer incineration technology will be provided. Dissemination of SWM to communities will also be facilitated.
- ⑥ The plan will be provided by a JICA loan.

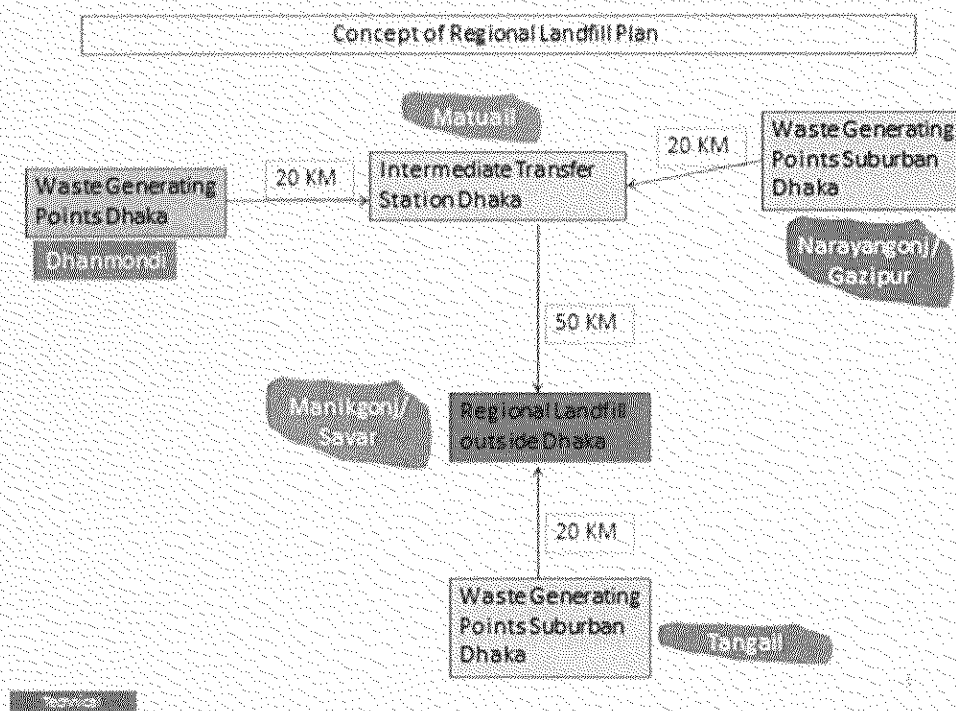


Figure 3.11-1 The Plan of Regional SWM

Table 3.11-2 Contents of the support approach

	Regional treatment approach	Preparation
Step1	To explain to the Central Government	To prepare regulation related to regional treatment if necessary.
	To develop consensus among local cities	To prepare financial source.(loan, PPP)
	To organize "Regional Solid Waste Association" to operate SWM.	To develop new technology for SWM. To prepare training center for SWM.
Step2	To prepare land for intermediate treatment facility on Matuail landfill site & regional waste disposal site outside of Dhaka.	To prepare collection vehicles and containers for transfer station.
Step3	To construct regional landfill site and transfer station.	To conduct awareness raising program for citizens and mass media.
	To construct incineration plant.	

Technical support for the management of landfill sites, strengthening of SWM in involved cities, and technology transfer to universities and institutions are separate activities from the JICA loan.

3.12 Cooperation with JOCV

This activity includes the following activities mentioned in the PDM.

- 2-13: To hold a "Kickoff Meeting" and exchange opinions for local SWM with community with possible cooperation of JOCV
- 2-14: To support organizing a "Community Unit Working Group(CUWG)" with possible cooperation of JOCV
- 2-15: To support CUWG for implementing community SWM activities including formulation of "Community Action Plan(CAP) with possible cooperation of JOCV

(1) Background

Both DCCs have many issues on solid waste management. The JOCV as field-level supporter has tackled these issues with close cooperation of JET which mainly work in the HQ. With the increase of JOCVs from April 2012, the Project and JOCV members have actively cooperated towards the "improvement in zone organizational ability".

1) Collaboration activities

In Ward 2 (DNCC), drain cleaning was carried out for five days from May 28, 2012 to June 1 with cooperation from DNCC, technical projects, JOCV, and several stakeholders such as CUWG members, PCSPs, NGOs, school officials, and the mosque organization.

Under the mechanisms of WBA 3, several CUWG trainings and community meetings were held to help various stakeholders grasp a "common problem". It has been found that project related work becomes much easier when the stakeholders are able to agree on working towards the solution of a common problem.

2) Collaboration activities 2

Various activities took place including a community meeting, and 530 (NO wastes) activities in collaboration with CI/CO, technical projects and JOCVs in Zone 2 (DNCC), Zone 5 (DNCC), and Zone 5 (DSCC) with JOCV members.

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3) Collaboration activities 3

It was suggested that the field-level JOCV create a database file (Ward Pro file) for each ward with the CI/CO, and DNCC create a database in the future with the help of the project.

(DSCC is creating Ward Pro file under South CWMO, so that the created Pro file are collected by each Zone, and formulated Pro files are managed by HQ.)

Table 3.12-1 Example of Ward Profile

Sl. No.	Registration Number	OT/ Comp	Capacity (1.5/2/3/5)	Driver Name	Driver Contact NO	Trip 1 Locations / Collection Time	Trip 2 Locations / Collection Time	Trip 3 Locations / Collection Time
1	07-236	OT	3	Nazrul Islam	01677332813	6:30AM Mirpur section 12 Main Road, 12/B, 12/D	9:30AM to 11AM 12/E, Dupikalapani, 12TA, 12PA, Uttara Kalshi	-
2	11-1258	Comp Japan	2	Dulal	01748959010	12PM Jarnalist Opposite	2PM to 4PM Jarnalist Opposite	-
3	20	Comp Indian	5	Chanmiah	01819512715	8AM Mirpur12 Busdepo	11AM Mirpur12 Busdepo	2PM to 4PM Mirpur Busdepo

Containers

Sl. No.	Registration Number	CC/A R	Capacity (3/5/7)	Driver Name	Driver Contact no.	Trip 1 Locations	Trip 2 Locations	Trip 3 Locations	Trip 4 Locations
1	TATA PARI-12	CC	5	Shohidul Islam	01199068145	Beside M.D.C. Institute			
2	11-1176	CNG CC	5	Mostafiz Urrahman	01720809649	Seramic Road	Seramic Road		
3	TATA PARI-25	CC	5	Badol	01715460926	Bangbon Bangladesh College			



①Containers in Ward 2, DNCC	②Containers in Ward 2, DNCC
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3.13 Third Country Training and the Japan Training

(1) Third Country Training

From the 15th February 2012 to 24th February 2012, three people from the DCC, JOCV, and the JICA Bangladesh office joined a JICA Expert to participate in a third country training program in Jakarta City, Indonesia.

1) Visiting Places

The Team visited the Ministry of Public Works; the DKI Jakarta Solid waste bureau; the final disposal site of Jakarta City constructed by Jakarta City and operated by a private company; a night soil treatment in Jakarta City; the Bungdung solid waste treatment association; a composting plant operated by a private company; the Bungdung institute of technology; the National Human settlement research center (Japan grant aid); the Environmental sanitation training center (Japan grant aid); the Jakarta waste mechanical transfer station (loan by Japan); and a transfer station operated by a private company.

Solid waste management law was enacted in 2008 in Indonesia. The law states that Indonesian SWM law enacted in 2008 states that open dumping landfill sites must be transformed into sanitary landfill sites. However, very few landfill sites have actually been changed because of a lack of finance. The law also states to introduce 3R practices, but the goal does not seem to be realistically possible.

The Indonesian government has developed a strategy to construct a large waste management facility without foreign loans. This has proven to be difficult, and the large facility has been split up into small packages, bought up by small contractors. It is clear that a PPP strategy must now be introduced.

2) Applying the training to SWM in Dhaka

Academic institutions are supporting municipalities and government on solid waste research and analysis of waste. The National Human settlement research center and Environmental sanitation training center trains local and municipal staff on SWM. New technologies are also being positively introduced. For example, the National Human settlement research center recently introduced a proto type incinerator to understand it.

3) Impressions from the trainees.

- Local Governments are working on SWM under the control of the Central Government
- JKT completely manages the collection and transportation all the way to the Landfill operation
- JKT also completely manages human collection, transportation, and treatment.
- Use of the transfer station when the Landfill is too far away
- Community People employ a primary collection company
- Composting work aims to reduce the amount of waste

Table 3.13-1 Schedule of Third Country Training

Date	Visit	Activities
Feb.15 th (Wed)		Leave Dhaka (SQ447, 23:55 – 6:00)
Feb.16 th (Thurs)	Ministry of Public Works	Arrival Jakarta (SQ952, 7:40 – 8:45) National Strategy on SWM law 2008; 3R& Landfill site

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Date	Visit	Activities
		improvement, PPP
Feb.17 th (Fri)	DKI Jakarta, Final disposal site in Jakarta.	SWM in JKT PPP plan. Incinerator tender. OM by private. BOT composting and Bio-gas plant is under construction. Future total SWM plant managed by PPP.
Feb.18 th	Holiday	
Feb.19 th	Holiday	
Feb.20 th (Mon)	Night Soil treatment facility Cakung Cilincing Transfer station	Oxidation ditch operated by DKI. Transfer station is closed on Jan.2011. Composting is started.
Feb.21 st (Tues)	West Java regional waste treatment Board Private cleaning service company.	Three landfill site managed by PPP. . Government constructed and private company operates.
Feb.22 nd (Wed)	Bungdung Institute Technology (ITB). Human settlement Research and Development Center	ITB supports Central Government, in the field of SWM closely RIHS supports Central Government SWM
Feb.23 rd (Thus)	Bekasi Environmental sanitation Training Center Transfer station, Suntar	Training system to support SWM activities of government. Maintenance and operation system of mechanical transfer station by SWM engineers. To report of training.
Feb.24 th (Fri)		Leaving Jakarta(SQ959,14:15-16:50 SQ446 20:35 – 22:40)

(2) The Japan Training

The training consisted of visits and lectures on SWM in Tokyo, from the 9th to 20th of September, 2012. The difficulties that Dhaka now faces are quite similar to those faced by Tokyo. Therefore, the aim of the training was to help trainees understand Tokyo's experiences and to try and apply them to their on context of Dhaka's SWM issues. The training consists of these four elements:

- History of SWM in Tokyo Metropolitan City and Japan's National policies.
- Recycling Companies in Metropolitan Tokyo (Super Eco-town and Private Recycling Company)
- Operation and Management of Incineration Plants and Sanitary Landfill Sites
- Waste collection and Transportation in Urban Areas

Dhaka is now facing a serious problem of capacity for their two Landfills. They are both almost full, and both DCCs should discuss solutions immediately. Regional landfill sites or incineration plants are some of the potential solutions for them, and considering those options, this training course was able to provide them with useful relevant information. At the same time, the issue of treating enormous amounts of waste, as well as strategies to reduce waste must be considered.

Table 3.13-2 Training Schedule

Day	Date	Morning	Afternoon	Accommodation
Day 1	9 th Sep	Arrived Dhaka		Airplane
Day 2	10 th Sep	Courtesy call to JICA HQ	Tokyo Metropolitan Government	Tokyo
Day 3	11 th Sep	Eco-town for food and household appliance	Visit landfill site in Tokyo	Tokyo
Day 4	12 st Sep	Transfer station at Shinjuku, collection site and Shinjuku SWM office	Transfer station by ship	Tokyo
Day 5	13 nd Sep	Incinerator plant at Shin-koto, SWM training center	Recycling plant ran by the private	Tokyo

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Day 6	14 th Sep	Japan environmental sanitation center-SWM in Japan-	Tokyo
Day 7	15 th Sep	Holiday	Tokyo
Day 8	16 th Sep	Holiday	Tokyo
Day 9	17 th Sep	Holiday	Tokyo
Day 10	18 th Sep	Effective use of former Landfill site	Preparation of JICA HQ Reporting
Day 11	19 th Sep	Preparation of JICA HQ Reporting	JICA HQ Reporting meeting
Day 12	20 th Sep	Leave Japan	Dhaka

All three trainees displayed great interest in Metropolitan Tokyo's SWM. The general opinion was that the incineration plant was particularly impressive, and its geothermal power generation seemed like a very attractive solution to apply.

Also, trainees understood the importance of cooperation within Dhaka city as a whole to achieve large reductions in waste production. This meant that investments in the environment were required not only from the government, but from private companies and the general public to join in recycling efforts. The CO of Zone-1 DSCC, was very moved by the grassroots level officers he observed in Tokyo. He hopes to apply these lessons in his everyday work and re-evaluate his role with respect to Dhaka's SWM.

(3) Accept Sudan and South Sudan third country training

DCC and JET accepted three trainees from Sudan and eight trainees from South Sudan during 2nd December to 8th December. The training forces on below.

- ① To understand 10 years history of improvement of SWM in Dhaka city
- ② To appreciate 12 years Japanese support for SWM in Dhaka city
- ③ To learn participatory SWM
- ④ To know how to manage Solid waste in a big city
- ⑤ To learn how to outsource / privatize by DCC

The training schedule is below.

Table 3.13-3 The schedule of training of Sudan and South Sudan

Date	AM	PM
Dec2(Sun)	9:30 Pick up at airport for Sudan QR344	12:10 Pick up at airport for South Sudan 9W276
Dec.3(Mon)	09:00 DNCC CWMO for courtesy call 11:00 DSCC Project office 11:30 DSCC CWMO for courtesy call	14:00 Matuail landfill site, 16:00 Garage & Workshop
Dec4(Tues)	9:30 Collection vehicles inspection and driver seminar (DNCC) 11:00 Zone office activity	14:00 JICA Office for courtesy call
Dec5(Wed)	9:30~10:30 Ward office (W36/13) 11:00~12:00 Ward office (W33/10)	14:00 Collection system (W36/13) 16:00 Kwaran Bazar market waste collection
Dec6(Thurs)	10:00 Community participatory solid waste management (W2) DNCC	14:00 Community participatory solid waste management (W40/27) 16:00 Ward office (W40/27)
Dec7(Fri)	9:30 Ward office (W84/48) 10:00 Community participatory solid waste management (W84/48)	1:30 Collection system (W53) (Officers Colony) 15:00 Private collection company (Clean Tech)
Dec 8 (Sat)	Leave Dhaka	

Trainees were expected to learn how SWM can be implemented in such a big city by observing and discussing with North and South DCC officials and applying the experiences they gained to improve their home country. On the other hand, North and South DCCs presented their activities to trainees with confidence. Accepting trainees from other countries also had a positive effect for Bangladesh side.

Chapter4 Activities of Output 2

4.1 WBA progress

(1) WBA Target Wards

Four wards were selected as new WBA target wards in the beginning of the 1st FY of the Project, and three wards in the beginning of the 2nd FY – namely, Wards 2, 9, 14 of DNCC; Ward 11 of DSCC; Ward 12 of DNCC; and Wards 6 and 49 of DSCC respectively.

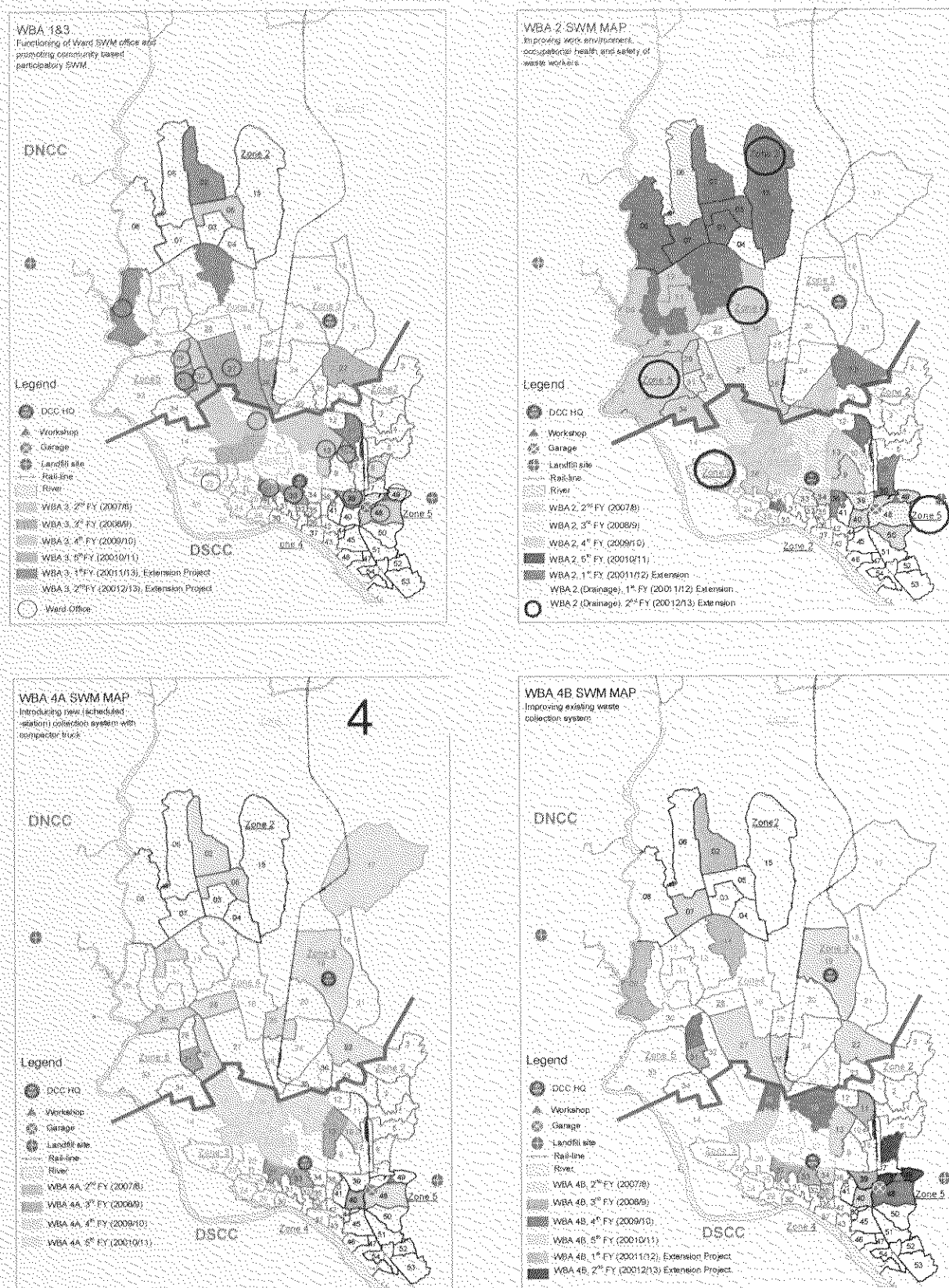
However, Ward 11 of DSCC postponed its introduction of WBA, because the CI of the Ward was transferred to DNCC and a new CI was yet to be appointed. WBA activity in Ward 12 of DNCC was also postponed due to a lack of capacity of the DNCC to increase the number of WBA wards after the division of the DCC.

Together with the 18 wards covered in the previous project, the total number of WBA target wards became 23, where all WBA components are to be introduced and comprehensive SWM is to be operated at the ward level. A list of the WBA target wards is shown in Table 4.1-1. Target wards of each component of WBA are shown in Figure 4.1-1.

Table 4.1-1 WBA Target Wards (Implementation of all WBA Components)

	New Number		Old Number		DNCC/ DSCC	CI	CO	Year of WBA Introduc tion	JOCV
	Ward	Zone	Ward	Zone					
1	Ward 39	Zone 5	Ward 75	Zone 1	DSCC	Mofijur Rahman Patwary	Md. Nurul Hossain Khan, Md. Asgar	2008	
2	Ward 40	Zone 5	Ward 76	Zone 1	DSCC	Abu Taher		2007	
3	Ward 48	Zone 5	Ward 84	Zone 1	DSCC	Bikash Chandra Dash		2009	✓
4	Ward 49	Zone 5	Ward 85	Zone 1	DSCC	Humayn Kabir Liton		2012	✓
5	Ward 33	Zone 4	Ward 69	Zone 2	DSCC	Abdur Rahman (CO)	Abdur Rahman	2008	
6	Ward 22	Zone 3	Ward 58	Zone 3	DSCC	Md. Nazib Khan	Md. Shahbuddin	2012	
7	Ward 27	Zone 3	Ward 63	Zone 3	DSCC	Md. Shah Kamal	Md. Shahbuddin	2008	
8	Ward 06	Zone 2	Ward 29	Zone 4	DSCC	Md. Rezaul Karim	Md. Monwar Hossain	2012	✓
9	Ward 10	Zone 2	Ward 33	Zone 4	DSCC	Md. Shafikul Islam		2010	
10	Ward 13	Zone 2	Ward 36	Zone 4	DSCC	Abdul Motaleb		2007	
11	Ward 11	Zone 2	Ward 34	Zone 4	DSCC		Md. Monwar Hossain	2011	
12	Ward 15	Zone 1	Ward 49	Zone 5	DSCC	Md. Abu Jafar	Fazlur Rahman	2009	
13	Ward 16	Zone 1	Ward 50	Zone 5	DSCC	Mohammad Shajahan		2009	
14	Ward 18	Zone 1	Ward 52	Zone 5	DSCC	Md. Habibur Rahman Talukder		2010	
15	Ward 19	Zone 1	Ward 53	Zone 5	DSCC	Md. Hanif Uddin		2009	
16	Ward 22	Zone 3	Ward 22	Zone 4	DNCC	Habib Md. Ali Ahasan	Basu Deb	2010	✓
17	Ward 26	Zone 5	Ward 39	Zone 6	DNCC	Rokib Hasan	Basu Deb, Iqbal Karim	2010	✓
18	Ward 27	Zone 5	Ward 40	Zone 6	DNCC	Md. Shahidul Islam		2010	✓
19	Ward 29	Zone 5	Ward 42	Zone 6	DNCC	Md. Bengir Ahmed		2009	✓
20	Ward 31	Zone 5	Ward 44	Zone 6	DNCC	Jahirul Islam		2008	✓
21	Ward 32	Zone 5	Ward 45	Zone 6	DNCC	Aminur Rahman Biswas		2009	✓
22	Ward 09	Zone 4	Ward 09	Zone 7	DNCC	Abu Khaled	Md. Moniruzzaman	2011	✓
23	Ward 14	Zone 4	Ward 14	Zone 7	DNCC	Anowar Hossain		2011	
24	Ward 12	Zone 4	Ward 12	Zone 7	DNCC	Rafiqul Karim	Md. Moniruzzaman	2012	
25	Ward 02	Zone 2	Ward 02	Zone 8	DNCC	Md. Shakawat Hossian Mollah	Mofizur Rahman Bhuyan	2011	✓
26	Ward 05	Zone 2	Ward 05	Zone 8	DNCC	Md. Masum Hussain		2009	

Note: Wards 22, 11 of DSCC and Ward 12 of DNCC postponed the introduction of WBA.



Note: Wards 22, 11 of DSCC and Ward 12 of DNCC postponed the introduction of WBA.

Figure 4.1-1 Target Wards of WBA 1, 2, 3, 4A and 4B

(2) Kickoff Meetings

All of the kick-off meetings for new target wards have been organized. DCC organized one kick-off meeting in Ward 14 by using the Community Budget of DCC before separation. DSCC also used the Community Budget to hold the kickoff meeting in ward 6.

In each kick-off meeting, 150-250 community people participated including representatives from local social welfare organizations, housing owners' associations, NGOs, PCSP, community leaders, and general residents. At each kick-off meeting, C/P made presentations on the objectives and outline of WBA, and the CI of the concerned ward explained the current conditions and problems of SWM, using photos and visual aids. Participants discussed how to solve the problems, as well as the importance of cooperation among the City Corporation and community members. Table 4.1-2 shows the list of new WBA target wards and kick-off meetings held in the Project.

Table 4.1-2 List of New WBA Target Wards

Ward & Zone (new number)	Ward & Zone (old number)	Year of Starting WBA	Reason why selected?	Kickoff Meeting
Ward 2, Zone 2 DNCC	Ward 2, Zone 8	1st JFY (2011/2012)	M/P	17 December 2011 (JICA Project budget)
Ward 9, Zone 4 DNCC	Ward 9, Zone 7	1st JFY (2011/2012)	M/P	10 December 2011 (JICA Project budget)
Ward 14, Zone 4 DNCC	Ward 14, Zone 7	1st JFY (2011/2012)	M/P	4 February 2011 (DNCC budget)
Ward 11, Zone 2 DSCC	Ward 34, Zone 4	1st JFY (2011/2012)	Proposal from DCC	<i>Cancelled because of the transfer of CI to DNCC</i>
Ward 49, Zone 5 DSCC	Ward 85, Zone 1	2nd JFY (2012/2013)	Proposal from DSCC	16 June 2012 (JICA Project)
Ward 6, Zone 2 DSCC	Ward 29, Zone 4	2nd JFY (2012/2013)	M/P	24 November 2012 (DSCC budget)
Ward 12, Zone 4 DNCC	Ward 12, Zone 7	2nd JFY (2012/2013)	M/P	<i>Cancelled because of the limited WBA implementation capacity of DNCC</i>

(3) Establishment of WBA Management System

WMD headquarters' initiatives and management are important to promote WBA. In the last year of the previous project, the WBA management system was discussed and introduced in consideration of the condition of insufficient management staff at headquarters. The system consisted of the following four components: 1) WBA Core Group at WMD Headquarters, 2) WBA reporting system, 3) Regular meetings (WBA meetings and WBA Core Group meetings) and 4) Zone level management.

In the project (extension period), it was aimed to enhance the WMD's management capacity and to make the WBA management system functional. However, because of the division of DCC in December 2011, it was difficult to deal with the WBA management system until the headquarters officials of each city corporation were confirmed.

In the transition period after the division of DCC in December 2011, CWMO and headquarter staff continued working for both South and North City Corporations temporarily, as per the orders of Local Government Division of the Ministry of LGRD & Cooperatives. Therefore, DNCC and DSCC managed WBA together, and WBA meetings were organized at the same time for two City Corporations at the DSCC office. After the appointment of a new CWMO for DSCC in May 2012, separate management procedures began.

Each City Corporation established new WBA Core Groups in response to office orders in July

2012. Two CIs were appointed for each component of WBA and WMD headquarter officers were appointed as leaders of the WBA Core Groups. Figure 4.1-2 shows the current conditions of headquarters staffing and members of the WBA Core Groups.

In June 2012, C/Ps and JET had intensive discussions to revise the system of WBA implementation, to address the dispersion of skilled and experienced staff across two City Corporations.

Several zones were selected in each City Corporation, where efforts of the project would be concentrated with the assistance of JOCVs; the selected zones were zones 2 and 5 of DSCC, and zones 2, 4 and 5 of DNCC.

It was also decided that zone level WBA management would have to be strengthened. Through the WBA Core Group meetings and Zone level meetings held in June 2012, the schedule of the meetings was decided as shown in Table 4.1-3

Table 4.1-3 Schedule of WBA Meetings, Core Group Meetings and Zone Level Meetings

DSCC	DNCC
WBA Meeting: Monday of last week, 12:00 am	WBA Meeting: Monday of 3rd week, 12:00 am
Core Group Meeting: Monday of last week, 2:30 pm	Core Group Meeting: Sunday of 2nd week, 12:00am
Zone 5 Meeting: Wednesday of 2nd week (if holiday, Tuesday)	Zone 2&4 Meeting: Thursday of 2nd week, 11:00am
Zone 2 Meeting: Sunday of 3rd week, 11:00 pm	Zone 5 Meeting: Sunday of 2nd week, 11:00am

In DSCC, WBA Meetings and Core Group Meetings are organized at least once a month. Zone level WBA meetings were not organized in any zone except Zone 5 until October 2012 after the separation of DCC. However, CWMO of DSCC realized the necessity of strengthening and functioning of zone level offices and started zone level meetings from November 2012.

Almost every week, he organized at least one zone level meeting with the presence of CIs and CO, and all activities were pre-planned as monthly plan. Copies of the monthly plans were sent to JET.

In December 2012, the project suggested the C/Ps to merge the zone level training workshop to the planned schedule of CWMO. The idea was shared and discussed with CWMO, together with COs and CIs at WBA meeting. Since the agenda of Project's Zone level training workshop and those of CWMO's zone level meeting were not totally same, it was decided to increase the duration of meetings and optimize the agenda so that both project objectives and CWMO's routine discussions are covered in the meetings.

Through the series of zone level meetings conducted by CWMO, the WBA reporting form has been circulated again to the participants, to resume regular WBA reporting from 1st December. DSCC succeeded to distribute all CIs of 56 wards of DSCC within a short time to start the WBA reporting system. Almost all CIs have been using the officially approved daily forms which are bound together as a reporting note book (31 pages) to fill up for one month. The rate of filling up the book was nearly 85% among the CIs. It is expected that almost all CIs will regularly use the forms from January 2013.

Based on the discussion in WBA meetings, DSCC planned campaigns targeting shops and restaurants and residents to stop throwing waste. On 1st January, the campaigns has started. In each zone, one target ward was selected, and CO and CIs in the zone, together with ZEO, PCSPs, NGO, community people and students, have been organizing campaigns cooperatively in the target areas. They continue campaigns until shops and restaurants in the areas stop throwing waste and the areas become clean, and they go to the next target areas. The official letter format to distribute to shops and restaurants was developed by CWMO and CIs, and distributed to all zones.

The campaigns are the first successful case of DSCC to manage and coordinate WBA activities at the organizational level by its own initiatives. It seems DSCC has been gradually incorporating the WBA management system including WBA Core Group, WBA reporting, WBA meetings and zone level management as its own system.

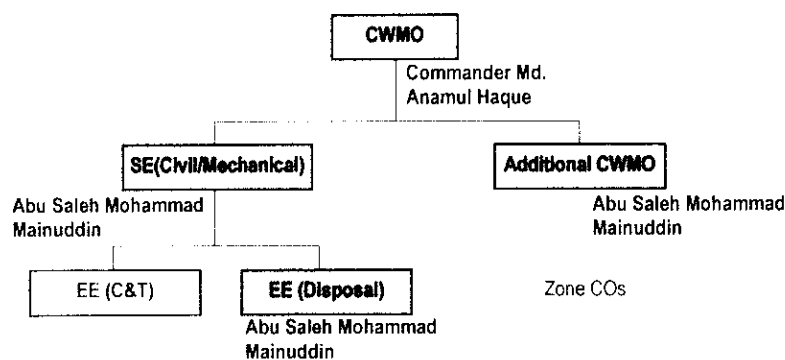
In DNCC, WBA Meetings are organized, but Core Groups has not been functioning well, and zone-level WBA meetings had not taken place in every Zone. CWMO of DNCC sometimes organized HQ meetings involving the entire COs, but CIs could not join in the meetings.

It was planned that the monthly reporting system would start from January 2013 in DNCC, and the forms have been distributed to all CIs. In addition, in the end of January, DNCC started WBA Core Group meetings by its own initiatives. They planned a fifteen-day cleaning program and scheduled to be held from 1st to 15th February. The program covers all components of WBA. The activities include the followings: 1) Cleaners contest, 2) Drivers contest, 3) CIs contest, 4) Special drain cleaning, 5) Providing tea/coffee at Amin Bazar landfill site to encourage drivers to use weighbridge and wash vehicles regularly, 6) development of campaign character (Mr. Clean) and implementation of campaigns, 7) special cleaning and campaigns at ward level, and 8) distribution of improved hand trolleys, rickshaw vans and brooms.

It is also a first successful case of DNCC to manage and coordinate WBA activities at the organizational level. It is expected that DNCC will continuously take initiatives to promote WBA and manage WBA activities as its own system.

The project supported the programs of both city corporations by providing materials such as leaflets, stickers, bins and buckets.

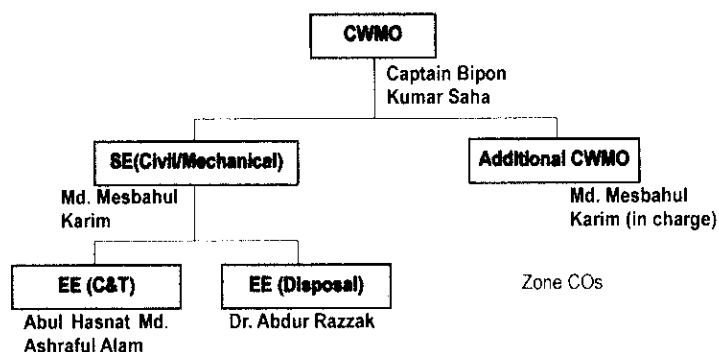
DSCC



WBA Core Group

Group leader: **Abu Saleh Mohammad Mainuddin (SE, AddCWMO, EE)**
 Sub-group leaders: Md. Nurul Hossain Khan (CO, Zone 5)
 Md. Monwar Hossain (CO, Zone 2)
 WBA1: Abdul Motaleb (CI, Ward 13, Zone 2)
 Rashedur Rahman Rassel (CI, Ward 21, Zone 1)
 WBA2: Md. Shafikul Islam (CI, Ward 10, Zone 2)
 Md. Abu Jafar (CI, Ward 15, Zone 1)
 WBA3: Bikash Chandra Dash (CI, Ward 48, Zone 5)
 Md. Shah Kamal (CI, Ward 27, Zone 3)
 WBA4: Md. Hanif Uddin (CI, Ward 19, Zone 1)
 Abu Taher (CI, Ward 40, Zone 5)

DNCC



WBA Core Group

Group leader: **Md. Mesbahul Karim (SE)**
 Co-group leader: **Abul Hasnat Md. Ashraful Alam (EE)**
 Coordinators: Mofizur Rahman Bhuiyan (CO, Zone 2)
 Basu Deb Sarker (CO, Zone 5)
 WBA1: Md. Shahidul Islam (CI, Ward 27, Zone 5)
 Md. Masum Hossain (CI, Ward 2, Zone 2)
 WBA2: Md. Habibur Rahman (CI, Ward 11, Zone 4)
 Md. Rafiul Hashan, CI, Ward 12, Zone 4)
 WBA3: Md. Bengir Ahmed (CI, Ward 29, Zone 5)
 Md. Anowar Hossain (CI, Ward 14, Zone 4)
 WBA4: Rokib Hasan (CI, Ward 26, Zone 5)
 Md. Rabiullah (CI, Ward 19, Zone 3)

Figure 4.1-2 Staffing of WMD Headquarters and WBA Core Group Members

4.2 WBA 1

This activity includes the following activities mentioned in the PDM.

2-5: To newly construct or renovate “Ward offices” (by DCC)

2-6: To discuss and confirm functions at each ward office

2-7: To enhance functions at each ward office

COs and CIs in WBA targeted wards are managing ward level solid waste management, such as to report WBA activities, to manage cleaning activities and cleaners, to maintain cleaning equipment, to receive citizens’ requests and complains and to solve the problems, to manage “the safety and sanitation committee” and to discuss with primary waste collectors (PCSP) to harmonize with secondary collection. For the smooth implementation of WBA, ward offices are essential facilities serving as solid waste management centers in the wards.

(1) Construction of Ward Offices

The ward offices are constructed as a strongholds to implement the W. Ward office activity began in 2008 at Ward 36, and both DCCs now have 15 ward offices in Wards 9, 27, 29, 31, and 32 of DNCC and Wards 6, 10, 13, 16, 22, 27, 33, 39, 48, and 49 of DSCC (in Ward 39 of DSCC the constructed Ward office was demolished to make way for construction of a shopping mall, with the promise to provide space for a new Ward office in the completed mall).

DCCs now have 15 ward offices and COs and CIs have constructed their own ward offices independently, such as Ward 26 in DNCC and Ward 15, 18, 19, 40 in DSCC. They are starting to implement WBA activities independently as well.

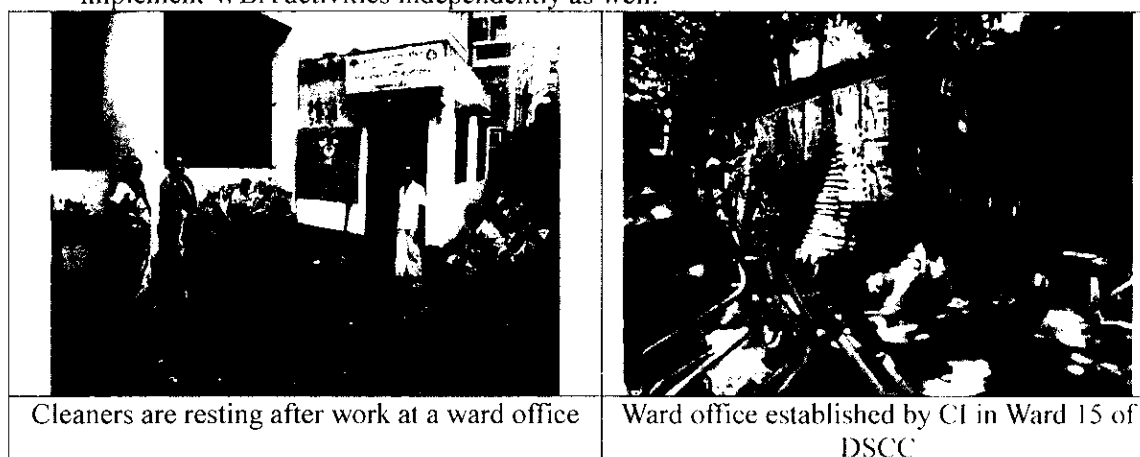


Figure 4.2-1 Functions of ward offices

Wards 2 and 12 offices in DNCC are being constructed in JFY 2012. Though there were some initial problems at the sites, now the construction works are going on in full swing. It is expected that the ward office construction will be completed in February 2013

(2) WBA Report

Both DCCs do not have accurate data on SWM in Dhaka. The Project has tried to generate reliable SWM data with the C/Ps in hopes of creating a better detailed plan. Thus, the “Annual Solid Waste Management Activity Plan” was issued.

DCCs have tried to accurately gauge the number of cleaners, as inaccurate numbers can cause financial discrepancies. JET has pushed the parties to understand the importance of this data in order to achieve efficient collection and management, but the DCCs have not yet opened up with this data.

In 2007, during initial discussion by JET at the former DCC, it was revealed that several cleaners were hit by cars while cleaning on the roads. JET at that time asked the Additional CWMO to provide the traffic accident data but it was never provided. However, safety accidents are a serious problem that must be eradicated, and the Project efforts are manifested in the introduction

of group work through WBA2. Even though VIP road cleaners have been applying the group work, other cleaners under the management of CIs with less initiative to the group work are not applying similar group work. Unfortunately the cleaners are still involved in traffic accidents. From 2008, JET and C/Ps created a reporting form for the wards and zones, and instructed CIs using ward offices to use the form. However the reporting system with the form has not continued due to complaints regarding the complexity of the form. In March 2012, DCC issued an order regarding ward data reporting, which instructed CIs to provide daily reports of ward data, such as the number of working cleaners, the number of collection vehicles, and accident data. The reporting system started off well, but the Scavengers' Unions have since prevented all CIs from continuing regular reporting. As a consequence the CIs, with the exception of those that are highly motivated, abandoned the reporting system. DNCC and DSCC high officers had meetings with the scavengers' union to continue the reporting system and both sides agreed to restart the reporting using revised forms. From December 2012, JET provided revised reporting forms to all the WBA wards.

4.3 WBA 2

This activity includes the following activities mentioned in the PDM.

- 2-8: To establish safety and sanitation committees
- 2-9: To disseminate a "Cleaner's working manual"
- 2-10: To distribute sanitary and safety working materials (safety gear, masks, first aid kit box) to cleaners
- 2-11: To hold a "Cleaners' Workshop"
- 2-12: To compile data for the number of traffic accidents of cleaners in safety and sanitation committee

(1) Brief explanation of WBA 2

The most important goal of WBA2 is that the cleaners will have pride as a public servant of DCCs. In line with this concept, JET and DCCs have improved their occupational health and safety as a first step.

From the time of the main Project, JET and C/Ps have been trying to enhance the sanitary working environment of cleaners, and to encourage proper cleaning work through the activities mentioned in the PDM. With initiatives by the C/Ps, dissemination of the cleaners' working manual, and the distribution of safety gear have taken place in several workshops. Though many Safety and Sanitation Committees (hereinafter referred to as "SSC") are inactive right now, the Project is still trying to encourage the SSC to follow through on its main roles – to collect and analyze accidents data.

Also, contribution by CIs and COs are necessary to achieve WBA2. CIs are working on the management of cleaners in their respective wards, and COs are supporting CIs. Thus, JET and C/Ps have contributed to the strengthening of monitoring cleaning work.

(2) Cleaners Workshop

In the workshop, the speaker explained to the cleaners on the importance of safety gear as well as the explanation of health care, safety (how to use a first aid kit), and sanitation. An example of a workshop program is shown in the Table below.

Table 4.3-1 An example of workshop program

Time	Speech theme/Contents	Speaker/Facilitator
10:30-10:35	Recitation from the Holy Quran	CI, Zone # 02
10:35-10:45	Opening address	Chief Waste Management Officer, DSCC

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Time	Speech theme/Contents	Speaker/Facilitator
10:45-10:55	Speech encouraging the use of safety gear and improvement of the working conditions	Zonal Executive, Zone#02
10:55-11:05	Objective of the workshop	Akio Ishii, JICA Expert Team
11:05-11:30	Explanation and demonstration of the Occupational health , safety gears and first aid kit	Dr. Sanjida Islam, Asst. Health Officer, DSCC
11:30-11:50	Explanation and demonstration of the manuals Explanation of safety and sanitation committee	Mr. Abdul Motalib, CI#13
11:50-12:00	Speech regarding follow-up/implementation and the lessons learned from the workshop	Mr. Abdul Latif, General Secretary, Scavengers Union
12:00-12:10	Distribution ceremony	
12:10-12:20	Closing Speech	CO, Zone #02

From 2008, C/Ps and JET conducted several road cleaners workshops to improve the working conditions and the efficiency of the cleaners. Table 4.4-2 shows the summary of the covered wards of both city corporations.

Table 4.3-2 Summary of the covered wards of safety gear distribution

Zone	Ward Completed	Ward Remaining
DSCC	1	15,16,17,18,19, 20,21
	2	6,9,10,13
	3	22,26,27,28,29
	4	33,34, 38
	5	7, 39,40,48,49,50
DNCC	1	0
	2	2,3,4,5,6,7,8,15
	3	22,35,36
	4	9,10,11,12,13,14,16
	5	26, 27, 29,30,31,32,33,34

DCC and JET have so far conducted road cleaners' workshops in 55 wards covering approximately 5,000 cleaners. Under the broad spectrum of WBA 2, the importance of drain cleaners' works has also been recognized, and for the first time a special training workshop for drain cleaners has been organized in this extension period separately.

Drain cleaners are allocated by zone (not by ward), and are fewer in number compared with road cleaners. Thus, training was carried out using Group discussions, power point presentations, icebreaking and brain storming sessions, and storytelling, among other interactive methods. This was done to facilitate the use of the workers manual, to understand the importance of personal hygiene and safety in the work environment, to assess existing work problems, to distribute safety gear, as well as to receive proposals to improve drain cleaning work and to improve relationships among the workers and staff.

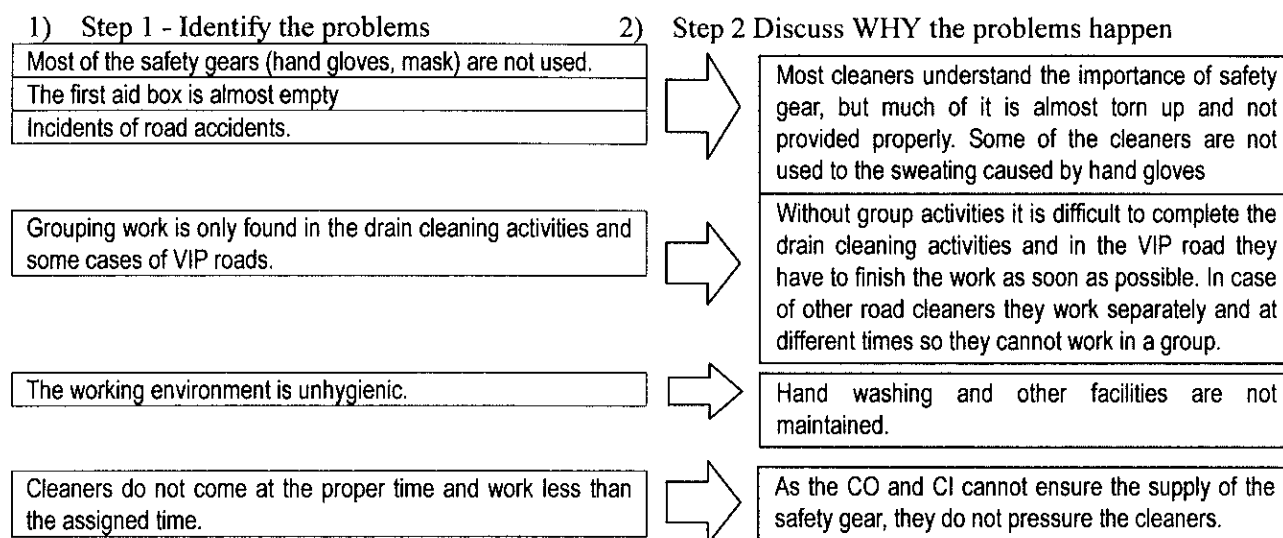
Summary of the both cleaner workshops is shown in the Table below

Table 4.3-3 Summary of the Drain cleaners Workshop

Type of Workshop	Date	Venue	Ward/Zone	City Corporation	Total No of Cleaners	Distributed Materials						Kata (Pcs)	Tagari Pcs
						Mask (Pcs)	Gloves (Pair)	Cleaners Manual	First Aid Box	Rubber boot (Pair)			
Cleaners Workshop	1-Mar-12	Shaïd Saidur Rahman neutron Community Centre	2	DNCC	70	280	70	70	1	Not Provide	Not Provide	Not Provide	
			3		80	320	80	80	1				
			4		60	240	60	60	1				
			13		60	240	60	60	1				
			15		50	200	50	50	1				
	17-Dec-12	Basabo Community Centre	1	DSCC	105	420	105	105	1				
			2		55	220	55	55	1				
			3		44	176	44	44	1				
			4		76	304	76	76	1				
			5		54	216	54	54	1				
Drain cleaners Workshop	21-Nov-11	CARITAS at Malibagh	Zone 2	DSCC	47	188	47	47	1	47	50	50	
	12-Feb-12	CARITAS at Malibagh	Zone 4	DSCC	47	188	47	47	1	47	50	50	
	27-Feb-12	CARITAS at Mirpur	Zone 2	DNCC	50	200	50	50	1	50	50	50	
	28-Feb-12	CARITAS at Mirpur	Zone 4	DNCC	50	200	50	50	1	50	50	50	
	7-Jun-12	CARITAS at Malibagh	Zone 5	DSCC	38	152	38	38	1	38	40	50	
	12-Jun-12	CARITAS at Mirpur	Zone 5	DNCC	69	276	69	69	1	69	40	50	
	9-Sep-12	CARITAS at Malibagh	Zone 3	DSCC	50	200	50	50	1	50	50	50	
	15-Jan-13 (Tentative)	CARITAS at Malibagh	Zone 1	DSCC	40	160	40	40	1	40	50	50	
Total		10 Ward and 8 Zone		1045	4180	1045	1045	18	391	380	400		

(3) Monitoring and follow-up

Proper and regular use of distributed materials and sanitary and safe cleansing practices are extremely important. Several discussion meetings and field visits were done together with JET and C/Ps regarding the utilization rates of safety gear among the cleaners and their working environment. As the SSC are not active, they have not yet undertaken several necessary steps, such as making site visits, or discussing issues raised in WBA meetings and zone meetings. JET has been pushing the CIs and COs to: 1) Identify the problems from the site, 2) Discuss and share the problems they identified, 3) Discuss the countermeasures, and 4) Take appropriate action to solve the problems. Preliminary findings generated through these steps are as follows:



3) Step 3 - Discuss the countermeasures

The following are opinions from CIs, COs and cleaners in the meetings and the workshops:

- A regular supply of the safety gear, aprons, first aid boxes etc., must be ensured by DNCC and DSCC HQs.
- The SSC should be very active, and higher officials of the DNCC and DSCC should be responsible for their activities.
- More manpower is necessary for implementing group work for all types of roads.
- Immediate initiatives should be taken for appropriate washing facilities in every ward for cleaners' health care.

4) Step 4 - Take actions to solve the problems

This step has not yet been realized. However, the CIs and COs requested the regular provision of safety gear and other materials for cleaning to higher officials in the long-run, but DCCs HQs did not provide any immediate response due to issues of administrative procedure. Thus, some of the CIs and Cos are considering giving up on making such a request, and are thus hesitating to monitor the cleaners.

4.4 WBA 3

This activity includes the following activities mentioned in the PDM.

- 2-4: To confirm the present situation of WBA activities at targeted area introduced in the Project (2007-11)
- 2-13: To hold a "Kick-off Meeting" and exchange opinions for local SWM with the community with possible cooperation from the JOCV

- 2-14: To support organizing a "Community Unit Working Group (CUWG)" with possible cooperation from the JOCV
- 2-15: To support CUWG for implementing community SWM activities including formulation of a "Community Action Plan (CAP)" with possible cooperation from the JOCV
- 2-16: To support and manage "Primary Collection Service Provider (PCSP)" utilizing PCSP permission and monitoring system
- 2-17: To conduct surveys for the present collection system in each ward
- 2-18: To coordinate among community people, primary collection service providers, and DCC
- 2-19: To improve the collection system based on 2-18 and 2-19

WBA 3 is an approach to improve waste collection and transport (both primary and secondary collection) effectively, and the ultimate target is to keep the community clean. To support WBA 2 and WBA 4, CIs and COs of Dhaka North and South City Corporations enhanced their communication strategies by using phone calls, meetings, discussions with the community and PCSP, as well as grievance procedures at ward offices. JOCVs are supporting the promotion of WBA 3 using community meetings, trainings, environmental education, and the facilitation of special cleaning programs.

CUWG Trainings have been organized for wards 48 and 49 of DSCC, and wards 2, 9, and 14 of DNCC. All the trainers and facilitators were CIs and COs, and both Corporations shared the cost of the training. DNCC and DSCC organized a kick off meeting in each by using their Community Budget.

It has been found in both city corporations that the budget disbursement process is too slow due to complicated procedures and insufficient initiatives from CIs and COs. It is a very positive and promising sign that most CIs and COs are now trying – and capable to some extent – to mobilize local resources from the community to solve local problems with little or no help from JICA Experts or JOCV. However, to sustain WBA 3, the proper utilization of budgets (community SWM budget of DNCC and DSCC) is inevitable.

There are some successful cases of WBA 3 recognized in several wards. For example, in ward 2 of DNCC, the CI and CO mobilized enormous social capital, with the help of JOCV, to clean a big blocked drain which was causing water logging in hundreds of houses for several years. Under the mechanisms of WBA 3, it was possible to ensure the participation of multiple stakeholders including community leaders, CUWG members, PCSP, and NGOs. Some other activities in which community was involved are summarised in Table 4.4-1.

WBA3 has been introduced to 23 wards in DNCC and DSCC. One significant achievement is that many CIs and COs developed excellent skills to carry out WBA activities (WBA 3 activities in particular) with less input or involvement of JICA Experts and JOCVs. However, their capacity and skills are still not yet fully utilized. Capacity of WMD headquarters to promote WBA has not been developed enough, because of the inadequate staffing conditions. Zone-level planning and initiatives are also important for the promotion of WBA, but the driving force from zones is still not sufficient in encouraging the activities simultaneously in all WBA wards.

Table 4.4-1 WBA 3 Activities carried out in WBA Wards

Ward No (Old Ward No.)	Major WBA 3 Activities
Ward 2 (Ward 2)	• CUWG meetings and trainings were organized several times • Campaigning using leaflet distribution and door to door visits • Environmental Education Program was organized with CUWG members at school • A Large blocked drain was cleaned with the collaboration of community organizations, community leaders, NGOs, PCSPs, JOCV and DNCC.

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Ward No (Old Ward No.)	Major WBA 3 Activities
Ward 6 (Ward 29)	- Survey and kickoff meeting has been organized. - CUWG members were identified and shared. - CUWG training preparation is going on.
Ward 9 (Ward 9)	- After CUWG training, community meetings were held. - Two open dumping points were closed (1. Hrishi Para, 2. Harirampur Pump) with the help of the community - Special cleaning program was carried out
Ward 27 (Ward 40)	- Community meetings are organized whenever necessary in the ward office - PCSPs meetings are organized around 2-3 times per month - A rally has been organized last May 2012 in West Rajabazar with community participation - Campaign using loudspeakers was done to control illegal dumping on foot path of the park from the vegetable market. The cost of the campaign was paid by PCSP with the influence of community - Three community meetings were designed and scheduled to be held in October 2012
Ward 29 (Ward 42)	- Campaign using loudspeakers is held in September 2012 - Leaflet was made and distributed in mosques at weekend prayer in September 2012 7 passages have been cleaned with the participation of community. The community participated by sharing the cost for removing waste from passages and DNCC collected the waste with vehicles. - Community meetings are organized once in a month
Ward 32 (Ward 45)	- Special Cleaning Program was organized with the community in a new colony area and a preparatory community meeting was held in the ward office in January 2012. 46 trips of waste were removed with the help of the community
Ward 15 (Ward 49)	Communication with community frequently done in the case of changing compactor stations
Ward 27 (Ward 63)	- Every month community meetings are organized with the help of PCSP and other local organizations 2 meetings were held in September 2012 where a zonal executive officer and CO and PCSP joined the CI - Community discussion are going on now (end of September 2012) to remove waste from cow dung.
Ward 10 (Ward 33)	- Constant Communication between all community units - Community supported cleaning 3 AGB colonies and 1 postal colony.
Ward 13 (Ward 36)	- Community is going to be organized to promote introduction of an additional compactor truck. Route planning and timing is under the process of conformation through the discussion between community, shops, restaurant and CI - Regular communication with community is taking place.
Ward 48 (Ward 84)	- An Environment Development Committee is formed along with CUWG who regularly monitors the activities of Cleaners. In case of absence of cleaner, the community inform CIs - Environmental Education and community participation has been enhanced through JOCV activities and several trainings. - CUWG and Ward Environmental Development Committee monitor schools where Environmental Education is provided. - CUWG is newly formed in unit 1 and a community meeting was organized to prepare for the training. Training was held on September 29, 2012 - All illegal dumping points were closed with the help of strict monitoring of CUWG members in unit 2 & 3.
Ward 49 (Ward 85)	- CUWG was organized and CUWG Training was held on September 29, 2012 - CAP (Community Action Plan) was made - PCSP training at ward office has been done on 22 December 2012.
Ward 19 (Ward 53)	- Community association was communicated by CIs and JET for collection continuation - Floating shops were warned to have buckets - More buckets will be distributed and location sorted out with survey

4.5 WBA4

This activity includes the following activities mentioned in the PDM.

2-16: To support and manage “Primary Collection Service Provider (PCSP)” utilizing PCSP permission and monitoring systems
2-17: To conduct surveys for the present collection system in each ward
2-18: To coordinate among community members, primary collection service providers, and DCC
2-19: To improve collection systems based on 2-18 and 2-19

(1) Related equipment of both DCC

Both city corporations separately have waste collection vehicles, maintenance and repair workshops, and garages. In 2010, a total of 100 different types of waste collection vehicles were provided to the former DCC through the EGAP. After the division of DCC, 58 EGAP vehicles are working in DSCC.

Repair and maintenance workshops for DNCC and DSCC are located in the Dholpur area. DSCC has Mechanical Workshop 2 for maintenance of all types of vehicles including vehicles other than waste collection ones and heavy equipment at the landfill site. On the other hand, Mechanical Workshop 1 belongs to DNCC for the same purpose. A new workshop funded by EGAP is located in the area of DNCC’s workshop. Under the special order of Ministry of Local Government EGAP Workshop will repair and maintain all 100 waste collection vehicles donated by the Government of Japan. The cost of repair and maintenance will be shared by each city corporation in proportion to their respective vehicles repaired and/or maintained. The manpower engaged at this workshop will receive their salaries from DNCC.

With regard to parking space, DNCC is using the spaces beside the Mirpur zone 2 and 4 offices and space outside the workshop. DSCC is using the former DCC’s garage located at Sayedabad. The vehicle list from 2010 to 2012 is shown below. In 2011, DCC retired 58 deteriorated waste collection vehicles: 32 open trucks and 26 container carriers. This is a significant positive outcome for DCC to retire these vehicles in line with official procedures, since these vehicles are usually a source of deep vested interests. Besides, the procurement of 20 waste collection vehicles (ten vehicles for each DCC) are planned in 2012. DSCC had ordered ten open trucks with 3ton capacity on December 2nd, 2012 and the vehicles will be delivered by early March. DNCC is collecting the quotations and studying the procurement procedure.

Table 4.5-1 Past record of the Number of vehicles procured and abolished for waste management (Same as Table 2.1-1)

	Type	2010	2011	2012
Existing vehicle	Open Truck	198	203	171
	Container Carrier	130	175	149
	Arm Roll	0	20	20
	Compactor	0	40	40
	Subtotal	328	438	380
New Procurement	Open Truck	5	0	20
	Container Carrier	45	0	0
	Arm Roll	20	0	0
	Compactor	40	0	0
	Subtotal	110	0	0

	Type	2010	2011	2012
Retired	Open Truck	0	32	0
	Container Carrier	0	26	27
	Arm Roll	0	0	0
	Compactor	0	0	0
	Subtotal	0	58	27

Source: Waste Management Department, Collection and Transportation wing, DNCC/DSCC

Many containers had been procured and used by DNCC/DSCC every year. The past record of procurement and abolishment is shown below. DNCC had newly procured 35 containers; 15 units of 7ton capacity and 20 units of 5ton. DSCC also procured 60 containers; 20 units of 7ton, 5ton and 3ton capacity each, in January 2013.

Table 4.5-2 Past Record of the Container Boxes from 2010 to 2012

	Capacity	2010	2011	2012	2013
Existing	3 ton	292	200	180	180
	5 ton	229	224	274	274
	7 ton	0	50	70	85
New Procurement	3 ton	15	30	0	20
	5 ton	30	100	20	20
	7 ton	50	20	15	20
Abolished	3 ton	107	50	0	
	5 ton	35	50	20	
	7 ton	0	0	0	

Source: Waste Management Department, Collection and Transportation wing, DNCC/DSCC

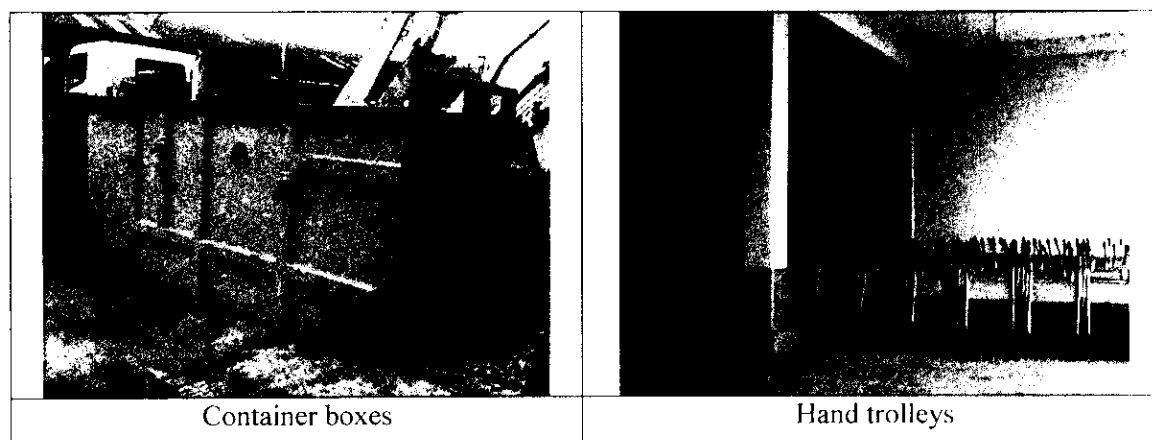


Figure 4.5-1 New Procured Container Boxes and Hand Trolley by DNCC

For the collection of bulky wastes, WMD have requested the Mechanical Department to provide pay loaders to. The Mechanical Department provided one available pay loader, but there were significant delays in the collection of bulky wastes. DNCC procured two pay loaders to address this issue. DNCC had ordered 300 hand trolleys for the daily waste collection and 200 units had been already delivered. DSCC had procured a total of 500 hand trolleys for the same purpose. Out of 500 trolleys, 250 were procured by direct procurement method and the others were bought by open tender method with the support of the Store and Purchase Department.



Figure 4.5-2 Newly Procured pay loader by WMD

(2) Improvement of waste collection system

1) Improvement of road sweeping work

The hand trolleys used by WMD cleaners are easily broken and are inconvenient for areas where the distance from the sweeping area to the secondary collection point is quite far. In order to remove a large volume of sweeping waste, DNCC cleaners are currently using rickshaw vans instead of hand trolleys. This year, JET procured six rickshaw vans (hereinafter RVs). Out of these, 2 are used for road sweeping in the Gulshan area and 4 are used in Mirpur area (zone 2 and 4). Furthermore, WMD will procure more RVs and allocate those RVs to other areas in DNCC. Recently DSCC decided to procure 56 rickshaw vans to smoothly remove the sweeping wastes to the secondary collection points.



Figure 4.5-3 New Rickshaw vans Fabricated by the Project

2) Safety operation for compactors

Safety Operations of waste collection, especially for compactors, is the one of the most important priorities of the Project. At the rear side of the compactor, there is a hopper that moves automatically using a switch. The waste loaders need to be very careful using such powerful heavy machinery. When WMD and JET examined the compactor operation, the following issues were identified:

- Regular DSCC/DNCC cleaners are not loading the wastes
- PCSP workers are operating the switch
- Cleaners are not wearing safety gear
- Cleaners are not following the proper procedures for loading work, such as using a "cloth"



Figure 4.5-4 Safety issues from the field

3) Coordination with PCSP and Communities

The support from PCSP and the community is necessary for waste collection, especially when operating the compactor. The Project has arranged some meetings whenever trouble with the PCSP or community occurred. The main issues on coordination related to the compactors and containers are:

- Due to the lack of coordination from the community, sometimes PCSP cannot bring the waste in a timely manner
- Some of the PCSP workers were not given enough time to segregate valuables from the wastes
- Some community members complained about the compactor station and segregation activities in front of their homes
- It is very difficult for WMD to manage PCSP which is polluting the surrounding areas of the container due to the political history

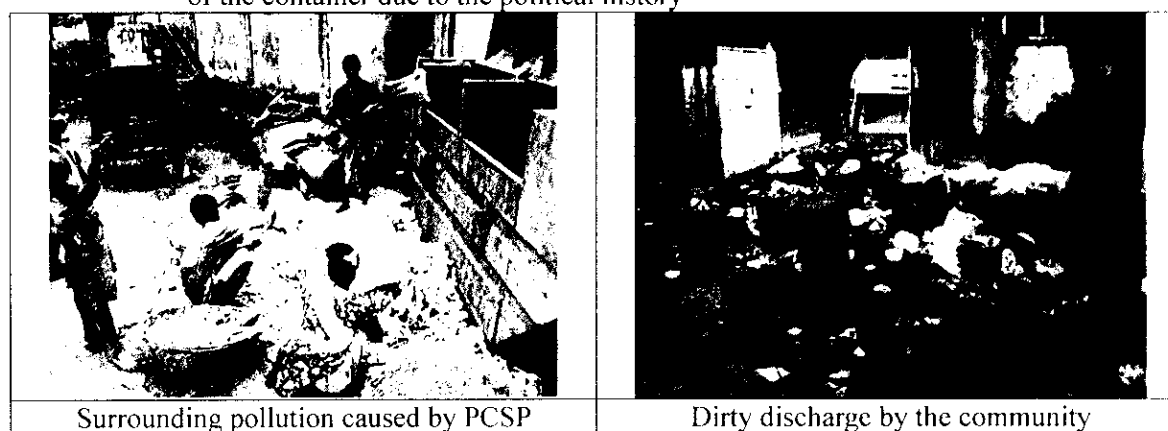


Figure 4.5-5 Problems created by the PCSP and community at collection points

4) Cleanliness of the compactor Station

There are some compactor's collection points where rickshaw van drivers gathered from morning to segregate the valuable wastes. Community has to suffer from bad smell until the arrival of the compactor. Those problems were reported to DNCC/ DSCC officials to improve the cleanliness.

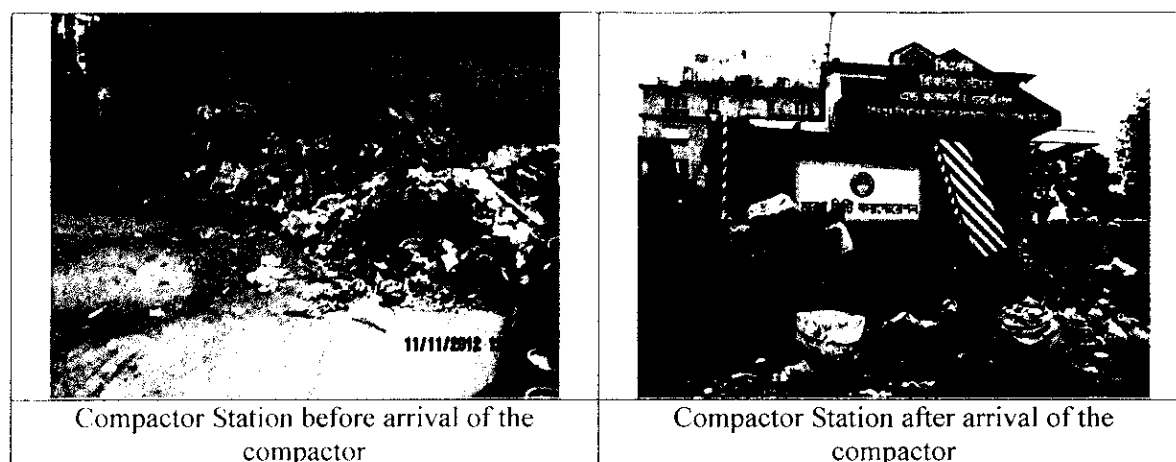


Figure 4.5-6 Cleanliness of the compactor Station

5) Container Survey Follow up:

Containers are playing a crucial role in solid waste transportation in Dhaka city. In 2009 the first survey on the containers was carried out to identify all the container locations in Dhaka City and the related problem. DCCs and JET periodically followed up the survey. In 2011, the follow up survey was implemented and it was found that capacity of the containers at many locations improved dramatically. However, the problems related with the containers still existed.

In November 2012, JET conducted the follow up survey targeting a total of 30 locations; 15 locations in each DCC in which previous surveys found serious problems.

Eleven problems regarding containers were identified through the previous surveys. Result of the latest survey is shown in Table below.

Table 4.5-3 Summary of the identified problems regarding containers

	Identified Problems	DSCC		DNCC		Total	
		Locations with this Problem	%	Locations with this Problem	%	Locations with this Problems	%
1	Containers are not collected everyday	1	7%	0	0%	1	3%
2	Irregular disposal to the dumping site	4	27%	3	20%	7	23%
3	Different types of containers gathered at a place	7	47%	12	80%	19	63%
4	Very Dirty Surroundings	11	73%	13	87%	24	80%
5	Under Capacity Containers are placed	0	0%	1	7%	1	3%
6	Wastes were burnt in some containers	0	0%	1	7%	1	3%
7	Waste Pickers were using containers for recycling and segregating.	9	60%	12	80%	21	70%
8	Lids of the containers were broken or stolen	9	60%	12	80%	21	70%
9	DSCC/ DNCC cannot find space to place containers	2	13%	3	20%	5	17%
10	Containers created traffic hazards	7	47%	8	53%	15	50%
11	At least 3 times old wastes are found at surroundings	3	20%	4	27%	7	23%

Positive Findings of the Container Survey are:

- Frequency of collection by container carriers is improved.
- Locations of irregular disposal are reduced.
- Capacity of the containers, either through increasing the number and/or size is improved through replacement of old dilapidated containers.
- There are fewer containers whose wastes are burned.

The main problems identified by the follow up survey are:

- Different types of containers are located at one location (63%): This problem is found in total 17 locations out of 30. The main reason is lack of planning by the collection and transportation unit of WMD. Besides in response to complaints regarding containers from communities at many wards, CIs and COs moved the containers without any plan and solution.
- Very dirty container surroundings (80%) and Waste picking activities beside containers (70%): This problem is caused by segregating valuable waste by the primary waste collectors and/or waste pickers around the containers. The segregation contributes to reduce waste amount collected and disposed, and therefore DNCC and DSCC should consider securing some extra spaces for the activity other than container locations.
- Lids of the containers were broken or stolen (70%): This scenario is very familiar in Dhaka because these metals can be sold with significant price at the recycling shops. To solve this problem, DNCC had produced some containers without windows and doors, however these are not sanitary.
- Containers created traffic hazards (50%): Due to the lack of open spaces in Dhaka, many containers are located along main road. These containers cause serious traffic.

Table 4.5-4 Conditions of the containers at Dhaka North City Corporation

Sl. No.	Name of the location (DNCC)	Ward (Zone)	Description of containers (October 2009)	Description of containers (November 2012)	Problems														
					1	2	3	4	5	6	7	8	9	10	11				
1	Mohammadpur Humayan Road	29 (5)	3-5ton; 1-3ton	4-5ton			✓	✓				✓	✓						
2	Beside Rayerbazar	34 (5)	4-5ton	4-5 ton			✓	✓				✓	✓				✓		
3	Khelaghar School (Tejgaon)	26 (5)	2-5 ton	2-5 ton			✓	✓					✓						
4	Ring Road	30 (5)	4-5 ton	2-5 ton			✓	✓				✓	✓			✓			
5	Beside Shohid Minar	9/10 (4)	3-3ton; 2-5ton	1-7 ton; 4-5 ton 1-3 ton		✓	✓		✓				✓						
6	No 10 circle; Fruit Market	14 (4)	3-3 ton; 1-5ton	4-5 ton			✓					✓	✓			✓			
7	Agargaon	28 (5)	1-5ton; 2-3ton	3-5 ton			✓					✓	✓						
8	415/B Khilgoan Chowdhury para (Behind 15 Story Building)	23 (3)	1-3ton	2- 3 ton			✓		✓										
9	Tongi Diversion Road	35 (3)	1-3ton	1-5 ton					✓				✓		✓	✓			
10	Road 73	19 (3)	3-3ton	2- 7 ton					✓				✓		✓				
11	Baridhara Main Road	18 (3)	5-5ton	7-5 ton			✓	✓					✓		✓	✓			
12	Rainkhola	8 (2)	3-3 ton	3-3 ton			✓	✓		✓			✓			✓			
13	Shial Bari	7 (2)	5-3 ton	2-7 ton			✓	✓		✓			✓		✓		✓		✓
14	No 3 City Corp Market	3 (2)	3-5 ton	4-5 ton			✓	✓				✓	✓			✓			✓
15	BRTC Bus Depot	2 (2)	6- 5ton	1- 5 ton; 1-5 ton compactor		✓			✓										✓
					0	3	12	13	1	1	12	12	3	8	20%	80%	20%	53%	27%
					0%	20%	80%	87%	7%	7%	80%	80%	20%	53%	27%				

Table 4.5-5 Conditions of the containers at Dhaka South City Corporation

Sl. No.	Name of the location (DSCC)	Ward (Zone)	Description of containers (October 2009)	Description of containers (November 2012)	Problems											
					1	2	3	4	5	6	7	8	9	10	11	
1	Avoidas Lane, beside Kamrunesa Girls School	39 (5)	1-3ton	1-3 ton												
2	Gendaria Distillari Par	48 (5)	1-3ton	2 - 5 ton			✓					✓			✓	
3	Beside West Jurain New Graveyard	54 (5)	1-5 ton	1- 5 ton	✓	✓		✓				✓	✓			✓
4	Midfort Hospital Gate	30 (4)	1-3ton	1-3ton				✓					✓		✓	
5	Chittoranjani Avenue Shadarghat Foot over bridge	37 (4)	2-3 ton	2-5 ton			✓									
6	4, Nawabpur Road (West side of Dholai khal)	42 (4)	2-3ton	1-7 ton				✓				✓	✓			✓
7	Iraqi Grave Yard	23 (3)	2-3 ton	2- 3 ton		✓	✓	✓					✓			✓
8	Azimpur Chapra Mosque (Beside Gov. Quarter)	26 (3)	1-3ton : 1-5ton	2- 5 ton			✓	✓				✓	✓		✓	
9	Bashabo beside field	4 (2)	3-3ton 1-5ton	3- 5 ton			✓						✓		✓	
10	Beside Kamalapur Community Center	8 (2)	4-3ton	4- 3 ton			✓	✓				✓				
11	Under the Flyover (Khilgaon Railway)	11 (2)	1-5ton	1- 7 ton				✓				✓	✓			
12	Malibag Bazar	12 (2)	1-5 ton	1- 7 ton 1- 5 ton			✓	✓				✓	✓		✓	
13	Kataban Dhal	18 (1)	3-3ton	1 - 7 ton; 1- 2 ton compactor		✓		✓				✓			✓	
14	Shantinagar bazar	19 (1)	1-3ton 1-5ton	1- 7 ton				✓				✓			✓	
15	DMC front	21 (1)	1-3ton	1 - 5 ton		✓		✓				✓	✓			
					1	4	7	11	0	0	9	9	2	7	3	
					7%	27%	47%	73%	0%	0%	60%	60%	13%	47%	20%	

(3) External checking of the EGAP vehicles:

External checking of the EGAP vehicles of DNCC and DSCC were done respectively on December 4 and December 6 of this year. At that time, drivers were required to present the vehicles in front of the inspection team. The Inspection Team consisted of DNCC/ DSCC Engineers, Transport Department persons and Vehicle Experts from JICA/ JICS. This team checked the external condition of those vehicles as well as the mileage. The vehicles ran for more than 20,000 kilometer but very few damages were detected. The team checked the condition of front bumper, front light, kilometer age, right mirror, right fender, rear bumper, rear light, left fender, left mirror, tire and glass.



Chapter 5. Good Practice and Lessons Learnt through the implementation of the Project

5.1 Strengthening and clarification of DCC's administrative procedure book

The purpose of formulating the administrative procedure is to upgrade SWM practices implemented during the Project to the level of routine administrative works and ensure sustainable management. Japanese public servants are always working under laws and regulations. If any queries which are difficult to resolve under existing laws and regulations arise, these should be dealt with by replies and proposals. North and South DCCs are also managing solid waste by some laws and regulations on the national level, DCC level and WMD office order level. However, at least for WMD, there is no integrated law book for SWM and the officials do not understand the overall relations among the laws and regulations. Thus, JET and C/P cooperated to formulate one integrated law book, called administrative procedure book. It consists of all the related laws and regulations from the national level laws to WMD level office orders and clarifies the background of daily work by laws and regulations. With this book in hand, CIs and COs can realize that their works are stipulated by laws and regulations, and they therefore become more confident and proud in the discharge of their duties.

In the process of formulating the procedure book, we held three seminars to collect and share CIs and COs opinions. Based on this activity the procedure book was prepared and a law specialist who is familiar with public service in Bangladesh and can communicate closely with WMD officials studied the contents of the procedure book. The administrative procedure book includes proposal / recommendation for the matters that are absent from existing laws and regulations as appendices as requested by the WMD officials. At first, we planned to only clarify and integrate existing laws and regulations related to SWM.

WMD officials showed strong interest to formulate the procedure book, and there were active discussions through three seminars. The book can be utilized not only as a guide for daily works, but also as a proposal to fulfill insufficient points of laws and regulations related to SWM. JET expects that this book will be useful to the C/Ps as they implement their duties and it will be one of the important tools to ensure sustainability of the project.

5.2 Involvement of external resource persons for evaluation of SWM carried out by WMD

Solid waste management carried out by WMD includes some activities involving outside organizations such as community. There are few opportunities to inform of current situation of solid waste management to outside persons and organizations and furthermore the evaluation of solid waste management had been carried out by WMD without other organizations. Therefore WMD had become an organization which could not easily receive opinions from outside persons for improving their activities. The evaluation on solid waste management by WMD had been carried out with outside specialists as a part of activities for strengthening WMD's sustainability.

JET had tried to establish SWM Council involving outside specialists, and then evaluation of solid waste management and revision of existing WMD Directives would be carried out in the Council. However the Council could not be established due to a sudden announcement of plans to divide DCC into Northern and Southern bodies. In conclusion, the evaluation and the revision had been carried out with outside specialists through holding a series of seminars for revision of WMD Directives instead of the SWM Council. Involvement of outside specialists in the evaluation and the revision had the following impacts on the DCCs:

- DCC high officials took very seriously opinions and recommendations from authoritative specialists
- WMD officials and staffs recognized the importance of solid waste management

and the high responsibility of their task through participation of the authoritative specialists.

- Exposing WMD's activities to outside specialists contributed to enhancing the transparency of solid waste management

Names of the outside specialists participating in the seminars are shown in the table below.

Table 5.2-1 List of Outside Specialists

Name	Organization
Dr. Delwar Hossain	BUET
Dr. Mafizur Rahman	BUET
Dr. A. B. M. Badruzzaman	BUET
Dr. M. A. Jalil	BUET
Dr. Badiul Alam Majumdar	THE HUNGER PROJECT (NGO)

The following recommendations were made by the outside specialists for revisions to the WMD Directives at the 3rd seminar.

- Strengthening WMD's Institutional Capacity
- Promotion of Public Private Partnership
- City-wide Awareness Raising Program
- Development of Current Waste Collection & Disposal System
- Study on New Waste Treatment System etc.

5.3 Introducing leachate treatment facility as a pilot project to reduce the accumulated leachate in the disposal area

The leachate treatment facilities of Matuail landfill site was designed by BUET.

However, the density of organic material of the leachate was higher than the design assumption and the treatment was not able to satisfy waste water regulations.

Therefore the Project introduced biochemical treatment of a pilot project scale to solve the problem.

The description of the introduced system was as follows. Raw leachate is coming to Pond 1, an anaerobic pond and anaerobic bacteria are cultured here. After that, leachate is transferred through pumping to the chemical mixing tank. At this tank, Polymer, Ferrous Sulfate and Lime are added with pure water. Then the leachate is transferred to a settlement tank. At this tank sludge and most of the suspended materials are removed. Then the leachate goes to Pond 2. Pond 2 is an aerobic unit and 24 hours aeration is needed to keep the aerobic bacteria alive. From pond 2, the treated leachate is transferred to sump.

The whole system took about 6 months to match with the target parameter of leachate. The staffs of the disposal site received the training of the regular operation and maintenance from the instructor of the manufacturer and now they are performing the operation of the chemical processing equipment.

Currently this kind of leachate treatment facilities at Matuail landfill is the only one available in Bangladesh

5.4 Cooperation with JOCVs

JICA has continuously sent JOCVs to Dhaka City Corporation since 2006. Ten JOCVs in total have been dispatched until December 2012, and one more is joining in January 2013. Six JOCVs will be working from January 2013.

At the time when the first JOCVs were dispatched, they worked on environmental education at primary schools. They developed a model environmental education program and a mobile school program. The following JOCVs continued activities and improved the models. The Project and the JOCVs cooperated each other, however the activities were clearly separated among them.

The project and JOCVs have been trying to strengthen the linkage among the activities. Through the process, JOCVs developed their WBA activities including community based SWM and collection improvement.

In the phase of model development of participatory SWM, and in the beginning stage of WBA promotion, the project focused on ward-level activities. Later, the project's priority was gradually shifted from field level to headquarters and zone level focusing on strengthening of management and promotion system.

On the other hand, each JOCV took responsibility of one zone and concentrated on ward level activities in the zone. JOCVs deal with zone level WBA management as well through the ward level activities.

The close cooperation between the Project and JOCVs in the way that the Project deals with system development and management and JOCVs deal with field level activities worked effectively to promote overall WBA system and participatory community-based activities.

When the project shifted its priority to management, it became difficult to understand the field level information such as characteristics of the community in particular wards, problems of solid waste management, and effective solutions. It is important to cross check the direction of the project by obtaining field level information. JOCVs played roles to provide such information and suggestions to the Project.

In the first half of the Project, CIs and COs worked closely with the JICA Expert Team, and developed many activities and implemented them. Through the experience of working with JICA Expert Team, they developed their capacity to implement WBA drastically. However in the later half, on-the-job training at the ward level was not carried out much by the project, therefore CIs and COs of new target wards had to develop activities by themselves and it was difficult for them to have many experiences. It is necessary to develop successful cases and to increase the numbers of model wards and zones, until the importance of the system is recognized among the stakeholders. JOCV encouraged CIs and COs at the fields and played important roles to develop successful cases together with them.

5.5 Coordination between DNCC and DSCC

The project is working hard on capacity development for WMD management officials as well as field level staff, and their developed skills and knowledge are taking root. However, DCC was suddenly split into North and South and JET had to work with two authorities. This made it difficult for us to communicate with each authority, but we tried to coordinate with both DCCs efficiently and consider the points mentioned below.

- In the project, WMD Annual Plan was formulated for North and South DCC separately. It consisted of their responsible works for SWM like management of collection vehicles, operation and maintenance of landfills, organizational structures, budget etc. The plan clarified assets such as collection vehicles and activities of each DCC separately.
- In the project, the WMD Directives were revised together with both DNCC and DSCC. WMD Directives reflect the high priority works of SWM and both DNCC and DSCC apply the same directives. Therefore, each WMD can offer the services equally.

5.6 Capacity development through WBA activities

We aimed to work with the C/P's, especially the CIs and COs, capacity development through the WBA program. WBA promotes to develop skills of not only CIs, COs and cleaners, but also the communities and their behavior modifications.

Table 5.5-1 shows the target of capacity development by WBA and the roles of each official level. For example, WBA 1, strengthening of wards offices; focuses on decentralization of SWM at the ward base. Also, it is very important to encourage C/Ps to improve their way of thinking and communities to show responsibility by participating in the SWM.

Table 5.6-1 Role of each C/P officials in WBA and the target of capacity development

Activity	Officials	Role of officials	Targets of capacity development
WBA1	CO, CI	● Ward based SWM ● Decentralization to zones and wards	● Improvement of their way of thinking regarding their work ● Provide formats among communities and SWM organizations like WMD, PCSP etc., to generate communities' participation for SWM
WBA2	CO, CI	● Education for cleaners to improve their working environment	● Strengthen their leadership ● Make them aware of their status as management officers
	Cleaners	● Safety and hygiene working environment	● Generate confidence of their work ● Make them aware of their status as DCC officials
WBA3	CO, CI	● Promote community participatory SWM	● Establish a framework of community participation ● Coordination and cooperation with communities
	Communities	● None	● Generate communities' participation for SWM
WBA4	CO, CI	● Sanitary and effective SWM	● Coordination and cooperation with communities
	Communities	● None	● Generate communities' participation for SWM

Chapter 6. Recommendations

6.1 Recommendations relating to Output 1

(1) Realization and Periodical Revision of WMD Directives

Existing WMD Directives which were formulated in Main Project were revised in the Project. WMD Directives is a policy stipulating prioritized activities carried out by WMD within around five years. Even with changes of CWMO and the other officers of WMD, WMD can carry out the consistent solid waste management based on the WMD Directives. WMD can use the Directives to convince the other departments and to secure the budget to realize the Directives, because DCCs officials, CEO etc. participated the discussion of the revision and agreed on the contents. In addition outside specialists fulfilled an important role to facilitate the discussion of the revision. In consequence, WMD Directives was revised with consensus from inside and outside person of DCCs.

DNSS and DSCC are expected to fulfil their business in accordance with the Directives. And the Directives should be revised by DCCs with support from outside specialist every five years.

(2) Utilize the public administrative book in daily work

Every one living in constitutional state shall work under laws and regulations. But sometimes existing laws and regulations do not address the real situation. Thus, JET and C/P cooperated to formulate one integrated law book, called the administrative procedure book. It consists of all the related laws and regulations from national level laws to WMD level office orders and clarifies the background of daily work by laws and regulations. It encourages especially the CIs and COs to consider that their works are stipulated by laws and regulations, and consequently generates more confidences and responsibilities on their parts.

As mentioned in 5.1, JET expects C/P to fulfil their SWM work using this book. Thus, C/P should keep making effort to improve this book considering the opinions of the field level staff.

(3) Application of Budgetary Assessment System

Even though DCCs have applied bottom-up budgeting system since 2011, parts of the budget were formulated based on the amount of the previous year due to the unfamiliar system to WMD. Therefore the budget had not been assessed and not examined. DCC did not have any database to assess and examine the draft budgetary plan, before JET provided the draft database. However some information of the database is still not current market prices.

It is essential to optimize the budget for strengthening capacity of WMD organization, and DCCs are expected to develop and apply the budgetary assessment system which is proposed in the Project.

(4) Continuous Formulation of Annual Activity Plan and Report

Solid Waste Management Annual Activity Report for 2010- 2011 and Plan for 2011-2012 were formulated in the Project. The report and plan are important tools to inform of solid waste management by DCCs to outsiders. And the report and plan including concrete figures and budget are convenient for WMD to explain their business to the other departments. The Plan and Report are expected to be formulated by DCCs every year.

(5) WMD Monitoring Committee

Needless to say, WBA activity is field level activity therefore it is very difficult for the DCC HQs to recognize these field level troubles and also the field level staff find it very difficult to obtain the citizens opinion.

Therefore the WBA core group created the WBA monitoring council to solve these problems.

This WBA monitoring council is not yet functioning well now, but it is hoped that the WBA monitoring council will be used well by WBA core group.

(6) Study on the Possibility of Regional Solid Waste Management

Collection ratio of DCCs is still less than 60 %, and there are a lot of uncollected wastes in Dhaka. In addition, the remaining capacity of Matuail LFS and Amin Bazar LFS will be expired within five years. On the other hand, the nearby cities cannot provide the sufficient waste collection service and they don't have sanitary landfill site. DCC had been requested to receive wastes transported from the nearby cities. An idea on regional landfill sites is one of the solutions for the problem on solid waste management in this region. Furthermore, an idea on regional solid waste management which include not only final disposal but also waste collection in the nearby cities is a further innovative idea. Considering problem in Dhaka as well as expansion of cities in Bangladesh, study on Regional Solid Waste Management in Dhaka metropolitan area is urgently required.

6.2 Recommendations relating to Output 2

(1) WBA 1

To strengthen ward level solid waste management, ward office had an important role. Ward office is a very good tool to decentralize solid waste management work in DCC.

Before the concept of ward office was introduced, CI, the most grass-root level officials of WMD, was the officials who are just driving around their jurisdiction and if they found the problem, just tried to solve it. But their works was drastically changed by the concept of WBA. A Ward office in WBA 1 brought the mind of decentralization of SWM and CIs became managers of their ward. Communities can come to ward office to discuss how to solve SWM problems with the CI directly. The relation between DCC and communities became closer.

DCC is expected to continue constructing more ward offices, as per of the directives.

(2) WBA 2

To protect cleaners from accidents and promote hygiene working environment is very important. Also, one of the important aims of WMB 2 is to encourage cleaners to keep confidence for their work. In any case, the COs and CIs should keep nurturing motivation and encourage cleaners to work properly. In the WBA and Core Group meeting, it was discussed that the authority should take initiative to buy safety gear using their own budget on a regular basis. Cleaners support the use of safety gear but are unable to do so, without the regular supply. Therefore, not only COs and CIs, also WMD high officials should be made aware of, and support field cleaning work.

(3) WBA 3

Participatory solid waste management makes community understand solid waste management activity and we found that it is also very good tool to improve solid waste management. For example, when compactor collection was introduced in the project, strong community supports was a key factor for realizing the smooth introduction.

WBA3 support waste collection strongly. WBA3 should be continuously promoted.

The system of community participation was developed through the project and the guideline was developed. However, further improvement of the system is necessary in the process of promoting WBA in whole Dhaka City. It is expected that experienced COs and CIs together with management officials of HQs continuously discuss about how to promote WBA 3 effectively in both city corporations, and improve the system including

management and budgeting of WBA3.

(4) WBA 4

WBA4 is supported through the connection of WBA1, WBA2 and WBA3.

As explained the WBA1 to 3 active ward can carry out WBA4 smoothly. It means WBA1, WBA2 and WBA3 activity means that DCC staff, such as cleaners and engineers and COs and CIs, also community people are helping each other and working together for proper solid waste management.

6.3 Other recommendations

(1) The horizontal sharing of knowledge to other cities about Landfill operation experience

Matuail Landfill is the first sanitary landfill site in Bangladesh which is operating in a scientific way. In addition, as a pilot project, a small biochemical leachate treatment plant has been constructed. Though it is a pilot project size, but processing is done according to the standard of quality of the water of waste water regulations in Bangladesh on Leachate.

Landfill staffs at Matuail have developed their landfill management experience through the JICA technical cooperation project over 7-years. It is necessary to improve the technical expertise of landfill management of the Bangladesh. So horizontally the experiences can be shared with other cities.

(2) Outsourcing of heavy equipment for landfill operation

The heavy equipment for landfill operations are usually supplied from the mechanical workshop division. The mechanical workshop division has low ability for repair and maintenance. As a result breakdowns of heavy equipment occur very often.

In addition, Mechanical department sometimes does not provide sufficient heavy equipment. Therefore they cannot carry out proper landfill operation.

Accordingly, it is necessary to have option for the outsourcing of heavy equipment for landfill operation.

(3) Technology exchanges between DSCC and DNCC

Most of the landfill staffs who received on the job training by JICA project stayed in DSCC and did not move to DNCC.

It is very difficult for DNCC to manage Amin Bazaar landfill site by the new un-trained staffs.

Therefore, it is necessary to shift some staffs of Matuail, DSCC to Amin Bazar, DNCC or the staff of DSCC to provide training for the staffs of DNCC.

(4) Special Health Benefits for the landfill workers

The persons working at landfills are in great danger of falling ill more than anyone else in Bangladesh. DNCC and DSCC need to maintain the healthy manpower to provide dedicated service to landfill. They need to propose some kinds of special health benefits or some health insurance for these field workers at landfill site.

(5) Continuous Environmental Monitoring

DSCC/ DNCC need to monitor the air, noise, water and soil parameters surrounding the respective landfills at regular intervals. Though these were done previously by JICA project, DSCC/ DNCC need to continue these activities. The data collected from the monitoring activities will help DSCC/ DNCC to offset any kind of environmental

objection by any authority.



**People's Republic of Bangladesh
Dhaka North City Corporation
Dhaka South City Corporation**

Project for Strengthening of Solid Waste Management in Dhaka City (Extension)

Project Completion Report Appendices

March 2013

**JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)**

**YACHIYO ENGINEERING CO., LTD.
ORIENTAL CONSULTANTS CO., LTD.**

1. Records of Implementation Schedule (Plan of Operation)

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2. Records of Input

2.1. Input by JICA

(1) Dispatch of JICA Experts

Japanese Fiscal Year 2011	11.33 MM
Japanese Fiscal Year 2012	11.9 MM
Total	23.23MM

M/M: Man-Month

(2) List of Equipment Provided

Extension project doesn't provide any equipment.

(3) List of Counterparts training

	Term of the Training	Target	Number of Participants	
			1 FY	2 FY
Third Country Training	15 th Feb. 2012 to 24 th Feb. 2012	WMD officials	3 ppl	N/A
Japan Training	9 th Sep. 2012 to 20 th Sep. 2012	WMD officials	N/A	3ppl
WBA Training	17-18 September, 2011 3 October, 2012	CI, CO	1 time 30 ppl	S:1 time 20 ppl
PCSP Training	23 October, 2011 26 October, 2011 8 October, 2012 9 October, 2012 17 October, 2012	PCSP	2 times Each time 30 ppl	N:2 times S:1 time Each time 30 ppl
Road Cleaner Workshop	1 March, 2012 17 December, 2012	Cleaners	1 time Around 300	1 time Around 300
Drainage Cleaner Workshop	21November, 2011 12February, 2012 27February, 2012 28February, 2012 7June, 2012 12June, 2012 9 September, 2012 24February, 2013	Drain Cleaners	4 times Total 194 ppl	N:2 times S:2 times Total 197 ppl
PRA Training	8-12 October, 2011	CI, CO	1 time	N/A
Evaluation and Monitoring Training	10-14 November, 2012	CI, CO	N/A	S:1 time
Drivers Workshop	2 February 2012 (DNCC) & 9 February 2012 (DSCC) 4 December (DNCC) & 6 December (DSCC)	Drivers	N:1 time 65ppl S:1 time 80 ppl	N:1 time 80 ppl S:1 time 60 ppl
Kick Off Meeting	4 February 2012, 16 June 2012, 24 November 2012,	Community	1 time	2 times
CUWG Training	10 March, 2012 29 September, 2012	CUWG	1 time	1 time N:1ward S:1wards

	Term of the Training	Target	Number of Participants	
			1 FY	2 FY
Zone-Wise Training	27 September, 2011(North and south separately) 17 October, 2011 18 October, 2011 12 February 2012,	CI, CO	5 time	N/A
WBA Directives Seminar	14th March, 2012 7th August 2012 29th November, 2012	DCC officials and outside knowledgeable persons	1 time	2 times
Law Seminar	15 th March, 2012 10 th June, 2012 17 th February, 2013(North and south separately)	DCC officials	1 time	3 times
Final Seminar	13 th February, 2013	DCC officials, EOJ, ADB, Press etc.	N/A	1 time 160 ppl

*N: DNCC, S: DSCC

(4) Local operation expenses borne by the Japanese side

Total amount of local operation expenses (including ward office construction) born by the Japanese side was 19,982 thousand yen (Approx. 242thousand US dollar). Expense by year is shown in the table below.

Year	1 st FY	2 nd FY
Local operation expenses (Unit: thousand ¥)	8,895	11,087
Conversion to US\$ with the rate as of 21/11/2012	107,780	134,341

(5) Records of Third Country Training in Indonesia and Counterpart Training in Japan
Participants of Third Country Training

Name	Position
K M Kabir Ahmed	Zonal Executive Officer
Abul Hasnat Md. Ashraful Alam	Executive Engineer
Md. Nurul Hossain Khan	Conservancy Officer

Participants of Counterpart Training in Japan

Name	Position
Captain Bipan Kumar Saha	CWMO, DNCC
Captain Md. Anamul Haque	CWMO, DSCC
AK Fazlur Rahman	CO(Zone- 1) DSCC

2.2. Inputs by the Bangladeshi side

(1) List of counterpart personnel

Before splitting DCC into two entities

Name	Designation	Remarks
Head Quarter, WMD		
Captain Bapon Kumar Saha	Chief Waste Management Officer (CWMO), WMD	
Mr. Syed Quadratullah	Superintending Engineer, Additional CWMO, WMD	
Abul Hasnat Md. Ashraful Alam	Executive Engineer (Collection and Transportation), WMD	
Abu Saleh Md. Main Uddin	Executive Engineer (Waste Management), WMD	
A H M Abdulla Harun	Assistant Engineer (Matuail Landfill Site), WMD	
N/A	Assistant Engineer (Amin Bazar Landfill Site), WMD	
Mr. Mizanur Rahman	Budget Officer	Belongs to Audit Dep.
WBA Core Group		
Captain Bapon Kumar Saha	Chief Waste Management Officer (CWMO), WMD	Group Leader
Mr. Syed Quadratullah	Superintending Engineer, Additional CWMO, WMD	Co-Group Leader
Abul Hasnat Md. Ashraful Alam	Executive Engineer (Collection and Transportation), WMD	Co-Group Leader
Md. Mofizur Rahman Bhuyan	Conservancy Officer, Zone-2	
Md. Nurul Hossain Khan	Conservancy Officer, Zone-1	
Abdul Motaleb	Conservancy Inspector, Ward-36, Zone-4	WBA 1
Md. Shafiqul Islam	Conservancy Inspector, Ward-33, Zone-3	WBA 2
Md. Benazir Ahmed	Conservancy Inspector, Ward-52, Zone-5	WBA 3
Aminur Rahman Biswas	Conservancy Inspector, Ward-45, Zone-6	WBA 4

Total number of staff is 12.

After splitting Dhaka City Cooperation (As of November 2012)

DNCC

	Name	Designation	Remarks
Head Quarter, WMD			
	Captain Bapon Kumar Saha, PSC, BN	Chief Waste Management Officer (CWMO), WMD	
	Mizbaul Karim	Superintending Engineer	
	N/A	Additional CWMO, WMD	
	Abul Hasnat MD. Asraful Alam	Executive Engineer (Collection and Transportation), WMD	
	Dr. Abdur Razzak	Executive Engineer (Disposal), WMD	
	N/A	Assistant Engineer (Amin Bazar Landfill Site), WMD	
	N/A	Budget Officer	Belongs to Audit Dep.
WBA Core Group			
	Md. Mesbahul Karim	Superintending Engineer	Group Leader
	Abul Hasnat Md. Ashraful Alam	Executive Engineer (Collection and Transportation), WMD	Co-group Leader
	Md. Mofizur Rahman Bhuyan	Conservancy Officer, Zone-2	Coordinator
	Md. Basudev Sarker	Conservancy Officer, Zone-5	Coordinator
	Md. Shahidul Islam	CI, Ward 27, Zone 5	WBA -1
	Md. Masum Hossain	CI, Ward 2, Zone 2	
	Md. Habibur Rahman	CI, Ward 11, Zone 4	WBA – 2
	Md. Rafiul Hashan	CI, Ward 2, Zone 2	
	Md. Bengir Ahmed	CI, Ward 29, Zone 5	WBA – 3
	Md, Anowar Hassain	CI, Ward 14, Zone 4	
	Rokib Hasan	CI, Ward 26, Zone5	WBA – 4
	Md, Rabiullah	CI, Ward 19, Zone 3	

Total number of staff is 14.

DSCC

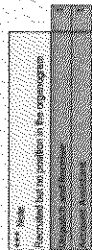
	Name	Designation	Remarks
Head Quarter, WMD			
	Commander Md. Anamul Haque, PSC, BN	Chief Waste Management Officer (CWMO), WMD	
	Abu Saleh Md. Main Uddin (In Charge)	Superintending Engineer, Additional CWMO, WMD	
	N/A	Executive Engineer (Collection and Transportation), WMD	
	Abu Saleh Md. Main Uddin	Executive Engineer (Disposal), WMD	
	A H M Abdulla Harun	Assistant Engineer (Matuail Landfill Site), WMD	
	Mr. Mizanur Rahman	Budget Officer	Belongs to Audit Dep.
WBA Core Group			
	Abu Saleh Md. Main Uddin	Superintending Engineer, Additional CWMO, Executive Engineer(Disposal), WMD	Group Leader
	Md. Monwar Hossain	Conservancy Officer, Zone-2	
	Md. Nurul Hossain Khan	Conservancy Officer, Zone-5	
	Abdul Motaleb	Conservancy Inspector, Ward-13, Zone-2	WBA 1
	Rashedur Rahman Rassel	Conservancy Inspector, Ward 21, Zone-1	
	Md. Shafiqul Islam	Conservancy Inspector, Ward-33, Zone-3	WBA 2
	Md, Abu Jafar	Conservancy Inspector, Ward-15, Zone-1	
	Md. Shah Kamal	Conservancy Inspector, Ward-27, Zone-3	WBA 3

	Name	Designation	Remarks
	Bikash Chandra Dash	Conservancy Inspector, Ward-48, Zone-5	
	Md, Hanif Uddin	Conservancy Inspector, Ward-19, Zone-1	WBA 4
	Abu Taher	Conservancy Inspector, Ward-40, Zone-5	

Total number of staff is 14.

Organogram of DNCC and DSCC WMD are shown below.

Dhaka North City Corporation



Dhaka South City Corporation

[illegible]

- (2) Provision of land, building, and other necessary facilities
Bangladeshi side provided a spacious office space for the Japanese expert team (JET).

- (3) Allocation of operational costs for the project

The operational cost covered by the DCC specifically used for the activities of the Project has not been separately recorded. Local operation expenses for utilities in the office such as electricity and telephone were born by the DCC. WMD budget during the project period is shown below.

(in crore)

Sl no	Particulars	2010-2011	2011-2012	2012-13		
		Original	Original	Original		
				DNCC	DSCC	Total
1	Cleaner's Salary	85.00	89.42	39.15	59.22	98.37
2	Private Waste Management	7.00	7.00	18.30		18.30
3	Driver's Salary, Over time	7.00	8.50	2.85	3.95	6.80
4	Fuel Cost	36.00	36.00	15.00	21.00	36.00
5	Vehicle Spare Parts Purchase, Repair, Maintenance	4.80	4.80	1.60	3.00	4.60
6	New Vehicle Purchase	6.50	8.50		2.00	2.00
7	Construction & Repair cost of Container, Hand trolley	3.50	3.50	1.00	2.00	3.00
8	Cost for Purchasing Cleaning tools	3.00	3.00	2.00	2.00	4.00
9	Special Cleaning	1.50	2.35	1.00	0.50	1.50
10	Purchase cost of Uniform/Umbrella-Shoe etc.	1.50	1.50	0.50	1.50	2.00
11	Training of Officer/Worker	1.00	1.00	0.05	0.05	0.10
12	Community Waste Management	0.45	0.40	0.50	0.50	1.00
13	Construction of Cleaner's Colony	11.50	20.00	5.00	2.00	7.00
14	Beautification	0.10		0.50	0.30	0.80
15	Dustbin	0.20	0.50	0.80	0.30	1.10
16	Purchase of Motor Cycle of Conservancy Department	1.00	2.50	2.50	2.00	4.50
17	Land Fill Operation & Maintenance	2.55	3.25	1.70	1.55	3.25
18	Amin Bazar Land fill Project	17.98				0.00
19	Ward office construction under WMD	0.50	1.00	1.00	0.20	1.20
21	Solid Waste Garage / Work shop		3.00	0.65	0.20	0.85
21	Development Budget	17.98	7.11			0.00
Total		209.06	203.33	94.10	102.27	196.37

3. Records of Meetings

3.1. Record of S/C

**Steering Committee Meeting of
Project for Strengthening of Solid Waste Management in Dhaka City (Extension)**

Meeting Name	Steering Committee Meeting
Date and Time	29 th November, 2012 14.30-15.30
Venue	Surma, Pan Pacific Sonargaon, Dhaka
Attendant	1. Md. Nazrul Islam, Chief Executive Officer, DNCC 2. Brig. Gen. Md. Abdullah Al Harun, Chief Health Officer, DSCC 3. Captain Bipan Kumar Saha, Chief Waste Management Officer, DNCC 4. Captain Anamul Haque, Chief Waste Management Officer, DSCC 5. Mr. Moniruzzaman, Chief Revenue Officer, DSCC 6. Md. Mesbahul Karim, Superintending Engineer, WMD, DNCC 7. Abu Saleh Md. Mainuddin, Superintending Engineer, WMD, DSCC 8. Mr. Mahbubur Rahman, Deputy Secretary, ERD 9. Mr. Anisur Rahman, LGD 10. Mr. Hiroto Sobajima, Second Secretary, Embassy of Japan 11. Dr. Mitsuo Yoshida, JICA Senior Advisor 12. Mr. Takuya Manabe, JICA Head quarter 13. Mr. Oseko Masahiro, Evaluation Analyst, Terminal Evaluation Team 14. Mr. Tsuyoshi Kano, Representative, JICA Bangladesh 15. Md. Ziaul Islam, JICA Bangladesh 16. Ms. Kaniz Falem, JICA Bangladesh 17. Mr. Akio Ishii, JET 18. Ms. Ayumi Koyama, JET 19. Md. Shoriful Alam Mondal, JET 20. Mr. Pallab Debnath, JET 21. Md. Shahinur Rahman, JET
Agenda	To present the results of the Terminal Evaluation of the Project for Strengthening of Solid Waste Management in Dhaka City
Material	Handouts on Results of the Terminal Evaluation of the Project for Strengthening of Solid Waste Management in Dhaka City

Welcoming everybody to the Steering Committee meeting Md. Nazrul Islam, Chief Executive Officer, Dhaka North City Corporation requested Dr. Mitsuo Yoshida to provide a short speech before the presentation of the Terminal Evaluation Report.

At his short speech, Dr. Yoshida informed that this evaluation is very important for any kinds of future cooperation from JICA. Without realistic consideration of the results of this project, it is hard to get next technical cooperation project. He requested all the present Steering Committee members to understand the achievements and evaluation of this project.

Afterward Mr. Oseko Masahiro, member of Terminal Evaluation Team presented the evaluation report with the help of power point slides. He explained the evaluation report one by one starting from Overall Goal of the project, which ended up with the final evaluation results.

The indicator of the overall goal of the project is: "More than 66% (or 3,054 ton/day) of wastes is transported to landfill sites and disposed properly by 2015." Evaluation Team expected that, more than 2,540 ton/day (or 58 % of total amount of waste) of wastes will be transported to landfill sites and disposed properly by the end of February 2013

There are 8 different Objectively Verifiable Indicators (OVI) of the project which were related with the project outputs and explained one by one.

OVI 1-1: WMD can formulate SWM Activity Plans (annual) for SWM.

Status: "Annual Activity Report on Solid Waste Management 2010-2011" was prepared in 2011, and based on this report both of north and south WMDs have respectively formulated "Annual Activity Plan on Solid Waste Management 2012-2013" but with the assistance of JET.

Remark: Both DNCC and DSCC made the plans with the assistance from JICA. From now on, DNCC and DSCC need to focus about how to prepare by their own initiatives.

OVI 1-2: Proper monitoring system of SWM activities by WMD is established and managed.

Status: Instead of SWM Council, the project held seminars to revise the WMD Directives. In these seminars, monitoring and evaluation of WMD activities were carried out under the supporting of outside specialists from BUET and NGOs.

Remark: Seminar is not a sustainable way to monitor any activity. Seminars are the place to share the views and to collect more information to modify anything. But to monitor SWM activities WMD needs to concentrate on proper monitoring system.

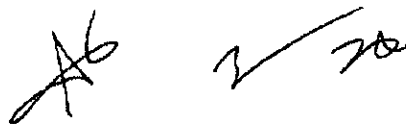
OVI 1-3: Periodically collecting and analyzing landfill weighbridge data in the WMD's Headquarters for SWM operational management.

Status: Many truck drivers bypassing weighbridges. The volume of the waste is estimated by multiplying the number of vehicle trips and the estimated unit load of vehicles.

Remark: Truck drivers who are skipping the trips from weighing their vehicles need to be controlled by WMDs. To plan any kinds of future activity regarding collection and transportation and landfill, weighbridge data is so vital.

OVI 1-4: Framework for promoting WBA including personnel assignment and duties in WMD is clarified and Institutionalized as WMD order.

Status: DCC had issued the official order to promote and extend WBA activities all over the Dhaka City namely the Office Order March 2010 to stipulate WBA as WMD's official work. The Office Order



mentioned the establishment of the WBA core group, core group meetings and bimonthly meetings was circulated in July 2012. The project is carrying out a study to clarify the standards and procedures for each specific operation such as procurement and budget utilization and compiling them as an easy-to-use manual.

Remark: The good point is three office orders are issued about WBA activities and "WBA Core Group" is already started to function. To implement the WBAs role of the "WBA Core Group" is working more hard.

OVI 2-1: Functions of more than 10 newly constructed or renovated "Ward Office" are successfully strengthened by the end of project (WBA1).

Status: Newly constructed or renovated 15 ward offices are being used by the COs and CIs on regular daily works. CIs involved in WBA activities have been significantly empowered and expanded their vocational capacity.

Remark: This OVI is very much achieved as there are 15 ward offices in Dhaka City and all are in operation now.

OVI 2-2: Data for number of traffic accident of cleaners are periodically collected and analyzed (WBA2).

Status: WBA reporting system has been introduced in both DCCs with the official order. The implementation of this reporting system has stagnated due to the opposition from cleaners' union.

Remark: Accident Data Collection is ignored by both DCCs. DNCC and DSCC need to emphasize over the daily safety of the cleaners especially during working hours.

OVI 2-3: More than 3 wards (3 units) compose "Community Action Plan (CAP)" (WBA3).

Status: CAPs were formulated by CUWGs composed of CIs, COs, PCSPs and local residents in 5 wards. Community activities are highly contributing to the community level waste management.

Remark: Evaluation team expressed satisfaction of this OVI.

OVI 2-4: More than 3 wards (3 units) improve conventional collection system (WBA4).

Status: The improvements of conventional collection system were observed in 7 wards which satisfied the evaluation team members.

After the remarks about OVIs, Evaluation Team presented the final comments. The Evaluation Team judged all the activities under five criteria. Those are Relevance, Effectiveness, Efficiency, Impacts and Sustainability. Comments against all of these criteria are:

Relevance – Very High

Effectiveness – High

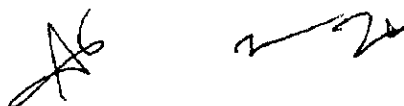
Efficiency – Very High

Impacts – Very High

Sustainability – Fair

Mission thinks relevance is very high because the activities taken under this project are very relevant with national waste management in Bangladesh. Those are: "Bangladesh: Poverty Reduction Strategy Paper, Nov. 2005", "Official gazette City Corporation Law 2009" and "Sixth Five Year Plan FY2011-2015". Another reason is the activities are also very consistent with Japanese ODA policy.

In case of Effectiveness of the project activities evaluation team decided high because of the positive and negative factors. The positive factors are acquiring the land of landfill for further use in future, preparing the regional landfill plan, construction of the transfer stations etc. But mission is highly



concerned about the full pledged staffing of the waste management department which is a negative point under their consideration.

For efficiency, mission scaled the project as very high. Though there are many vehicles in DNCC and DSCC's list practically small numbers of vehicles are managing so many trips. So the efficiency rates of using the vehicles are very high.

For the impact of the activities of the project, mission analyzed this project have many impacts over many aspects. Those are:

- Target of indicator is expected to be achieved by the target year of 2015
- Satisfaction of local people is appreciable
- Model of Waste Management are known to neighboring cities
- 5 City Corporations are constructing sanitary landfill sites imitating Matuail landfill site
- Some City Corporations inspired to replicate similar SWM activities

But mission is not so satisfied in sustainability of the project activities. So mission rated this criterion as fair. The main reasons are:

- There are no guidelines or strategies of SWM in Bangladesh so far.
- DCCs have not yet issued any policy papers and Master Plan II.
- Significant number of vacancies at WMD organogram.
- Till now no budget officer is deployed for both DCCs.
- Most significant one the total amount of budget is not enough to procure all the necessary goods and services.

Finally Mission members provide some recommendations for WMD staffing, WMD management and WMD activities. Those are:

For WMD Staffing

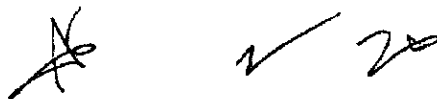
1. All the vacant posts in WMDs are expected to be filled with permanent staffs.
2. To enhance the human resources of the workshop especially mechanics.
3. To permanently employ the LMU staffs of Matuail landfill and to make haste to recruit the staff of LMU of Amin Bazar landfill.
4. Budget officers are supposed to be assigned to WMDs

For WMD Management

1. Clean Dhaka Master Plan must be revised to be based on the actual population of service areas.
2. The construction of ward offices in remaining wards is awaited.
3. To make necessary arrangements for WBA core members to expand WBA activities to non-WBA wards.
4. To make a regular open meeting for monitoring of WMD's activities.
5. To continue SWM accounting system using bottom-up budgeting.

For WMD Activities

1. To complete the construction of Amin Bazar landfill in order to realize the full-scale operation.
2. Planning and periodical implementation of environmental monitoring for both Matuail and Amin Bazar landfills are highly required.
3. To provide safety-gears to cleaners timely and continuously.

The block contains two handwritten signatures or initials. The one on the left is a stylized signature, possibly 'A' or 'K'. The one on the right consists of a checkmark followed by the number '20'.

After that the evaluation report was signed by the officials.

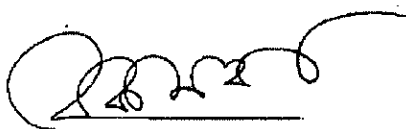
After the presentation of the JICA representative, Mr. Kano was requested to provide speech. He mainly focused on two points:

- He is quite happy to see the positive feedback of this project by the evaluation team.
- At this circumstance, project will continue up to February 2013. After that DSCC, DNCC and JICA will discuss about the further help by technical cooperation or any other format.

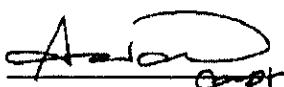
Then Dr. Mitsuo Yoshida told that 10 years ago DCC had no real solid waste management system. At that time, Conservancy, Transport and Mechanical three different departments were completing their tasks without any kind of coordination and cooperation. Then with the help of JICA Clean Dhaka Master Plan was prepared in 2005. After that, Waste Management Department is formed and now this department is still at growing stage. Except the head of the departments, many field working posts are vacant. To get some sustainable effects from the project, WMD must be run in full phase. Now from JICA side, Mr. Kano would follow up the staffing progress and the financial activities. Any kind of positive report from JICA Bangladesh office will fasten the next technical cooperation with Dhaka.

Chief Waste Management of DNCC informed the mission that even they did not fulfill the vacant posts; they did their best to complete. DNCC/ DSCC are not far behind to complete all the vacant posts of WMD. From DNCC/ DSCC side, they would try their best to finish this recruitment within shortest possible time. He requested Mr. Kano for the further help to DNCC / DSCC in solid waste management to consider from now on. It is very urgent for JICA to consider the practical issues and continue the support for solid waste management of Dhaka City.

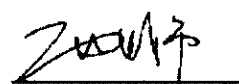
At the short speech CEO of DNCC first thanked all and expressed his joy for the happy ending of this project. The improvements of this project would guide Dhaka city for further improvement in Solid Waste Management. By this project solid waste management service is getting better and better compared with past. CEO also agreed to all the comments regarding the staffing of WMD. He informed that he would try his best to recruit the staffs against all the vacancies. CEO expected that the cooperation from JICA and Japan will continue in every sector. He hoped that Evaluation Team would see the efforts from DNCC/ DSCC and recommend for further cooperation from Government of Japan. Then he again thanked all the persons attended at this meeting.



Captain Bipan Kumar Saha, BN
Chief Waste Management Officer
DNCC



Captain Anamul Haque, BN O
Chief Waste Management Officer
DSCC



Akio Ishii
Chief Advisor
JICA Expert Team

3.2. Record of Workshops and Seminars

Please see the 2.1 (3)

3.3. Records of Orders/Letters



Japan International Cooperation Agency
Dhaka City Corporation

**Project for Strengthening of Solid Waste Management
in Dhaka City (extension)**

Dhaka City Corporation (DCC), Level-13, Nagar Bhaban, Dhaka.
Tel & Fax : (880-2)-716-2350



August 16, 2011
LTO 11-08-02

Mr. Syed Qudrat Ullah, Superintending Engineer and Additional CWMO, Waste Management
Department, DCC

Subject: Holding of 1st Steering Committee Meeting

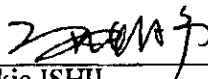
Dear Sir,

Thank you for your contribution to Project implementation.

I would like to ask you to arrange 1st Steering Committee Meeting of the Project to be held on August 21st or 23rd 2011, the date of which will have to be agreed by CEO of DCC. The agenda will be as follows.

- 1) Inception Report
- 2) Others

Best Regards,


Akio ISHII
Chief Advisor, JICA Expert Team

Copy for kind information and action

1. Capt. Mr. Bapon Kumar Saha, Chief of Waste Management Officer, Waste Management Department, DCC
2. Abul Hasnat Mohammad Ashraful Alam, Executive Engineer, Waste Management Department, DCC 
3. Staff Officer to CEO, DCC
4. Office Copy

Project for Strengthening of Solid Waste Management in Dhaka City, People's Republic of Bangladesh (Extension)

Annual Activities Plan in First JFY

Ver1: August 16, 2011

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8.2 Evaluation on WBA activities in the Committee	Ishii/Okamoto	Shoriful																								
9. Collection, reporting and analysis of the data on the weight of solid waste brought to Matuail and Amin Bazar Landfill Sites.	Arai	Shahinur/Pallab																								
10. Assistance in the regular collection, reporting and analysis of the data on the weight of the solid waste brought to the landfill sites	Arai	Shahinur/Pallab																								
11. Assistance in the construction and standardization of the WBA extension structure	Ishii	Shoriful																								
12. Assistance in the revision of the existing WMD Directives	Ishii	Shoriful																								
13. Indirect assistance to the activities implemented in the Main Project (2007-2011) which are to be implemented and extended by DCC independently (including management of the final disposal sites and financial affairs)																										
13.1 Assistance in the operation in landfill sites and the formulation of the future plan	Saito	Pallab																								
13.2 Assistance in the financial affairs	Osakabe	Rifat																								
(Output 2)																										
14. A study on the use of WBA-related manuals (including Community-based SWM Guidelines and Cleaners' Manual) and assistance in their revision	Okamoto	Shahinur																								
15. Assistance in the formulation of a WBA Introduction Plan	Okamoto	Shoriful																								
16. Planning and implementation of the training for capacity development in WBA																										
16.1 Planning the training regarding WBA	Ishii	Shoriful																								
16.2 Implementation of the trainings (WBA, PRA)	Okamoto	Shahinur/Shoriful																								
17. Assistance in the strengthening of the functions of Ward Offices (WBA1)	Ishii	Pallab																								
18. A survey on the work environments of the drainage cleaners (WBA2)																										
18.1 A survey on the work environments of the drainage cleaners	Ishii	Shoriful /Shahinur																								
18.2 Holding workshops for the drainage cleaners	Ishii	Shahinur/Shoriful																								
18.2 Fabrication of RVs and Hand Trolley for the drainage work	Ishii	Pallab																								
19. Implementation of the activities for the improvement of the work environments of the cleaners (WBA2)	Ishii	Shahinur																								
20. Confirmation of the state of collection and management of the data on the traffic accidents involving the cleaners and a study on the construction of a sustainable data collection and management	Ishii	Shahinur																								

	Person in charge (DDC/JET)	Person in charge JET local expert	2011												2012																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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Japan International Cooperation Agency
Dhaka City Corporation

**Project for Strengthening of Solid Waste Management
in Dhaka City (Extension)**

Dhaka City Corporation (DCC), Level-13, Nagar Bhaban, Dhaka.
Tel & Fax : (880-2)-716-2350



Thursday, 27 October 2011

Ref: LTO 11-10-01

To
Mr. Bipan Kumar Saha
Captain, BN
Chief Waste Management Officer
Waste Management Department
Dhaka City Corporation

**Sub: Advice to form a Waste Management Council/Advisory Committee for Waste
Management Department (WMD)**

Dear Sir,

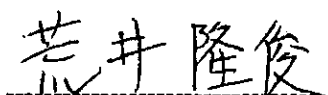
Thank you for your good leadership for smooth implementation of Project for Strengthening of Solid Waste Management in Dhaka City (Extension).

In line with the discussion on Inception Report held on 21st August 2011, JET sincerely like to advice to formulate an Advisory Committee or Council for WMD in order to evaluate the present status of existing Directives, revise it if necessary and support for fulfillment of staffing of WMD. There are 18 directives have been developed and followed through the implementation of activities of project jointly by JET and DCC officials. To improve the service of waste management to the citizen it is very much necessary to evaluate the directives, revise the directives if necessary arise and support for staffing of the all vacant posts of WMD.

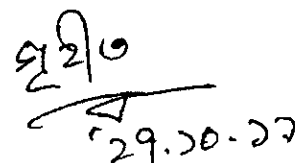
I would like to share that in accordance with the Waste Management and Public Cleansing Law in Japan the concerned departmental heads of City Corporations/Prefectures have the authority to form committee or council to advise the department. In line with that notion, JET has also been thinking to work with a committee or council for waste management department. Idea of JET on the Council or Committee is attached here with.

So I therefore, would like to advise you to take necessary steps to formulate a Waste Management Council or Waste Management Advisory Committee who can evaluate the directives of WMD, revise it and support for staffing of WMD.

Yours sincerely



Takatoshi Arai
Deputy Chief Advisor
JICA Expert Team


29.10.11

Attachment 1: Idea of JICA Expert Team to formulate Waste Management Council/Waste
Management Advisory Committee

Attachment 2: A copy of Waste Management Department Directives

Idea of JICA Expert Team

1. Name of the entity
 - (1) Waste Management Council or
 - (2) Waste Management Advisory Committee
2. Members composition:
 - CWMO, CEO, GM transport, Chief Engineer of DCC, AdCWMO, SE, EE
 - Former WMD (Conservancy Department Officers, CCO/CWMO, Ad CWMO, Dty CWMO etc.)
 - Councilors (male & female),
 - Representative from IEB
 - Professor from BUET/DU
 - Experts from relevant research organizations
 - Journalist,
 - Representative from civil society
 - Central Government (MoEF/DOE),
 - Private Company, NGO,
 - Donner Agency
3. Roles/Activities of WM Standing Committee:
 - Evaluation of WMD Directives
 - Revision of Waste Management Directives
 - Support for the progress of staffing in WMD
4. Frequency of meeting
 - Twice in a year or more
5. Secretary
 - Superintending Engineer of WMD/Additional Chief Waste Management Officer of WMD
6. Reporting & reflection of report
 - To mayor to approve directives
 - Revised directives
 - Progress in staffing



Japan International Cooperation Agency
Dhaka City Corporation

**Project for Strengthening of Solid Waste Management
in Dhaka City (Extension)**

Dhaka City Corporation (DCC), Level-13, Nagar Bhaban, Dhaka
Tel & Fax : (880-2)-716-2350



November 29, 2011
LTO- 11-11-01

To
Captain Bipan Kumar Saha psc, BN
Project Director
Chief Waste Management Officer
Waste Management Department
Dhaka City Corporation
Dhaka

Dear Sir:

Subject: To nominate 3 persons for third country training in Jakarta, Indonesia

At first I am thanking you for your sincere leadership of our project.

I would like to inform you as a part of third country training for the DCC officials, JICA Expert team this time decided to arrange a training program to Jakarta, Indonesia from February 15 to 24, 2012 for three persons.

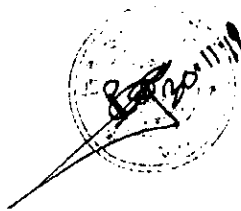
We are requesting you to nominate 3 members from the waste management department not later than January 15, 2012.

Sincerely

Akio Ishii

Chief Advisor

JICA Expert Team





Japan International Cooperation Agency
Dhaka City Corporation

**Project for Strengthening of Solid Waste Management
in Dhaka City (Extension)**

Dhaka City Corporation (DCC), Level-13, Nagar Bhaban, Dhaka.
Tel & Fax : (880-2)-716-2350



11 December 2011

Ref: LTO 11-12-03

Mr. Syed Quadratullah
Superintending Engineer and Additional Chief Waste Management Officer
Waste Management Department
Dhaka North City Corporation and Dhaka South City Corporation

**Sub: Reference of the Cost Items and Amounts of Typical Activities to be
implemented by Community Budget**

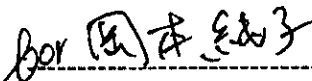
Dear Sir,

Thank you for your continuous contribution and good leadership to implement the Project. We appreciate your effort to improve the disbursement procedure of Community Solid Waste Management Budget of Dhaka City Corporation. We believe your initiatives will make the WBA implementation more active in all target wards and will encourage Conservancy Offices and Conservancy Inspectors to realize various activities based on needs at the field level.

According to your request, we would like to provide information on the cost of each WBA activity based on our past experience of the Project. In the attached document, typical WBA activities and their costs are shown, which must be useful for your reference. Please consider that WBA activities are not limited to those shown in the table but can be designed variously according to the objective of each activity.

We expect that the official disbursement procedure of Community Budget will be clarified urgently to expedite the zone level plan formulation and implementation.

Yours sincerely



Akio Ishii
Chief Advisor
JICA Expert Team

Copy for kind information

1. Mr. Bipan Kumar Saha, Captain, BN, Chief Waste Management Officer, Waste Management Department, Dhaka South and North City Corporations
2. Abul Hasnat Mohammad Ashraful Alam, Executive Engineer, Waste Management Department, Dhaka South and North City Corporations

Attachment 1: List of typical activities to be implemented by Community Budget and estimated costs.

20/12/11

List of Typical Activities to be implemented by Community Budget and Estimated Costs

The JICA Expert Team recommends that the Community Budget shall be used to improve the solid waste management at the ward level according to the framework of WBA shown in the WBA Booklet.

The typical activities include, but are not limited to, the followings:

Training of WMD staff for WBA implementation

- WBA training
- PRA training
- TOT training

WBA 1: Functioning of Ward Solid Waste Management Office

- Stationeries for Ward SWM Office
- Furniture and equipment for Ward SWM Office
- Construction and renovation of Ward SWM Office

WBA 2: Improvement of Cleaners' Working Environment

- First Aid box
- Hand gloves
- Masks
- Safety and Sanitation Committee meeting

WBA 3: Community Based Solid Waste Management

- Kick meeting
- CUWG training
- CUWG meetings/PCSP meetings
- Miking
- Leaflet/Sticker
- T-Shirt
- Banner
- Cultural Event
- Environmental Education Program

WBA 4: Improvement of Collection System

- PCSP Training
- Rickshaw van
- Hand trolley
- Special Cleaning Program

Estimated cost of each activity and its provided conditions are described in the following table.

Estimated Costs of Typical Activities to be implemented by Community Budget

Sl. No.	Activities	Objective	Cost related items	Number per wards per year	Unit cost	Remarks
1	WBA training	To understand the concept, strategies and sustainability matters of WBA	3 days training program including 1 day field trip - Copy office order - Deliverables (note book, folder, pen, program) - Projector and screen - Morning and afternoon tea - Lunch - Certificates - Stationeries (Tape, brown paper, flip chart paper,)	1 time per zone	45,000	Around 20 participants can take training at a time
2	PRA training	To enhance the participatory knowledge and skill of CIs and COs of a zone	5 day training from professional & reputed training institute like ITN-BUET	1 time per zone all wards of a zone	180,000	Around 15 participants can take training at a time
3	TOT training	To enhance the training skill of CIs and COs	5 day training from professional & reputed training institute like ITN-BUET	1 time per zone	180,000	Around 15 participants can take training at a time
4	Stationeries for Ward SWM Office	- Stapler - Pen		1	150	Filing and book keeping
		Resolution books (CUWG meeting, SSC meeting, etc.)		24	4	Filing and book keeping
		Chair for CI		2	30	Filing and book keeping
		Desk for CI		1 per ward	5,000	
		Plastic Chair		1 per ward	13,000	
		Billboard		10 per ward	700	
		White board		1 per ward	3,800	
		Magnet board		1 per ward	2,600	
		Small cabinet		1 per ward	2,000	
		Complaint box		1 per ward	4,200	
		Water server		1 per ward	1,100	
5	Furniture and Equipment for Ward SWM Office			1 per ward	11,000	

Sl. No.	Activities	Objective	Cost related items	Number per wards per year	Unit cost	Remarks
6	Construction and renovation of Ward SWM Office	To improve Ward level SWM	Depends on ward	Depends on availability of land	Variable to space and ward	WMD headquarters may follow the same procedure of Ward 40 and Ward 84
7	Cleaners Workshop /Drain Cleaner Workshop	To improve cleaners' working environment	- Sound system - Banner - Venue with chair & tables - Renting projector & screen - Rostrum - Snacks and water	1 time per zone	50,000	5 wards, 350 cleaners and 50 officers If the venue is free of charge
8	First Aid box	For first aid of the cleaners	- First Aid Box - Artery - S/B Scissors - Needle holder - Needle holder - Silk roll - Cotton-200 gm - Bandage - Savlon - Band Aid - Hexisol-250 ml - Triangular Bandage - Paracetamol - Burn Silk - Sterile gloves - ORS saline - Savlon Cream - Thermometer - Hand Gloves	1	2,000	JICA Expert Team gave 46 wards where refill is necessary. Materials need to fill at least two times per ward per year
9	Hand gloves	For safety of ward and drain cleaners		2-3 pair /cleaner	160	Safety gears
10	Masks	For ward and drain cleaners		4/cleaner	10	Safety gears
11	Kick meeting	To share WBA and Community Solid Waste Management	- Invitation letter - Venue with chair & tables	1	50,000	Around 250 people join

Sl. No.	Activities	Objective	Cost related items	Number per wards per year	Unit cost	Remarks
		- To share role of DCC, PCSP & Community - To share community units - To share functional steps of community solid waste management of WMD, DCC	- Sound system - Renting projector & screen - Rostrum - Snacks & water - Deliverable (note book, pen, folder) - Tea			
12	CUWG training	- To motivate and empower community in decision making - To influence community to share responsibilities - To make community understand the roles of stockholders in SWM - Preparation of Community Action Plan	- Invitation letter - Deliverables (note book, folder, pen, program) - Projector and screen - Morning and afternoon tea - Lunch - Certificates - Stationeries (Tape, brown paper, flip chart paper,)	2	50,000	Targeting two units. Training will be carried out as per Training Module developed by JICA Expert Team and DCC. 40 people join each time
13	CUWG meetings, PCSP meetings	- To make social maps - To identify open/illegal dumping spots - To identify PCSP coverage & uncover age area - To show container, dustbin, open truck and compactor collection spots - To show narrow streets where rickshaw van cannot enter but other means of primary collection is required.	- Brown paper & poster paper - Sign pen - Tea	12 to 15	1,000	Targeting two units where activities will be carried out
14	Miking	- To aware and mobilize people - To be arranged for awareness raising programs such as rally, sticker campaign, etc.		2	1,000	School Children, PCSP, Community, DCC Cleaners, CO & CI join the rally
15	Leaflet/Sticker	- To aware and mobilize people - To send information to community	Materials, design and print	Depends on requirement of ward	10	

Sl. No.	Activities	Objective	Cost related items	Number per wards per year	Unit cost	Remarks
16	T-Shirt	To use in the Campaign / Rally	Design, fabrics, embroidery & packaging	Depends on ward and zone	150	
17	Banner	To use at kick-off meeting, CUWG training, PCSP training, Rally	Materials, design and print	4 to 5	3,000	Around 100 sqf each banner @35 Tk sqf
18	Cultural Event	Raising SWM awareness	- Sound system - Musicians and Instruments - Banner - Stage and Chairs	1	150,000	Bowl songs and SWM related songs
19	Envionmental Education Program	To raise awareness of school children	- Art paper - Post-It - Photo print - Refreshment - Others	Depends on ward and zone	900	
20	Rickshaw Van	To improve DCC's cleaning works		Depends on ward	30,000	
21	Hand Trolley	To improve DCC's cleaning works		Depends on ward	13,000	
22	Special Cleaning Program	To solve major SWM problems	N/A	Depends on ward	0	CI can facilitate community to entertain the cleaners
23	PCSP Training	- Sharing health safety issues of waste workers - To improve service coverage and standard - To harmonize with secondary collection of DCC - Facing EDUL-AZHA	- Invitation letter - Deliverables (note book, folder, pen, program) - Projector and screen - Morning and afternoon tea - Lunch - Certificates - Stationeries (Tape, brown paper, flip chart paper)	2	50,000	Training will be carried out as per Training Module developed by JICA Expert Team and DCC



Japan International Cooperation Agency
Dhaka City Corporation

**Project for Strengthening of Solid Waste Management
in Dhaka City (extension)**

Dhaka City Corporation (DCC), Level-13, Nagar Bhaban, Dhaka.
Tel & Fax : (880-2)-716-2350



December 15, 2011

LTO 11-12-02

Capt. Mr. Bipon Kumar Saha, Chief of Waste Management Officer, Waste Management
Department, DCC

Subject: Contents of Third Country Training in Indonesia

Dear Sir,

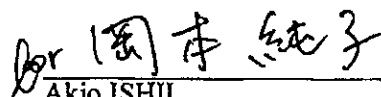
Thank you for your contribution to Project implementation.

We would like to share tentative contents of Third Country Training in Indonesia with you. Based on the purpose and contents, we highly appreciate if you select appropriate participants for the training. Bangladeshi participants need to prepare a visa to enter Indonesia and the procedure will take more than two weeks. We recommend you to decide participants earlier than 15th January and precede the visa speedily.

Attachment

- 1) Indonesia Study Tour Proposal
- 2) Visa requirements for ordinary passport

Best Regards,



Akio ISHII

Chief Advisor, JICA Expert Team

Copy for kind information and action

1. Mr. Syed Qudrat Ullah, Superintending Engineer and Additional CWMO, Waste Management Department, DCC
2. Abul Hasnat Mohammad Ashraful Alam, Executive Engineer, Waste Management Department, DCC
3. Staff Officer to CEO, DCC South
- ✓ Staff Officer to CEO, DCC North
- ✓ Office Copy



Japan International Cooperation Agency
Dhaka City Corporation
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in Dhaka City (extension)**

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December 15, 2011
LTO 11-12-02

Capt. Mr. Biplon Kumar Saha, Chief of Waste Management Officer, Waste Management
Department, DCC

Subject: Contents of Third Country Training in Indonesia

Dear Sir,

Thank you for your contribution to Project implementation.

We would like to share tentative contents of Third Country Training in Indonesia with you. Based on the purpose and contents, we highly appreciate if you select appropriate participants for the training. Bangladeshi participants need to prepare a visa to enter Indonesia and the procedure will take more than two weeks. We recommend you to decide participants earlier than 15th January and precede the visa speedily.

Attachment

- 1) Indonesia Study Tour Proposal
- 2) Visa requirements for ordinary passport

Best Regards,

Am
15/12/2011

for 岡本 純子
Akio ISHII
Chief Advisor, JICA Expert Team

for 15.12.2011

Copy for kind information and action

1. Mr. Syed Qudrat Ullah, Superintending Engineer and Additional CWMO, Waste Management Department, DCC
2. Abul Hasnat Mohammad Ashraful Alam, Executive Engineer, Waste Management Department, DCC
3. Staff Officer to CEO, DCC South *Am*
15.12.11
4. Staff Officer to CEO, DCC North
5. Office Copy

Receive Copy

Indonesia Study Tour Proposal

Project for Strengthening of Solid Waste Management in Dhaka City (Extension)

1. Objective:

- To obtain knowledge and information to implement project activities
- To get connections for information exchange for improvement of SWM services

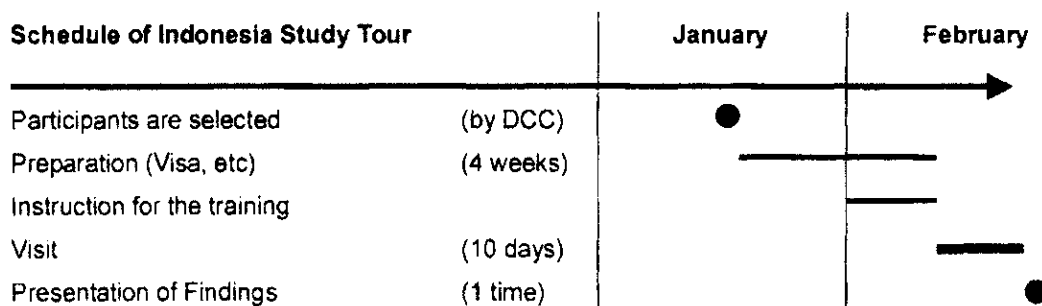
2. Description

Jakarta, one of the biggest Asian cities, has around 12 million people as much as Dhaka city. So, same problems such as efficiency of collection, management of landfill site, promotion of participatory solid waste management etc., are imposed on those two cities. Also history of Japanese cooperation for Solid Waste Management is similar. As Indonesia, M/P was formulated in 1987 by Japanese technical cooperation, construction of transfer station, workshop and landfill site improvement, purchase of collection equipment were done by Japanese loan aid. Japanese Grand aid also supported construction of Water Supply and Environmental Sanitation Training center of waterworks under the Ministry of public works. Moreover, Bandung Institute of Technology and Research Institute for Human Settlements, Environmental management center in west Java research Solid Waste Management continuously. Therefore, Third Country training in Indonesia is very effective for trainees.

3. Proposed Schedule

Tour is to motivate counterparts in the following areas:

- To clarify knowledge to be learnt for the improvement of DCC's solid waste management
- To understand the situation of other city's solid waste management
- To determine what kind of knowledge can be transferred from Jakarta to Dhaka



Schedule during Indonesia Visit (tentative)

Date	Morning	Afternoon	Stay
15, Feb, Wed	Move to Jakarta	Courtesy call to JICA office	Jakarta
16, Feb, Thu	Sunter transfer station, Jakarta	Courtesy call to Department of Public works	Jakarta
17, Feb, Fri	Water Supply and Environmental Sanitation Training center of waterworks, Bekasi	Landfill site, Bekasi	Jakarta
18, Feb, Sat	Holiday		Jakarta
19, Feb, Sun	Holiday		Jakarta
20, Feb, Mon	Human waste treatment center, Pulo Gadung	Privatized Chunk transfer station	Jakarta
21, Feb, Tue	Project office for SWM, Bandung	Landfill site, Bandung	Bandung
22, Feb, Wed	Bandung Institute of Technology	Research institute for Human Settlement	Bandung
23, Feb, Thu	Report to JICA	Meeting with DoPW and Jakarta Municipality	Jakarta
24, Feb, Fri	Back to Dhaka		Jakarta

4. Participants

No.	Name	Organization	Passport No.
1.	To be determined	Dhaka City Corporation	
2.	To be determined	Dhaka City Corporation	
3.	To be determined	Dhaka City Corporation	
4.	Mr. Akio Ishii	JICA Expert Team	

WMD staff closely involved in the Clean Dhaka Project should be selected as trainees.

Mr. Akio Ishii (Chief Advisor, JICA Expert Team member) will join the Tour in Jakarta, Indonesia and guide the Tour.

Ms. Miyuki Oku (JOCV in Bangladesh who work with the JICA Expert Team) may attend guide the tour with Mr. Ishii.

5. Budget

- Air fare economy class (Dhaka – Jakarta - Dhaka) and transportation inside Indonesia (Vehicles)
- Accommodation
- Daily allowance: ¥3,800/day/ppl
- Translator (English-Indonesian)

The expenses other than above are bore by participants.

Note: Koyama will carry Daily Allowances for the participants in US\$ from Japan. The allowances will be paid in US\$ right before the Tour.



THE EMBASSY OF THE REPUBLIC OF INDONESIA
DHAKA

VISA AND CONSULAR SERVICES

Visa Hours : 09.30 – 12.30 hours
Visa Collection : 15.00 – 16.00 hours
Sunday to Thursday

Ordinary Passport

Requirements:

1. Fill up 1 (one) copy visa application form;
2. Valid passport or travel document with at least 6 (six) months validity for Single Entry Visa and at least 18 (eighteen) months validity for Limited Stay Entry Visa & Multiple Business Entry Visa, from the date of submission;
3. 2 (two) recent colour passport size photographs with red background;
4. Request/recommendation letter of the visa applicant;
5. Photocopy of the passport of the applicant;
6. Proof of the original and copy return ticket (or ticket to continue travel to another country) of the applicant;
7. Photocopy of the latest (3 months) Bank Statement of the applicant to cover the cost of living while in Indonesia;
8. Photocopy of the Company License of the Trade License of the applicant;
9. Copy of Invitation letter from sponsor in Indonesia (for Business/Social-Culture Single Entry, Limited Stay and Multiple Entry Visas).
10. Proof of the Clearance letter from Indonesian Immigration (for Social-Culture Single Entry, Limited Stay and Multiple Entry Visas).
11. Hotel booking only for the Tourist Visa applicant.

Additional Requirements:

1. Copy of the Marriage Certificate or a proof of identity for those who are accompanying their spouses (Indonesian spouses) of parents living in Indonesia;
2. Copy of reference/recommendation letter from the institution or specific department/division for those who are assigned to conduct activities in: religious missions/research work in education, social or cultural fields;
3. International Certificate of Yellow Fever Vaccination for those who are coming from or stop over an infected area;
4. Reference/recommendation letter from Airlines Offices (package tour arrangement).

Fees:

1. Transit Entry Visa.....	Tk. 1,400.00	US\$ 20.00
2. Single Entry Visas (Tourist, Business and Social).....	Tk. 3,150.00	US\$ 45.00
3. Limited Stay Entry Visa (6 months).....	Tk. 3,500.00	US\$ 50.00
4. Limited Stay Entry Visa (1 year).....	Tk. 7,000.00	US\$ 100.00
5. Limited Stay Entry Visa (2 years).....	Tk. 12,250.00	US\$ 175.00
6. Multiple Business Entry Visa.....	Tk. 7,000.00	US\$ 100.00
7. Legalization of Document.....	Tk. 1,400.00	US\$ 20.00
8. Clearance telex	Tk. 400.00	US\$ 6.00

Note:

- Delivery of the visa are 4 (four) working days
- Application must be submitted at least 2 (two) weeks prior to the date of departure.
- No additional/extra fees.

* ANY INQUIRY REGARDING CONSULAR MATTERS (VISA) PLEASE EMAIL TO:

pk@jakarta-dhaka.com
Website: www.jakarta-dhaka.com

Dhaka, 17 January 2010
Visa and Consular Section

Road No 53 Plot No 14 Gulshan - 2, Dhaka-1212, Bangladesh
Tel: (880-2) 9881640-41, Fax: (880-2) 8825291, 8810993



Japan International Cooperation Agency
Dhaka City Corporation

**Project for Strengthening of Solid Waste Management
in Dhaka City (Extension)**

Dhaka City Corporation (DCC), Level-13, Nagar Bhaban, Dhaka.
Tel & Fax : (880-2)-716-2350



01, February 2012

Ref: LTO 12-02-02

Captain Bipan Kumar Saha, BN
Chief Waste Management Officer
Waste Management Department
Dhaka North City Corporation

Sub: Workshop for EGAP vehicle Drivers

Thank you for your good leadership for smooth implementation of Project for Strengthening of Solid Waste Management in Dhaka City (Extension).

It is our pleasure to inform you that under the project of Strengthening of Solid Waste Management in Dhaka City, JICA Expert Team has been supporting Waste Management Department of DCC for organizing several trainings and workshops targeting different level of personnel. The objectives of the training workshops are to enhance the capacity of the staff and to improve the working skill on varieties of aspects of solid waste management of Dhaka City Corporation.

The incoming workshop titled on "Drivers workshop" will be held on February 02, 2012 at 9 AM at Mirpur Garage. The main objective of this workshop is to create awareness about cleanliness, regular use of weighbridge, servicing etc. between the EGAP vehicle drivers.

Yours sincerely

Akio Ishii
Chief Advisor
JICA Expert Team

Copy to:

1. General Manger, Transport Department, Dhaka North City Corporation
2. Manager, Transport Department, Dhaka North City Corporation
3. EE (Collection & Transportation), WMD, Dhaka North City Corporation
4. Staff Officer to Chief Executive Officer, Dhaka North City Corporation
5. Masanobu Kasimura Representative, JICA Bangladesh

office copy



Japan International Cooperation Agency
Dhaka City Corporation

**Project for Strengthening of Solid Waste Management
in Dhaka City (Extension)**

Dhaka South City Corporation (DCC), Level-13, Nagar Bhaban, Dhaka.
Tel & Fax : (880-2)-716-2350



06, February 2012

Ref: LTO 12-02-03

Captain Bipan Kumar Saha, BN
Chief Waste Management Officer
Waste Management Department
Dhaka South City Corporation

Sub: Workshop for EGAP vehicle Drivers

Thank you for your good leadership for smooth implementation of Project for Strengthening of Solid Waste Management in Dhaka City (Extension).

It is our pleasure to inform you that under the project of Strengthening of Solid Waste Management in Dhaka City, JICA Expert Team has been supporting Waste Management Department of DCC for organizing several trainings and workshops targeting different level of personnel. The objectives of the training workshops are to enhance the capacity of the staff and to improve the working skill on varieties of aspects of solid waste management of Dhaka City Corporation.

The incoming workshop titled on “**Drivers workshop**” will be held on February 09, 2012 at 9 AM at Central Garage. The main objective of this workshop is to create awareness about cleanliness, regular use of weighbridge, servicing etc. among the EGAP vehicle drivers.

Yours sincerely

Akio Ishii
Chief Advisor
JICA Expert Team

Copy to:

1. General Manger, Transport Department, Dhaka South City Corporation
2. Manager, Transport Department, Dhaka South City Corporation
3. EE (Collection & Transportation), WMD, Dhaka South City Corporation
4. Staff Officer to Chief Executive Officer, Dhaka South City Corporation
5. Masanobu Kashimura, Representative, JICA Bangladesh

office copy



Japan International Cooperation Agency
Dhaka North City Corporation

**Project for Strengthening of Solid Waste Management
in Dhaka City (Extension)**

Dhaka South Nagar Bhaban, Level-13, Dhaka.
Tel & Fax : (880-2)-716-2350



February 23, 2012
LTO- 12-02-04

To
Honorable Administrator
Dhaka North City Corporation
Dhaka

Dear Sir:

Subject: Necessary actions for future landfill site

Thank you for your support to our Project for Strengthening of Solid Waste Management in Dhaka City (Extension).

As you know now DNCC is operating a landfill site at Aminbazar. The landfill site is essential facility to implement solid waste management. We would like to share you, in accordance with our estimation, the remaining capacity of the landfill site is 2,670,000m³. It means the life span is until December 2017. Inauguration of new landfill operation may be taken four and half years for the necessary steps such as land acquisition, investigations, design and construction from our past experience. Therefore, we sincerely advise you to commence necessary actions for land acquisition toward continual landfill operation and proper solid waste management.

It would be grateful if you could kindly understand the above and take necessary action.

Yours sincerely,

for 荒井隆俊

Akio Ishii
Chief Advisor
JICA Expert Team

c.c.: Chief Executive Officer, DNCC
Chief Waste Management Officer, DNCC

Office Copy



Japan International Cooperation Agency
Dhaka North City Corporation

**Project for Strengthening of Solid Waste Management
in Dhaka City (Extension)**

Dhaka South Nagar Bhaban), Level-13, Dhaka,
Tel & Fax : (880-2)-716-2350



February 23, 2012
LTO- 12-02-05

To
Honorable Administrator
Dhaka North City Corporation
Dhaka

Dear Sir:

Subject: Staff allocation to Aminbazar landfill site

Thank you for your support to our Project for Strengthening of Solid Waste Management in Dhaka City (Extension).

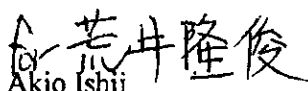
As you know DNCC is operating a landfill at Aminbazar which was built by Japan Debt Cancellation Fund (JDCCF). However, we found following difficulties due to lack of the operation staffs;

- ✓ Wastes is improperly placed and disposed without any instruction
- ✓ Weighbridge at the entrance cannot measure the waste amount transferred to the landfill site
- ✓ Washing pool for collection vehicles does not work
- ✓ Aeration equipment at leachate pond does not properly work and so on.

In order to maintain the smooth operation of the landfill site, we sincerely advise you to allocate the necessary staffs to the site.

It would be grateful if you could kindly understand the above and take necessary action.

Yours sincerely,


Akio Ishii

Chief Advisor
JICA Expert Team

c.c.: Chief Executive Officer, DNCC
Chief Waste Management Officer, DNCC



Japan International Cooperation Agency
Dhaka North City Corporation

**Project for Strengthening of Solid Waste Management
in Dhaka City (Extension)**

Dhaka South Nagar Bhaban), Level-13, Dhaka.
Tel & Fax : (880-2)-716-2350



February 23, 2012
LTO- 12-02-06

To
Honorable Administrator
Dhaka North City Corporation (DNCC)
Dhaka

Dear Sir:

Subject: Leachate treatment facility at Aminbazar landfill site

Thank you for your support to our Project for Strengthening of Solid Waste Management in Dhaka City (Extension).

As you know DNCC and DSCC are operating landfill sites at Aminbazar and Matuail, respectively. We found that leachate treatment facility is becoming a serious threat to surrounding environment at the landfill sites. Besides, former DCC faced some legal problems by court for some environmental issues in 2010.

In consideration of above situation, JICA already took a pilot project for DSCC to build a leachate treatment facility at Matuail landfill site which will be completed by this March. The objective of this facility is to treat the leachate so that the treated water can be transferred to nearby drains or agricultural land.

We sincerely advise you to take proper initiative to build the leachate treatment facility at Aminbazar by the use of remaining fund of Japan Debt Cancellation Fund (JDCF) or your own budget.

It would be grateful if you could kindly understand the above and take necessary action.

Yours sincerely,

for 荒井隆俊

Akio Ishii
Chief Advisor
JICA Expert Team

c.c.: Chief Executive Officer, DNCC
Chief Waste Management Officer, DNCC



Japan International Cooperation Agency
Dhaka North and South City Corporation
**Project for Strengthening of Solid Waste Management
in Dhaka City (Extension)**



Dhaka City Corporation (DCC), Level-13, Nagar Bhaban, Dhaka, Tel & Fax : (880-2)-716-2350

Wednesday, 29 Feb. 12

Ref: LTO 12-02-07

To
Dr. Md. Mafizur Rahman
Centre Director
International Training Network
Bangladesh University of Engineering and Technology

Sub: Request to organize a seminar of CIs and COs of Dhaka North and South City Corporation on Legal Aspects of Solid Waste Management in Dhaka City

Dear Sir,

It is our pleasure to inform you that JICA Expert Team has been working with City Corporations of Dhaka for Improving Solid Waste Management. To improve the capacity of City Corporation Staff, JICA Expert Team, Dhaka North and South City Corporation would like to organize a counterpart workshop on the legal aspects of Solid Waste Management in Dhaka City.

JICA Expert Team would like to request ITN-BUET to organize the workshop collaborating among Dhaka North and South City Corporation and JICA Expert Team

The objectives of this workshop are to share existing regulatory documents (act, law, rule, policy, strategies, master plan, office orders etc.) and understanding the gaps and necessity of regulatory information. JICA Expert Team will mainly present the key note paper and like to request ITN-director to make comment on the existing work (key note) on legal aspect of SWM.

I therefore like to request you arrange necessary preparation with JICA Expert Team to make the workshop successful.

Sincerely

Akio Ishii
Team Leader
JICA Expert Team



Dhaka North and South City Corporations
Japan International Cooperation Agency
**Project for Strengthening of Solid Waste Management
in Dhaka City (Extension)**



Dhaka South City Corporation (DSCC), Level-13, Nagar Bhaban, Dhaka, Tel & Fax: (880-2)-716-2350

June 28, 2012
Ref: LTO 12-06-01

To
Commander Md. Anamul Haque (psc, BN)
Chief Waste Management Officer
Dhaka South City Corporation

Sub: Formulation and issuing core group office order

Dear Sir,

Thank you for your initiatives for smooth implementation of JICA project on Solid Waste Management in your department.

You might have already known that ward based approach (WBA) is very important item of overall solid waste management of Dhaka South City Corporation. It is already understood that SWM services of DSCC as well as promotion of WBA is affected by the lack of required staff members of Waste Management Department. To overcome this problem, the necessity of an active WBA core group is realized and discussed in the previous WBA meetings.

A structure of WBA core group is attached, which was developed based on the discussion among JICA Expert Team, you and former WBA core group members. It was shared in the WBA meetings as well.

For active participation of core group members, an official order is required. I therefore, would like to request you to issue an office order to activate the WBA core group in DSCC and enhance their function in promoting WBA.

Yours sincerely

Akio Ishii
Chief Advisor/Team Leader
JICA Expert Team

Attachment: Structure of WBA Core Group, Dhaka South City Corporation

Copy for kind information and action

1. Abu Saleh Mohammad Mainuddin. Superintending Engineer and Additional CWMO, Waste Management Department, DSCC
2. Office Copy



Dhaka North and South City Corporations
Japan International Cooperation Agency
**Project for Strengthening of Solid Waste Management
in Dhaka City (Extension)**



Dhaka South City Corporation (DCC), Level-13, Nagar Bhaban, Dhaka, Tel & Fax: (880-2)-716-2350

June 28, 2012
Ref: LTO 12-06-02

To
Bipan Kumar Saha
Captain, BN
Chief Waste Management Officer
Dhaka North City Corporation

Sub: Formulation and issuing core group office order

Dear Sir,

Thank you for your initiatives for smooth implementation of JICA project on Solid Waste Management in your department.

You might have already known that ward based approach (WBA) is very important item of overall solid waste management of Dhaka North City Corporation. It is already understood that SWM services of DNCC as well as promotion of WBA is affected by the lack of required staff members of Waste Management Department. To overcome this problem, the necessity of an active WBA core group is realized and discussed in the previous WBA meetings.

A structure of WBA core group is attached, which was developed based on the discussion among JICA Expert Team, you and former WBA core group members. It was shared in the WBA meetings as well.

For active participation of core group members, an official order is required. I therefore, would like to request you to issue an office order to activate the WBA core group in DNCC and enhance their function in promoting WBA.

Yours sincerely

Akio Ishii
Chief Advisor/Team Leader
JICA Expert Team

Attachment: Structure of WBA Core Group, Dhaka North City Corporation

Copy for kind information and action

1. Md. Mesbahul Karim, Superintending Engineer, Waste Management Department, DNCC
2. Abul Hasnat Mohammad Ashraful Alam, Executive Engineer, Waste Management Department, DNCC
3. Office Copy

Attachment

Structure of WBA Core Group, Dhaka North City Corporation

Group leaders:	Md. Mesbahul Karim (Superintending Engineer)
	Abul Hasnat Md. Ashrafal Alam (Executive Engineer)
Sub-Group leaders:	Mofizur Rahman Bhuiyan (Conservancy Officer, Zone 2)
	Basu Deb Sarker (Conservancy Officer, Zone 5)
WBA1:	Md. Shahidul Islam (Conservancy Inspector, Ward 27, Zone 5)
WBA2:	Aminur Rahman Biswas (Conservancy Inspector, Ward 32, Zone 5)
WBA3:	Md. Bengir Ahmed (Conservancy Inspector, Ward 29, Zone 5)
WBA4:	Rokib Hasan (Conservancy Inspector, Ward 26, Zone 5)



Dhaka North and South City Corporations
Japan International Cooperation Agency
**Project for Strengthening of Solid Waste Management
in Dhaka City (Extension)**



Dhaka South City Corporation (DCC), Level-13, Nagar Bhaban, Dhaka, Tel & Fax: (880-2)-716-2350

June 28, 2012
Ref: LTO 12-06-01

To
Commander Md. Anamul Haque (psc, BN)
Chief Waste Management Officer
Dhaka South City Corporation

Sub: Formulation and issuing core group office order

Dear Sir,

Thank you for your initiatives for smooth implementation of JICA project on Solid Waste Management in your department.

You might have already known that ward based approach (WBA) is very important item of overall solid waste management of Dhaka South City Corporation. It is already understood that SWM services of DSCC as well as promotion of WBA is affected by the lack of required staff members of Waste Management Department. To overcome this problem, the necessity of an active WBA core group is realized and discussed in the previous WBA meetings.

A structure of WBA core group is attached, which was developed based on the discussion among JICA Expert Team, you and former WBA core group members. It was shared in the WBA meetings as well.

For active participation of core group members, an official order is required. I therefore, would like to request you to issue an office order to activate the WBA core group in DSCC and enhance their function in promoting WBA.

Yours sincerely

Akio Ishii
Chief Advisor/Team Leader
JICA Expert Team

Attachment: Structure of WBA Core Group, Dhaka South City Corporation

Copy for kind information and action

1. Abu Saleh Mohammad Mainuddin, Superintending Engineer and Additional CWMO, Waste Management Department, DSCC
2. Office Copy

Attachment

Structure of WBA Core Group, Dhaka South City Corporation

Group leader:	Abu Saleh Mohammad Mainuddin (Superintending Engineer and Additional CWMO)
Sub-Group leaders:	Md. Nurul Hossain Khan (Conservancy Officer, Zone 5) Md. Monwar Hossain (Conservancy Officer, Zone 2)
WBA1:	Abdul Motaleb (Conservancy Inspector, Ward 13, Zone 2) Rashedur Rahman Russel (Conservancy Inspector, Ward 21, Zone 1)
WBA2:	Md. Shafikul Islam (Conservancy Inspector, Ward 10, Zone 2) Md. Abu Jafar (Conservancy Inspector, Ward 15, Zone 1)
WBA3:	Bikash Chandra Dash (Conservancy Inspector, Ward 48, Zone 5) Md. Shah Kamal (Conservancy Inspector, Ward 27, Zone 3)
WBA4:	Md. Hanif Uddin (Conservancy Inspector, Ward 19, Zone 1) Abu Taher (Conservancy Inspector, Ward 40, Zone 5)



Dhaka North and South City Corporations
Japan International Cooperation Agency
**Project for Strengthening of Solid Waste Management
in Dhaka City (Extension)**



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August 8, 2012
LTO- 12-08-02

Commander Anamul Haque, psc, BN
Chief Waste Management Officer,
Waste Management Department, DSCC

Dear Sir:

Subject: Submission of Annual Plan of Activities 2012-13 and request for circulation

Thank you so much for your continuous cooperation to the project.

It is pleasure to inform you that, Project for Strengthening of Solid Waste Management in Dhaka City (Extension) has prepared an annual plan regarding solid waste management for 2012-13 fiscal year. JICA Expert Team strongly believes that, from next fiscal year personals from Dhaka South City Corporation can make such plan and carry out the activities all the year.

It would be grateful if you could kindly circulate the plan to relevant officials within Dhaka South City Corporation.

Sincerely yours,

Akio Ishii
Chief Advisor
Project for Strengthening of Solid Waste Management in Dhaka City (Extension)
JICA Expert Team

Attachment: Annual Plan of Activities 2012-13; (20 copies)

Copy for information:
Abu Saleh Md. Mainuddin, Add. CWMO & SE, WMD, DSCC



JICA Expert Team
Japan International Cooperation Agency
Dhaka North City Corporation
Project for Strengthening of Solid Waste Management
in Dhaka City (Extension)

Dhaka South Nagar Bhaban, Level-13, Dhaka.
Tel & Fax : (880-2)-716-2350



c/c

September 24, 2012
LTO- 12-09-01

To
Bipan Kumar Saha, Captain, BN
Chief Waste Management Officer
Waste Management Department
Dhaka North City Corporation
Dhaka

Dear Sir:

Subject: Waste Collection Amount Survey at Aminbazaar and Matuail

I would like to inform you as a part of recording of the actual vehicle number at landfill sites both Aminbazar and Matuail from 25th September 2012 to 2nd October 2012 from JICA side we have arranged a survey for both landfill sites. During the survey, our surveyors will collect the **vehicle number, capacity and types**. This survey will update us the real number of the collection trucks at the landfill sites from both city corporations.

We are requesting your kind cooperation about this survey. Especially the drivers and the staffs at landfill site need to assist our surveyors to identify the vehicle and copy the registration plate number.

Thanking you in advance.

Sincerely

for

Akio Ishii

OSALIBE

Chief Advisor

JICA Expert Team

CC:

1. General Manger, , Central Transport Pool, Dhaka North City Corporation
2. Manager, , Central Transport Pool, Dhaka North City Corporation
3. SE, WMD, Dhaka North City Corporation
4. EE (Landfill), WMD, Dhaka North City Corporation
5. EE (Collection and Transportation), WMD, Dhaka North City Corporation
6. Assistant Engineer, WMD, (Aminbazaar Landfill Site), Dhaka North City Corporation
7. Staff Officer to Chief Executive Officer, Dhaka North City Corporation



Japan International Cooperation Agency
Dhaka City Corporation

**Project for Strengthening of Solid Waste Management
in Dhaka City (extension)**

Dhaka City Corporation (DCC), Level-13, Nagar Bhaban, Dhaka.
Tel & Fax : (880-2)-716-2350



November 12th, 2012

LTO- 12-11-04

Captain B K Saha, Psc BN
Chief Waste Management Officer
Waste Management Department
Dhaka North City Corporation, Dhaka

Subject: Organizing the Steering Committee Meeting.

Dear Sir,

Thanking you for your kind cooperation and strong leadership for the project.

We are pleased to inform you that we would like to arrange the Steering Committee Meeting on
November 29, 2012 at 13:00 hrs at Panpacific Sonargaon Hotel, (Suma);

Agenda for the meeting is above

- 1) Discussion on the results of the Terminal Evaluation of this Project

On this regard kindly take the necessary actions.

Your kind cooperation is highly appreciated

Sincerely yours,

Akio Ishii
Chief Advisor
JICA Expert Team

office copy



Japan International Cooperation Agency
Dhaka City Corporation
Project for Strengthening of Solid Waste Management
in Dhaka City (Extension)
Dhaka City Corporation (DCC), Level-13, Nagar Bhaban, Dhaka.
Tel & Fax : (880-2)-716-2350



November 13, 2012
Ref: LTO 12-11-05

Captain Bipan Kumar Saha, psc BN.
Chief Waste Management Officer,
Dhaka North City Corporation
Dhaka

Subject: Request to give approval of WMD Directives.

Dear Sir

Thanking once again for your sincere efforts and leadership for the project management.

I am very pleased to inform you that WMD directives has been finalized and waiting for your kind approval.

We look forward to your kind acceptance of the WMD Directive.

Sincerely your

Mr. 荒井隆俊

Akio Ishii
Chief Advisor
JICA Expert Team

Enclosure: copy of Directives

office copy

Final Draft of Revised WMD Directives

1. Strengthening WMD's Institutional Capacity

- Staffing and recruitment for all vacant positions of WMD
- Improvement of SWM fee collection from commercial organizations, large waste generators
- Formulation of budgetary plan through bottom-up system
- Enforcement of the law, rules and regulation
- Construction ward offices: 6 yards/ year

2. Promote Public private partnership

- Primary waste collection by Primary Collection Service Providers (PCSP)
- Privatized waste collection management
- Hospital waste collection

3. City wide awareness raising program

- Clean Dhaka Ward Contest
- Billboard
- Electronic and print media coverage

4. Improvement of existing system of waste collection and final disposal

- Conducting environmental monitoring of leachate, noise and gas every 6 months
- Improvement of maintenance system of collection vehicles and heavy equipment through periodical training to the mechanics and Engineers

5. Study on new waste treatment system

- Developing regional landfill sites with cooperation of other municipalities considering intermediate transfer station
- Considering application of advanced SWM technology such as "Waste to Energy"
- Formulation of guidelines on proper management of hazardous and medical waste in line with national standards for approval by the related ministries

6. Optimizing allocation and enhancing efficiency of SWM equipment

- Optimized distribution of the vehicles, containers and so on rather than equal distribution
- Study on suitable criteria on the selection for procurement of waste collection

vehicles and heavy equipment according to that local condition

7. Expansion of WBA considering 3R's

- Expansion of WBA targeted wards: 6 wards/year
- Community based public awareness raising program once per ward per year
- Regular monitoring of WBA and reporting based on approved format
- Holding WBA Core Group Meeting and WBA meeting once a month for the smooth coordination
- Introduction of 3R activities such as source separation

8. Improvement of work environment and occupational health as a part of WBA 2

- Holding workshops for cleaners and LFS workers
 - Road cleaner: 5 wards/year
 - Drainage cleaner: 2 zones/year
 - LFS workers: Once a year
- Periodical distribution of safety gears and ensure their usages
 - Safety gears: 1 set/person (three times per year)
 - First aid box: 1 set/ward (three times refilling per year)



Japan International Cooperation Agency
Dhaka City Corporation

**Project for Strengthening of Solid Waste Management
in Dhaka City (Extension)**

Dhaka City Corporation (DCC), Level-13, Nagar Bhaban, Dhaka.
Tel & Fax : (880-2)-716-2350



November 13, 2012

Ref: LTO 12-11-06-s

Md. Anamul Haque, Captain, BN
Chief Waste Management Officer,
Dhaka South City Corporation
Dhaka

Subject: Holding Seminar on "WMD Directives" on 29th November, 2012

Dear Sir

Thank you very much for your sincere efforts for the project management.

I am very pleased to inform you that a seminar on "WMD directives" will be held on 29th November, 2012.

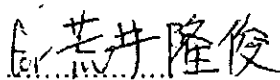
It would be a special honor to invite you on the occasion.

The important information related to the seminar is as follows

1. Date and Time: November 29th, 2012 at 10:00 AM
2. Venue: Pan Pacific Sonargaon, (Surma)
3. Agenda: Program

We look forward to your kind acceptance of this invitation and hope to see you at the seminar.

Sincerely your



Akio Ishii
Chief Advisor
JICA Expert Team

Enclosure: Program

Copy for information and necessary action

1. Zonal Executive Officer, Zone 1, DSCC.
2. Zonal Executive Officer, Zone 2, DSCC
3. Zonal Executive Officer, Zone 3, DSCC
4. Zonal Executive Officer, Zone 4, DSCC
5. Zonal Executive Officer, Zone 5, DSCC

office copy

6. Mr. Abu Saleh Md. Mainuddin, Additional CWMO,DSCC
7. Mr. Abdullah Harun, Asst. Engineer, DSCC
8. Md. Nurul Hossain Khan, Zone 5
9. Md. Monwar hossain, Zone 2
10. MD. Abdul Motaleb CI, Ward13, Zone 2
11. Md. Rashedur Rahman CI, Ward 21, Zone 1
12. Md. Shafikul Islam CI, Ward 10, Zone 2
13. Md. Abu Zafar CI, Ward 15, Zone 1
14. Mr. Bikash Chandra Dash CI, Ward 48, Zone 5
15. Md. Shah Kamal CI, Ward 27, Zone 3
16. MD. Hanif Uddin CI, Ward 19, Zone 1
17. Mr. Abu Taher, CI, Ward 40, Zone 5



Dhaka North and South City Corporations
Japan International Cooperation Agency
**Project for Strengthening of Solid Waste Management
in Dhaka City (Extension)**



Dhaka South City Corporation (DSCC), Level-13, Nagar Bhaban, Dhaka, Tel & Fax: (880-2)-716-2350

Date: 03.12.2012

LTO: 12-12-02

To
The Chief Health Officer
Dhaka South City Corporation

**Sub: Request to allow Dr. Sanjida Islam to facilitate a session of a workshop arranged
by the Officials of WMD and JICA Expert Team**

Dear Sir,

It is our pleasure to inform you that under the project of Strengthening of Solid Waste Management in Dhaka City(Ext), JICA Expert Team has been supporting Waste Management Department of DSCC for organizing several trainings and workshops targeting different level of personnel. The objectives of the training workshops are to enhance the capacity of the staff and to improve the working skill on varieties of aspects of solid waste management of Dhaka South City Corporation.

The incoming workshop titled on **Cleaners Workshop** will be held on 13th December, 2012 at Basabo Community Center. The program is attached herewith. We would like to request Dr. Sanjida Islam, Project Officer of UPHCP to take a session on **Occupational Health Safety and Sanitation** that will approximately last for an hour. She was facilitating several other previous workshops organized by JICA Expert Team and Waste Management Department of DSCC.

I therefore, would like to request you to allow her to take the session aiming to make the training successful.

Yours sincerely

Mr. Akio Ishii
Team Leader
JICA Expert Team

CC: Chief Waste Management Officer, DSCC,

Attachment-1: The Training Program Outline



Dhaka North and South City Corporations
Japan International Cooperation Agency
Project for Strengthening of Solid Waste Management
in Dhaka City (Extension)



Dhaka South City Corporation (DSCC), Level-13, Nagar Bhaban, Dhaka, Tel & Fax: (880-2)-716-2350

Cleaners' Workshop

Date: 13.12.2012 — Time: 10:30

Venue: Basabo Community Center (Zone 02, DSCC)

Master of the ceremony: Mr. Shafikul Islam, CI

Agenda:

Time	Speech theme/Contents	Speaker/Facilitator
10:30-10:35	Recitation from the Holy Quran	CI, Zone # 02
10:35-10:45	Opening address	Chief Waste Management Officer, DSCC
10:45-10:55	Speech regarding encourage to use safety gear and improvement of the working condition	Zonal Executive, Zone#02
10:55-11:05	Objective of the workshop	Akio Ishii, JICA Expert Team
11:05-11:30	Explanation and demonstration of the Occupational health , safety gears and first aid kit	Dr. Sanjida Islam, Asst. Health Officer, DSCC
11:30-11:50	Explanation and demonstration of the manuals	Mr. Abdul Motalib, CI#13
	Explanation of safety and sanitation committee	
11:50-12:00	Distribution ceremony	
12:00-12:10	Closing Speech	CO, Zone #02



Japan International Cooperation Agency
Dhaka South City Corporation

Project for Strengthening of Solid Waste Management in Dhaka City (Extension)

Dhaka South City Corporation Level-13, South Nagar Bhaban, Dhaka.

Tel: (880-2)-716-2350, Fax: (880-2)-716-2350



December 13, 2012
Ref: LTO 12-12-02

Superintending Engineer
Waste Management Department
Dhaka South City Corporation
Dhaka

Subject: To ensure the operation of Leachate Treatment Plant at Matuail

Dear Sir:

This letter is to request you to continue the operation of leachate treatment plant at Matuail. According to the agreement between our contractor and JICA, it was mentioned that the contractor would continue the operation up to six months which ended on 30 September 2012. Upon the request of Mr. Abdullah al Harun, Assistant Engineer, Waste Management Department contractor have extended the operation up to end of November. As per agreement, the contractor also trained 04 (Four) persons of Dhaka South City Corporation about the operation of leachate treatment system. They are now capable to operate the operation of the project.

[Names of trained up persons: (a) Mr. M. A. Shahed (b) Mr. Md. Kaium Mondal (c) Mr. Md. Monir Hossain (d) Mr. Md. Sheikh Farid].

Therefore, you are requested to take necessary steps for continuing the system by DSCC's own budget and manpower. Your kind attention would be highly appreciated.

Sincerely

Masahiro Saito
Training for O & M of Landfill sites,
JICA Expert Team

Copy for kind attention:

Mr. Abdullah al Harun, Assistant Engineer, Waste Management Department



Japan International Cooperation Agency

Dhaka North City Corporation

Project for Strengthening of Solid Waste Management in Dhaka City (Extension)



Dhaka South City Corporation Level-13, South Nagar Bhaban, Dhaka.

Tel: (880-2)-716-2350, Fax: (880-2)-716-2350

January 28, 2013
Ref: LTO 13-01-03

Captain Bipan Kumar Saha, BN
Chief Waste Management Officer
Waste Management Department
Dhaka North City Corporation
Gulshan Avenue, Dhaka

Subject: Utility Connection to the newly constructed ward offices at ward 2 and 12 and removal of shops around ward 2 office

Dear Sir,

“Project for Strengthening of Solid Waste Management in Dhaka City” has executed for 7 years and thanks for the continuous support to our project activities.

As a part of ward based solid waste management, this year project has started to build ward solid waste management offices at ward 2 and 12 according to your proposal (Ref: 46.207.000.12.00182.2012-451; Dated 13 August 2013). The construction of the ward offices will be finished hopefully within February 10, 2013. To function the ward offices properly, it is necessary to get the **water and electricity connection** to these offices. Therefore please proceed for the immediate action to fulfill these utility connections to the ward offices.

At the location of ward 2, around the office there are many **temporary shops** which obstructed the view of the office from the community. It is also urgent to remove those shops and community can know the existence of ward solid waste management office.

Regarding the above issue your kind attention would be highly appreciated.

Sincerely

Akio Ishii
Chief Advisor
JICA Expert Team

Attachment:

- Ward Office Location at Pallabi Section 12 (ward 2)

Copy for kind attention and to take necessary action:

1. Mr. Mesbahul Karim, Superintending Engineer, WMD, DNCC
2. Abul Hasnat Md. Ashraful Alam, Executive Engineer, WMD, DNCC
3. Dr. Abdur Razzak, Executive Engineer, WMD, DNCC



Japan International Cooperation Agency

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Project for Strengthening of Solid Waste Management in Dhaka City (Extension)

Dhaka South City Corporation Level-13, South Nagar Bhaban, Dhaka.

Tel: (880-2)-716-2350, Fax: (880-2)-716-2350



Attachment:

Ward Office Location at Pallabi Section 12 (ward 2)



Ward
Office

Illegal
Shops

View from North Direction



Illegal
Shops

View from West Direction

3.4. Summary of WBA

WBA Inputs to Each Ward (as of DEC 2012)

Extension Project	Implemented by DCC

WBA Inputs to Each Ward (as of DEC 2012)

Approach	1A		1B	2A	2B	2C	3	4A	4B	4A-4B
	To provide Ward Offices through new construction or renovation of existing offices function		To strengthen ward office	To provide Safety Officers	To organize Safety & Sanitation Committee	To introduce "Cleaners Manual" and re-organize work methods	To support community activities through organizing CLWG	To introduce new collection system	To improve conventional collection system	PCSP Training
	New Construction	Renovation		Distributed	Condition	Year to Establish	Condition	Distributed	Condition	
Ward 1										
Ward 2	Ext 2nd FY	Underway	Ext 1st FY	Finished	Ext 1st FY	Ext 1st FY	Ext 1st FY	Ext 1st FY	Ext 1st FY	Ext 1st FY
Ward 3			Ext 1st FY	Finished	Ext 1st FY	Ext 1st FY	Ext 1st FY	Ext 1st FY	Ext 1st FY	Ext 1st FY
Ward 4			Ext 1st FY	Finished	Ext 1st FY	Ext 1st FY	Ext 1st FY	Ext 1st FY	Ext 1st FY	Ext 1st FY
Ward 5			3rd FY	Renovated very low	3rd FY	3rd FY	3rd FY	3rd FY	3rd FY	3rd FY
Ward 6			3rd FY	Finished	3rd FY	3rd FY	3rd FY	3rd FY	3rd FY	3rd FY
Ward 7			3rd FY	Renovated a low	3rd FY	3rd FY	3rd FY	3rd FY	3rd FY	3rd FY
Ward 8			3rd FY	Renovated a low	3rd FY	3rd FY	3rd FY	3rd FY	3rd FY	3rd FY
Ward 9		4th FY	4th FY	Finished	4th FY	4th FY	4th FY	4th FY	4th FY	4th FY
Ward 10			5th FY	Small amount remained	5th FY	5th FY	5th FY	5th FY	5th FY	5th FY
Ward 11			4th FY	Finished	4th FY	4th FY	4th FY	4th FY	4th FY	4th FY
Ward 12	Ext 2nd FY	Underway	4th FY	Finished	4th FY	4th FY	4th FY	4th FY	4th FY	4th FY
Ward 13			Ext 1st FY	Finished	Ext 1st FY	Ext 1st FY	Ext 1st FY	Ext 1st FY	Ext 1st FY	Ext 1st FY
Ward 14			5th FY	Renovated a low	5th FY	5th FY	5th FY	5th FY	5th FY	5th FY
Ward 15			Ext 1st FY	Finished	Ext 1st FY	Ext 1st FY	Ext 1st FY	Ext 1st FY	Ext 1st FY	Ext 1st FY
Ward 16			4th FY	Finished	4th FY	4th FY	4th FY	4th FY	4th FY	4th FY
Ward 17										
Ward 18										
Ward 19										
Ward 20										
Ward 21										
Ward 22										
Ward 23										
Ward 24										
Ward 25										
Ward 26										
Ward 27										
Ward 28										
Ward 29										
Ward 30										
Ward 31										
Ward 32										
Ward 33	3rd FY	Continuing	3rd FY	Finished	3rd FY	3rd FY	3rd FY	3rd FY	3rd FY	3rd FY
Ward 34										
Ward 35										
Ward 36	2nd FY	Continuing	2nd FY	Finished	2nd FY	2nd FY	2nd FY	2nd FY	2nd FY	2nd FY
Ward 37										
Ward 38										
Ward 39										
Ward 40	4th FY									
Ward 41										
Ward 42		4th FY	Continuing	4th FY	Finished	4th FY	4th FY	4th FY	4th FY	4th FY
Ward 43										
Ward 44	3rd FY	Continuing	3rd FY	Finished	3rd FY	3rd FY	3rd FY	3rd FY	3rd FY	3rd FY
Ward 45	3rd FY	Continuing	4th FY	Finished	4th FY	4th FY	4th FY	4th FY	4th FY	4th FY
Ward 46										
Ward 47										
Ward 48										
Ward 49										
Ward 50	4th FY	Continuing	4th FY	Finished	4th FY	4th FY	4th FY	4th FY	4th FY	4th FY
Ward 51										
Ward 52										
Ward 53										
Ward 54										
Ward 55										
Ward 56										
Ward 57										
Ward 58		3rd FY	Continuing	3rd FY	Finished	3rd FY	3rd FY	3rd FY	3rd FY	3rd FY
Ward 59										
Ward 60										
Ward 61										
Ward 62										
Ward 63	3rd FY	Continuing	3rd FY	Finished	3rd FY	3rd FY	3rd FY	3rd FY	3rd FY	3rd FY
Ward 64										
Ward 65										
Ward 66										
Ward 67										
Ward 68										
Ward 69	3rd FY	Continuing	3rd FY	Finished	3rd FY	3rd FY	3rd FY	3rd FY	3rd FY	3rd FY
Ward 70										
Ward 71										
Ward 72										
Ward 73										
Ward 74										
Ward 75	3rd FY	Continuing	3rd FY	Finished	3rd FY	3rd FY	3rd FY	3rd FY	3rd FY	3rd FY
Ward 76										
Ward 77										
Ward 78										
Ward 79										
Ward 80										
Ward 81										
Ward 82										
Ward 83										
Ward 84	4th FY	Continuing	4th FY	Finished	4th FY	4th FY	4th FY	4th FY	4th FY	4th FY
Ward 85	Ext 2nd FY	Continuing	4th FY	Finished	4th FY	4th FY	4th FY	4th FY	4th FY	4th FY
Ward 86										
Ward 87										
Ward 88										
Ward 89										
Ward 90										
Total	10	7		5		5	23	12	43	90

Implemented by DCC

Extension Project

