

バングラデシュ人民共和国
ダッカ市廃棄物管理能力強化
プロジェクト
中間レビュー報告書

平成 20 年 11 月
(2008 年)

独立行政法人国際協力機構
地球環境部

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序 文

バングラデシュ人民共和国では、都市への人口集中や市街地の拡大が急速に進んでおり、それに伴い、都市における廃棄物、大気汚染、スラム拡大等、悪化する都市環境への対応が緊急の課題となっています。とりわけ、バングラデシュの首都であるダッカ市は、人口が1,200万人（ダッカ首都圏）を超えており、人口急増と経済発展によりますます増大する廃棄物の管理が大きな社会的課題となっています。

日本国政府は、バングラデシュ人民共和国政府の要請に基づき、独立行政法人国際協力機構（JICA）を通じて、2003年から2006年にかけて「ダッカ市廃棄物管理計画調査」を実施し、同国の首都ダッカ市における廃棄物管理の改善に必要な計画策定及び提言を行うとともに、2015年を目標年次とした「クリーンダッカ・マスタープラン（Clean Dhaka Master Plan、M/P）」を策定しました。このM/Pに基づき、ダッカ首都圏の廃棄物管理を担うダッカ市役所（DCC）は、廃棄物管理改善の取り組みを進めてきましたが、専門的知見、経験等の不足により十分な改善は達成されておりません。

このような状況からDCCは、廃棄物管理分野の専門家派遣による技術協力プロジェクトを、バングラデシュ人民共和国政府を通じて要請し、これを受けてJICAは、2006年10月、長 英一郎バングラデシュ事務所次長を団長とする事前調査団を派遣し、調査結果を受けて2006年12月に両政府間で討議議事録（R/D）の署名が取り交わされ、2007年2月よりプロジェクトが開始されました。

今般JICAは、これまでの活動実績を整理し現時点までの進捗状況について評価を行うため、国際協力専門員 吉田充夫を日本側の総括とし、バングラデシュ人民共和国側関係機関との協同作業により中間評価調査を2008年10月26日から11月13日まで実施しました。同調査団での協議内容は合同評価報告書にまとめられ、11月13日、合同評価報告書を添付した協議議事録（M/M）をDCCと署名交換しました。

本報告書は、同調査団の調査結果を取りまとめたものであり、今後の技術協力実施にあたって多くの関係者に広く活用されることを願うものです。

ここに調査団の各位をはじめ、調査にご協力いただいた外務省、在バングラデシュ人民共和国日本国大使館など、内外関係各機関のかたがたに深く謝意を表するとともに、引き続き一層のご支援をお願いする次第です。

平成20年11月

独立行政法人国際協力機構

バングラデシュ事務所長 萱島 信子

目 次

序 文

目 次

写 真

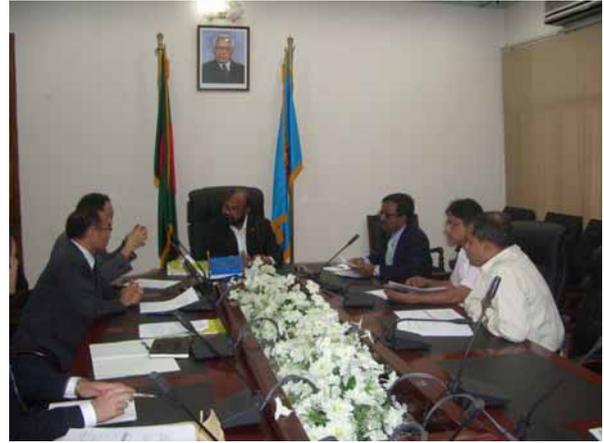
略語表

中間レビュー結果要約表

第1章 中間レビューの概要	1
1-1 対象プログラム・プロジェクトの概要	1
1-2 中間レビューの目的	1
1-3 レビューチーム構成	2
1-4 調査日程	2
第2章 評価手法	4
2-1 評価のデザイン	4
2-2 情報・データ収集方法	4
2-3 評価結果の取りまとめ	5
第3章 プロジェクト・デザイン・マトリックス (PDM) の変遷	6
第4章 評価結果	7
4-1 投 入	7
4-2 実 績	8
4-3 評価5項目による評価結果	11
第5章 提 言	14
第6章 団長所感	16
付属資料	
1. 協議議事録 (M/M) (合同評価報告書含む)	21
2. 評価グリッド	108



マトワイル処分場



ダッカ市長との面談



ブルーバッグを用いた収集運搬



マトワイル既存処分場カウンターパートとの協議



ワードオフィス開所式



市内でのインタビュー調査

略 語 表

略 語	英語名称	日本語
AWMO	Assistant Waste Management Officer	廃棄物管理オフィサー（アシスタント）
C/P	Counterpart	カウンターパート
CCO	Chief Conservancy Officer	清掃局局长
CEO	Chief Executive Officer	ダッカ市役所助役
CI	Conservancy Inspector	清掃監督官
CO	Conservancy Officer	清掃オフィサー
CWMO	Chief Waste Management Officer	廃棄物管理局局長
DCC	Dhaka City Cooperation	ダッカ市役所
ERD	Economic Relations Division	対外経済協力局
JDCF	Japan Debt Cancellation Fund	債務削減相当資金
JICA	Japan International Cooperation Agency	国際協力機構
JOCV	Japan Overseas Cooperation Volunteer	青年海外協力隊
M/M	Minutes of Meeting	協議議事録
M/P	Master Plan	マスタープラン
MDGs	Millennium Development Goals	ミレニアム開発目標
NGO	Non Governmental Organization	非政府組織
OVI	Objective Verifiable Indicators	客観的に検証可能な指標
PCSP	Primary Collection Service Provider	1次収集業者
PDM	Project Design Matrix	プロジェクト・デザイン・マトリックス
PO	Plan of Operation	活動計画
PRSP	Poverty Reduction Strategy Paper	貧困削減戦略文書
R/D	Record of Discussion	討議議事録
WBA	Ward-based Approach	ワード・ベースド・アプローチ
WMD	Waste Management Department	廃棄物管理局

中間レビュー結果要約表

1. 案件の概要	
国名：バングラデシュ人民共和国	案件名：ダッカ市廃棄物管理強化プロジェクト
分野：廃棄物管理	援助形態：技術協力プロジェクト
所轄部署：バングラデシュ事務所	協力金額（評価時点）：2億9,000万円
協力期間	R/D締結：2006年12月11日
	2007年2月～2011年2月
	先方関係機関：ダッカ市役所（DCC）
	日本側協力機関：
<p>1-1 協力の背景と概要</p> <p>バングラデシュ人民共和国「以下、（バングラデシュ）と記す」では、都市への人口集中や市街地の拡大が急速に進んでおり、とりわけ、首都であるダッカ市は、人口が1,200万人（ダッカ首都圏）を超え、人口急増と経済発展によりますます増大する廃棄物の管理が大きな社会的課題となっている。このような課題に対処するための長期的な計画策定を目的として、2003年から2006年にかけてバングラデシュ国政府の要請に基づき、JICAは「ダッカ市廃棄物管理計画調査」を実施し、同国の首都ダッカ市における廃棄物管理の改善に必要な計画策定及び提言を行うとともに、2015年を目標年次とした「クリーンダッカ・マスタープラン（Clean Dhaka Master Plan、M/P）」を策定した。このM/Pに基づき、ダッカ首都圏の廃棄物管理を担うダッカ市役所（Dhaka City Cooperation：DCC）は、廃棄物管理改善の取り組みを進めてきたが、専門的知見、経験等の不足により十分な改善は達成されていない。このような状況からDCCは、M/Pの実現を目的として廃棄物管理分野の専門家派遣による技術協力プロジェクトをバングラデシュ国政府を通じて要請した。この要請に基づきJICAは、2006年10月に事前調査団を派遣し、調査結果を受けて2006年12月に両政府間で討議議事録（Record of Discussion：R/D）の署名が取り交わされ、2007年2月より4年間のプロジェクトが開始された。</p> <p>1-2 協力内容</p> <p>本プロジェクトはDCCをカウンターパート（C/P）機関とし、ダッカ市での廃棄物管理サービス改善を通じ、C/Pが廃棄物管理に関する知識・技術を身につけ、持続可能な廃棄物管理実施能力向上を支援することを目的として、2007年2月より4年間の予定で実施されている。</p> <p>(1) 上位目標 「ダッカ市の廃棄物管理サービスが持続的に実施される」</p> <p>(2) プロジェクト目標 「ダッカ市の廃棄物管理サービスが向上する」</p> <p>(3) アウトプット</p> <ol style="list-style-type: none"> 1) 廃棄物管理活動の管理・調整のための能力が向上する 2) 住民参加型廃棄物管理プログラムが促進される 3) 廃棄物収集運搬能力が向上する 4) 最終処分場が適切に運転・維持管理される 5) 廃棄物管理のための会計システムが改善される <p>(4) 投入（評価時点） 日本側：専門家派遣8名、機材供与 約620万円、研修員受入：26名（本邦研修12名、第三国研修14名）、ローカルコスト負担：約1,100万円</p>	

バングラデシュ側：C/P配置117名、施設：専門家執務スペース、ローカルコスト負担：(廃棄物管理全般にかかる費用として)約2,800万タカ(2007/2008年度)

2. 評価調査団の概要

調査者：	担当分野	氏名	所属
	総括/廃棄物管理	吉田 充夫	JICA国際協力専門員
	社会配慮	三宅 博之	北九州市立大学 法学部教授
	環境管理	加納 大道	JICA地球環境部 環境管理グループ 環境管理第一課職員
	協力企画	廣澤 仁	JICAバングラデシュ事務所 所員
	評価分析	森 正蔵	株式会社日水コン 海外事業部技術部

調査期間：2008年10月26日～11月13日

評価種類：中間レビュー

3. 評価結果の概要

3-1 実績の確認(各成果の達成度)

成果1：廃棄物管理活動の管理・調整のための能力が向上する

プロジェクト終了までに、成果1は達成されることが見込まれるが、DCCによる廃棄物管理局(Waste Management Department：WMD)への人員配置が遅延しており、成果が確実に達成されるため、またWMDの自立発展性を確保するためには、人員配置を迅速に行うことが重要である。また、WMDの設立及びWMDへの人員配置の遅延並びに専門家チーム、カウンターパート(C/P)共にそれらに多くの時間・労力を費やさざるを得なかったためにいくつかの活動について後れがみられた。

成果2：住民参加型廃棄物管理プログラムが促進される

成果2はこれまでに部分的に達成されており、プロジェクト終了までには全般的に達成されることが見込まれる。一方でプロジェクト後半にワード・ベースド・アプローチ(Ward-based Approach：WBA)の普及を更に促進させ、また1次収集業者を含めた各活動のモニタリングシステムを改善するために「ワード廃棄物管理ガイドライン」を可能な限り早急に改訂することが重要である。

本成果において特に重視していたWBA導入についての清掃監督官(CI)の能力はおおむね順調に向上している。プロジェクトで支援したワードにおけるCIは各ワードの廃棄物管理におけるステークホルダー(1次収集業者、コミュニティ及びDCC)間の調整者としての役割を果たしつつあり、何名かのCIは住民からの苦情処理に加えて、担当ワードの廃棄物管理の改善にかかる提案などを行っている。今後はCIの継続的な取り組み、コミュニティの参加状況等のモニタリングや促進を通じて自立発展性の向上を図っていく必要がある。

成果3：廃棄物収集運搬能力が向上する

WBAのコンポーネントのなかで各ワードにおける収集改善が本成果に関連しておりWBAの普及を通じて一定程度の能力の向上が見られる。確実に成果を達成するために、現在暫定的に配置されているC/Pの意識向上を図り、また、WMDの人員配置を速やかに進め、かつプロジェクト後半において実施される予定の環境プログラム無償「ダッカ市廃棄物管理低炭素化転換計画」を通じた廃棄物収集車両の投入及び稼働を遅滞なく行うことが重要である。併わせて適切な収集運搬システムの実施にあたっては、特に廃棄物排出ルールの遵守に関するコミュニティからの協力や収集車両を運転するドライバーからの協力が必要不可欠である。

成果4：最終処分場が適切に運転・維持管理される

これまで順調にマトワイル処分場を中心に最終処分場運用管理能力は改善されてきており、プロジェクト終了までには成果4は達成されると見込まれる。マトワイル処分場については、債務削減相当資金（Japan Debt Cancellation Fund：JDCF）を活用して、衛生埋立方式の処分場に改修されており、衛生埋立にかかる運用管理も含めて、運用管理能力を更に向上させるために①重機担当及び処分場管理担当職員の適切な配置、②重機不足、③浸出水の処理システムの稼働、④トラックスケールの適切な運用といった課題を解決していく必要がある。また、同じくJDCFを活用して新規建設が予定されているアミン・バザール処分場については、環境配慮などの課題を早急に解決して建設に取りかかることが必要である。

成果5：廃棄物管理のための会計システムが改善される

プロジェクトにより廃棄物管理についての会計システムが導入され、また予算管理・支出管理の概念や手法について専門家から技術移転が行われてきたことから、財務管理能力は向上しており、プロジェクト終了時までには成果5の達成がほぼ見込まれる。

3-2 評価結果の要約

(1) 妥当性

本プロジェクトが対象としているダッカ市では、前述のように都市人口の急増などにより大量の廃棄物が発生し、一方でDCCの収集・運搬を中心とした廃棄物管理能力が十分でないために、廃棄物が散乱している地域が市内で多く見られる。最近ではダッカ市住民の廃棄物管理に関する意識が少しずつであるが高まりつつあり、適切な管理へのニーズも高まってきていることから、廃棄物管理に関する技術協力へのDCCのニーズは極めて高い。

また、バングラデシュ国政府の貧困削減戦略文書（Poverty Reduction Strategy Paper：PRSP）では「環境と持続的開発」が支援戦略に、「衛生と安全の水」が戦略的課題にそれぞれ位置づけられており、また、同国の政策上の妥当性は高いといえる。

また、対バングラデシュ国のJICA国別事業実施計画では援助重点分野「社会開発と人間の安全保障」の中の「都市環境対策」プログラムに廃棄物管理が含まれており、本プロジェクトはわが国の援助政策との整合性も確保している。

(2) 有効性

現時点までの進捗度を考慮すると、WMDへの人員配置が迅速かつ適切に行われ、各成果についての能力開発が行われれば、プロジェクトの終了時点までに、達成可能と見込まれる。

また、本プロジェクト目標にある「ダッカ市における廃棄物管理サービス」は主に成果2及び3に関連する廃棄物の収集・運搬並びに成果4の最終処分場管理から構成されており、それらのサービスをより適切に提供するための土台として成果1のDCCの組織としての管理・調整能力及び成果5の「会計システムの改善」の向上が必要不可欠であることから、すべての成果がプロジェクト目標の達成に密接に関連しているといえる。

(3) 効率性

日本側の投入は専門家派遣、研修員受入れ、機材供与、及びプロジェクト活動費に関しては、おおむね計画どおり投入が実施されたといえる。特に日本におけるC/P研修は効果的であり、C/Pの意欲、士気を高め知識・技術レベルの向上に大きく役立っている。

バングラデシュ側の投入については、100名を超えるC/Pが日本側専門家とともに活動を展開しているが、一方で、WMD設立及びそれに伴う職員の配置等のために多くの関係省庁

及びDCC内関係機関との調整・交渉が必要となりC/Pの一部がそれらの業務に時間を割かざるをえない状況となっている。それらはWMDの設立は外部条件に設定されているものの、C/Pの効率的な活動に一定程度影響を与える結果となっている。

(4) インパクト

長期的な計画（M/P）のもとに、プロジェクト目標及び上位目標が設定されていることから、プロジェクト目標の達成及びそれから派生したインパクトにより上位目標が達成される見込みは高いといえる。

また、正のインパクトとして、現場レベルでの作業環境改善が進み、一般住民の「廃棄物管理は汚い仕事」という認識が少しずつ変わりつつあり、それに伴ってWMD職員が廃棄物管理業務に対してより意欲的に取り組み始める、業務にプライドを持ち始めるといった好事例がみられることが挙げられる。なお、現時点では本プロジェクトによる負のインパクトは確認されていない。

(5) 自立発展性

WMD設立から日が浅く、職員の正式な配置がまだ十分に進んでいない現時点では、個々のC/Pの能力及びモチベーションはプロジェクトの実施によって高まっているものの、DCCが組織全体で自立発展的に廃棄物管理業務を実施・展開していく環境は十分に整っていない。一方で自立発展性の確保に寄与する点として、①市長に承認されたWMDのディレクティブが今後も維持されるであろうこと、②各種のマニュアルやガイドラインの作成・共有、③DCCの歳入増、④WBAの概念や内容がC/P及び対象地域のコミュニティに浸透しつつあることが挙げられる。

3-3 結論

プロジェクト前半期間は多くの時間・労力を前提条件であるWMDの承認に要したため、若干プロジェクトの活動に遅延がみられ、中間レビュー調査以降は、設立されたWMDの組織強化を図り、新たな組織において、関係者間でプロジェクト目標等を迅速に共有し、活動を実施していく必要がある。

一方で、既に着実な成果が発現している部分もあり、後半期間において、今後設定された5つの成果にかかる能力が順調に強化されることにより、おおむねプロジェクト目標「ダッカ市の廃棄物管理サービスが向上する」はプロジェクト終了までに達成されると見込まれる。

3-4 提言（当該プロジェクトに関する具体的な措置、提案、助言）

(1) WMD全体の能力強化

2008年10月にWMDが正式に設立されたものの、必要な人員の未配置、廃棄物管理にかかる一部業務が他の部局から移管されていない、といった課題が多く残されている。プロジェクトの目標を達成し、かつWMDがダッカ市の廃棄物管理全体を効果的に実施していくためには、DCCが必要な体制整備を早急に行うことが必要であり、プロジェクト後半に向けての最重要課題である。

(2) 住民参加型廃棄物管理について

住民参加型廃棄物管理及びWBAはダッカ市の廃棄物管理を改善し、Clean Dhakaを達成するための鍵となる概念であり、今後もプロジェクトにおいて普及・拡大を推進していくべきである。

(3) 今後解決すべき課題の認識

プロジェクトで解決すべき課題はいくつかあるが、特に以下の点について今後プロジェクトで取り組むべき重要課題として認識していくことが必要である。

- ・1次収集業者（PCSP）を中心とした1次収集と2次収集のより効果的な連携
- ・ワークショップでの車両維持管理技術レベルの向上
- ・ダッカ市全域をカバーするための2次収集業務の業務計画の検討

(4) 最終処分場運営管理能力の更なる向上

プロジェクトによりマトワイル処分場において圧縮、覆土や方面防護等、衛生的に埋立を行うための処分場管理能力は向上したといえる。一方で、更に管理能力を向上させるために、即日覆土と浸出水対策を徹底すること、環境モニタリングを継続的に行うこと、ウエストピッカー等への社会的な配慮も行うことなどが必要である。

(5) 財務管理能力の更なる向上

プロジェクト開始時は財務管理についてはほぼ行われていなかったに等しい水準であったが、関係部署からのヒアリングに基づく年度ごとの廃棄物管理全般にかかる必要経費の産出、積み上げ方式による予算計画の策定等、基礎的な財務管理能力の向上がみられる。今後はこの制度の定着を図るとともに、支出管理及び分析、収入増の方策の検討等が必要である。

(6) PDM及び年間行動計画に基づいたプロジェクト運営

プロジェクトはJICA、DCC及び専門家チームが協働で作成したプロジェクト・デザイン・マトリックス（PDM）及び年間行動計画に基づいて運営が行われており、PDMで定められた目標及び指標達成のために年間行動計画を策定し、それに基づいて活動を行っていることを特にDCC側のC/P全体に広く再認識してもらうことが重要である。

第1章 中間レビューの概要

1-1 対象プログラム・プロジェクトの概要

バングラデシュ人民共和国（以下、「バングラデシュ国」と記す）では、都市への人口集中（増加率5.6%/年）や市街地の拡大が急速に進んでおり、それに伴い、都市における廃棄物、大気汚染、スラム拡大等、悪化する都市環境への対応が緊急の課題となっている。とりわけ、同国の首都であるダッカ市は、人口が1,200万人（ダッカ首都圏）を超えており、人口急増と経済発展によりますます増大する廃棄物の管理が大きな社会的課題となっている。同市では、ダッカ市役所（Dhaka City Corporation : DCC）が廃棄物管理を担っているが、廃棄物管理に係る実施体制の脆弱さ、計画の欠如、機材不足、住民の衛生意識の低さ等の理由により、適切な廃棄物管理が行われてこなかった。今後、同市が健全に発展を遂げ、住民が安全な都市生活を享受するためには、適切な廃棄物管理を実施する必要があるとの認識から、バングラデシュ国政府は2002年、わが国に対し同市の廃棄物管理に係る調査及び計画策定を要請した。

それを受け、JICAは開発調査（ダッカ市廃棄物管理計画調査、2003年11月～2006年3月）を実施し、2015年を目標年次とした「クリーンダッカ・マスタープラン（Clean Dhaka Master Plan）」（以下、「M/P」と記す）が策定された。

開発調査終了後、DCCはM/Pの提言に対して、ローカルNGOとの連携による医療廃棄物の収集処理事業も含めて、独自の取り組みを積極的に推進してきた。また、JICAは開発調査終了後、既存処分場管理・改善に係るフォローアップ協力（技術支援、2006年）、債務削減相当資金（Japan Debt Cancellation Fund : JDCF）を使った既存処分場への衛生理立方式の導入及び処分場の拡張（2006年～）、住民意識向上と住民参加型収集活動の普及を目的とした環境教育分野の青年海外協力隊（JOCV）の配置（2006年～）等DCCの取り組みに対する補足支援を行ってきた。

しかしながら、M/Pで提案されている内容を実現するためには、廃棄物収集・運搬を中心に数多くの技術面・マネジメント面の課題が残されており、また、廃棄物管理に携わるDCC職員は、取り組み意欲はあるものの、基本的な計画策定及び実施能力や経験がまだまだ十分とはいえない状況にあった。そのため、DCCはM/Pを段階的かつ確実に実現し、同市における効果的な廃棄物管理体制を確立するためには、DCC職員が各課題を解決する能力や技術を習得するための支援が必要であると判断し、バングラデシュ国中央政府を通じ、わが国に対し技術協力プロジェクトを要請した。この要請に基づき、JICAは2006年10月に事前調査を実施し、2006年12月に討議議事録（Record of Discussion : R/D）の署名を行った。

本プロジェクトはDCCをカウンターパート（C/P）機関とし、DCC職員が廃棄物管理に係る課題を解決する能力・技術を身につけ、ダッカ市内における効果的な廃棄物管理体制を構築することへの支援を目的として2007年2月より4年間の予定で協力が実施されている。

協力開始から約1年半を迎えた今般、2011年2月の活動期間終了に向けて、これまでの活動実績を評価するとともに、プロジェクト目標を達成するために必要な提言を抽出することを目的に中間レビューを実施した。

1-2 中間レビューの目的

- (1) プロジェクトの進捗（投入実績、活動実績、計画達成度等）を、プロジェクトの内容について定めたR/D及びプロジェクト・デザイン・マトリックス（Project Design Matrix : PDM）に

に基づき確認するとともに、課題と問題点の整理を行う。

- (2) JICA事業評価ガイドラインに基づき、5項目（妥当性、有効性、効率性、インパクト、自立発展性）の観点から評価を実施し、プロジェクトが順調に成果発現に向けて実施されているかを検証する。
- (3) (1) 及び (2) の検討結果及びバングラデシュ国側との協議に基づき必要に応じPDMの修正を行う。
- (4) 上記の調査結果に基づき、今後の活動計画に関する提言を行う。

1-3 レビューチーム構成

(1) 日本側

担当分野	氏名	所属
総括/廃棄物管理	吉田 充夫	JICA国際協力専門員
社会配慮	三宅 博之	北九州市立大学 法学部教授
環境管理	加納 大道	JICA地球環境部 環境管理グループ環境管理第一課職員
協力企画	廣澤 仁	JICAバングラデシュ事務所 所員
評価分析	森 正蔵	株式会社日水コン 海外事業部技術部

(2) バングラデシュ側

Mr. Md. Delwar Hossain	合同調整委員会メンバー Senior Assistant Secretary, Local Government Division, Ministry of Local Government, Rural Development and Co-operatives
Commander M.R. Chowdhury	プロジェクトマネージャー Chief Waste Management Officer, WMD, DCC
Dr. Tariq Bin Yousuf	C/P（最終処分場グループリーダー） Executive Engineer, Engineering Division
Mr. Abul Hasnat Md. Ashraful Alam	C/P（収集・運搬グループリーダー） Assistant Engineer, Mechanical Division-1

1-4 調査日程

Date	Activities
26th Oct. (Sun)	Arrival of One JMET Member (Mr. Mori)
27th Oct. (Mon)	09:00 JMET: Meeting with JICA Bangladesh Office 11:30 Confirmation of the Process of Joint Evaluation with Two DCC Evaluators (in presence of C/Ps and JET)
28th Oct. (Tue)	Analysis of Results of the Questionnaire Survey for Preparing for Interviews
29th Oct. (Wed)	12:00 Group Interview to JET Members staying in Bangladesh (Group interview to JET Members staying in Japan was conducted in Japan on October 23)

30th Oct. (Thu)	11:00 Group Interview to C/Ps (group leaders and a deputy group leader)
31st Oct. (Fri)	Analysis of Results of the Questionnaire Survey for Preparing for Interviews
1st Nov. (Sat)	Preparation of 1st Draft of Joint Evaluation Report
2nd Nov. (Sun)	Preparation of 1st Draft of Joint Evaluation Report
3rd Nov. (Mon)	11:00 Group Interview to C/Ps (Assistant Engineers) 15:00 Visiting Amin Bazar Landfill Site
4th Nov. (Tue)	AM: Preparation of 1st Draft of Joint Evaluation Report 15:00 Confirmation of the Process of Joint Evaluation with LGD Evaluator
5th Nov. (Wed)	11:00 Group Interview to C/Ps (selected CIs)
6th Nov. (Thu)	12:00 Interview to the Chief Adviser of JET 14:00 Joint Evaluation Meeting for Sharing Findings
7th Nov. (Fri)	Arrival of the Other Three JMET Members
8th Nov. (Sat)	AM Meeting among JMET 14:00 Visiting Matuail Landfill site 15:30 Visiting Ward 33 office 16:30 Visiting Ward 69
9th Nov. (Sun)	08:00 JMET: Meeting with JICA Bangladesh Office 11:30 Courtesy Call to LGD (Secretary) 12:30 Courtesy Call to DCC (Mayer, CEO) 15:00 Courtesy Call to ERD (Deputy secretary) 16:15 Visiting Ward 69 and Ward 63 to See New Waste Collection (WBA4)
10th Nov. (Mon)	08:00 Visiting Ward 44 to see New Waste Collection (WBA4) 09:00 Joint Evaluation Meeting for Revision of the 1st Draft report
11th Nov. (Tue)	15:00 Joint Evaluation Meeting for Finalizing the Draft report
12th Nov. (Wed)	11:00 Wrap-up Meeting among Joint Evaluation Team and Project Members (C/Ps and JET) 15:00 Report to Mayer of DCC (Presentation to Media) 15:00 Ward 75 Office Opening Ceremony
13th Nov. (Thu)	08:00 JMET: Report to JICA 10:00 JMET: Report to EOJ 13:40 Departure of JMET

第2章 評価手法

本レビューは、「JICA事業評価ガイドライン」（2004年1月：改訂版）、（以下「ガイドライン」）に基づき、PDMを用いた評価手法に則って実施された。ガイドラインによる評価は、①PDMに基づく評価のデザイン、②プロジェクトの実績・投入を中心とした必要情報・データの収集、③プロジェクトの実績と現状及び「妥当性」「有効性」「効率性」「インパクト」「自立発展性」の「評価5項目」の観点からの収集情報・データの分析・評価、④PDMの修正、⑤分析結果からの提言・教訓の導出及び報告という流れからなっている。

なお、本レビューで活用した評価5項目の定義は以下のとおりである。

(1) 妥当性

プロジェクトのめざしている効果（プロジェクト目標や上位目標）が、受益者（ダッカ市民）のニーズに合致しているか、問題や課題の解決策として適切か、相手国と日本側の政策との整合性はあるか、「援助プロジェクトの正当性・必要性」を問う視点。

(2) 有効性

プロジェクトの実施により、受益者もしくは社会への便益がもたらされているのか（あるいは、もたらされるのか）を問う視点。成果の達成がプロジェクト目標の達成につながるかなどを分析する。

(3) 効率性

主にプロジェクトのコストと効果の関係に着目し、資源が有効に活用されているか（あるいはされるか）を問う視点。成果とインプットの間関係をタイミング・質・量の観点から分析する。

(4) インパクト

プロジェクト実施によりもたらされる、より長期的、間接的効果や波及効果を見る視点。予期していなかった正・負の効果・影響を含む。

(5) 自立発展性

援助が終了しても、プロジェクトで発現した効果が持続しているか（あるいは持続の見込みはあるか）を組織、制度、政治、財政、技術等の面から問う視点。

2-1 評価のデザイン

評価のデザインを確定するにあたり、R/D、PDM、事前評価報告書、インセプションレポート、プロジェクト事業進捗報告書、業務完了報告書等に基づき、評価項目案を調査団内で検討し確定した。なお評価項目の詳細は評価グリッド（付属資料2）を参照されたい。

2-2 情報・データ収集方法

定量的及び定性的なデータが収集され、評価のための分析に用いられた。データ収集に用いた方法を以下に示す。

1) 報告書、文献等のレビュー

2) 質問票調査及び集計結果に基づくグループ・インタビュー（専門家チーム、C/Pのグループ・リーダー、清掃監督官（Conservancy Inspector : CI）及びアシスタント・エンジニアに対して個別に実施グループ

- 3) 現場視察（マトワイル、アミン・バザール両処分場、ワード事務所、ゴミ収集の現場等）
- 4) 専門家チーム及びC/Pからの直接的なデータ収集

質問票調査は、選択式の問題と選択した内容について理由やコメントなどを求める記述式の質問から構成されており、専門家及びC/Pのグループ・リーダー等には広範囲の質問（実施プロセス、有効性、効率性、インパクト、自立発展性について）を用意し、アシスタント・エンジニア及びCIには、比較的限られた内容の質問（実施プロセス、有効性、効率性について）を用意した。グループ・インタビュー調査におけるC/Pのグループ分けは、DCC側評価者との協議において、各カウンターパートのDCCにおける立場などを考慮して最終決定した。

2-3 評価結果の取りまとめ

本評価調査の分析結果を基に、日本・バングラデシュ国側双方の合同評価メンバーが協議を行い、その結果を英文のMinutes of Meeting（M/M）として取りまとめ、署名・交換した（付属資料1としてJoint Evaluation Report「合同評価報告書」が添付されたもの）。

第3章 プロジェクト・デザイン・マトリックス（PDM）の変遷

2007年2月プロジェクト開始に伴って、事前調査において作成された「PDM Version 0（PDM0）」を再検討し、客観的に検証可能な指標（OVIs）の再検討及び活動の修正を行い2007年4月に「PDM Version 1（PDM1）」を作成した。PDM 1は2007年3月に開催されたステアリングコミッティ（Steering Committee、S/C）で承認された。

また、2008年2月に運営指導調査が実施され、DCC、JICAバンングラデシュ事務所及びJICA専門家チームとともにプロジェクトの進捗状況を確認し、PDM上の成果の表現及び活動修正について議論し、その結果をもとにS/Cで「PDM Version 2（PDM 2）」として承認された（付属資料1、Annex 1）。

本レビューではPDM2に基づき評価を行う。

第4章 評価結果

4-1 投入

プロジェクト開始時点より現在まで、以下の投入が実施された。

4-1-1 日本側の投入

(1) 専門家派遣

本プロジェクトはこれまでの8名の専門家が、13の分野で派遣されている。年度ごとの全専門家の派遣期間の合計を以下に示す。詳細については、付属資料1のAnnex 3のA3-1を参照されたい。

(MM：人月)	
日本の2006年度	12.8 MM
日本の2007年度	25.2 MM
日本の2008年度（10月27日時点まで）	17.2 MM
合計	55.2MM

(2) 機材の供与

本調査時点までに約620万円相当の機材を供与した。詳細については、付属資料1のAnnex 3のA3-3を参照されたい。

(3) プロジェクト活動費

本調査時点までに約1,100万円の経費が日本側より投入された。詳細は付属資料1のAnnex 3のA3-4を参照されたい。

(4) カウンターパート研修

2008年10月までに、計12名のC/Pが本邦での研修に参加した（うち9名は各センターで実施されている廃棄物管理に関する集団研修に参加し、3名が本プロジェクトのC/P用に計画されたC/P研修に参加した）本邦での研修に加えて、計14名のC/Pがインド及びベトナムで実施された第三国研修に参加した（インド：8名、ベトナム：6名）詳細は、付属資料1のAnnex A4-3を参照されたい。

4-1-2 バングラデシュ側の投入

(1) カウンターパートの配置

本調査時点までに、（臨時職員を含めて）計117名のC/Pが配置されている。

(2) 施設の貸与

DCCより市役所の建物の一部に日本人専門家のための執務スペースが提供されている。

(3) プロジェクト活動費

(本プロジェクト用に限定されたものではないものの) 2006年/2007会計年度では、約2,400万タカ、2007/2008会計年度では約2,800万タカがDCCの年間予算から廃棄物管理関連費用として支出された。

4-2 実績

4-2-1 廃棄物管理局(WMD)の設立

M/PにおいてDCCにおける総合的な廃棄物管理能力強化の手段の一つとして廃棄物の発生から最終処分までの一体的に管理するための廃棄物管理局(Waste Management Department: WMD)の設立が提案された。DCC側でもWMD設立を積極的に推進し2006年末ごろまでに設立の政府承認を得る旨約束し、事前調査時(2006年10月)に作成されたPDMにおいて前提条件の1つとして設定された。しかし、DCC側が最大限努力をしたにもかかわらず、関係省庁やDCC内の他の部署との調整などに当初想定よりも大幅に時間を要し、2008年10月ようやく承認された。

承認後、WMDへ職員が暫定的に配置され、常勤のC/Pが増加した。特に、収集運搬グループに、より実効的な人員が増えたことは、プロジェクトにとって有意義なことであった。今後、プロジェクトの効率的・効果的实施及び自立発展性の確保に向けて、WMDへの職員の本格的な配置をDCC側が遅滞なく進めていくことが最も重要である。

なお、WMDが設立していない状況にもかかわらず、PDMの成果ごとに形成されたC/Pのワーキング・グループを中心としてDCC内の異なる部署間での情報共有・連携を図り、一定程度成果が発現した点は評価できる。

4-2-2 各成果の達成度

(1) 成果1: 評価B

成果1: 廃棄物管理活動の管理・調整のための能力が向上する

プロジェクト終了までに、成果1は達成されることが見込まれる。しかしながら、DCCによるWMDへの人員配置が遅延しているため、成果が確実に達成されるため、またWMDの自立発展性を確保するためには、人員配置を迅速に行うことが重要である。

WMDの設立及びWMDへの人員配置の遅延並びに専門家チーム、C/P共にそれらに多くの時間・労力を費やさざるを得なかったためにいくつかの活動について遅れが見られた。一方で、専門家チーム及びこれまで暫定的に配置されてきたC/Pの尽力により、活動の多くは進捗しており、人員配置が迅速に行われれば、各指標及び成果は達成されることが考えられる。

(2) 成果2: 評価B

成果2: 参加型廃棄物管理プログラムのための能力が向上する

成果2はこれまでに部分的に達成されており、プロジェクト終了までには全般的に達成されることが見込まれる。一方でプロジェクト後半に、収集・運搬を安全面、衛生面からワード(区)ごとに改善する取り組みであるワード・ベースド・アプローチ(Ward-based Approach: WBA)の普及をさらに促進させ、また1次収集業者を含めた各活動のモニタリングシステムを改善するために「ワード廃棄物管理ガイドライン」を可能な限り早急に改訂することが重要である。

本成果において特に重視していたWBA導入についてのCIの能力はおおむね順調に向上している。プロジェクトで支援したワードにおけるCIは各ワードの廃棄物管理におけるステークホルダー（1次収集業者、コミュニティ及びDCC）間の調整者としての役割を果たしつつあり、何名かのCIは住民からの苦情処理に加えて、担当ワードの廃棄物管理の改善にかかる提案などを行っている。また、WBAの4つのコンポーネントの1つである「WBA1：ワード事務所の建設」によって、事務所が各ワードの廃棄物管理にかかる情報・データ・機材等の管理、関係者間の協議・意見交換の場の提供、クリーナーへの指導・管理の場の提供といった役割を果たしていることに加えて、CIの廃棄物管理業務に携わることに対する意欲やCIの権威の向上といった副次的な効果も発生しており、本コンポーネントが廃棄物管理の改善に貢献している。また同じくコンポーネントの1つである「WBA3：コミュニティ参加型廃棄物管理の推進」については、これまでに6ワード（10コミュニティ・ユニット）に展開されており、プロジェクトの終了時点までに予定された20ワードへの展開が完了する見込みである。今後はCIの継続的な取り組み、コミュニティの参加状況等のモニタリング及び促進を通じて自立発展性の向上を図っていく必要がある。

(3) 成果3：評価B

成果3：廃棄物収集運搬のための能力が向上する

WBAの4つのコンポーネントの中でWBA3及びWBA4が本成果に関連しておりWBAの普及を通じて一定程度の能力の向上が見られる。一方、グループ3の副リーダーのプロジェクトへの参加が遅れたこと及びリーダーがWMD設立のために多くの時間が割かれたことなどにより、当初予定どおりの能力強化が達成されていない面もある。成果の達成のためには、現在暫定的に配置されている人員（数名のエンジニアが新たにグループ3の活動に加わった）のグループメンバーとしての意識向上を図り、また、WMDの人員配置を速やかに進め、かつプロジェクト後半において実施される予定の環境プログラム無償「ダッカ市廃棄物管理低炭素化転換計画」を通じた廃棄物収集車両の投入及び稼動を遅滞なく行うことが重要であり、それらの投入も活用しつつ（新しいシステムの導入も含めた）適切な収集運搬システムの策定及びその実施が行われれば、収集運搬能力が確実に強化され、成果3は達成されると考えられる。あわせて、適切な収集運搬システムの実施にあたっては、特に廃棄物排出ルールの遵守に関するコミュニティからの協力や収集車両を運転するドライバーからの協力が必要不可欠である。

(4) 成果4：評価B

成果4：最終処分場の運用管理のための能力が向上する

これまで順調にマトワイル処分場を中心に最終処分場運用管理能力は改善されてきており、プロジェクト終了までには成果4は達成されると見込まれる。マトワイル処分場については、債務削減相当資金（JDCF）を活用して、衛生理立方式の処分場に改修されており、衛生理立にかかる運用管理も含めて、運用管理能力を更に向上させるために①重機担当及び処分場管理担当職員の適切な配置、②重機不足、③浸出水の処理システムの稼動、④トラックスケールの適切な運用といった課題を解決していく必要がある。

また、同じくJDCFを活用して新規建設が予定されているアミン・バザール処分場につい

ては、プロジェクト自体は中央政府によって正式に承認されているものの、環境保護団体等から処分場建設にかかる更なる環境配慮などを求められていることから、この課題を早急に解決し建設に取りかかることが必要である。また、建設後、必要な職員の配置に加えて、配置された職員に対しマトワイル処分場と同程度の運用管理能力を習得するための技術移転を効果的に行うことが必要である。

(5) 成果5：評価B

成果5：廃棄物管理のための財務能力が向上する

DCCではこれまで年度ごとに必要経費を積み上げて必要な予算を要求する、年度ごとの支出がどれくらい発生しているかを管理・分析するといった予算管理・支出管理がほとんど行われてこなかったが、プロジェクトにより廃棄物管理についての会計システムが導入され、また予算管理・支出管理の概念や手法について専門家から技術移転が行われてきたことから、財務管理能力は向上しており、プロジェクト終了時までに成果5の達成がほぼ見込まれる。

(6) プロジェクト目標

プロジェクト目標：ダッカ市の廃棄物管理サービスが向上する

プロジェクト目標は「①プロジェクト終了時までに52.5%（2,053t/日）が埋立地に運搬され、適切に処理される」「②ダッカ市（または民間委託地域での民間業者）の収集サービスに対する住民の満足度が36%からプロジェクト終了時までに50%に上がる」の2つの指標がある。

①については、マトワイル処分場のトラックスケール（計量台）が設置されてからまだ十分な時間が経過しておらず現在時系列データを収集・分析中であること、（DCC及び専門家チームが再三にわたって指導・監督をしているにもかかわらず）トラックスケールに乗らないまたはトラックスケールの手前で収集した廃棄物を降ろしてしまう収集車両があること、アミン・バザール処分場の工事がまだ始まっていないこと、などから現時点で正確なデータを元に目標達成の見込みについて述べることは困難であるが、環境プログラム無償及びJDCFによるアミン・バザール処分場開発プロジェクトによって調達される100台以上の収集車両が当初計画どおりに調達・導入され、また、WBAによって導入される新しい収集運搬システムが適切に導入・稼動することにより、プロジェクト終了時までに達成可能と見込まれる。

②については、現在WBAを実施している地域においてベースラインとなる住民満足度のデータを収集・分析しているところであり、正確なデータに基づいた評価は困難であるものの、本レビュー中のWBAを実施した住民などへの聞き取り調査ではWBAについてはおおむね評価は高く、プロジェクト終了時までに達成可能と見込まれる。

いずれの指標もWMDへの人員の配置を完了したうえで、各成果（1）廃棄物管理活動の組織的な管理・調整、2）コミュニティ廃棄物管理、3）収集運搬管理、4）処分場運用管理、及び5）財務管理）についての能力開発が行われれば、プロジェクトの終了時点までに、達成可能と見込まれる。

(7) 上位目標

上位目標：ダッカ市の廃棄物管理サービスが持続的に実施され、市の衛生面環境が改善される

上位目標の指標はプロジェクト目標の指標の延長線上にあるものであり、プロジェクト目標達成が、上位目標の達成に大きく関連する。現時点では、プロジェクト目標（2011年までにDCCの廃棄物管理サービスが改善する）は達成可能と見込まれ、またDCCの廃棄物管理についての組織・制度及び財務に関連する能力が向上しているため、2015年までにダッカ市の廃棄物管理サービスが持続的に実施されるようになり、市の衛生面環境が著しく改善される可能性は高い。

WMDの人員配置、住民意識の向上、マスタープラン（M/P）で提案された老朽化した収集車両の更新等外部条件もしくはDCC側の実施に影響される部分が多いものの、プロジェクトを実施し、その成果及びインパクトが持続的に発現していくことによって上位目標の達成は可能であると考えられる。

4-2-3 実施プロセス

実施プロセスはおおむね良好であると評価できる。主要なC/Pは、PDMの内容を理解し、プロジェクト活動の適切なタイミングでの実施及びモニタリングのために専門家チームとC/Pが共同で作成した年間活動計画（Annual Action Plan）に沿ってプロジェクト活動を実施している。一方で、廃棄物管理活動について、WMDがより自立的かつシステムティックなモニタリングシステムを確立し、よりオーナーシップをもってプロジェクトの運営・管理にあたることも必要である。

JICA専門家チームとC/P間のコミュニケーションは充実しているが、C/Pのワーキング・グループ間の調整に関して（WMD以外の部署のワーキング・グループメンバーがいる状況も影響しており）まだ改善の余地がある。

今後はJICAバンングラデシュ事務所も本プロジェクトに対して継続的な支援を行っており、今後もDCC、専門家チーム、JICAバンングラデシュ事務所間の連携を更に緊密にしてプロジェクト運営・管理にあたっていくことが望ましい。

また、日本政府及びJICAの廃棄物管理にかかる他の支援（JDCF、環境プログラム無償、及びJOCV等）との情報交換及び連携について改善が見られ、このことは、プロジェクト目標の達成するうえでも重要だと考えられる。

4-3 評価5項目による評価結果

4-3-1 妥当性

(1) バンングラデシュ国の開発政策

本プロジェクトが対象としているダッカ市では、前述のように都市人口の急増などにより大量の廃棄物が発生し、一方でDCCの収集・運搬を中心とした廃棄物管理能力が必ずしも十分とはいえないために、廃棄物が散乱している地域が市内で多く見られる。最近ではダッカ市住民の廃棄物管理に関する意識が少しずつであるが高まりつつあり、適切な管理へのニーズも高まってきていることから、廃棄物管理に関する技術協力へのDCCのニーズは極めて高い。

また、バングラデシュ国政府は、貧困削減に向けたより戦略的な政策及びミレニアム開発目標（Millennium Development Goals : MDGs）の達成を目的として、2005年10月に貧困削減戦略文書（“Unlocking the Potential ; National Strategy for Poverty Reduction” : PRSP）を策定した。PRSPは、その戦略としてpro-poor成長のためのマクロ経済環境整備、pro-poor成長を牽引するセクター、社会セーフティネット、及び人間開発の4つの戦略ブロック並びに参加とエンパワメント、ガバナンス、サービス・デリバリー及び環境と持続的開発の4つの支援戦略から構成される戦略を掲げており、さらに、雇用創出、栄養改善、母子保健、教育の質の改善、衛生と安全の水、刑事司法制度、地方ガバナンス、モニタリングを戦略的課題としている。2008年10月に選挙管理内閣が承認したPRSP（2009～2011年度）改訂案においても「環境と持続的開発」が支援戦略に、「衛生と安全の水」が戦略的課題にそれぞれ位置づけられており、また、バングラデシュ国の政策上の妥当性は高いといえる。

(2) 日本の援助政策

対バングラデシュ国のJICA国別事業実施計画では援助重点分野「社会開発と人間の安全保障」の中の「都市環境対策」プログラムに廃棄物管理が含まれており、本プロジェクトはわが国の援助政策との整合性も確保している。

(3) アプローチの適切性

本プロジェクトではダッカ市の廃棄物管理を担うDCCのオーナーシップを尊重し、JICAの支援で作成されたM/Pに基づき廃棄物管理にかかる具体的な技術、手法を支援するアプローチである。DCCは開発調査におけるC/P機関として、わが国とともに廃棄物管理に取り組んできており、日本との協力を精通している。

(4) 日本の援助の比較優位

わが国は廃棄物管理に関し、技術的優位性をもっており、これまでアジア、中米、中東地域において廃棄物管理にかかる開発調査、技術協力を数多く実施してきており、経験も豊富である。また、DCCには、開発調査において育成された人材も多く、彼らの経験を有効に活用することができることなどが援助の比較優位の点としてあげられる。

4-3-2 有効性

(1) プロジェクト目標の達成見込み

本プロジェクトのプロジェクト目標の達成見込みは、10ページ「4-2-2 (6) プロジェクト目標」を参照されたい。

(2) 各アウトプットのプロジェクト目標への貢献度

本プロジェクト目標にある「ダッカ市における廃棄物管理サービス」は主に成果2及び3に関連する廃棄物の収集・運搬並びに成果4の最終処分場管理から構成されており、それらのサービスをより適切に提供するための土台として成果1のDCCの組織としての管理・調整能力及び成果5の「会計システムの改善」の向上が必要不可欠であることから、すべての成果がプロジェクト目標の達成に密接に関連しているといえる。

4-3-3 効率性

(1) 日本側の投入

専門家派遣、研修員受入れ、機材供与及びプロジェクト活動費に関しては、WMD設置の遅れにより若干変更されたものの、おおむね計画どおり投入が実施されたといえる。特に日本におけるC/P研修は効果的でありC/Pの意欲、士気を高め知識・技術レベルの向上に大きく役立っている。

(2) バングラデシュ側の投入

本レビュー時点で廃棄物収集・運搬からマネジメント部門まで100名を超えるC/Pが日本側専門家とともに活動を展開している。一方で、WMD設立及びそれに伴う職員の配置等のために多くの関係省庁及びDCC内関係機関との調整・交渉が必要となりC/Pの一部がそれらの業務に時間を割かざるをえない状況となっている。WMDの設立は外部条件に設定されているものの、C/Pの効率的な活動に一定程度影響を与える結果となっている。

4-3-4 インパクト

長期的な計画(M/P)の下に、プロジェクト目標及び上位目標が設定されていることから、プロジェクト目標の達成及びそれから派生したインパクトにより上位目標が達成される見込みは高いといえる。

また、プロジェクト実施による正のインパクトとして、現場レベルでの作業環境改善が進んだこともあり、一般住民の「廃棄物管理は汚い仕事」という認識が少しずつ変わりつつあり、それに伴ってWMD職員が廃棄物管理業務に対してより意欲的に取り組み、業務にプライドを持ち始めるといった好事例がみられることが挙げられる。なお、現時点では本プロジェクトによる負のインパクトは確認されていない。

4-3-5 自立発展性

WMD設立から日が浅く、職員の正式な配置はいまだに十分に進んでいない現時点では、個々のC/Pの能力及びモチベーションはプロジェクトの実施によって高まっているものの、DCCが組織全体で自立発展的に廃棄物管理業務を実施・展開していく環境は十分に整っていない。一方で自立発展性の確保に寄与する点として以下の4つが挙げられる。

- 1) 市長に承認されたWMDのディレクティブが今後も維持されるであろうこと
- 2) プロジェクトを通して各種のマニュアルやガイドラインが作成され、WMD内で共有される体制が整ったこと
- 3) DCCの歳入が増えており、WMDへの適切な予算配分が期待できること
- 4) WBAの概念や内容がC/P及び対象地域のコミュニティに浸透しつつあること

なお、DCCのダッカ市役所助役(CEO)や廃棄物管理局局長(CWMO)を含めた職員は通常2~3年で交代するケースが多いが、今後新たに任命されるであろうCEO、CWMO、その他のDCCの職員が、新たに設立されたWMDの枠組みのなかでオーナーシップを発揮し積極的に活動を展開していくことができるかといった点も、プロジェクト終了後にも自立的に発展するための重要な要素の1つになると考えられる。

第5章 提 言

(1) 廃棄物管理局全体の能力強化

2008年10月にWMDが正式に設立されたものの、必要な人員の未配置、廃棄物管理にかかる一部業務が他の部局から移管されていない、といった課題が多く残されている。プロジェクトの目標を達成し、かつWMDがダッカ市の廃棄物管理全体を効果的に実施していくためには、DCCが必要な体制整備を早急に行うことが必要であり、プロジェクト後半に向けての最重要課題である。特に技術移転の対象となるWMD職員の新規採用をできる限り早期に行うことがプロジェクトの自立発展性を確保するために重要である。

(2) 住民参加型廃棄物管理について

住民参加型廃棄物管理及びWBAはダッカ市の廃棄物管理を改善し、Clean Dhakaを達成するための鍵となる概念であり、今後もプロジェクトにおいて普及・拡大を推進していくべきである。普及・拡大を行うにあたっては、プロジェクト前半で作成した「WBAガイドライン」を、実際に業務を行っているCI等の意見を反映しつつ改訂すること、JOCVの活動と連携し住民の意識啓発を更に進めるために環境教育にかかるCI等の能力を研修等を通じて強化すること、廃棄物管理オフィサー（Assistant Waster Management Officer：AWMO）や清掃オフィサー（Conservancy Officer：CO）等CI以外のWMD職員の参画をより進め、かつCIのスキル及びモチベーションの向上を更に図るよう継続的に支援を行っていくこと、各ワードの代表（Councilor）向けのワークショップを開催し、代表間での廃棄物管理に対する意識を向上させること、が重要である。

(3) 今後解決すべき課題の認識

特に、以下の点について今後プロジェクトで取り組むべき重要課題として認識し、活動を行っていくことが必要である。

- ・ PCSPを中心とした1次収集と2次収集のより効果的な連携
- ・ ワークショップでの車両維持管理技術レベルの向上
- ・ ダッカ市全域をカバーするための2次収集業務の業務計画の検討

(4) 最終処分場運営管理能力の更なる向上

プロジェクトによりマトワイル処分場において圧縮、覆土や方面防護等、衛生的に埋立を行うための処分場管理能力は向上したといえる。一方で、更に管理能力を向上させるために、即日覆土と浸出水対策を徹底すること、環境モニタリングを継続的に行うこと及びウエストピッカー等への社会的な配慮も行うことが必要である。

(5) 財務管理能力の更なる向上

プロジェクト開始時は財務管理についてはほぼ行われていなかったに等しい水準であったが、関係部署からのヒアリングに基づく年度ごとの廃棄物管理全般にかかる必要経費の産出、積み上げ方式による予算計画の策定など基礎的な財務管理能力の向上が見られる。今後はこの制度の定着を図るとともに、支出管理、分析及び収入増の方策の検討等が必要である。

(6) PDM及び年間行動計画に基づいたプロジェクト運営

プロジェクトはJICA、DCC及び専門家チームが協働で作成したPDM及び年間行動計画に基づいて運営が行われており、PDMで定められた目標及び指標達成のために年間行動計画を策定し、それに基づいて活動を行っていることを、特にDCC側のC/P全体に広く再認識してもらうことが重要である。併わせて、プロジェクト目標の指標の1つとなっている住民満足度調査の達成目標や調査方法等を明確にする、M/Pの改訂にあたって現在の廃棄物管理の状況やバングラデシュ国の現状を勘案し、例えば3R（Reduce, Reuse and Recycle）の導入を組み入れる、といったことが必要である。

第6章 団長所感

今回の中間評価調査での、全体的な総合評価、すなわちプロジェクト目標達成の可能性は、「プロジェクト終了時に達成される見込みがある (will be achieved)」というものである。しかし、目標達成のためになされねばならない課題はいまだ多い。合同評価報告書ではバングラデシュ国側の意向もありすべての検討課題について網羅的に記述することができたとは必ずしもいえないものの、PDMに沿って5つの成果ごとに検討してみると、達成度にはかなりの濃淡が認められた。このうち、とりわけ成果1（マネジメント及び調整能力向上）と成果3（収集運搬能力向上）は、前半期に予定した活動がDCCによるWMD設立の遅れに起因して不十分なままとなっており、カウンターパートの配置や結集にも十分とはいえない状況にあった。すなわち、成果1については、今回新たに設立されたWMDの運営管理能力確立という課題そのものが残されており、また、成果3については収集運搬を外部条件の発展（環境プログラム無償による収集運搬機材供与）に対応して適切な計画をたてて実行するという課題が残されている。収集運搬は、コミュニティ廃棄物管理（成果2）、及び最終処分場（成果4）の間をつなぐものであり、これらには他の部局との調整と連携も求められる。

このように考えると、前半期の遅れを取り戻し、後半期に全力で取り組む必要のある主要な上記2課題は、本来はプロジェクトの全期間を通して取り組んではじめて達成しうるほどの大きな課題であることがわかる。

一方、成果2（コミュニティ廃棄物管理）、成果4（最終埋立処分場管理）、成果5（廃棄物財政管理）については、前半期にほぼ当初計画に沿った活動が実施され、一定の前進が認められた項目であるが、もちろん完了したわけではなく、後半期にも引き続き改善の努力を必要とする。なお、ワード単位を軸としたWBAは、WMDが設立されていないなかで、総合的な廃棄物管理体制を構築するうえで、大変効果的なアプローチであったと評価できる。

したがって、後半期には本来のプロジェクト・デザインからすれば、幅広い範囲での活動について相当の努力が必要になると予想される。しかし、限られた投入という条件の下では、ある程度ターゲットを絞って、具体的な成果が現れる方向で、支援を実施することが肝要であると考えられる。その意味で、成果1での「WMDの組織づくりを支援」しつつ、成果3の「収集運搬能力向上」を具体的に達成することを最重点におくことが、WMD設立期であり環境プログラム無償の機材の導入時期でもあることから、もっとも効果的な設定であると考えられる。これにより、ダッカ市内のゴミ状況が目に見えて改善されれば、住民意識の向上や廃棄物管理事業に対する理解の促進にもつながり、広い意味で自立発展性にもつながる。

本プロジェクトの現地モニタリングは、2007年4月、2008年2月に続いて今回が3度目であるが、回を追って専門家チームとC/Pとの間の緊密な連携や信頼関係が強まり、C/Pの良質の部分の自主性・主体性が高まってきている。このことはPDMの指標には表れにくいだが、大変重要な成果であると考えられる。この間、紆余曲折があったとはいえ、専門家チームのキャパシティ・ディベロップメント（CD）支援アプローチが、全体として効果的であったことを示しているといえよう。

また、高いレベルの意思決定者（市長等）のプロジェクトに対するオーナーシップが強まってきていることも確認でき、これまでの表敬程度の関係から、具体的なプロジェクトの内容を意見交換するレベルに達してきている。例えばCEOからは、ワードレベルの上級意思決定者であるCouncilorに対するワークショップの開催や、廃棄物埋立地の公衆衛生問題改善のための提案がな

されるといった、新しいイニシアティブも生まれてきており、後半期にはこうしたイニシアティブをうまく生かすよう取り組んでいくことが求められる。

付 属 資 料

1. 協議議事録（M/M）
（合同評価報告書含む）
2. 評価グリッド

**MINUTES OF MEETING BETWEEN
JAPAN INTERNATIONAL COOPERATION AGENCY AND
AUTHORITIES CONCERNED OF THE PEOPLE'S REPUBLIC OF BANGLADESH
AND DHAKA CITY CORPORATION ON
THE PROJECT FOR STRENGTHENING OF SOLID WASTE MANAGEMENT IN
DHAKA CITY OF BANGLADESH**

The Japanese Mid-term Evaluation Team, organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Dr. Yoshida Mitsuo, visited the People's Republic of Bangladesh (hereinafter referred to as "Bangladesh") from October 26th to November 13th, 2008 for the purpose of conducting the joint mid-term evaluation on the Project for Strengthening of Solid Waste Management in Dhaka City of Bangladesh (hereinafter referred to as "the Project").

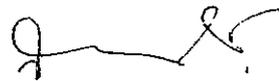
The Bangladesh Evaluation Team, which consists of members from the Local Government Division, Ministry of Local Government, Rural Development and Co-operatives (hereinafter referred to as "LGD") and Dhaka City Corporation, was also assigned for the purpose of conducting this evaluation.

After intensive study and discussion on the achievement of the project and its activities by both teams, the Joint Evaluation Team, both parties agreed upon the Joint Mid-term Evaluation Report attached hereto.

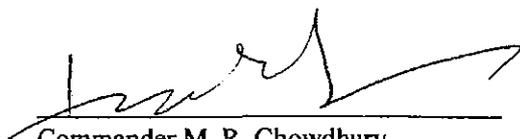
Dhaka, November 13th, 2008



Dr. Yoshida Mitsuo
Leader
Japanese Mid-term Evaluation Team
Japan International Cooperation Agency
Japan



Ms. Nasreen Akhtar Chowdhury
Deputy Secretary
Economic Relations Division
Ministry of Finance
Bangladesh



Commander M. R. Chowdhury
Chief Waste Manager Officer
Dhaka City Corporation



Mr. Md. Delwar Hossain
Senior Assistant Secretary
Local Government Division,
Ministry of Local Government,
Rural Development and Co-operatives

Attachment 1: Joint Mid-term Evaluation Report

Attachment 2: List of Participants of the Meetings

**JOINT MID-TERM EVALUATION REPORT
ON
THE PROJECT FOR STRENGTHENING OF SOLID WASTE MANAGEMENT
IN
DHAKA CITY OF BANGLADESH**

November 2008

**Bangladesh – Japan
Joint Mid-term Evaluation Team**

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Abbreviation and Acronym

AAP	Annual Activity Plan
BUET	Bangladesh University of Engineering and Technology
CBO	Community Based Organization
CCO	Chief Conservancy Officer (presently CWMO)
CEO	Chief Executive Officer
CI	Conservancy Inspector
CO	Conservancy Officer
COD	Chemical Oxygen Demand
C/P	Bangladesh Counterpart to the Project
CSI	Conservancy Supervising Inspector
CUWG	Community Unit Working Group
CWMO	Chief Waste Management Officer
DCC	Dhaka City Corporation
DOE	Department of Environment, Ministry of Environment and Forest
EC	Electrical Conductivity
ECNEC	Executive Committee of National Economic Council
EE	Executive Engineer
FMG	Financial Management Group
FDG	Final Disposal Group
FY	Fiscal Year
GIS	Geographic Information System
GPS	Global Positioning System
Group 1	Management and Coordination Group
Group 2	Community Solid Waste Management Group
Group 3	Collection and Transportation Group
Group 4	Landfill Management Group
Group 5	Financial Management Group
JICA	Japan International Cooperation Agency
JDCF	Japan Debt Cancellation Fund
JET	JICA Expert Team
JOCV	Japan Overseas Cooperation Volunteers
LF	Landfill
LGD	Local Government Division, Ministry of Local Government, Rural development and Co-operatives
LMU	Landfill Management Unit
MCG	Management and Coordination Group

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M/P	Master Plan
NGO	Non Governmental Organization
O&M	Operation and Maintenance
OJT	On the Job Training
OT	Open Truck
OVI	Objectively Verifiable Indicators
PCM	Project Cycle Management
PCSP	Primary Collection Service Provider
PD	Project Director
PDM	Project Design Matrix
PR	Public Relations
PRA	Participatory Rural Appraisal.
PRSP	Poverty Reduction Strategy Paper
SE	Superintending Engineer
SSC	Safety and Sanitation Committee
St/C	Steering Committee
SWM	Solid Waste Management
WBA	Ward-based Approach
WMD	Waste Management Department

TABLE OF CONTENTS

1. INTRODUCTION..... 1

1-1. PREFACE 1

1-2. OBJECTIVE OF THE JOINT MID-TERM EVALUATION 1

1-3. MEMBERS OF THE JOINT EVALUATION TEAM 1

1-4. SCHEDULES OF THE JOINT EVALUATION 3

2. OUTLINE OF THE PROJECT..... 4

2-1. BACKGROUND OF THE PROJECT 4

2-2. SUMMARY OF THE PROJECT 4

3. METHODOLOGY OF EVALUATION 5

3-1. POINTS OF EVALUATION 5

3-1-1 Evaluation of Achievement and Implementation Process based on PDM 5

3-1-2 Evaluation of Five Evaluation Criteria 5

3-1-3 Viewpoints of Mid-term Evaluation 6

3-2. PROCEDURE OF JOINT EVALUATION 7

3-2-1 Evaluation Planning 7

3-2-2 Collection of Information and Analysis 7

3-2-3 Joint-Discussion, Reporting and Feedback 8

4. RESULTS OF THE JOINT EVALUATION..... 9

4-1. PERFORMANCE AND IMPLEMENTATION PROCESS..... 9

4-1-1 Inputs 9

4-1-2 Performance 10

4-1-3 Implementation Process 13

4-2. EVALUATION BY FIVE CRITERIA 13

4-2-1 Relevance 13

4-2-2 Effectiveness 13

4-2-3 Efficiency 13

4-2-4 Impact 14

4-2-5 Sustainability 14

4-3. CONTRIBUTING AND CONSTRAINING FACTORS 14

4-3-1 Contributing Factors 14

4-3-2 Constraining Factors 15

5. CONCLUSION..... 15

6. RECOMMENDATION 16

ym *25*
 *26*


ANNEX 1.	PROJECT DESIGN MATRIX VERSION 2 (PDM2)	A - 1
ANNEX 2.	EVALUATION GRID	A - 3
A2-1.	PERFORMANCE	A - 3
A2-2.	IMPLEMENTATION PROCESS	A - 17
A2-3.	5 CRITERIA: RELEVANCE	A - 22
A2-4.	5 CRITERIA: EFFECTIVENESS.....	A - 23
A2-5.	5 CRITERIA: EFFICIENCY	A - 24
A2-6.	5 CRITERIA: IMPACT	A - 27
A2-7.	5 CRITERIA: SUSTAINABILITY	A - 29
ANNEX 3.	TABLES OF IMPUTES	A - 32
A3-1.	ASSIGNMENT OF JICA EXPERT TEAM.....	A - 32
A3-2.	ASSIGNMENT OF BANGLADESH COUNTERPARTS.....	A - 33
A3-3.	MACHINERY AND EQUIPMENT PROVIDED	A - 37
A3-4.	OPERATIONAL COST FROM THE JAPANESE SIDE.....	A - 38
A3-5.	OPERATIONAL COST FROM THE BANGLADESH SIDE.....	A - 39
ANNEX 4.	TABLES OF ACTIVITIES	A - 41
A4-1.	PLAN AND PROGRESS OF THE ACTIVITIES	A - 41
A4-2.	DISSEMINATED INFORMATION, WORKSHOP, SEMINARS AND MEETINGS.....	A - 47
A4-3.	OVERSEAS COUNTERPART TRAINING.....	A - 50
A4-4.	PREPARED MANUAL AND GUIDELINE	A - 52
ANNEX 5.	RECORD OF MEDIA COVERAG	A - 53
ANNEX 6.	RECORD OF THE ENVIRONMENTAL MONITORING AT MATUAIL LANDFILL SITE	A - 56
ANNEX 7.	ATTENDANT LIST OF THE WRAP-UP MEETING	A - 59



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1. INTRODUCTION

1-1. Preface

The Japanese Mid-term Evaluation Team, organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Dr. Yoshida Mitsuo, visited the People's Republic of Bangladesh (hereinafter referred to as "Bangladesh") from October 26th to November 13th, 2008 for the purpose of conducting the joint mid-term evaluation on the Project for Strengthening of Solid Waste Management in Dhaka City of Bangladesh (hereinafter referred to as "the Project").

The Bangladesh Joint Evaluation Team, which consists of members from the Local Government Division, Ministry of Local Government, Rural Development and Co-operatives (hereinafter referred to as "LGD") and Dhaka City Corporation, was also assigned for the purpose of conducting this evaluation. Both Bangladesh and Japanese Evaluation Teams organized the Joint Evaluation Team.

This joint mid-term evaluation report has been prepared through an intensive evaluation study (including document review, questionnaire survey, interviews and site visits) and discussion between the Japanese Team and the Bangladesh Team. DCC Counterparts (C/Ps) were asked questions thoroughly, as well as JICA Expert Team (JET), through the questionnaire survey and interviews to adequately evaluate the Project.

1-2. Objective of the Joint Mid-term Evaluation

Every JICA's project is evaluated at four stages, namely ex-ante, mid-term, terminal and ex-post. This time, one year and eight months after the inauguration of the Project, mid-term evaluation is conducted since the Project reached half the way. Specific objective of the mid-term evaluation are to;

- review the progress of the Project and evaluate the achievement from the viewpoints of the five evaluation criteria which are relevance, effectiveness, effectiveness, efficiency, impact, and sustainability,
- analyze the factors to promote/impede the effects,
- itemize necessary actions to be taken and make recommendation for the Project,
- revise PDM and PO, if necessary, and
- summarize results of the study in a joint evaluation report.

1-3. Members of the Joint Evaluation Team

The evaluation and the recommendations on the Project were made by the following members of the Joint Evaluation Team.

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[Bangladesh Side]

Name	Title in Relation to the Project	Occupation
Mr. Md. Delwar Hossain	Steering Committee Member	Senior Assistant Secretary (Paura - 1), Local Government Division, Ministry of Local Government, Rural Development and Co-operatives
Commander M. R. Chowdhury	Project Manager	Chief Waste Manager Officer, WMD, DCC
Dr. Tariq Bin Yousuf	Leader of Group 4 (Landfill Management Group)	Project Director, Landfill Improvement Project, WMD, DCC
Mr. Abul Hasnat Md. Ashraful Alam	Leader of Group 3 (Collection and Transportation Group)	Executive Engineer, WMD, DCC

[Japanese Side]

Name	Title in Relation to the Project	Occupation
Dr. Mitsuo Yoshida	Leader of the Japanese Mid-term Evaluation Team	Senior Advisor, Japan International Cooperation Agency
Prof. Hiroyuki Miyake	Social Consideration	Professor, The University of Kitakyusyu, Japan
Mr. Hiromichi Kano	Environmental Management	Program Officer, Environmental Management Division I, Environmental Management Group, Global Environmental Department, Japan International Cooperation Agency
Mr. Jin Hirosawa	Cooperation Planning	Representative, JICA Bangladesh Office, Japan International Cooperation Agency
Mr. Shozo Mori	Evaluation and Analysis	Private Consultant, Engineering Division, Overseas Services Department, Nihon Suido Consultants Co., LTD.

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1-4. Schedules of the Joint Evaluation

Date	Activities
26 th Oct. (Sun)	Arrival of One JMET Member (Mr. Mori)
27 th Oct. (Mon)	09:00 JMET: Meeting with JICA Bangladesh Office 11:30 Confirmation of the Process of Joint Evaluation with Two DCC Evaluators (in presence of C/Ps and JET)
28 th Oct. (Tue)	Analysis of Results of the Questionnaire Survey for Preparing for Interviews
29 th Oct. (Wed)	12:00 Group Interview to JET Members staying in Bangladesh (Group interview to JET Members staying in Japan was conducted in Japan on October 23)
30 th Oct. (Thu)	11:00 Group Interview to C/Ps (group leaders and a deputy group leader)
31 st Oct. (Fri)	Analysis of Results of the Questionnaire Survey for Preparing for Interviews
1 st Nov. (Sat)	Preparation of 1 st Draft of Joint Evaluation Report
2 nd Nov. (Sun)	Preparation of 1 st Draft of Joint Evaluation Report
3 rd Nov. (Mon)	11:00 Group Interview to C/Ps (Assistant Engineers) 15:00 Visiting Amin Bazar Landfill Site
4 th Nov. (Tue)	AM: Preparation of 1 st Draft of Joint Evaluation Report 15:00 Confirmation of the Process of Joint Evaluation with LGD Evaluator
5 th Nov. (Wed)	11:00 Group Interview to C/Ps (selected CIs) 16:30 Interview to the Chief Adviser of JET
6 th Nov. (Thu)	14:00 Joint Evaluation Meeting for Sharing Findings
7 th Nov. (Fri)	Arrival of the Other Three JMET Members
8 th Nov. (Sat)	AM Meeting among JMET 14:00 Visiting Matuail Landfill site 15:30 Visiting Ward 33 office 16:30 Visiting Ward 69
9 th Nov. (Sun)	08:00 JMET: Meeting with JICA Bangladesh Office 11:30 Courtesy Call to LGD (Secretary) 12:30 Courtesy Call to DCC (Mayer, CEO) 15:00 Courtesy Call to ERD (Deputy secretary) 16:15 Visiting Ward 69 and Ward 63 to See New Waste Collection (WBA4)
10 th Nov. (Mon)	08:00 Visiting Ward 44 to see New Waste Collection (WBA4) 09:00 Joint Evaluation Meeting for Revision of the 1st Draft report
11 th Nov. (Tue)	15:00 Joint Evaluation Meeting for Finalizing the Draft report
12 th Nov. (Wed)	11:00 Wrap-up Meeting among Joint Evaluation Team and Project Members (C/Ps and JET) 15:00 Report to Mayer of DCC (Presentation to Media) 15:00 Ward 75 Office Opening Ceremony
13 th Nov. (Thu)	08:00 JMET: Report to JICA 10:00 JMET: Report to EOJ 13:40 Departure of JMET

Note: Signing to M/M (attached by "Joint Mid-Term Evaluation Report") will be done through circulation after November 13th.

JMET : Japanese Mid-term Evaluation Team
JET : JICA Expert Team

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2. OUTLINE OF THE PROJECT

2-1. Background of the Project

Japan International Cooperation Agency (JICA) started technical cooperation on solid waste management (SWM) with Dhaka City Corporation (DCC) in 2000. During the period from November 2003 to March 2006, a development study was implemented. Clean Dhaka Master Plan, the main output of that Study was the first M/P on SWM in Bangladesh that covers all aspects of SWM, including public awareness raising, primary collection, secondary collection, transportation and final disposal as well as administration and financial management. For the implementation of Clean Dhaka Master Plan, this technical cooperation Project consisting of the dispatch of experts started in February 2007 and is presently being implemented by DCC and JICA Expert Team (JET).

In parallel with the technical cooperation activities, the Government of Japan supported other SWM activities in DCC. Improvement and expansion of Matuail Landfill was implemented using the Japan Debt Cancellation Fund (JDCF). Two JOCVs have been dispatched for environmental education. A Grass-roots Grant Aid has been used to implement a project for medical waste management by an NGO. DCC is also planning to apply for JDCF to construct landfill facilities at Amin Bazar landfill.

2-2. Summary of the Project

The Project, which aims to develop the capacity on solid waste management in Dhaka City, has been carried out since February 2007 for the period of four years. The followings are a brief description of the Project, and the evaluation will be carried out based on it. For the further detailed information on the Project, please refer to the Project Design Matrix Version 2 (revised in February 2008 jointly by JICA Expert Team, DCC counterparts and JICA Advisory Committee; hereinafter referred to as "PDM2") shown in Annex 1.

Table: Basic Project Flame (Part of the Project Design Matrix Version 2 (PDM2))

Overall Goal	The solid waste management services of Dhaka City Corporation are sustained and the sanitary environment of the city is improved.
Project Purpose	The solid waste management services of Dhaka City Corporation are improved
Outputs	1) Capacity for management and coordination of solid waste management activities is improved. 2) Capacity for participatory solid waste management program is improved. 3) Capacity for solid waste collection and transportation is improved. 4) Capacity for operation and management of final disposal is improved. 5) Capacity for financial management on solid waste management is improved.

The number of JET members who have been involved in the project is nine and eight of them are currently working for the Project as listed in A3-1 of Annex 3.

The five outputs shown in the table above are planned to be achieved by separate 5 C/Ps groups (Group 1 to Group 5) which are Management and Coordination Group, Community SWM Group, Collection and Transportation Groups, Landfill Management Group and Financial Management Group in order. C/Ps of each group are listed in A3-2 of Annex 3.

3. METHODOLOGY OF EVALUATION

3-1. Points of Evaluation

The mid-term evaluation was jointly conducted using the Project Cycle Management method (hereinafter referred to as "PCM" method). This method consists of two parts, which are 1) evaluation of achievement and implementation process based on PDM and 2) evaluation by five criteria (Relevance, Effectiveness, Efficiency, Impact, and Sustainability).

The overall assessment and item-wise assessment will be described as A: achieved/will be satisfactory achieved, B: mostly achieved/will be mostly achieved, C: partly achieved/will be partly achieved and D: not achieved/would not be achieved.

3-1-1 Evaluation of Achievement and Implementation Process based on PDM

The achievement levels in terms of Inputs, Activities, Outputs, Project Purpose and Overall Goal were assessed in comparison with the Project design summarized in PDM2 shown in Annex 1 and the detailed tables showing planned schedule and progress of the designated activities for each output up to June 2009 shown A4-1 of Annex 4 (which have been prepared based on the Plan of Operation (PO) of the Project). The implementation process of the Project was also confirmed from the various viewpoints such as monitoring and interviews.

3-1-2 Evaluation of Five Evaluation Criteria

In addition to verification of achievement level and Implementation process of the Project, the mid-term evaluation study assesses the Project from the following five evaluation criteria.

- 1) Relevance: Relevance of the Project is reviewed by the validity of the Project Purpose and Overall Goal in connection with the development policy and the needs of Bangladesh.
- 2) Effectiveness: Effectiveness is assessed to what extent the Project has achieved its Project Purpose, clarifying the relationship between the Project Purpose and Outputs.
- 3) Efficiency: Efficiency of the Project implementation is analyzed with emphasis on the relationship between Outputs and Inputs in terms of timing, quality and quantity.
- 4) Impact: Impact of the Project is assessed in terms of positive/negative and intended/unintended changes taken place as a result of the Project.
- 5) Sustainability: Sustainability of the Project is assessed in terms of institutional/political, financial and technical aspects by examining the extent to which the achievements of the Project will be sustained after the Project is completed.

The relationship between the five criteria and the PDM is shown in the following figure.

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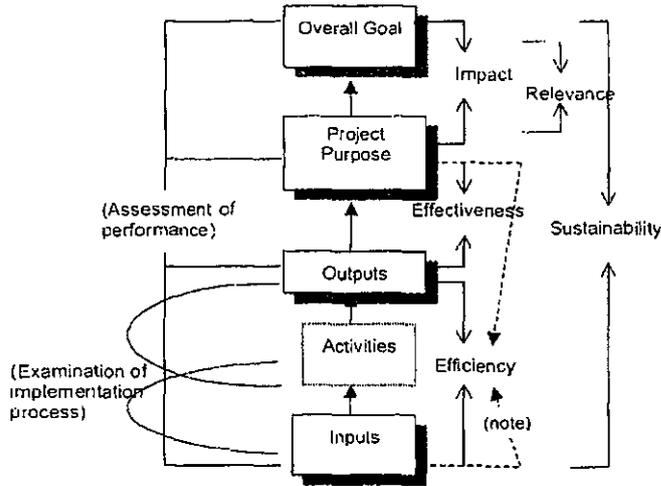


Figure: Relationship between the Five Criteria and the PDM (source: JICA Guideline for Project Evaluation)

3-1-3 Viewpoints of Mid-term Evaluation

The following figure shows the viewpoints of mid-term evaluation.

	Ex-ante evaluation	Monitoring Half 1	Mid-term evaluation	Terminal evaluation	Ex-post evaluation
Confirmation of performance	Note 1	●	●	●	◇
Grasping of implementation process	○	●	●	●	◇
<Five Evaluation Criteria>					
Relevance	●	-	●	●	◇
Effectiveness	○	-	◇	●	-
Efficiency	○	-	●	●	-
Impact	○	-	◇	◇	●
Sustainability	○	-	○	○	●

Note 1: In case of an ex-ante evaluation, this means conducting a baseline study or establishing indicators.

Note 2: An examination based on the Five Evaluation Criteria is normally beyond the scope of monitoring, but for its operation and management, it is important to keep these Five Evaluation Criteria's view points always in mind.

- : Examination based on the actual situation and performance
- : Examination based on forecasts and prospects
- ◇: Examination according what is judged necessary and possible for the evaluation
- Full examination is not yet possible, or completed in a previous phase

Figure: Viewpoints of Mid-term Evaluation (source: JICA Guideline for Project Evaluation)

Mid-term evaluations focus on relevance and efficiency. Regarding relevance, it is important to verify once more whether the project strategy is valid as it is. An analysis of contributing and constraining factors is also required. As for how effectiveness and impacts are showing themselves, the future trends and feasibilities are examined based on the output performance and the activity status. Sustainability is examined based on prospects. Particularly with respect to effectiveness, thorough studies are required as to whether there are prospects that effectiveness can be achieved in the remaining half-term of the project. If any negative impacts start to show while

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the project is under way, the project strategy is changed based on an analysis of their causes.

3-2. Procedure of Joint Evaluation

The procedure of the Joint Evaluation consists of three stages of interactions among the Joint Evaluation Team (between the Japanese Mid-term Evaluation Team and Bangladesh Evaluation Team), which are 1) evaluation planning, 2) collection of information and analysis, and 3) joint-discussion, reporting and feedback.

3-2-1 Evaluation Planning

The first stage, Evaluation Planning, consists of the following three steps.

Steps of Evaluation Planning	Work
(1) Confirm the purpose of evaluation:	Consider what the purpose of the evaluation is.
	Consider who the potential users of the results are.
(2) Organize information of the target project:	Grasp the contents of the project plans.
	Grasp the current situation of the project.
(3) Formulate evaluation work plan:	Consider what the evaluation methodology is.
	Consider evaluation questions, basis for judgment, data needed, and data collection methods.

Evaluation planning was done mainly by the Japanese Mid-term Evaluation Team before its dispatch to Bangladesh in consultation with JICA Headquarters, JICA Bangladesh Office and JET Members by videoconference. This stage was completed in Dhaka through the initiation meetings with Bangladesh Evaluation Team (three DCC evaluators and one LGD evaluator) where the purpose and work plan of the evaluation were shared and confirmed.

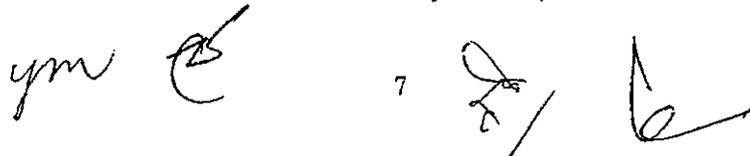
3-2-2 Collection of Information and Analysis

(1) Collect data

Both quantitative and qualitative data were gathered and utilized for analysis. Data collection methods used for the evaluation were as follows:

- Literature/Documentation Review;
- Questionnaires (Counterparts, Experts);
- Group Interviews (JET Chief Adviser, JET Members in Dhaka, JET Members in Japan, C/P Group Leaders, CIs and Assistant Engineers);
- Direct Data collection from JET and C/Ps; and,
- Direct Observations (Matuail Landfill Site, Amin Bazar Landfill Site, Ward SWM Office, New Waste Collection System, etc.)

The questionnaire, which consists of closed-end questions (choice of alternative answers) and open-end



questions (description of comments and reasons behind their choice), was prepared by Japanese Mid-term Evaluation Team (JMET) and sent to all the eight JET members and 16 selected DCC counterparts prior to the dispatch of JMET. The eight JET members and five leading members were asked to answer a broad set of questions regarding implementation process, effectiveness, efficiency, impact and sustainability while the other selected DCC counterparts were asked questions limited to implementation process, effectiveness and efficiency.

The grouping of C/Ps for the group interviews were finalized in consultation with DCC evaluators in consideration of C/Ps' positions in DCC. JET members staying in Japan at the time of the evaluation were also interviewed prior to the dispatch of JMET. Based on the results of the questionnaire survey, the further questions asked in the group interviews were prepared separately for each group.

As a result of direct data collection from JET and C/Ps, tables showing the lists of inputs and activities implemented by October 2008 are attached in Annexes 3 and 4.

(2) Analysis of the Collected Data

The results of the questionnaire survey were tabled and analyzed by calculating of the ratios of selected alternative answers separately for JET and C/Ps and by listing the comments and reasons behind their choices.

The results of the questionnaire survey and the group interviews were shared between JMET and Bangladesh Evaluation Team in a meeting during the preparation of the first draft of Joint Evaluation Report. Some important points identified through the questionnaire survey and the group interviews were discussed in the meeting.

3-2-3 Joint-Discussion, Reporting and Feedback

The first draft of Joint Evaluation Report, mainly prepared by JMET, was shared with Bangladesh Evaluation Team. The contents of the first draft, including conclusions and recommendations, were discussed among Joint Evaluation Team to prepare the final draft of Joint Evaluation Report.

Then, the final draft was sent to LGD and ERD for acquiring their comments on the final draft to finalize Joint Evaluation Report. Meanwhile, the contents of the final draft was explained to DCC counterparts and JET members as feedback in the wrap-up meeting held on November 12, 2008 (Attendee list is attached as ANNEX 7). The finalized Joint Evaluation Report was prepared prior to the return of JMET (except for the one JMET member joined from JICA Bangladesh Office) on November 13, 2008.

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4. RESULTS OF THE JOINT EVALUATION

4-1. Performance and Implementation Process

4-1-1 Inputs

(1) Inputs from Japanese Side

1) Assignment of JICA Expert Team

The following numbers of experts were dispatched and assigned. For details, please refer to A3-1 of ANNEX 3.

Japanese Fiscal Year 2006	12.8 MM
Japanese Fiscal Year 2007	25.2 MM
Japanese Fiscal Year 2008 (up to Oct. 27)	17.2 MM
Total	55.2MM

M/M: Man-Month

2) Machinery and Equipment Provided

Equipment provided by the Japanese side is detailed in A3-3 of ANNEX 3. In total, the Japanese side has allocated the following amount for procuring 24 items: 6,242,341 yen

3) Operational Cost from the Japanese Side

Operational Cost borne by the Japanese side is detailed in A3-4 of ANNEX 3. In total, Japanese side has allocated as follows: 11,186,931 Yen.

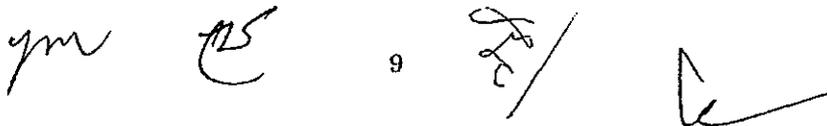
List of the costs and companies of subcontracts, such as for Ward Office Construction, is detailed in A3-4. The record of disseminated information, workshops, seminars and meetings are listed in A4-2 of ANNEX 4.

4) Group Training and Counterpart Training

Nine (9) counterparts were dispatched to JICA Group training courses on SWM in Japan and three (3) counterparts were dispatched to the Counterpart training in Japan up to Oct. 2008.

Eight (8) counterparts participated to India Study Tour and six (6) counterparts to Hanoi Study Tour.

For details, please refer to the ANNEX A4-3.

 The block contains several handwritten signatures and initials in black ink. From left to right, there is a signature that looks like 'ym', a signature that looks like 'AS', a small number '9', a signature that looks like 'JICA', and a signature that looks like 'L'.

(2) Inputs from Bangladesh Side

1) Assignment of Counterparts

Detailed assignment of Bangladesh counterparts to the Project is summarized as the ANNEX A3-2. In total, one hundred and seventeen (117) full-time and part-time counterparts have been assigned so far.

2) Operational Cost from the Bangladesh Side

The operational costs from DCC specifically used for the activities of the Project have not been separately tabled because the Project covers the improvement of existing SWM related activities of DCC. The table in A3-5 of ANNEX 3 shows the SWM costs spent from DCC annual budgets for the last two years; in total 242,235,290 Taka for 2006/2007 and 285,911,548 Taka for 2007/2008.

4-1-2 Performance

(1) Establishment of WMD

WMD was not approved by the Government of Bangladesh at the early stage of the Project, which means one of the preconditions of the Project was not fulfilled.

According to the agreement made between the Bangladesh side and JICA in the Preparatory Study in October 2006, the organization reform mainly for the establishment of WMD is initially estimated to be approved by the Bangladesh Government by the end of year 2006. However, the government approval of WMD has been delayed till October 2008 and full-scale staff transfer to WMD has not been realized yet.

As a result of recent temporary deployment of 13 DCC staffers to WMD, the number of the counterparts actually working full-time for the Project has increased to eight and especially Collection Group become more effective, which is a major positive development for the Project.

(2) Output 1

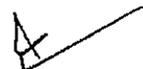
Output 1: Capacity for management and coordination of solid waste management activities is improved.

It is anticipated that Output 1 will be achieved by the end of the Project. However, more effort need to be secured to strengthen the management system of fully-functioned WMD and sustainability of SWM services of DCC.

C/Ps' capacity development for management and coordination of SWM activities has been delayed since Group 1 had to work intensively for the establishment of WMD although all the activities for achieving Output 1 are in progress. After the forthcoming full-scale staff transfer to WMD, their capacity, as an integrated department, for management and coordination of SWM activities should be significantly improved by the end of the Project. To improve management system of WMD will take a lot of efforts of C/Ps and JET members.



10



(3) Output 2

Output 2: Capacity for participatory solid waste management program is improved.

The Output 2 has been partially achieved and it is anticipated that it will be fully achieved by the end of the Project in general. However, it is necessary to revise the Ward SWM Guideline urgently for accelerating the dissemination of Ward SWM system over the city and to improve the monitoring system of PCSPs for optimizing primary collection system during the latter half of the Project period.

C/Is' capacity for participatory SWM program is successfully improving. Communication among PCSPs, communities and DCC for better SWM is improving. The coverage of WBA3 (Participatory SWM) has reached 10 community units in 6 wards as planned and it is expected to reach 20 wards by the end of the Project. Community participation, ownership and continuation of the program need to be carefully assessed. Many CIs have been involved in participatory SWM of targeted communities significantly and they have been motivated and empowered through the construction of Ward SWM Offices and the experiences they had in the targeted wards. Ward offices need to be functionalized as a decentralized entity.

(4) Output 3

Output 3: Capacity for solid waste collection and transportation is improved.

In over all, the Output 3 will be achieved at the final stage of the Project term if capacity development of C/Ps in the field of collection and transportation is achieved and appropriate plan for collection and transportation systems are formulated & implemented under the collaboration of the Japan's Grant Aid for Environment and Climate Change. In addition, the cooperation from the community in waste delivery and transport drivers cooperation and dedication to the collection service will bring overall improvement.

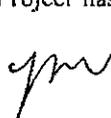
Since participation of deputy leaders of Group 3 was delayed and the participation of the leader in Group 3, related activities were limited during the former half of the Project period, the capacity development of C/Ps for solid waste collection and transportation has not reached to a satisfactory level. Recently few engineers have formally joined in the activities of Group 3 as part of the deployment of 13 staff to WMD. However, the target C/Ps for the capacity development is still not clear at this moment because other DCC staff are also involved in this Project. They and other DCC staff, who will be involved in the Project after the full-scale staff transfer to the WMD, should be properly recognized as counterparts.

(5) Output 4

Output 4: Capacity for operation and management of final disposal is improved.

Capacity for operation and management of final disposal has been improving moderately so far and it is anticipated that the Output 4 will be achieved by the end of the Project in general. However, in order to fully achieve Output 4, appropriate allocations of staff and heavy machineries are still required.

Operation of Matuail landfill is generally going well though without soil cover due to limited availability of heavy equipment. Regarding environmental protection, leachate treatment system has been constructed but not yet started to operate. The weighbridge has been installed, but it is not properly used. Amin Bazar LF Improvement Project has been officially approved but its EIA requirements have not been fulfilled yet. Those



issues should be solved in the latter half of the Project period.

(6) Output 5

Output 5: Capacity for financial management on solid waste management is improved.

Capacity for financial management for SWM has been improving well so far. It is anticipated that the Output 5 will be mostly achieved by the end of the Project in general if appropriate budget system is formulated by WMD and implemented by DCC.

Accounting system for SWM could be successfully introduced during the former half of the Project period. C/Ps acquired the knowledge on the accounting system. However, more efforts are required to enhance control of expenditure for SWM.

(7) Project Purpose

Project Purpose: The solid waste management services of Dhaka City Corporation are improved

As the overall evaluation at the mid-term of the Project period, the Project Purpose will be achieved by the end of the Project under the fulfillment of the five designated outputs and the Important Assumptions for the Project Purpose.

The achievement of the Project Purpose will become much more tangible if the the forthcoming 127 collection vehicles efficiency used (through the Japan's Grant Aid for Environment and Climate Change and Amin Bazar LF Improvement Project) and the improvement of Amin Bazar LF into a sanitary landfill is completed by the end of the Project.

It is expected that through the planned capacity development in organization management and coordination of SWM activities, community SWM, collection and transportation management, landfill management and financial management secured by fully functioned WMD, the SWM services of DCC will be significantly improved by the end of the Project. This achievement of the Project Purpose would result in significant increase of citizens' satisfaction with DCC SWM services towards Clean Dhaka.

(8) Overall Goal:

Overall Goal: The solid waste management services of Dhaka City Corporation are sustained and the sanitary environment of the city is improved.

The Project Purpose and the Overall Goal are on the same line and the differences between their OVIs are only in target levels. Therefore, achievement of the Project Purpose will contribute much to the achievement of the Overall Goal. Since the achievement of the Project Purpose (i.e. improvement of DCC's SWM services by 2011) is expected and institutional and financial capacities of DCC regarding SWM are improving, it is also expected that the SWM services of DCC will be sustained and that the sanitary environment of the city will be significantly improved by 2015. The Project is focusing on capacity development, which would contribute to the sustainability of SWM services of WMD. Participatory SWM also depends upon community awareness. So, the Project needs to develop the awareness of the community people more, and then every step to be taken in participatory SWM will be sustained. In addition, other vehicles than those to be provided in the Japanese Environmental Grant Aid Project and Amin Bazar LF Improvement Project) are also very old. To achieve the

12

Overall Goal by 2015 will depend on whether other vehicles are properly replaced or procured.

4-1-3 Implementation Process

The implementation process of the Project is, as a whole, good. Timing of implementing the project activities is improving. C/Ps now understand PDM2 and working in accordance with the Annual Activity Plan prepared jointly among the Project Team for timely implementation and monitoring of the activities. It is important for the Project to shift more ownership to C/Ps by establishing more systematic self monitoring of WMD.

The communication between the JICA Expert Team and the Bangladesh counterparts are fruitful, but there are still some problems in coordination between C/Ps groups. JICA Bangladesh Office has been supporting the Project well, but the selection process of trainees for overseas training should be improved. Information exchange with the other project, such as Matuail LF Expansion Project, Amin Bazar LF Improvement Project, Japan Environmental Grand Aid Project and JOCV's Environmental Education, has been improving during the former half of the Project period, which is particularly important for achievement of the Project Purpose.

4-2. **Evaluation by Five Criteria**

4-2-1 Relevance

Overall, the Project is highly relevant and valid. Bangladesh Government place more priority than before on proper SWM in urban areas and the Project Purpose is well related to the needs of city residents of Dhaka. Since the commencement of the Project, DCC's priority over SWM has been increased and the public awareness on the importance of proper SWM has been raised, making the Project more relevant. The Government of Japan has continuously involved in the improvement process of SWM in Dhaka and a suitable supporter of SWM technical cooperation in Dhaka since it technical advances in SWM and related experiences in Dhaka.

4-2-2 Effectiveness

Since the Project covers necessary elements for the improvement of SWM by DCC and follows the M/P, it is effective. The designated five outputs, which are covering whole capacities necessary for appropriate SWM in Dhaka City, will contribute to the achievement of the Project Purpose. The Effectiveness is high because the Important Assumptions for Project Purpose is highly probably fulfilled by the end of the Project.

4-2-3 Efficiency

Overall, the Project has been efficiently carried out based on the planned Inputs and Activities. However, C/Ps and JET had to unexpectedly spend much of their time for the establishment of WMD during the former half of the Project period, which was originally planned to be dealt with only in the beginning stage of the Project

13

period according to the Inception Report. The delay of establishment of WMD caused less efficient involvement of DCC personnel; that is, many CPs have not participated in the activities much, and many of the key persons are not yet work in full time basis.

Many C/Ps were satisfied with the provided PRA trainings and overseas training in terms of their effectiveness and timeliness. Support from engineers to CIs regarding the DCC's procurement procedure is required to utilize the 50 lakh taka allocated for community SWM activities.

4-2-4 Impact

Since the Project Purpose and the Overall Goal are on the same line in accordance with the M/P with difference only in target levels, achievement of the Project Purpose will have strong and direct impact on the achievement of the Overall Goal. However, more intensive implementation of community SWM activities will be required within the 5 years after the end of the Project to expand WBA over the city consisting of 82 wards.

4-2-5 Sustainability

This project has not yet developed mechanism for sustainable SWM in Dhaka City. If the mechanism for sustainability is not developed successfully, it will be difficult for DCC to continue the improvement after the completion of the Project without any assistance or supervision from donors.

C/Ps are being trained and motivated by experiencing the Project implementation, which ensure the basement for sustainability of self-reliance SWM in Dhaka city.

Other positive aspects are 1) DCC will remain the policy directions in SWM after the end of the Project because of the approved Directives of WMD, 2) Development of operation manuals and guidelines are included in the Project, 3) Prospect on WMD's future budget increase is positive since the revenue of DCC have been doubled for the last four years, 4) the methodologies applied in the Project such as WBA have been well accepted by C/Ps and communities, etc.

How much management officers and decision makers of DCC, including new CWMO, would take initiative under the framework of newly established WMD after the Project, will probably decide whether the impacts of the Project will be sustained or not.

4-3. **Contributing and Constraining Factors**

4-3-1 Contributing Factors

Identified factors particularly contributing to the achievement of the Project Purpose are listed as follows;

1. Establishment of WMD,
2. WBA accepted by DCC staff and communities,
3. DCC's budget allocation for the operation and maintenance of Matuail LF,

14

4. DCC's initiatives, such as construction of mini transfer stations, which are outside of the Project but are brought forwards by C/Ps' capacity strengthened through the Project,
5. Cls' active participating in the Project and their improving capacities,
6. Motivation and developed skill of key engineering staff,
7. Present policies giving high priority to SWM,
8. Good communication between JET and C/Ps,
9. Workshop and training held for capacity development,
10. Improved coordination among related department,
11. Good coordination with the Japanese Environmental Grand Aid Project,
12. Good coordination with the Amin Bazar LF Improvement Project.
13. Good coordination with Medical SWM project conducted by NGO
14. Networking among other city corporations in Bangladesh

4-3-2 Constraining Factors

Identified factors particularly constraining the achievement of the Project Purpose are listed as follows;

1. Insufficient laws, rules, standards, guidelines on SWM in Bangladesh,
2. Limited assignment periods of JET members,
3. Past delay in the establishment of WMD,
4. Current delay in the full-scale staff transfer to WMD,
5. Difficulty of coordination among DCC engineering and conservancy wings in previous organization setup,
6. Delay of utilization of the budget for community SWM activities,
7. Delay of the reassessment of real estate property value which has not been done for many years.

5. CONCLUSION

The most important precondition of the Project, **the establishment of WMD**, has just fulfilled finally by making a lot of efforts throughout the former half of the Project, although many aspects of DCC's SWM have already been improved. So, the Project is now required at this mid-term stage to make a fresh start as an integrated department for SWM towards Clean Dhaka by implementing full-scale staffing for new functions of WMD as early as possible.

The Joint Evaluation Team concludes this evaluation here that if the planned activities are properly conducted during the latter half of the Project, the **Project Purpose** (improvement of DCC's SWM services) will be mostly achieved by the end of the Project, through the capacity development in the five priority areas of expertise described as Outputs 1 to 5. Implementation process of the Project is good in general, based on good communication between JET and C/Ps. WMD's capacity for **Operation and Management of Landfill** (Output 4) and **Financial Management** (Output 5) will be enhanced to a satisfactory level by the end of the Project, judging from their related improvements during the former half of the Project period and their planned activities for the latter half.

15

On the other hand, WMD's capacity for **Collection and Transportation** (Output 3) has not been developed successfully yet due to the delay of establishing WMD. Emphasis should be placed on that the capacity for Collection and Transportation needs to be developed significantly at utmost speed to effectively and efficiently utilize the forthcoming new 127 collection vehicles to be procured through the Japan's Grant Aid for Environment and Climate Change, and Amin Bazar LF Development Project. Especially in regard with improvement of Collection and Transportation, preparation of a strategy for collection and transportation and its implementation plan need to be carried out at the possible earliest timing, in consideration of the acquisition of new collection vehicles including 35 compactors, recent changes in collection time, WBA, and DCC-led expansion of mini transfer station, to achieve the Project Purpose on time. Successful capacity development for Collection and Transportation have to be accompanied by further development of WMD's capacity for **Management and Coordination** (Output 1) in order to expand SWM activities over the city, securing the achievement of the **Project Purpose**. Capacity for **Community SWM** (Output 2) has been successfully developed through experiencing Ward Based Approach. This is the time when WMD should start considering sustainable expansion of Community SWM based on further capacity development in SWM of Dhaka City.

From the view points of the five criteria, the Project is **quite relevant** and matches citizens' demands, and this Project is **effective** to achieve the Project Purpose, based on the achievement of the five designated outputs, in coordination with the other related projects.

However, **limited efficiency** during the former half of the Project requires more efforts to improve in the latter half of the Project period.

Although it is expected that the achievement of the Project Purpose will have direct impact on the achievement of the Overall Goal, only **limited emergence of impact** has been recognized due to the slow expansion of WBA during the former half of the Project period etc. Especially, continuous expansion of WBA4 (Improved Collection System) and WBA2 (Participatory SWM) in good coordination, is required in accordance with the strategy for collection and transportation to reach the Overall Goal. Other positive impacts of the Project on political, social, and environmental aspects are also expected.

The development of systematic coordination and monitoring system of the SWM activities is required to ensure the **sustainability**, which should be anchored by DCC's ownership. It is important to share understandings on the identified contributing and constraining factors among the JET and C/Ps, especially to improve the efficiency and sustainability.

6. RECOMMENDATION

(1) Strengthening of Waste Management Department (WMD) is most important issue in the latter half of the Project period.

- 1) Newly established WMD should be made functional smoothly as early as possible.
- 2) DCC should fully understand the holistic function of SWM structure and function of WMD.
- 3) Clear job allocation of respected wings/sections of WMD is required.

(2) Community SWM is the key concept for developing the SWM service in Dhaka City.

- 1) Revise the existing Ward SWM guideline so as to come into effect.

16

- 2) Increase environmental educational skills of the Community Group members by providing training opportunities and raise public awareness in cooperation with JOCVs, especially in every target ward of WBA.
- 3) Continuously enhance the Conservancy Inspectors' motivation and skills for community SWM activities based on WBA (participatory waste collection and construction of Ward SWM Offices etc.) with active support from Assistant Chief Waste Management Officers and Conservancy Officers.
- 4) Organize workshops for councilors of Dhaka City in order to raise awareness about Ward SWM.

(3) Many challenges are still remained for improving the waste collection and transportation activities by DCC.

- 1) Expand collaboration between primary collection service providers and DCC secondary collection.
- 2) Improve the technical skill of the Maintenance Workshop for proper O&M of collection vehicles.
- 3) Adequate operation plan for secondary collection and transportation service covering over the DCC service area is required corresponding to future development of DCC's capacities including the forthcoming collection vehicles expected in the latter half of the Project period.

(4) The final disposal has been greatly enhanced in particular with significant improvement of the Matuail Landfill, but further efforts are required.

- 1) Daily covering soil and leachate treatment is indispensable for improving the environmental conditions of Matuail Landfill.
- 2) Environmental monitoring should be continued for avoiding health effects caused by landfill gas and environmental contamination.
- 3) More social considerations should be given to waste pickers in the landfill.

(5) Financial management on SWM has been strengthened, but further efforts are required.

- 1) New financial management system should be prepared in coordination with different sections in the WMD.
- 2) Control of expenditure for SWM activities is recommended based on reporting and analysis.
- 3) Increase the revenue for securing financial sustainability such as by considering reassessment of property values and increase in conservancy tax rate.

(6) Project management based on PDM and Annual Activity Plan (AAP) should be reinforced.

- 1) PDM and AAP, in particular the OVIs, should be reconsidered and the target levels of the Outputs, Project Purpose and Overall Goal should be clearly defined.
- 2) Define the method to be applied for the survey of service satisfaction rate which is the indicator for the achievement level of Project Purpose and Overall Goal.
- 3) The PDM and AAP shall be shared by all the Project members including newly joined WMD staff.
- 4) Revise the Clean Dhaka Master Plan in accordance with new related developments of Dhaka City and enhanced capacities of DCC. The introduction of 3R (Reduce, Reuse, Recycle) policy is suggested to be examined in the process of revising the Master Plan.

17

ANNEX 1. PROJECT DESIGN MATRIX VERSION 2 (PDM2)

{Project Title} The Project for Strengthening of Solid Waste Management in Dhaka City of Bangladesh
 {Project Period} February 2007-January 2011(4 years)

{Target Groups} Waste Management Department, Concerned Department, City residents, Its approval process is in progress by upgrading Conservancy Department and Waste Management Division.
 {Target Area} Under the jurisdiction of Dhaka City Corporation

[Date] 20 Feb 2008

[PDM Version] 2

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Overall Goal The solid waste management services of Dhaka City Corporation are sustained and the sanitary environment of the city is improved.</p>	<p>1 More than 88% (or 3054 ton/day) of wastes is transported to landfill sites and disposed properly by 2015. 2 The ratio of city residents in DCC who are satisfied with the collection services provided by DCC (or private companies in privatized zones) reaches 70% by the end of 2015 from the current level of 36%.</p>	<p>1 Reports of WMD Project Evaluation Report 2 Attitude Survey/Opinion Survey Report to be conducted by DCC/Baseline survey</p>	<p>1 National policy to give priority to solid waste management is sustained</p>
<p>Project Purpose The solid waste management services of Dhaka City Corporation are improved</p>	<p>1 More than 52.5% (or 2053 ton/day) of wastes is transported to landfill sites and disposed properly by the end of Project. 2 The ratio of city residents in DCC who are satisfied with the collection services provided by DCC (or private companies in privatized zones) reaches 50% by the end of the Project from the current level of 36%.</p>	<p>1 Reports of WMD Project Evaluation Report 2 Attitude Survey/Opinion Survey Report to be conducted by DCC/Baseline survey</p>	<p>1 Commitment to attainment of Clean Dhaka Master Plan from Dhaka City Corporation and other stakeholders is sustained. 2 Financial capacity of Dhaka City Corporation is strengthened.</p>
<p>Outputs Capacity for management and coordination of solid waste management activities is improved.</p>	<p>Managers of Waste Management Department (WMD) can formulate 1.1 Annual Activity Plans and budget proposal by the end of the Project 1.2 Percentage of Project's activities whose completion is delayed more than one month is reduced to 70% in the Sr. J.Y (April 2010 to March 2011) 1.3 Eight (8) good practices and cases are disseminated by the Project. 1.4 Clean Dhaka Water plan is revised according to the change in social conditions and environmental consciousness of the citizens by the end of the Project.</p>	<p>1.1 Minutes of the Project Team meeting 1.2 Project Progress Reports Project Annual Reports 1.3 Case study reports/articles/ Newsletters/newspaper articles/etc. 1.4 Project Progress Reports from other organizations</p>	<p>1 Commitment to attainment of Clean Dhaka Master Plan from Dhaka City Corporation and other stakeholders is given 2 Natural disaster such as flood and political conditions, such as elections, do not greatly affect the implementation of the Project 3 DCC allocates appropriate budget for solid waste management. 4 Central Government gives required support for solid waste management of DCC.</p>
<p>2 Capacity for participatory solid waste management program is improved.</p>	<p>2.1 More than 20 Conservancy inspectors have obtained enough knowledge and skills and been motivated to promote ward-level community solid waste management by the end of the Project 2.2 A community-based SWM Guideline is prepared and ready for use by the end of 2007/08 financial year of Bangladesh. 2.3 Monitoring of registered primary collection service providers is conducted and fed-back regularly to improve their service. 2.4 Coordination among community, DCC and primary collection service providers is improved in target areas. 2.5 Number of successful community initiatives for solid waste management reaches 20 by the end of the Project.</p>	<p>2.1 Project Progress Reports Physical observations 2.2 Guideline publication 2.3 Customer satisfaction survey/interview 2.4 Project Progress Reports 2.5 Project Progress Reports</p>	
<p>3 Capacity for solid waste collection and transportation is improved.</p>	<p>3.1 Appropriate collection and transportation systems are formulated for representing areas in DCC jurisdiction by the end of the Project. 3.2 Conservancy Inspectors, Cleaners, Drivers and Workshop Staff are trained and motivated to improve the efficiency of the collection and transportation. 3.3 Coordination between Primary and Secondary Collection is enhanced to increase the efficiency of collection and transportation in target areas. 3.4 Duration of repair time of the collection vehicles is decreased</p>	<p>3.1 MIS data base Project Progress Reports 3.2 MIS data base Project Progress Reports 3.3 MIS data base Project Progress Reports 3.4 MIS data base Project Progress Reports</p>	

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<p>4 Capacity for operation and management of landfill is improved.</p>	<p>4.1 Required staff for O&M of landfill are allocated and work properly since July 2008</p> <p>4.2 Environmental parameters are monitored as per Environmental Management Plan since July 2008 at Matuail</p> <p>4.3 Waste placing, compaction, soil covering on waste and slope maintenance are operated adequately as per O&M manual</p> <p>4.4 Leachate is treated adequately as per O&M Manual.</p> <p>4.5 Weight bridge is operated and data are provided regularly to WMD's Headquarters.</p>	<p>4.1 DCC budget for SWM</p> <p>4.2 Project Progress Reports</p> <p>4.3 Laboratory test reports</p> <p>4.4 Project Progress Reports</p> <p>4.5 Physical observations</p> <p>4.6 Laboratory test report</p> <p>4.7 Project Progress Reports</p> <p>4.8 Weight bridge operations reports</p> <p>4.9 MIS data base</p>	<p>1 Frequent transfer of trained counterpart personnel does not occur</p> <p>2 Environmental Management Plan for Matuail and Environmental Impact Amin Bazar are approved by the Environment, Ministry of Environment Forest without any delay.</p> <p>3 Japan Debt Cancellation Fund for Matuail landfill expansion is disbursed by the Government of Bangladesh without any delay</p> <p>4 Amin Bazar landfill construction project is approved by the Government of Bangladesh without delay.</p> <p>5 Staff whose capacity has been developed in the Project and the Development Study DCC transfers staff to WMD and employs new staff appropriately without delay.</p> <p>6 DCC allocates appropriate budget to conduct the Project activities.</p> <p>7 DCC transfers relevant assets to WMD property without delay.</p> <p>8 DCC prepares enough offices for WMD appropriately without delay.</p>
<p>5 Capacity for financial management in solid waste management is improved.</p>	<p>5.1 Annual financial report of each financial year is available in September next financial year by the end of the Project.</p> <p>5.2 Reports for financial planning are prepared in each financial year by April by the end of the Project.</p> <p>5.3 Monthly reports on actual revenue and expenditure are available by the second week of next month by the end of the Project.</p> <p>5.4 Control of expenditure for solid waste management is improved.</p>	<p>5.1 Project Progress Reports</p> <p>5.2 Project Progress Reports</p> <p>5.3 Project Progress Reports</p> <p>5.4 Project Progress Reports</p>	<p>1 Waste Management Department is approved by the Government of Project concept, and roles and responsibilities of project stakeholders is shared and clearly understood among them.</p>
<p>Activities</p> <p>1-1 To establish Waste Management Department (by DCC)</p> <p>1-2 To strengthen Waste Management Department Human Resources and Institution.^{1, 2}</p> <p>1-3 To prepare Annual Activity Plans</p> <p>1-4 To coordinating Project Activities</p> <p>1-5 To raise awareness and to conduct public relations campaigns on solid waste management</p> <p>1-6 To develop solid waste management network among city corporations</p> <p>1-7 To review and modify Clean Dhaka Master Plan</p> <p>2-1 To develop Ward SWM Guideline</p> <p>2-2 To organize community people and support community level SWM activities.²</p> <p>2-3 To improve primary collection permission and monitoring system</p> <p>2-4 To support primary collection service providers to improve their services.³</p> <p>2-5 To organize awareness raising programs and environmental education programs in target wards</p> <p>2-6 To coordinate among community people, primary collection service providers and DCC.^{2, 3}</p> <p>2-7 To conduct training programs for the counterpart</p> <p>3-1 To conduct surveys and data collection and analysis for improvement of collection efficiency.³</p> <p>3-2 To improve efficiency of collection system.^{1, 3}</p> <p>3-3 To improve the system of repair and maintenance of equipments</p> <p>3-4 To train technicians, repair mechanics, drivers, cleaners, and other workers.¹</p> <p>4-1 To develop sanitary landfill (by DCC)</p> <p>4-2 To operate and manage sanitary landfill.¹</p> <p>4-3 To conduct environmental monitoring</p> <p>4-4 To evaluate landfill operation improvement</p> <p>5-1 To develop financial reports</p> <p>5-2 To prepare proposal of financial plans</p> <p>5-3 To improve procurement and payment processes</p>	<p>Japanese Side</p> <p>1 Dispatch of experts</p> <p>(1) Chief Adviser</p> <p>(2) Solid Waste Management</p> <p>(3) Community Mobilization/Communication</p> <p>(4) Optimization of Secondary Collection</p> <p>(5) Landfill Management</p> <p>(6) Waste Collection Vehicle and Equipment Maintenance Management</p> <p>(7) Financial management</p> <p>2 Provision of equipment</p> <p>3 Training of counterparts</p> <p>4 Dispatch of study team when necessary</p> <p>5 Allocation of operational costs for the Project</p> <p>Bangladesh Side</p> <p>1 Assignment of counterpart personnel</p> <p>2 Provision of land, building, and other necessary facilities</p> <p>3 Allocation of operational costs for the Project</p>	<p>Inputs</p>	<p>Pre-conditions</p>

<<Note>>

1) For the activities accompanied with "by DCC" as well as for activities that are added in the PDM workshop and subsequent group meeting, strong initiative, including budget allocation, will be taken by DCC. (Abbreviation) DCC (Dhaka City Corporation), MOEF (Ministry of Environment and Forest), SWM (Solid Waste Management), WMD (Waste Management Department)

¹ This activity includes Sub-Project 1 (Provision of safety gears and workers' manual to improve working environment)

² This activity includes Sub-Project 2 (Establishment of ward-level solid waste management offices and strengthening the function of ward offices)

³ This activity includes Sub-Project 3 (New collection system)

ANNEX 2. EVALUATION GRID

A2-1. Performance

Topic	Questions	Evaluation Results	Grade
1.1 Preconditions	<p>1.1.1 Has Waste Management Department been approved by the Government of Bangladesh.</p> <p>1.1.2 Is project concept, and roles and responsibilities of the Project shared and clearly understood among stakeholders?</p>	<p>WMD was not approved by the Government of Bangladesh at the early stage of the Project, which means one of the preconditions of the Project was not fulfilled.</p> <p>According to the agreement made between the Bangladesh side and JICA in the Preparatory Study in October 2006, the organization reform mainly for the establishment of WMD is initially estimated to be approved by the Bangladesh Government by the end of year 2006. However, the government approval of WMD has been delayed till October 2008 and full-scale staff transfer to WMD has not been realized yet.</p> <p>As a result of recent temporary deployment of 13 DCC staffers to WMD, the number of the counterparts actually working full-time for the Project has increased to eight and especially Collection Group become more effective, which is a major positive development for the Project.</p> <p>It can be evaluated that the project concept, and roles and responsibilities of the Project has been shared among the Project Team and the steering committee members.</p> <p>Main members of C/Ps understand the contents of the revised PDM (version 2) and they can mobilize the other members of C/Ps in their groups such as drivers and PC & GIS operators, etc. to achieve the output of each group through designated activities. Ownership of the Project among C/Ps and coordination with other concerned departments of DCC have been improving. In the kickoff meeting of WBA in each ward, many community people (150 to 300 persons) are informed about the Project and encouraged to be involved by ward commissioners, C/Ps, JET, etc.</p>	D/B
	<p>1.2.1 Has the inputs provided from the Bangladesh side been enough? Is the planned future Bangladesh inputs enough? (assignment of C/Ps, project cost, etc.)</p>	<p>The input provided so far from the Bangladesh side is evaluated item-wise in 5.3 in detail. The detail of the planned future Bangladesh inputs are not clear at this time because of the delay of WDM staff transfer and preparation of annual budget for WMD.</p>	B
1.2 Inputs	<p>1.2.2 Has the inputs from the Japanese side been provided as planned? (experts, counterpart training, equipment, project cost, etc.)</p> <p>1.2.3 Has the inputs provided from the Japanese side been enough? Is the planned future Japanese inputs enough? (experts, counterpart training, equipment, project cost, etc.)</p>	<p>The input provided so far from the Japanese is evaluated item-wise in 5.2. Appropriateness of Japanese Inputs (Feb. 2007 - Oct. 2008) of 5. Efficiency in detail. The planned future inputs from Japanese side needs to increase because of the coming introduction of the 100 new trucks (including 35 compactors) from the Japanese Environment! Grand Aid and the 27 new trucks from the Amin Bazar Improvement Project. More specifically, the total assignment period of the JET members working with Group 3 (Collection and Transportation Group) need to extend for planning and implementing WBA4 (improved collection and transportation system) over many wards to utilize the 127 trucks effectively and efficiently. The total assignment period of the JET members working with Group 2 (Community SWM Group) also need to extend to deal with changes in collection system and residents' behaviors required for the introduction of the 35 compactors. The station collection system needs to be well adapted to each target area of compactor and the residents have to be well-informed and encouraged to support the new collection system.</p>	B

ym *AS* *FC* *↙*

<p>1.3 Important Assumptions for Outputs</p>	<p>Has the following Important Assumptions for Outputs shown in PDM2, been satisfied?</p> <p>1) Frequent transfer of trained counterpart personnel does not occur.</p> <p>2) Environmental Management Plan for Matuail and Environmental Impact Assessment for Amin Bazar are approved by the Department of Environment, Ministry of Environment and Forest without any delay.</p> <p>3) Japan Debt Cancellation Fund for Matuail landfill expansion is disbursed by the Government of Bangladesh without any delay.</p> <p>4) Amin Bazar landfill construction project is approved by the Government of Bangladesh without delay.</p> <p>5) Staff whose capacity has been developed in the Project is appropriately allocated.</p> <p>6) DCC transfers staff to WMD and employs new staff appropriately without delay.</p> <p>7) DCC allocates appropriate budget to conduct the Project activities. 8) DCC transfers relevant assets to WMD properly without delay.</p> <p>9) DCC prepares enough officers for WMD appropriately without delay.</p>	<p>1) Although several DCC staff, whose capacities have been developed through the development study, have not been assigned to the Project, only a few groups out of the five groups of the Project had experienced transfer of one or two trained C/P. SE involved in Group 1 has been changed twice.</p> <p>2) Environmental Management Plan for Matuail has not been approved due to the delay in establishing landfill standards by the MOE. Group 4 is working on drafting the standards for the MOE, referring to the corresponding Indian standards. Environmental Impact Assessment for Amin Bazar has not been prepared. DCC is waiting for the hearing to be held by the high court regarding the legal embargo posed on the development of Amin Bazar Landfill three years ago in response to the accusation from BELA, a local NGO.</p> <p>3) Disbursement of some portion of the Japan Debt Cancellation Fund was delayed for one year due to procedural mistake of the central government. However, the expansion of Matuail Landfill has already been completed by October 2008.</p> <p>4) Amin Bazar landfill improvement project has already been approved by the Government of Bangladesh in terms of budgeting. However, the EIA required for the implementation has not been conducted yet (IEE was conducted in 2004).</p> <p>5) Planning of full-scale staff transfer to WMD has not been finalized by DCC.</p> <p>6) Implementation of full-scale staff transfer to WMD has been delayed, as explained in 1.2, although 13 staff has recently deployed to WMD.</p> <p>7) DCC has allocated budget for improvement of Matuail Landfill Site. DCC has also committed to construct 15 SWM Ward Offices (currently preparing tender document for two SWM Ward Offices) by the end of the Project and to provide 50 lakh taka for SWM community activities although their commitment has not yet materialized.</p> <p>8) & 9) Asset transfer and preparation of offices for WMD has been delayed due to the delay in the establishment of WMD and full-scale staff transfer.</p>	<p>C</p>
<p>1.4 Achievement of the Outputs</p>	<p>Overall Evaluation'</p> <p>1.4.1 Has the Output 1 been achieved?</p> <p>"Capacity for management and coordination of solid waste management activities is improved."</p> <p>Related Activities: 1-1 To establish Waste Management</p>	<p><u>It is anticipated that Output 1 will be achieved by the end of the Project. However, more effort need to be secured to strengthen the management system of fully-functioned WMD and sustainability of SWM services of DCC.</u></p> <p>C/Ps' capacity development for management and coordination of SWM activities has been delayed since Group 1 had to work intensively for the establishment of WMD although all the activities for achieving Output 1 are in progress. After the forthcoming full-scale staff transfer to WMD, their capacity, as an integrated department, for management and coordination of SWM activities should be significantly improved by the end of the Project. To improve management system of WMD will take a lot of efforts of C/Ps and JET members.</p> <p>Managers of WMD seem to become able to prepare annual activity plans for each project output for the next project year autonomously by the end of this project year on the basis of C/Ps' experiences in participating in the preparation of annual plan for the Project. Group 5, Financial Management Group (FMG), has analyzed related costs of the last two years and incorporated the SWM expenditure with revenue with the assistance of JICA Expert. FMG with assistance of JICA expert will establish new budget system in February 2009 for WMD. Judging from these progresses, WMD are expected to be able to formulate annual budget proposal in accordance with their annual activity plan autonomously by the end of the Project.</p>	<p>B</p>
			<p>B</p>

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<p>Department (by DCC) 1-2 To strengthen human resources and institution of Waste Management Department *1 *2 1-3 To prepare Annual Activity Plans 1-4 To coordinate Project Activities 1-5 To raise awareness and to conduct public relations campaigns on solid waste management 1-6 To develop solid waste management network among city corporations 1-7 To review and modify Clean Dhaka Master Plan</p>	<p>Indicator 1.2: Percentage of Project's activities whose completion is delayed more than one month is reduced to 70% in the 5th JFY (April 2010 to March 2011) (Especially related to Activity 1-4)</p>	<p>The percentages of activities delayed more than one month in the third JFY (up to October, 2008) has been calculated at 17% by JET. Since this calculated percentage of the third year is a result of improvement for the last 20 months, expected further reduction of the percentage in the fourth and fifth years will probably achieve the target level of 70% reduction. The percentages of delayed activities in the first and second JFYs can not be calculated because of the delay of WMD establishment and further emphasis on WBA, which have been incorporated in the last revision of PDM.</p>	<p>B</p>
	<p>Indicator 1.3: Eight (8) good practices and cases are disseminated by the Project. (Especially related to Activity 1-4)</p>	<p>Good practices and lessons from the Project activities have not been compiled yet and Group 1 needs to work on the definition of good practices and cases. However, there has been possible good practices disseminating from the Project and/or disseminating over the City such as 1) development of SWM at the ward level, 2) waste station collection system, 3) development and implementation of Community Action Plans by CUNGs, 4) develop budget for activities to enhance community participation in SWM, 5) development of sanitary landfill, 6) integrated organization structure/coordination between different departments, 7) putting waste in a timely manner at designated locations, 8) Analysis of SWM cost structure and unit costs, 9) efficient utilization of collection trucks, and 10) Promoting Environmental Education Program in SWM.</p>	<p>B</p>
	<p>Indicator 1.4: Clean Dhaka Master plan is revised according to the change in social conditions and environmental consciousness of the citizens by the end of the Project. (Especially related to Activity 1-7)</p>	<p>Although revision of the Master Plan has not started, the schedule for the revision has been planned as follow. 1) Later in this Third Project Year: to study the changes in social environment around solid waste management since the preparation of the Master Plan (March 2005) and to decide policy against the changes. 2) Forth Project Year: To implement study for revising the Master Plan including the evaluation of project activities such as introduction of new collection system in the third and fourth project year. 3) Fifth Project Year: to formulate the revised master plan and prepare its report. According to the group leaders of C/Ps, 7 or 8 counterparts has been improving their capability for the coming revision of the M/P. C/Ps are willing to incorporate more aspects of 3Rs (Reduce, Reuse and Recycle) including composting, source separation, and energy recovery due to developing expectations from communities and policy makers and their own motivation to be a model case for other cities in Bangladesh, etc.</p>	<p>B</p>
	<p>Others (Especially related to Activity 1-1, 2, 5 and 6)</p>	<p>Regarding Activity 1-1, WMD was approved by the Ministry of Establishment in June 2008 and this was the result of the efforts of DCC, C/Ps, JET, JICA Bangladesh Office etc. for the last two years as already explained in 1.2.1. The Directives of the WMD has also been prepared to coincide with the inauguration ceremony for the new Waste Management Department held on August 14, 2008. Regarding Activity 1-2, CPs are confirming on what measures (regarding staff recruitment, assets allocation and budgeting) they are taking to activate the WMD as soon as possible after MOF's approval on WMD. Group-1 has identified the required numbers of key posts and their purposes. The weakness of organizational structure in terms of vacant posts and the departmental coordination will be the most concerned matter for the future activities of new born WMD. Regarding Activity 1-5, there have been major progresses in promoting public relations activities and advocating necessary actions to policy makers, government organizations, city dwellers, etc. An Inauguration Ceremony to announce the newly established WMD was held on August 14, 2008. A PR Effect Baseline Survey was conducted on the 28th of July, 2008, to grasp the awareness level of general Dhaka citizens on SWM in order</p>	<p>B</p>

<p>to develop strategies to increase public awareness. Six news letters has already been published and two types of Eco-bag campaigns have held in several wards. Leaflet, DVD, Sticker campaign and the PR website on the Project are also utilized for the activities. As seen in Annex 5, the project has been covered 58 times by different newspapers by August 2008 and one time by TV program. It is expected that continuation of these activities will significantly increase public awareness on solid waste and improve public relations by the end of the Project.</p> <p>Regarding Activity 1-6, the 2nd Bangladesh SWM Conference has already held by the Project and discussions have started on the themes to be raised in the 3rd conference to be held in Chittagong in February 2009.</p>	<p>The Output 2 has been partially achieved and it is anticipated that it will be fully achieved by the end of the Project in general. However, it is necessary to revise the Ward SWM Guideline urgently for accelerating the dissemination of Ward SWM system over the city and to improve the monitoring system of PCSPs for optimizing primary collection system during the latter half of the Project period.</p> <p>CIs' capacity for participatory SWM program is successfully improving. Communication among PCSPs, communities and DCC for better SWM is improving. The coverage of WBA3 (Participatory SWM) has reached 10 community units in 6 wards as planned and it is expected to reach 20 wards by the end of the Project. Community participation, ownership and continuation of the program need to be carefully assessed. Many CIs has been involved in participatory SWM of targeted communities significantly and they have been motivated and empowered through the construction of Ward SWM Offices and the experiences they had in the targeted wards.</p> <p>Ward offices need to be functionalized as a decentralized entity.</p>	<p>Five (5) CSIs and Twenty (20) CIs have been assigned as counterparts of Group2. It is expected that most of the 20 CIs will have enough knowledge and skills and will be well-motivated to promote ward-level community SWM by the end of the Project. Now most of the counterparts of Group 2 have been trained through PRA training program, etc., however, more CIs should be involved in WBA proactively in their own wards in the coming fiscal years although CIs still need to develop their PC related skills.</p>	<p>A draft guideline has been submitted to the CEO and CWMO for official approval on 22nd July 2007 but it has not yet been finalized. The draft ward SWM guideline has been circulated to the regular counterparts and newly activated counterparts and discussions on the draft guideline among the counterparts and other stakeholder took place several times. The necessity for some amendments or modifications have been realized such as PCSPs Permission Process, the supporting work for collection system improvement, collaboration or partnership with prevailing NGOs/CBOs working on same community activities etc. The implementation of participatory solid waste management is in progress in different wards based on the draft ward SWM Guideline. In the middle of year 2009, based on the experience and lessons learned from the work in several communities, the guideline will be revised.</p>
<p>1.4.2 Has the Output 2 been achieved? "Capacity for participatory solid waste management program is improved."</p> <p>Related Activities: 2-1 To develop Ward SWM Guideline 2-2 To organize community people and support community level SWM activities *1 *2 2-3 To improve primary collection permission and monitoring system 2-4 To support primary collection service providers to improve their services *4 2-5 To organize awareness raising</p>	<p>Overall Evaluation</p>	<p>Indicator 2.1: More than 20 Conservancy Inspectors have obtained enough knowledge and skills and been motivated to promote ward-level community solid waste management by the end of the Project. (Especially related to Activity 2-2 and 7)</p> <p>Indicator 2.2: A community-based SWM Guideline is prepared and ready for use by the end of 2007/08 financial year of Bangladesh (June 2008). (Especially related to Activity 2-1)</p>	<p>B</p>

<p>and environmental education programs in target wards #3</p> <p>2-6 To coordinate among community people, primary collection service providers and DCC #2 #4</p> <p>2-7 To conduct training programs for the counterparts on participatory SWM</p>	<p>Indicator 2.3: Monitoring of registered primary collection service providers is conducted and fed-back regularly to improve their service. (Especially related to Activity 2-3 and 4)</p> <p>Indicator 2.4: Coordination among community, DCC and primary collection service providers is improved in target areas. (Especially related to Activity 2-6)</p> <p>Indicator 2.5: Number of successful community initiatives for solid waste management reaches 20 by the end of the Project. (Especially related to Activity 2-2, 7)</p> <p>Others (Especially related to Activity 2-5)</p>	<p>Improvement of PCSPs permission has started on a limited scale. C/Ps have figured out issues where improvement is necessary in the permission process (involvement of the community in selection, evaluation and continuation of PCSP activity in the ward, etc.). However, consensus among high officials of DCC and JICA Experts and Counterparts is yet to be made. It is expected that monitoring of registered PCSPs and regular fed-back will be effective once the registration process become smooth and that it will increase city residents' satisfaction in a large scale by the end of the Project.</p>	<p>B</p>
<p>2-6 To coordinate among community people, primary collection service providers and DCC #2 #4</p> <p>2-7 To conduct training programs for the counterparts on participatory SWM</p>	<p>Indicator 2.3: Monitoring of registered primary collection service providers is conducted and fed-back regularly to improve their service. (Especially related to Activity 2-3 and 4)</p> <p>Indicator 2.4: Coordination among community, DCC and primary collection service providers is improved in target areas. (Especially related to Activity 2-6)</p> <p>Indicator 2.5: Number of successful community initiatives for solid waste management reaches 20 by the end of the Project. (Especially related to Activity 2-2, 7)</p> <p>Others (Especially related to Activity 2-5)</p>	<p>Coordination among community, DCC and PCSPs is improving successfully in target areas through large-scale kick-off meeting of Ward SWM in each ward (150 to 300 community people, their commissioners, DCC C/Ps, PCSPs and JET has joined for each meeting) and continuous communication with CUWGs and PCSPs is continuing in different units of the wards where WBA3 (Community Participation) is being carried out. The action plans for selected community units are being prepared and jointly by community people, DCC C/Ps and PCSPs. Participation of community people in unit level meeting after the kickoff meeting, CUWG members and PCSPs are free from political interference or control need to be considered for sustaining the program.</p> <p>Around 10 CUWGs have been formulated through WBA3 and some CUWGs, such as Unit 7 of Ward 36 and Unit 6 of Ward 69, have already produced successful results. Dependency on the project support, community cost sharing in future is essential for its success and sustainability. Besides CIs are being trained to promote community activities, training program for CUWG and PCSPs has also been planned to start from the end of October 2008. CIs will be the facilitator for the both trainings. Accordingly, WBA will expand over all or several community units within those targeted 20 wards, the number of successful community initiatives for SWM is expected to reach more than 20 by the end of the Project without fail.</p>	<p>B</p>
<p>1.4.3 Has the Output 3 been achieved? "Capacity for solid waste collection and transportation is improved."</p> <p>Related Activities: 3-1 To conduct surveys and data collection and</p>	<p>Overall Evaluation</p>	<p>CUWGs and PCSPs has successfully arranged rally, sticker campaign, cultural programs and other public relation activities in different wards in coordination with C/Ps (with presence of ward commissioners and local leaders) and they will continue these activities. Arrangement of cleanliness day in a month as a community or social activity may be a good indicator of community's overwhelming participation. DCC has been carrying out three types of environmental education programs, together with JOCVs, which are Model School Program, Mobile School Program and Recycle Bank Program. The Project has indirectly cooperated with the JOCVs.</p> <p><u>In overall, the Output 3 will be achieved at the final stage of the Project term if capacity development of C/Ps in the field of collection and transportation is achieved and appropriate plan for collection and transportation systems are formulated & implemented under the collaboration of the Japan's Grant Aid for Environment and Climate Change. In addition, the cooperation from the community in waste delivery and transport drivers cooperation and dedication to the collection service will bring overall improvement.</u></p> <p>Since participation of deputy leaders of Group 3 was delayed and the participation of the leader in Group 3, related activities were limited during the former half of the Project period, the capacity development of C/Ps for solid waste collection and transportation has not reached to a satisfactory level. Recently few engineers have formally joined in the activities of Group 3 as part of the deployment of 13 staff to WMD. However, the target C/Ps for the capacity development is still not clear at this moment, because other DCC staff are also involved in this Project. They and other DCC staff, who will be involved in the Project after the full-scale staff transfer to the WMD, should be properly recognized as counterparts.</p>	<p>B</p>

<p>analysis for improvement of collection efficiency *4</p> <p>3-2 To improve efficiency of collection system *2 *4</p> <p>3-3 To improve the system of repair and maintenance of equipments</p> <p>3-4 To train technicians, repair mechanics, drivers, cleaners, and other workers *2</p>	<p>Indicator 3.1: Appropriate collection and transportation systems are formulated for representing areas in DCC jurisdiction by the end of the Project. (Especially related to Activity 3-1 and 2)</p>	<p>It is expected that appropriate collection and transportation systems will be formulated for other representing areas in DCC jurisdiction by the end of the Project.</p> <p>Analysis of the weigh bridge data for the months of April, May, June and July 2008 at Matuail Landfill are completed and most of Low Performing Trucks (LPT) are identified although there are problems in obtaining proper data. Present reporting and monitoring system of operation records is being evaluated. For this purpose existing forms, information deficiencies are being identified and suitable forms are also prepared. The present system of hapazard planning based on unreliable data collection and insufficient monitoring of operations needs to be improved, and C/Ps should be more aware of this matter.</p> <p>5 areas have been selected for introduction of the new collection systems (WBA4) and methods of waste collection & transportation with necessary facilities been confirmed. Container and Rickshaw van designs are being finalized and manufacturing company selection is in progress. Technical discussions were held with the team for the Japan's Grant Aid for Environment and Climate Change and suitable truck types and capacities were selected. To run the coming 127 new trucks properly and to develop the collection and transportation system (expansion of WBA4 over other wards), operational plan for the upcoming collection trucks is under preparation. Required activities have been identified and responsible persons have been selected for efficient and effective operation of new vehicles. However, coordination with Transport department needs to be improved for smooth obtaining and operation of collection trucks. As forthcoming actions, detail discussion with Community Group is required for mass awareness campaign of new system among concerned community unit people, and technical human resources within WMD need to be reinforced in order to smoothly prepare expansion plans for new collection system in WBA and other wards.</p> <p>Note: B* means that according to its initial expectation, this is graded as B, however, much more efforts will be required to fulfill the current expectation of fully utilizing the forthcoming vehicles.</p>	<p>B*</p>
<p>Indicator 3.2: Conservancy Inspectors, Cleaners, Drivers and Workshop Staff are trained and motivated to improve the efficiency of the collection and transportation. (Especially related to Activity 3-4)</p>	<p>Indicator 3.2: Conservancy Inspectors, Cleaners, Drivers and Workshop Staff are trained and motivated to improve the efficiency of the collection and transportation. (Especially related to Activity 3-4)</p>	<p>Distribution ceremony for cleaners working manual and safety gears and inauguration of Safety and Sanitation Committee were held for cleaners of four wards in July and August, 2008. Some problems regarding safety gears & demonstration of manuals were identified. In future much more workshops should be arranged for the cleaners to encourage them to use safety gear & first aid kit.</p> <p>Regarding the development of collection and transport guidelines for engineers, CIs and drivers, engineers should be highly trained up locally or abroad. But unfortunately such kind of activity is absent. Some problems related to workshop staff, such as aged vehicles and improper maintenance of vehicles, will also be addressed in the guidelines. CIs have been well-trained and well-motivated, but they need more training on using PCs. While transferring drivers and collection trucks from Transport Department to WMD, the drivers should be more motivated to use weighbridge for better control and efficiency. It is also necessary to arrange training and workshop for drivers to operate the compactors to be introduced to the collection system.</p>	<p>C</p>
<p>Indicator 3.3: Coordination between Primary and Secondary Collection is enhanced to increase the efficiency of collection and transportation in target areas. (Especially related to</p>	<p>Indicator 3.3: Coordination between Primary and Secondary Collection is enhanced to increase the efficiency of collection and transportation in target areas. (Especially related to</p>	<p>Insufficient cooperation with DCC is sometimes found from some PCSPs. Through the WBA activities many efforts are being made to coordinate between community, PCSPs and DCC on developing the sustainable primary collection system that supports secondary collection and vice-versa. DCC staffers are taking interest in these activities through arranging meetings between community and PCSPs and visiting political ward commissioners. Also C/Ps are considering on the suitable equipment to be used by PCSPs based on available secondary collection systems.</p>	<p>C</p>

<p>Activity 3-1 and 2)</p>	<p>Indicator 3.4: Duration of repair time of the collection vehicles is decreased. (Especially related to Activity 3-3 and 4)</p>	<p>Concrete data concerning how decrease the duration of repair of the collection vehicles have not calculated yet. However, present repair management system has been evaluated from the viewpoints of personnel, technical, management and financial aspects. Based on the evaluation, decision on the training program of vehicle maintenance personnel will be made, and suitable forms will be prepared for computerizing of maintenance related information flow after further evaluation of present maintenance related information recording system. Construction of new workshop and training for proper maintenance of the provided 127 trucks are also included in the Japan's Grant Aid for Environment and Climate Change, which will also help reducing the repair time in the Project.</p>	<p>B</p>
<p>1.4.4 Has the Output 4 been achieved?</p>	<p>Overall Evaluation</p>	<p>Capacity for operation and management of final disposal has been improving moderately so far and it is anticipated that the Output 4 will be achieved by the end of the Project in general. However, in order to fully achieve Output 4, appropriate allocations of staff and heavy machineries are still required.</p> <p>Operation of Matuail landfill is generally going well though without soil cover due to limited availability of heavy equipment. Regarding environmental protection, leachate treatment system has been constructed but not yet started to operate. The weighbridge has been installed, but it is not properly used. Amin Bazar LF Improvement Project has been officially approved but its EIA requirements have not been fulfilled yet. Those issues should be solved in the latter half of the Project period.</p>	<p>B</p>
<p>Related Activities: 4-1 To develop sanitary landfill (by DCC) 4-2 To operate and manage sanitary landfill *1 4-3 To conduct environmental monitoring 4-4 To evaluate landfill operation improvement responsibilities</p>	<p>Indicator 4.1: Required staff for O&M of landfill are allocated and work properly since July 2008 in Matuail. (Especially related to Activity 4-2 and 4)</p> <p>Indicator 4.2: Environmental parameters are monitored as per Environmental Management Plan since July 2008 at Matuail. (Especially related to Activity 4-1 and 3)</p>	<p>On job training as well as coordination meeting between related departments has become a regular activity. However, permanent and suitable staffing for landfill operations at the landfills remains elusive due to the delay of full-scale staff transfer to WMD. After the staff transfer, dual authority at Matuail landfill will be improved.</p> <p>Some operators of the Amin Bazar landfill are requested to join in Matuail on job training/workshop. More advocacies for the staff are needed for risk allowance/health insurance.</p> <p>DCC decided to procure several machinery for the operation of Amin Bazar Landfill.</p> <p>The environmental monitoring of landfill gas (CH4, O2, H2S, CO etc.), leachate and surface water (PH, EC, COD, NH4-N, etc.) are done regularly in the landfill site (For details, see attached ANNEX 6). However, according to the monitoring data, a part of the concentration values of H2S and CH4 indicates cautious level. The environmental monitoring of landfill gas should be continued. In addition, technical guidelines for landfill construction and operation including disposal standards to facilitate the regulatory authority are still under preparation (in reference to related Indian standards). Preparation of Environmental Management Plan for Matuail expansion and its submission to DOE (by DCC) is required.</p>	<p>B</p>
<p>Indicator 4.3: Waste placing, compaction, soil covering on</p>	<p>Indicator 4.3: Waste placing, compaction, soil covering on</p>	<p>Operation manual for landfill has been prepared by BUET consultant. Shooting of video program, on the landfill operation as an educational and training tool, has started. Some pictorial boards on landfill operations shall</p>	<p>B</p>

<p>waste and slope maintenance are operated adequately as per O&M manual. (Especially related to Activity 4-1, 2)</p>	<p>be installed at the landfill for easy understanding by the staffs. Application of cover materials using the old waste started in September at two days a week. More efforts are required to manage the waste filling heights and the slopes.</p> <p>The frequent breakdown of the heavy machinery, such as bull dozer and excavators, hampers the daily waste dressing, compaction and soil covering at Matuail landfill site. Mechanical workshop will remain under a separate department and not join WMD, so coordination with Engineering Department and mechanical workshop engineers need to be enhanced for their better participation. The problem of frequent breakdowns of heavy machinery is slowly being resolved through procurement of new equipment and more coordination between WMD and Engineering Dept. at site.</p>	<p>B</p>
<p>Indicator 4.4: Leachate is treated adequately as per O&M Manual. (Especially related to Activity 4-1, 2 and 3)</p>	<p>Construction of the extended part of the landfill site was completed in June 2008. Although the construction of the leachate ponds and installation of the pumps and aerators are almost done physically, operation is yet to be started.</p>	<p>B</p>
<p>Indicator 4.5: Weighbridge is operated and data are provided regularly to WMD's Headquarters. (Especially related to Activity 4-2)</p>	<p>Weighbridge is properly operated at Matuail Landfill and data are provided regularly to WMD's Headquarters. It is required to start keeping record of the less motivated drivers who skip the weigh bridge and to refuse wash their trucks and discharge the wastes if they don't follow the instructions of the waste instructors. It is also required to check and record the type of waste entering into the weighbridge. The record of weight of the trucks of the privatization contract is a new job of the weighbridge operators. For the budget provision and allocation, the per ton cost of waste disposal need to be prepared by the financial group using the weigh bridge data.</p>	<p>B</p>
<p>Others (about EIA requirements for Amin Bazar Improvement Project)</p>	<p>ECNEC has approved the Amin Bazar landfill project on 25th Sept, 2008. In the Amin Bazar Development Project (JDCF fund), 29 crore taka has been allocated. Around 27 crore taka will be spent for procurement of container carriers and heavy equipments. Rest of the money will be spent for civil construction such as Weighbridge, soil cover and platform construction. However, the EIA of the Amin Bazar is suspended due to pending writ petition by BELA. Necessary steps such as engagement of Barrister have been taken by DCC and hearing in the court will be done soon. It is also required to conduct environmental monitoring for operation and maintenance of Amin Bazar new landfill. While dealing with the high court, scientific and technical investigations and preparation of EMP for the EIA should be timely managed, before conducting the required public consultation based on the result of the legal matter, in order to avoid further delay in the development of Amin Bazar LF Development Project. Systematic planning is required for construction as well as daily waste disposal in order to protect the surrounding environment by controlling odor and pollution of the environment. The embankment reconstruction with slope protection is the big challenge of the Amin Bazar landfill project. A topographical survey will be carried out to fix the top of the embankment considering the flood level. More social considerations should also be given to waste pickers in the existing Amin Bazar dumping site.</p>	<p>C</p>
<p>1.4.5 Has the Output 5 been achieved? "Capacity for financial</p>	<p>Overall Evaluation</p> <p>Capacity for financial management for SWM has been improving well so far. It is anticipated that the Output 5 will be mostly achieved by the end of the Project in general if appropriate budget system is formulated by WMD and implemented by DCC.</p> <p>Accounting system for SWM could be successfully introduced during the former half of the Project period. C/Ps acquired the knowledge on the accounting system. However, more efforts are required to enhance control of</p>	<p>B</p>

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<p>management on solid waste management is improved."</p> <p>Related Activities: 5-1 To develop financial reports 5-2 To prepare proposal of financial plans. 5-3 To improve procurement and payment processes</p>	<p>Indicator 5.1: Annual financial report of each financial year is available in September next financial year by the end of the Project. (Especially related to Activity 5-1)</p> <p>Indicator 5.2: Reports for financial planning are prepared in each financial year by April by the end of the Project. (Especially related to Activity 5-2)</p> <p>Indicator 5.3: Monthly reports on actual revenue and expenditure are available by the second week of next month by the end of the Project. (Especially related to Activity 5-1)</p> <p>Indicator 5.4: Control of expenditure for solid waste management is improved. (Especially related to Activity 5-1 and 2)</p> <p>Others (Especially related to Activity 5-3)</p>	<p>expenditure for SWM.</p> <p>The Group 5 could successfully collect the data about the SWM expenditure with revenue. However, appropriate reporting on financial data has not yet been implemented, which is a basic skill for financial management on SWM.</p> <p>Through the analysis of reported annual costs and improving monthly reporting on actual revenue and expenditure, Group 5 is expected to develop capability, by the end of the Project, to produce annual financial report of each financial year by the September of next financial year.</p> <p>Financial plan for SWM was not formed with annual budget of DCC since WMD has just officially established. In February 2009, Group 5 with assistance of JICA expert will establish new budget system to incorporate the SWM expenditure with revenue. At present the CWMO claims to control the conservancy budget, budget for operation of Matuail and Amin Bazar landfills. Also he has committed budget for community activities. What is not under WMD control is the budget for secondary collection and repairs and maintenance. More discussion is needed. Group 5 proposes to establish a budget committee which is an essential organization to develop the budget policy and year plan.</p> <p>Regular monitoring is made every month to ensure collection and to check of financial data including actual cost data from various departments. As a result, control of expenditure for solid waste management starts improving. However, due to inadequate and/or incorrect data collected, sometimes monitoring works are delayed. Group 5 is planning to modify/update the Request Form of data collection after discussions with related departmental heads. Sometimes few departments are irregular to submit data. To the departments which will not submit data timely letters will be sent through the project manager. Financial Management Group has also identified two issues which would ease collection of data from zones; improvement of forms for data collection and more support from CWMO. Collected data has been inputted immediately. Due to absence of a full time computer operator regular and timely data input is sometimes delayed. GROUP 5 needs a full time Computer operator.</p> <p>Regarding Activity 5-3, Group 5 has analyzed DCC's Store & Purchase Department working procedures, and discussion was made between Store & Purchase department and Group 5 to analyze the existing process and identify the problems. Store & Purchase Department procures and supplies materials, equipments and others according to various departments' requirements, which are time consuming. Sometimes Store & Purchase Department can not supply timely to the departments. Therefore, WMD need more cooperation with Store & Purchase Department to improve the current procurement system. Group 5 has not prepared any proposal yet because WMD is not functioning yet. After full function of WMD, a committee needs to be established consisting of key personnel to prepare a proposal to improve the existing system.</p>	<p>B</p> <p>B</p> <p>B</p> <p>B</p>
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<p>1.5 Achievement of the Project Purpose</p>	<p>1.5.1 Regarding the achievement of the five outputs through activities, the following Important Assumptions for Project Purpose are satisfied?</p> <ol style="list-style-type: none"> 1) Commitment to attainment of the M/P from DCC and other stakeholders is given. 2) Natural disaster, such as flood and political conditions, such as elections, do not greatly affect the implementation of the Project. 3) DCC allocates appropriate budget for solid waste management. 4) Central Government gives required support for solid waste management of DCC. 	<p>1). WMD has been established after a lot of efforts and its full-scale staff transfer is expected anytime soon. According to the Dhaka City mayor, full-scale staff recruitment will be done within 2008. DCC has raised priority over SWM and city residents has become more aware of DCC's community based activities so that more cooperation can be expected from community people.</p> <ol style="list-style-type: none"> 2) Natural disaster and political conditions has not greatly affected the implementation of the project. 3) DCC allocate appropriate budget for SWM to some extent. 4) Central government has been giving required support to SWM although sometimes it took more time than expected. 	<p>B</p>
<p>1.5.2 By the end of the Project, will the solid waste management services of Dhaka City Corporation be improved?</p>	<p>Overall Evaluation</p>	<p>As the overall evaluation at the mid-term of the Project period, the Project Purpose will be achieved by the end of the Project under the fulfillment of the five designated outputs and the Important Assumptions for the Project Purpose.</p> <p>The achievement of the Project Purpose will become much more tangible if the forthcoming 127 collection vehicles efficiency used (through the Japan's Grant Aid for Environment and Climate Change and Amin Bazar LF Improvement Project) and the improvement of Amin Bazar LF into a sanitary landfill is completed by the end of the Project.</p> <p>It is expected that through the planned capacity development in organization management and coordination of SWM activities, community SWM, collection and transportation management, landfill management and financial management secured by fully functioned WMD, the SWM services of DCC will be significantly improved by the end of the Project. This achievement of the Project Purpose would result in significant increase of citizens' satisfaction with DCC SWM services towards Clean Dhaka.</p>	<p>B</p>
	<p>Indicator 1: More than 52.5% (or 2053ton/day) of wastes is transported landfill sites and disposed properly by the end of Project.</p>	<p>Considering the total daily collection capacity of collection vehicles after the provision of 127 trucks and the total capacity of the sanitary LFs after the improvement of Amin Bazar LF, it is estimated that Indicator 1 (More than 52.5% (or 2053ton/day) of wastes is transported landfill sites and disposed properly) of the Project Purpose will be achieved by the end of the Project if the above mentioned factors regarding WBA4, drivers, the EIA arc well handled. Detailed results of analysis are as follows:</p>	<p>B</p>
		<p>As for disposal, the Project has increased amount of wastes that are properly disposed through the improved facilities and operation in Matuail LF. However, since the numbers of functioning collection vehicles has not increased significantly since the start of the Project, the increase in amount of collected waste through promoting efficient waste collection, which started in this JFY, is quite limited so far. A significant achievement regarding increase in waste collection so far is the increase of residents utilizing PCSPs over the city (around 70%) and reduction of illegal/wild dumping due to raised residents' awareness especially in the community units where WBA3 has been conducted.</p> <p>Fortunately, the forthcoming provision of 127 collection vehicles in 2009 and the planned improvement of Amin Bazar LF into sanitary LF, through the Japanese Environmental Grant Aid and Amin Bazar Improvement Project by DCC respectively, will increase the ratio of wastes collected and disposed properly to a great extent. The</p>	

<p>utilization of the 127 trucks will be maximized by implementing WBA4 (new collection system) over many wards, which will result in more increase of wastes collected and properly disposed. Better and close cooperation and coordination between CIs and Engineers, which is expected to be improved by the establishment of WMD, will be required to implement WBA4 effectively and smoothly, especially when identifying new secondary collection points, demarcating collection areas, and consider the type of waste collection most suitable to each locality.</p> <p>The achievement also depends on the attitudes of drivers of waste collection vehicles who will be under control of CWMO and EE for transportation and the condition to secure the budget for hiring sufficient numbers of new drivers and waste collection staff. The progress of Amin Bazar Improvement Project will be another determinant factor. Therefore, the existing problem with BELA regarding the EIA for Amin Bazar Improvement Project (already explained in 1.3.1 2) and 1.4.5 (Others)) need to be solved without future prolonged delay.</p> <p>At the end of the Project, the actual achievement in terms of the ratio of wastes collected and properly disposed should be calculated based on the average daily amounts of wastes brought to the two LFs which will be weighted with truck gauges and the amount of generated wastes projected in the M/P. Truck gauges have already installed in Matuail LF and will also be installed in Amin Bazar LF.</p>	<p>Indicator 2: The ratio of city residents in DCC who are satisfied with the collection services provided by DCC (or private companies in privatized zones) reaches 50% by the end of the Project from the current level of 36% (Master Plan Study, 2005).</p>
<p>By conducting WBA3 and WBA4 in selected wards and continuing the other activities listed above over the city, Indicator 2 of the Project Purpose will be achieved. Involvements of more CIs, who are well-motivated and trained, are one of the key factors to increase the satisfaction level of the residents effectively through WBA. Detailed results of analysis are as follows:</p> <p>The ratio of city residents in DCC, who are satisfied with the collection services provided by DCC, has been increased since the baseline ratio of 36% which was estimated in the household awareness survey for the formulation of M/P conducted in February 2004. In this survey, of those who were not satisfied with the waste collection service of DCC, 69% replied that wastes were scattered around bins/containers (1st Point of dissatisfaction), 34% replied that bins/containers were too far or there were no bins in their areas (2nd Point), and 21% replied that time schedule of collection is not suitable (3rd Point).</p> <p>As seen in the following, comparing the satisfaction levels of Low Income Group (Monthly Household Income: Less than 5,000 Taka) and Middle Income Group (Monthly Household Income: Between 5,000 to 50,000 Taka) estimated by the household awareness survey conducted for the M/P and the latest baseline survey conducted for WBA in this Project (preliminary results), increase in the residents' satisfaction level by 15.5% in average without conducting WBA can be roughly observed.</p> <p>B</p> <p>% of Satisfied Residents</p> <p>1) Household Awareness Survey conducted for the formulation of M/P in February 2004.</p> <p>Low Income Group: 23.75 Middle Income Group: 28.33% High Income Group: 57.5%</p> <p>2) Forcal Area Baseline Survey conducted for Cycle (2) of WBA in October 2008</p> <p>Low Income Group: 43% (Wards 63 and 75) Middle Income Group: 40% (Wards 36 and 76)</p> <p>* Average increase in the residents' satisfaction is: (43% - 24%) + (40% - 28%) / 2 = 15.5%.</p> <p>Since the target increase of the average satisfaction ratio over the city used as Indicator 2 is 14% (50%-36%)</p>	

while the roughly observed increase of satisfaction in the two income groups explained above is 15.5%, it is expected that this target will be achieved by the end of the Project even the roughly estimated current achievement of 15.5% is over estimated. To back up this prospect, the activities of the Project and other DCC activities which are improving residents' satisfaction with the collection services, by solving the above-mentioned three points of dissatisfaction, etc., have been identified as follow through the questionnaire survey and interviews.

Activities Improving the Resident's Satisfaction

- 1) PR activities by Group 1 through mass media, campaigns, website, etc.
 - a. To make residence understand their responsibility in SWM and recognize WMD's efforts
 - b. To raise residents' awareness to involve them more in community SWM of Group 2
- 2) WBA3 (Participatory SWM) by Group 2
 - a. To consultation with the community and satisfying their specific demands
 - b. To bridge the community with PCSPs
 - c. To raise their awareness through rally, announcing, etc. to make them understand their responsibility in SWM and recognize WMD's efforts.
 - d. To conduct intensive cleaning by cleaners on demand of community
- 3) Improvement of PCSPs activities by Group 2 through registration and monitoring
 - a. To increase the ratio of primary collection and reduce wastes dumped improperly from households to surrounding environment.
 - b. To reduce residents traveling long distance for primary collection
 - c. To reduce wastes scattered around bins and containers.
- 4) WBA4 (New Collection System) by Group 3
 - a. To reduce collection vehicle related problems
 - b. To improve the image of WMD by new collection vehicles
 - c. To satisfy residents' demand regarding location of collection points, route, etc.
 - d. To optimize the distance between each household to their closest containers.
- 5) Reduction of dust bins by installing more containers, etc. by Group 3 and DCC
 - a. To reduce collection vehicle related problems
 - b. To reduce wastes scattered around bins
- 6) Introduction of Mini Transfer Stations by DCC
 - a. To reduce wastes scattered around bins and containers
 - b. To reduce aesthetic and odor problems
- 7) Relocation of containers along main roads to back roads by DCC
 - a. To reduce aesthetic and odor problems
 - b. To reduce traffic jam worsened by collection trucks
- 8) Fixation of Timing (6 p.m to 8 p.m) for Primary Collection by DCC
 - a. To reduce wastes scattered around bins and containers
 - b. To facilitate residents to take out the garbage after their work and schooling
 - c. To reduce traffic jam worsened by collection trucks
 - d. To give PCSPs enough time to sort out for recycle

As results of WBA3, many of open dumping points have already been closed in different wards and dustbins are now comparatively cleaner than before. Counterparts and community people conveyed very important messages emphasizing proper waste discharge and stop throwing wastes in streets and drains based on the leaflet and stickers through announcement in rally. It has been heard from the ward conservancy inspector that after the rally scattering waste around trash bins and waste in the roads and drain has been reduced. WBA3 is planned to be conducted in 20 wards by the end of the Project, covering about 10% of the total population of the city. WBA3 has been established in 6 wards already as planned and improving residents' satisfaction remarkably. The 6 interviewed CIs actively involved in WBA3 foresee on average that about 72.5% of the residents covered by WBA3 will be satisfied with DCC collection services by the end of project. This figure, 72.5%, is very close to the average percentages of satisfaction expected by the 8 JET members and the 15 C/Ps replied to the questionnaire. WBA4 is expected to cover more wards than WBA3 by the end of the Project. A rough awareness survey conducted at the pilot project area of WBA4 shows high percentage of residents supporting the new collection method.

Regarding the estimation of the satisfaction ratio at the terminal evaluation, there are two problems to solve at this stage as follows.

1) 36%, the baseline satisfaction level of Indicator 2, does not represent the average satisfaction level of the city at the start of the Project (February 2007) because its field survey was conducted in February 2004, which is 3 years before the start of the Project. And the sample allocation of this household awareness survey for the formulation of the M/P was 80 samples for Low Income Group, 120 samples for Middle Income Group and 80 samples for High Income Group which does not represent the actual income group distribution of the city at all. Since the latest census conducted in 2001 did not cover the household income level distribution and no statistical information is available regarding this, six of the CIs involved in community activities and familiar with different income groups over the city was asked their perception on the income group distribution in percentages over the city in the interview through a rapid appraisal technique. Their agreed perception was; High Income Group (more than 50,000 Taka/month) is only 8%, Low Income Group (less than 5,000 Taka/month) is 40% and the remaining 52% is Middle Income Group. The average baseline satisfaction level recalculated by using their perceptual figures is 28.8%, which is for sure more representative for Dhaka City. Even if accepting the calculation of average based on the unrepresentative sample allocation, which is conducted in the Ex-ante evaluation to prepare the first version of PDM, the calculation conducted was numerically not correct. The result should be 35% (more precisely 35.4%) instead of 36%. Revision of PDM2 may be required to solve this problem.

2) The other problem is that the inception report of the Project indicates that final household surveys (after baseline survey and mid-term survey) will be conducted in the 20 wards by university personnel, where WBA3 has been conducted, at the end of project. Although, the 2nd indicator of the Project Purpose and the Overall Goal of PDM2 suggest that a household survey covering the whole city is required at the end of the Project. Therefore, one of the following measures has to be chosen to solve the problem.

1. The target area of the final survey to be conducted by the Project at the end of the Project will be changed from the 20 wards to the whole city.
2. DCC will conduct a household survey targeting the city and proper allocation of samples will be

<p>1.5 Achievement of the Overall Goal</p>	<p>1.5.1 Regarding the achievement of the Project Purpose through the Outputs, the following Important Assumptions for Overall Goal are satisfied:</p> <p>1) Commitment to attainment of Clean Dhaka Master Plan from Dhaka City Corporation and other stakeholders is sustained.</p> <p>2) Financial capacity of Dhaka City Corporation is strengthened.</p>	<p>1.6.2 By 2015 (within about 5 years after the completion of the Project (Feb, 2011), will the solid waste management services of Dhaka City Corporation be sustained and will the sanitary environment of the city be improved?</p>	<p>considered in regard to the problem explained above in 1)</p> <p>3. The target area of satisfaction level improvement regarding Indicator 2 of the achievement of the Project Purpose shown in PDM2 will be changed to the 20 wards and the baseline ratio should be revised based on the Forcal Area Baseline Surveys conducted so far.</p>
<p>1.6.1</p>	<p>Overall Evaluation</p>	<p>The Project Purpose and the Overall Goal are on the same line and the differences between their OVs are only in target levels. Therefore, achievement of the Project Purpose will contribute much to the achievement of the Overall Goal. Since the achievement of the Project Purpose (i.e. improvement of DCC's SWM services by 2011) is expected and institutional and financial capacities of DCC regarding SWM are improving, it is also expected that the SWM services of DCC will be sustained and that the sanitary environment of the city will be significantly improved by 2015. The Project is focusing on capacity development, which would contribute to the sustainability of SWM services of WMD. Participatory SWM also depends upon community awareness. So, the Project needs to develop the awareness of the community people more, and then every step to be taken in participatory SWM will be sustained. In addition, other vehicles than those to be provided in the Japanese Environmental Grant Aid Project and Amin Bazar LF Improvement Project) are also very old. To achieve the Overall Goal by 2015 will depend on whether other vehicles are properly replaced or procured.</p>	<p>1), DCC has been sustaining its commitment to attainment of Clean Dhaka Master Plan through implemented Mutual LF Improvement and Extension Project, Operation of Mutual LF, planned Amin Bazar LF Improvement Project, introduction of mini-transfer stations, etc. as well as through this capacity development project as the C/P organization. JICA, as another stakeholder of the Project, also committed the Japan's Grant Aid for Environment and Climate Change which will provide 100 collection vehicles, workshop and training for workshop staff and participation of two JOCVs in environmental education programs in Dhaka City along with the Project.</p> <p>2), Financial capacity of DCC has significantly strengthened recently, in terms of increase in its revenue. DCC's revenue has been approximately doubled for the four years from BFY2002/2003 to BFY2006/2007 due to the increase of real-estate tax (household tax) from newly settled households. This trend is expected to continue until the end of the Project. If the rate of conservancy tax, property values of existing households, and/or collection rate of conservancy tax are increased through reassessment, etc., DCC's revenue would increase dramatically. Though, this is highly political matter.</p>
<p>Indicator 1: More than 66% (or 3054 ton/day) of wastes is transported to landfill sites and disposed properly by 2015.</p>	<p>The total capacity of the two sanitary LFs will be enough for the target amount of wastes (3,054 ton/day or 66%), however the forthcoming 127 new collection vehicles, together with existing trucks, are not enough to collect the target amount of wastes. Important factor for the achievement of the Overall Goal is whether DCC can continue to replace old collection vehicles and heavy machineries for final disposal. According to the M/P, DCC is required to purchase about 273 (= 400 - 127) new vehicles more by 2015 (the target year of the M/P) to achieve the target collection level at 66% on the assumption that all the collection vehicles which had been procured by 1999 will be replaced with new collection vehicles.</p> <p>Fortunately, DCC's income revenue is increasing and WMD's capacity for financial planning and procurement will be improved significantly by the end of the Project. In addition, construction of workshop and training for workshop staff will also be provided by the Japanese Environmental Grant Aid and repair work of old collection trucks will be improved. Consequently, this will reduce the number of additional trucks required for replacing low functioning old trucks by 2015 and the purchase of enough collection vehicles for the achievement of the Overall Goal will become more feasible.</p>	<p>3. The target area of satisfaction level improvement regarding Indicator 2 of the achievement of the Project Purpose shown in PDM2 will be changed to the 20 wards and the baseline ratio should be revised based on the Forcal Area Baseline Surveys conducted so far.</p>	<p>considered in regard to the problem explained above in 1)</p> <p>3. The target area of satisfaction level improvement regarding Indicator 2 of the achievement of the Project Purpose shown in PDM2 will be changed to the 20 wards and the baseline ratio should be revised based on the Forcal Area Baseline Surveys conducted so far.</p>

	<p>Indicator 2: The ratio of city residents in DCC who are satisfied with the collection services provided by DCC (or private companies in privatized zones) reaches 70% by the end of 2015 from the current level of 36% (Master Plan Study, 2005).</p>	<p>The population coverage of WBA3 (Participatory SWM) to be conducted in 20 wards by the end of the Project is only 10% and its impact on the resident's satisfaction level with DCC collection services over the city is limited during the project period. Although, the number of CIs trained for WBA3 has been increased in a accelerated way, it is necessary WMD have to increase the organizational capacity by the end of the Project to expand full set of WBA approaches over the city within the following four years until 2015.</p>
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Note: 1) For the activities accompanied with "(by DCC)" as well as for activities that are added in the PDM workshop and subsequent group meeting, strong initiative, including budget allocation, will be taken by DCC. <Abbreviation> DCC (Dhaka City Corporation), SWM (Solid Waste Management), WMD (Waste Management Department)
 *1 This activity includes Sub-Project 1 (Provision of safety gears and workers' manual to improve working environment)
 *2 This activity includes Sub-Project 2 (Establishment of ward-level solid waste management offices and strengthening the function of ward offices)
 *3 This activity includes Sub-Project 3 (Introduction of new collection system)
 2) The overall assessment and item-wise assessment will be described as A: achieved/will be satisfactory achieved, B: mostly achieved/will be mostly achieved, C: partly achieved/will be partly achieved and D: not achieved/would not be achieved.

A2-2. Implementation Process

Topic	Questions	Evaluation Results	Grade
2.1 Overall Evaluation	2.1.1 Is the implementation process of the Project appropriate and effective?	<p>The implementation process of the Project is, as a whole, good. Timing of implementing the project activities is improving. C/Ps now understand PDM2 and working in accordance with the Annual Activity Plan prepared jointly among the Project Team for timely implementation and monitoring of the activities. It is important for the Project to shift more ownership to C/Ps by establishing more systematic self monitoring of WMD.</p> <p>The communication between the JICA Expert Team and the Bangladesh counterparts are fruitful, but there are still some problems in coordination between C/Ps groups. JICA Bangladesh Office has been supporting the Project well, but the selection process of trainees for overseas training should be improved. Information exchange with the other project, such as Matuail LF Expansion Project, Amin Bazar LF Improvement Project, Japan Environmental Grand Aid Project and JOCV's Environmental Education, has been improving during the former half of the Project period, which is particularly important for achievement of the Project Purpose.</p>	B
2.2 Implementation of Activities	2.2.1 Have activities of the Project been carried out as planned?	<p>The activities of the Project have not been implemented as planned in the latter half of the Project period because of the delay of the establishment of the WMD. Contents of activities were not changed much although many activities were added at the time of preparation of PDM 1. Under such condition, some additional activities were planned to be implemented by DCC initiatives, but these activities were delayed or not implemented. For the first 2 Project years it was difficult to carry out activities as planned mainly due to the delay of the establishment of WMD. However, there is remarkable improvement this 3rd year. Now, all the activities have been carried out based on the annual plan. Now DCC personnel understand the importance of time to implement activities. The detailed tables showing planned schedule and</p>	C

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		progress of the designated activities for each output up to June 2009 are shown in A4-1 of ANNEX 4
	2.3.1 How is the overall effectiveness of the WBA evaluated?	<p>According to the interviews, most of the CPs and JETs evaluate that the WBA approach is very effective. WBA is providing many opportunities for C/Ps by showing concrete ways of activities to achieve their purposes. In other words, WBA is practical, educative, and effective and a forum for real SWM. By applying WBA, CIs should be strengthened and encouraged. WBA is integrated approach to improve SWM through CPs and community's daily activities. It seems that organizing the community level activities and communicate with the people is very tough but the inspectors are getting into the community gradually.</p>
	2.3.2 Has the WBA been carried out as planned?	<p>So far, it has been implemented as planned in principle though some activities were delayed due to Ramadan, etc. Some CIs tend to plan the timing of their activities very eagerly in the development of annual activity plan, which sometimes results in delays of few weeks or few months. But, most of their activities are carried out without significant delays.</p>
2.3 Ward-based Approach (WBA)	2.3.3 Are there any methodological problems in the WBA?	<p>There is difficulty in coordination among the processes of the community SWM and introduction of new collection system, though it is very good approach to combine those two activities in the WBA. The process can be improved based on the lessons learned from this fiscal year.</p> <p>The possible coverage of WBA implementation during the Project periods is not much comparing to the huge target population of Dhaka City due to the limited periods of JET members' assignment and limitations in DCC resource allocation, therefore sustainability of WBA rather challenging.</p>
	2.3.4 How much will the WBA spread over the wards and community units of Dhaka City by the end of the Project (February 2011)?	<p>WBA means coordinating SWM activities to improve the service. In that sense coordinated SWM is expected to increase. DCC may be able to extend full activities of WBA to 20 wards in case DCC allocated human resources planned and required budget along with increased inputs from JET and JICA. Regarding WBA1, DCC is keener, at this stage, in increasing functions of existing Ward SWM Offices than increasing the numbers of Ward SWM Offices. However, CDD has already committed to construct five new Ward SWM Offices in the BJY of 2008 according to interviews with JET.</p> <p>WBA2 (Improving Working Conditions) are expanding over many wards, however some problems, such as illiteracy of many cleaners regarding provided cleaner's manual, need to be solved for smooth expansion of WBA2. The expansion of WBA3 is being carried out as planned at the beginning of the Project (2nd JFY: 2 wards, 3rd JFY: 4 wards, 4th JFY: 6 wards, 5th JFY: 8 wards and Total: 20 wards). WBA4 is expected to expand over many wards after procurement of the forthcoming 127 collection vehicles.</p>
	2.3.5 How much will the WBA spread over the wards and community units of Dhaka City by 2015 in terms of the population ratio of influenced communities?	<p>DCC may be able to extend WBA in faster pace after the Project than during the Project if DCC shows initiative and allocate required budget. In the questionnaire survey, it was expected that WBA can be spread about 85% of the total wards in the city by 2015 with sufficient resources. However, the expansion of WAB can be slowed down significantly if WMD's commitment to WBA activities are not sustained.</p>
2.4 Monitoring and Decision-Making Process	2.4.1 Are the Project Design Matrix Version 2 (PDM2) and Activity-wise Implementation Schedule called Plan of Operation (PO) effective monitoring tools for the Project?	<p>Previously, there was no profound understanding and consensus on the contents of PDM among C/Ps so that JET has conducted the 3-days PDM workshop for development of PDM 1, inviting active discussion of C/Ps. PDM2 (see Annex 1) and its OVI are recognized as a good tool for monitoring now and PDM2 is well used especially by Community Group. Annual Activity Plan (AAP), which is the annual breakdown of the PO flexibly planned in each year, has also been utilized for monitoring since July 2007. This monitoring system is to improve the monitoring of DCC activities or at least of WMD's. C/Ps use the AAP for reporting at monthly Project Team meetings. Now DCC C/Ps understand the importance of adequate the planning to implement activities.</p>

	<p>The Project Advisory Committee enhanced the communication between DCC high officials and technical CPs and JET. When the Advisory Committee came in Feb 2008 for monitoring, the discussions between JET, DCC, and the Committee help the Project reshape the PDM to version 2 and ask for Bangladesh side's further commitment. However, past monitoring reports were written in Japanese and not shared with C/Ps. Further support is required to bring out DCC's effort and commitment.</p>	<p>2.4.2 How effective were the past project monitoring studies by the JICA Advisory Committee to Dhaka for the improvement of the Project?</p>	<p>B</p>
	<p>For the project, DCC has not successfully developed its own monitoring system although the activities of the Project were monitored or reviewed jointly with JET and C/Ps as it required. However, before the commencement of the Project, DCC had developed a monitoring system on performance of private company/NGO in privatized (secondary collection and transport service) wards for their privatization project. A existing good aspect is that CWMO is always responsive to JET when approached and that some C/Ps feels CWMO and high officials are actively monitoring over their activities. It is important for the Project to shift more ownership to C/Ps through more systematic self monitoring by DCC.</p> <p>At the ward level, CO is monitoring CI's activities but it is not systematically done. Reporting of CIs and information management of CIs and CO needs to be improved. DCC give PCSPs permission to improve CIs' monitoring over PCSPs' activities and this system is improving.</p>	<p>2.4.3 Does DCC have its own effective monitoring system for the Project?</p>	<p>C</p>
	<p>Due to the development of management capability of CWMO, as well as development of assignment of key full-time staffs of WMD decision-making process is being improved. However, there are still problems in decision-making and subsequent instruction processes. WMD's organizational functions have not yet worked since appropriate and sufficient staff has not deployed.</p> <p>There is a committee to select DCC personnel for training courses abroad, nomination of trainees from WMD are not fully appreciated thus some time right person cannot be send abroad for training.</p>	<p>2.4.4 Are there any problems in the decision-making process regarding course correction of the Project, alternation of activities, selection of personnel, etc.?</p>	<p>B</p>
	<p>A successful example of the past decision-makings is that the organization chart for WMD was set up and 13 staffers were already deployed officially to WMD. Another example is that WBA is introduced and the collaborative activities among community level SWM and collection and transportation were established. In Matuaiti, the standards for sanitary landfill is being prepared, first in Bangladesh, through good decision-making and monitoring process at the site.</p>	<p>2.4.5 Have there been any effective changes made through the monitoring process and/or the decision-making process to improve the Project?</p>	<p>B</p>
<p>2.5 Communication</p>	<p>By carrying out the activities together between C/Ps and JET and sharing experiences, their good relationship working as one team has been gradually developed. Because of monthly Project Team meetings and weekly WBA Team meetings and group meetings, the good communication among C/Ps and JET members is sustained. The minutes of the meetings are signed by Project Managers and the Chief Advisor/Deputy Chief Advisor of JET. Some JET members receive frequent e-mail from DCC CP while being away from the Project in Japan. Regular S/C meetings (twice a year) and visits of Japanese Advisory Committee also helps communication with DCC top managers.</p> <p>However, it is not clear who would be appointed to which position through the forthcoming full-scale staff transfer to WMD, therefore the C/Ps targets for capacity are still not clear in some parts. Another problem is that due to language barrier some C/Ps' participation in project activities have not been satisfactory.</p>	<p>2.5.1 How good is the communication between the JICA Expert Team and the Bangladesh counterparts?</p>	<p>A</p>
	<p>Communication among JET members and local staff was improved since daily brief meetings in the morning and week end meetings as required. Since short assignment periods and frequent changes of JET members staying in Bangladesh, there are some problems in communication among the members. As for communication with JET members staying in Japan or other countries, JET has tried to improve it through internet but is facing some difficulties.</p>	<p>2.5.2 How good is the communication among the JICA Expert Team?</p>	<p>A</p>
	<p>Since many C/Ps have other jobs than SWM and they have difficulties to attend the regular meetings. There are</p>	<p>2.5.3 How good is the</p>	<p>B</p>

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<p>communication among the Bangladesh counterparts?</p>	<p>still some problems in coordination between C/P groups.</p>	
<p>2.5.4 How good is the communication with the public and Community Unit Working Groups (CUWGs) in the Project?</p>	<p>Still the communication between CUWGs and citizens is weak. In general due to poor image of DCC in city residents, WMD's good intention sometimes creates little value to community people. However, in the target areas of WBA, communication between communities and CIs has been improved significantly after establishing CUWGs with development of communication capability, change in attitudes and enhanced motivation of the CIs. The CIs now have frequent meetings with CUWGs. The involvement of local religious institutions, teachers and ward commissioners are also being improved through various activities of community SWM. CUWGs are communicating with the people in their areas. However, CUWGs are not well recognized by all residents yet at this stage. More PR activities covering the whole city is required while campaigns for raising public awareness in the target wards should be continuously carried out in a sustainable manner.</p>	B
<p>2.5.5 How good is the communication of the Project with Non-Governmental Organization (NGO) and Primary Collection Service Providers (PCSPs)?</p>	<p>In WBA wards, communication with a partnering local NGO are kept good continuous meetings and possibilities of working with NGOs, who are well-trained in community development and integrated grass-root level approach for poverty reduction and improvement of living-environment covering community SWM, are being sought by some members of Group 2. DCC, with initiative of CWMO, are making efforts to communicate with PCSPs and making good bridges between residents and PCSPs. Although most of the PCSPs can run their business without any support, some PCSPs get support from NGOs. As a result of DCC's efforts, PCSPs covers about 70% of the city population now.</p>	A
<p>2.5.6 How good is the communication with JICA Tokyo Headquarter, JICA Bangladesh Office and/or Japan Embassy in Bangladesh in the Project?</p>	<p>JET has been reporting regularly to JICA Tokyo Headquarter, JICA Bangladesh Office and/or Japan Embassy in Bangladesh. When JET communicates with JICA, it takes a while before final answer is given. Information on training in Japan for the CPs was not given to JET early enough to control the candidates. Therefore, the Project had very hard times this year to coordinate and suggest the candidates CPs for training and it consumed large amount of Group 1's time. Since trainees are not successfully selected from the point view of many C/Ps, the C/Ps have developed a serious doubt about the understanding of JICA Tokyo, JICA Bangladesh Office and Embassy of Japan on the purpose of the trainings, as well as JET's.</p>	B
<p>2.5.7 Is the support from JICA Tokyo Headquarter, JICA Bangladesh Office and/or Japan Embassy enough for the success of the Project?</p>	<p>Especially, JICA Bangladesh Office has been supporting the Project very well. Further supports on training in Japan is requested. Many C/Ps working for community SWM asks for more help form more JOCVs, as well as from JET, for better implementation of environmental education programs.</p>	A
<p>2.5.8 How good is the communication and coordination between the DCC (WMD) Head Quarter, Zone Offices and Ward Offices in the Project?</p>	<p>After renovation of Ward Offices, communication of the Ward Office and DCC HQ was improved. Since CIs who participate the Project generally communicate CWMO and DCWMO directly, the communication of among them is good. However, involvement of COs from each zone is limited partly because of the problems of qualification of most of COs, except some exceptions. The Project's current direct communication to Zone Executive Officers and Zone Accounts Officers may have to be improved. There is a strong vertical command chain from DCC Headquarter. However, feedback from bottom to top is limited. More decentralization through constructing more Ward SWM Offices and systematic reporting from bottom to top and monitoring system are required.</p>	B
<p>2.5.9 How good is the communication and coordination among the different departments of</p>	<p>The coordination among the different departments related to SWM is gradually improving. Some other department heads, such as Chief Engineer and Chief Health Officers, are cooperating to the Project activities. There is good relationship with Public Relations Office. It was difficult to get GIS maps from UPD, but now it is improved. On the</p>	C/B

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	DCC related to Solid Waste Management (including Conservancy Dept., Transport Dept, Engineering Dept, Store and Purchase Dept, etc.) or among the different divisions of WMD in the Project?	operation of Matuail LF, site meeting is held weekly inviting the persons in charge of the departments related to the operation. Regarding financial management, every department and zone related to SWM is very much cooperative in collecting actual cost data. However, more effort is needed for coordination among the related departments specially transport. It is expected to be much better after WMD staffers are all appointed officially and the department functions properly.	
	2.6.1 How well does the project maintain continuity with the Master Plan and Priority Projects prepared in the Study on the Solid Waste Management in Dhaka City (2003-2006)?	Basically, the Project is following the MP and its priority projects. Some activities, such as WBA, have been materialized in better forms than those proposed in the MP. The persons participated since the development study and many other C/Ps recognizes the Project as the initiation stage of implementing the MP. However, due to the problems of scarce full-time staff and incapability of the Waste Management Division of budget control, DCC could not maintain many activities proposed in the MP. This situation will be improved after WMD have its full functions.	B
	2.6.2 How effective is the coordination with Japan Overseas Cooperation Volunteers (JOCV) in the activities related to public awareness improvement and public involvement in the Project?	Coordination with the previous two JOCVs was very good. The current basic stance of the Project with regard to JOCV's Environmental Education Programs is to respect their independency and voluntarism, i.e. The Project activities related to environment education will continue by the C/Ps of the Project regardless of two new JOCVs' participation. However, more collaboration by JOCVs is expected. will increase the performance of C/Ps significantly. The new JOCVs have been invited to various campaigns for arising awareness conducted in the Project. Currently, they are preparing their work plan to continue their predecessors' Environmental Education Programs with their DCC C/Ps (some of them are also working as C/Ps of the Project). Active implementation of the Environmental Education Program by the new JOCVs and their good coordination with the Project will significantly help DCC, which will result in a synergy effect with the Project to achieve its Output 2.	B
2.6 Coordination with Other Projects	2.6.3 How effective is the coordination with the Japan's Grant Aid for Environment and Climate Change which will provide new collection trucks, workshop and technical assistance?	The Japanese Environmental Grant Aid Project will be effective to improve SWM in Dhaka since containers and waste collection vehicle are lacking. Till now, this technical cooperation Project has made many inputs for the Japan's Grant Aid for Environment and Climate Change to create good coordination between the two projects. More inputs from JET and its C/Ps are expected to be required when 100 collection vehicles actually come to Dhaka. The best utilization of the coming collection vehicles is very much needed.	A
	2.6.4 How effective is the coordination with other DCC-led projects including Amin Bazar LF Development Project?	The efficiency of waste transportation has been significantly improved after the construction of Amin Bazar LF by DCC in the north west although it still needs to be improved to a sanitary LF through the Amin Bazar LF Improvement Project like Matuail like the other major DCC-led project for the expansion of sanitary LF in Matuail (completed in October 2008). The Amin Bazar LF Improvement Project also includes procurement of 27 collection vehicles and heavy machines, which effectively supplement the Project for achieving its Project Purpose.	A
	2.6.5 How effective is the coordination with other projects led by other international or local donors including NGO that are related to solid waste management?	There have been good communication with PRISM Bangladesh, an NGO which received Grassroots Grant Aid for Medical Waste Management. The Project is now collaborating with another local NGO involved in sanitation and SWM and having community development skills. This effort is widely led by PD of the C/Ps (CEO). Local NGOs are also voluntarily taking part to build mini-transfer stations of DCC (several containers placed at a walled site), promoting PCSPs and painting their advertisements on the surrounding wall.	B
2.7 Ownership of the Bangladesh Side	2.7.1 Have C/Ps been assigned appropriately to have a sense of ownership over the Project?	Ownership to the Project by C/Ps is increasing day by day and the sustainability of the improved SWM services are increasing gradually. Project Chief (CEO) and Project Manager (CWMO) have strong ownership.	B

2.7.2 Have C/Ps been involved in activities of the Project proactively since the Project started?	C/Ps has become more advanced and active since the start of this project. Some C/Ps become able to take initiative by themselves to activate community program and motivate the community people. The active participation of the engineers in Matuail landfill construction has proved their outstanding capacities as well as their sincere effort which has gained the image of DCC.	A
2.7.3 Is the Bangladesh side making efforts autonomously to improve its own support system regarding required budget, personnel and facilities/equipment for the Project?	Previously, the budget from DCC for the Project activities was not disbursed sufficiently, but after the establishment of the WMD, it is expected that the budget will be disbursed effectively. Most of the budget for SWM is not yet under the control of C/Ps or WMD. Even it falls under WMD, DCC may have serious limitation for budget allocation to SWM. DCC has allocated handsome amount money to maintain Matuail LF and ward offices.	B
2.7.4 Do the leaders of C/Ps actively participate in the project management?	Since all the leaders of C/Ps have their original job responsibilities as well, an issue is the time allowed to them by their superiors to engage in the Project activities. They are active for the project management as they can share a time for the Project, but they are not always available for the project due to routine jobs.	A

A2-3. 5 Criteria: Relevance

Topic	Questions	Evaluation Results	Grade
3.1 Overall Evaluation	3.1.1 Is the implementation of the Project relevant?	Overall, the Project is highly relevant and valid. Bangladesh Government place more priority than before on proper SWM in urban areas and the Project Purpose is well related to the needs of city residents of Dhaka. Since the commencement of the Project, DCC's priority over SWM has been increased and the public awareness on the importance of proper SWM has been raised, making the Project more relevant. The Government of Japan has continuously involved in the improvement process of SWM in Dhaka and a suitable supporter of SWM technical cooperation in Dhaka since it technical advances in SWM and related experiences in Dhaka.	A
3.2 Needs	3.2.1 Are the Project Purpose and the Overall Goal relevant to the needs of Dhaka City and Bangladesh? 3.2.2 Are the Project Purpose and the Overall Goal relevant to the needs of the target groups?	As seen in the Poverty Reduction Strategy Paper (PRSP) of Bangladesh in 2005, Bangladesh Government has recognized the management of increasing solid wastes as one of the most important issue regarding urban environmental problems and voiced its strongest stand on committing itself for better management of solid waste in Dhaka City, where the amount of generated waste was estimated at 3000 tons per day, in accordance with the Clean Dhaka Master Plan prepared by Japanese support. This technical cooperation project was also referred in the latest PRSP as a good example of responding the needs of Bangladesh and implementing the development policy of Bangladesh.	A
3.3 Priority	3.3.1 Is the Project relevant with the development policy of Dhaka City and Bangladesh? 3.3.2 Is the Project relevant to the Japan's country assistance policy for Bangladesh?	The Project Purpose and the Overall Goal of this project are well-related to actual needs of Dhaka City and its residents by using the ratio of city residents satisfied with DCC's collection services as one of the indicators to measure the achievement of the Project Purpose and Overall Goal. The project accords with the the current Japan's country assistance policy for Bangladesh and the current JICA's Policy for technical cooperation.	A
3.4 Strategy	3.4.1 Has the Project taken up a good strategy to tackle challenges identified for	The project is based on the M/P and its priority projects formulated in the development study (2003-2005), therefore it has well taken up the good strategy developed in the study to tackle challenges identified for better SWM	A

<p>the solid waste management sector in Bangladesh and Dhaka City? (i.e. approach, selection of the target areas)</p> <p>3.4.2 Does Japan has comparative advantage in this technical area?</p>	<p>in Dhaka City. Dhaka City has a leading role in Bangladesh regarding SWM and this Project are contributing to Nation-wide improvement of SWM through holding SWM conferences among Bangladesh metropolitan cities and establishing good practices and standards which can be applied in other Areas in Bangladesh.</p> <p>Japan is well-advanced in SWM, especially in sanitary landfill and optimization of waste collection and transportation system at the city-wide level and local level. Japan has continuously involved in the improvement of SWM in Dhaka City since the dispatch of a SWM expert in 2000 followed by the development study. Because this technical cooperation project is based on the M/P, which was prepared in the development study based on advanced practical experiences of Japan regarding SWM, the Japanese advantages can be well-utilized for the capacity development of C/Ps effectively and efficiently in a consistent way.</p> <p>The local experiences Japan had in Bangladesh through the development study also gives a significant advantage to Japan as the most suitable dinner for this Project. Outputs 2 to 4 are the points of priority improvement identified for the M/P, and improvement of these points was initiated by Japan through the pilot projects conducted in the follow-up of the M/P in 2006.</p>	<p style="text-align: center;">A</p>
<p>3.4.3 Was the selection of the Bangladesh Counterpart organization and target groups right?</p>	<p>SWM in Dhaka have not been dealt with under a single responsible department of DCC in an integrated way. Currently many of the primary C/Ps of the Project still belongs to different departments of DCC such as Conservancy Department and Engineering Department. However, after the forthcoming full-scale staff transfer to newly established WMD, most of the C/Ps will belong to WMD, except for operators of heavy machineries and workshop staff who will probably stay in Engineering Department. Since the C/Ps of this technical cooperation Project included those C/Ps trained through the preparation of M/P, implementation of the pilot projects in the follow up, etc. based on the requests from both Japanese and Bangladesh sides, their already trained capacities and established communication with Japanese experts have been contributing to more effective and efficient implementation of the Project.</p> <p>The target ultimate beneficiaries of the Project are residents in Dhaka City, which are among the people who have been most affected negatively by the insufficient capacities of DCC regarding SWM.</p>	<p style="text-align: center;">A</p>
<p>3.5 Changes in Socio-economic Environment?</p>	<p>3.5.1 Was there any change in the environment of the Project (political, economic and social conditions) since the start of the Project (February 2007)?</p>	<p>Since the start of the Project, DCC's priority over SWM and the residents' awareness on the importance of proper SWM have been increased along with raising awareness and piratical priority on environmental protection in Bangladesh. This trend has further enhanced the relevance and validity of the Project.</p>

A2-4. 5 Criteria: Effectiveness

Topic	Questions	Evaluation Results	Grade
<p>4.1 Overall Evaluation</p>	<p>4.1.1 How effective is the Project to improve the solid waste management services of Dhaka City Corporation (DCC)?</p>	<p>Since the Project covers necessary elements for the improvement of SWM by DCC and follows the M/P, it is effective. The designated five outputs, which are covering whole capacities necessary for appropriate SWM in Dhaka City, will contribute to the achievement of the Project Purpose. The Effectiveness is high because the Important Assumptions for Project Purpose is highly probably fulfilled by the end of the Project.</p>	<p style="text-align: center;">B</p>

4.2 Cause-Effect Relationship between Outputs and Project Purpose	4.2.1 Are the designed five Outputs of the Project (please refer to PDM2) enough for the achievement of the Project Purpose? 4.2.2 Are there any factors particularly contributing to the achievement of the Project Purpose? 4.2.3 Are there any factors particularly constraining the achievement of the Project Purpose?	Please refer to the first paragraph of the overall evaluation regarding the achievement of the Project Purpose shown in 1.5.2 of 1. Performance. Identified factors particularly contributing to the achievement of the Project Purpose are listed as follows: 1. Establishment of WMD. 2. WBA accepted by DCC staff and communities, 3. DCC's budget allocation for the operation and maintenance of Matuail LF, 4. DCC's initiatives, such as construction of mini transfer stations, which are outside of the Project but are brought forwards by C/Ps' capacity strengthened through the Project. 5. CIs' active participating in the Project and their improving capacities, 6. Motivation and developed skill of key engineering staff. 7. Present policies giving high priority to SWM, 8. Good communication between JET and C/Ps, 9. Workshop and training held for capacity development, 10. Improved coordination among related department, 11. Good coordination with the Japanese Environmental Grand Aid Project, 12. Good coordination with the Amin Bazar LF Improvement Project. 13. Good coordination with Medical SWM project conducted by NGO 14. Networking among other city corporations in Bangladesh Identified factors particularly constraining to the achievement of the Project Purpose are listed as follows: 1. Insufficient laws, rules, standards, guidelines on SWM in Bangladesh, 2. Limited assignment periods of JET members, 3. Past delay in the establishment of WMD, 4. Current delay in the full-scale staff transfer to WMD, 5. Delay of utilization of the budget for community SWM activities, 6. Delay of the reassessment of real estate property value which has not been done for many years.	B
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A2-5. 5 Criteria: Efficiency

Topic	Questions	Evaluation Results	Grade
5.1 Overall Evaluation	5.1.1 Has the Project been efficiently carried out?	Overall, the Project has been efficiently carried out based on the planned Inputs and Activities. However, C/Ps and JET had to unexpectedly spend much of their time for the establishment of WMD during the former half of the Project period, which was originally planned to be dealt with only in the beginning stage of the Project period according to the Inception Report. The delay of establishment of WMD caused less efficient involvement of DCC personnel; that is, many C/Ps have not participated in the activities much, and many of the key persons are not yet work in full time basis. Many C/Ps were satisfied with the provided PRA trainings and overseas training in terms of their effectiveness and timeliness. Support from engineers to CIs regarding the DCC's procurement procedure is required to utilize the 50 lakh taka allocated for community SWM activities.	B
5.2 Appropriateness	5.2.1 The number of	Sometimes timely assignment of the experts could not be done due to change in schedule of other projects. As	B

<p>of Japanese Inputs (Feb. 2007 - Oct. 2008)</p>	<p>Activities in Counterpart Groups</p> <p>5.2.2 Ward Based Approach (Pilot Projects and Support to DCC's expansion)</p> <p>5.2.3 Workshops/Special Training Programs in Bangladesh</p> <p>5.2.4 Overseas Counterpart Training (India, Viet Nam and Japan)</p>	<p>experts</p> <p>b. Timeliness of dispatching experts</p> <p>c. Fields of expertise</p> <p>a. The number of experts</p> <p>b. Timeliness of dispatching experts</p> <p>c. Fields of expertise</p> <p>a. relevance of training to needs of CPs</p> <p>b. practicality of training</p> <p>c. frequency of training</p> <p>a. The number of trainees</p> <p>b. Timeliness</p>	<p>mentioned before, the gap period between the end of JFY and beginning of JFY make capacity development more difficult since continuous relationship and effort with C/Ps, as well as communities, are required.</p> <p>As already explained in 1.3.4, many of the inputs from the JET members related to Group 1 has been spent for the establishment of WMD. Group 2 requires more input from JET than initially planned for utilizing the forthcoming 35 compactors in different ways socially sustainable depending on the characteristics of each target area of compactors. Group 3 also requires more inputs from JET members to utilize all the 127 collection trucks effectively through expanding WBA4. Expertise of JET members are well valued by C/Ps. The experts' performances in their respective fields are also recognized by C/Ps through their trouble shooting in WBA and C/Ps' capacity development.</p> <p>Regarding raining programs in Bangladesh, Many C/Ps were satisfied with the provided RRA trainings, but they now require more specific and advanced training for effective implementation of WBA3, such as community development, primary collection and environmental education, in addition to participatory approach. Many C/Ps are not satisfied with the P/C training provided in the past since the availability of PCs in the training.</p> <p>The C/Ps belong to Group 5 (Financial Management Group) also need specific training for establishing new budget system for WMD.</p> <p>Regarding overseas training, many C/Ps, who participated in overseas training through the Project, recognize the effectiveness and timeliness of the past overseas trainings and study tours in India, Viet Nam and Japan. As DCC is preparing for the Japan's Grant Aid for Environment and Climate Change, visiting Hanoi, where compactors have been operated and maintained very well, was quite timely.</p>	<p>B</p>
<p>5.3 Appropriateness of Bangladesh Inputs (Feb. 2007 - Oct 2008)</p>	<p>5.3.1 Assignment of Bangladesh Counterparts</p> <p>5.3.2 Provision of Facilities / Equipment</p>	<p>a. The number of CPs</p> <p>b. Timeliness of assignment</p> <p>c. Expertise of CPs</p> <p>a. Facilities (Project Office, Ward Office, LF etc.)</p>	<p>The number of CPs is fine, but many CPs have not fully participated in the activities. Many of the key persons are not yet work in full time basis and they have multiple jobs. The delay of establishing WMD and full-scale staff transfer to WMD have been worsening the timely assignment of C/Ps who are assured to stay as C/Ps after the full-scale staff transfer to WMD although 13 staffers have been recently deployed to WDM. As already explained in 1.4, Group 2, Group 3 and Group 5 will require active involvement of more CIs, engineers and financial/accounting staff in the next year.</p> <p>The capacities of active C/Ps have been improved remarkably. Some C/Ps have become confident to operate project activities by their own initiative. However, more efficient capacity development is required to fully achieve the five outputs and the Project Purpose by the end of the Project (February 2011) and to achieve the ambitious overall goal only 4 years after the completion of the Project.</p> <p>Moreover, lands have been prepared by DCC for the three Ward SWM Offices constructed with fund from JICA for the last two years. DCC has also committed to construct five Ward SWM Offices by March 2009 and DCC is currently preparing the tender documents for constructing two Ward SWM Offices. DCC has also provided a special collection vehicle for two month for WBA in each target ward five times and one container are provided for the implementation of WBA in Ward 76.</p> <p>However, there is no sufficient project offices for C/Ps. Vehicle arrangement for C/P engineers to visit two LF's and</p>	<p>C</p> <p>B</p> <p>B</p>

	b. Equipment and supplies (Trucks, etc.)	<p>the target wards of WBA. PCs for C/Ps including C/Is. and projectors for community SWM activities are also required as inputs from the Bangladesh side. Arrangement of venue and refreshment for community SWM activities should be proved from the Bangladesh side as well.</p> <p>Site visit to Matuail landfill site was organized for the DCC engineers and policy makers, and policy makers became acquainted with the improvement of Matuail landfill. For the operation and maintenance of Matuail landfill site, such as construction of working road, platform, gas vent pipe extension etc., DCC has secured a budget of 2 crore taka in the financial year 2007-08. The potential of outsourcing is being examined. One package of the Matuail landfill operation, valued 1.70 crore, is now in the tendering process. The capital costs of the construction of sanitary LFs in Matuail and Amin Bazar are shown in A3.5 of Annex 3 along with other financial inputs from the Bangladesh side.</p> <p>As explained in 2.7.3, although 50 lakh taka was allocated few years ago for community SWM activities, no disbursement has been made from this DCC's budget, mainly because the lack of capabilities of the concerned C/Ps regarding the identification of items required in their activities and the preparation of procurement plan have not been developed. Especially, support from well-experienced engineers to the concerned C/Is regarding the DCC's procurement procedure is required. Though C/Ps become more experienced in conducting environmental education program they are facing some financial problems. Budgetary documents are now under preparation to get the budget allocated for community SWM. The cost for environmental education program will be covered from this cost.</p>	B
5.3.3 Operational Costs	a. Amount	<p>Utilization of allocated inputs from both sides seems efficient. DCC is currently preparing tender documents for their first two WBA SWM Offices while monitoring the improvement of the existing Ward SWM Offices' functionalities and their utilization since the effectiveness and efficiency of Ward SWM Offices have not been confirmed or well recognized yet by DCC.</p>	B
5.4.2 Personnel	b. Timeliness of disbursement		A
5.4.3 Facilities/equipment/supplies			A
5.4.4 Operational Costs			A
5.5.1 Are the decided project activities enough for the achievement of the Outputs?		<p>Through the past revisions of PDM, the coverage of the Project activities has become quite enough for the achievement of the five Outputs and for the fulfillment of the numerical targets of OVIs set for each output. DCC-led expansion of mini-transfer stations' coverage over the city might be better to be included in the Project since it can be one type of effective collection systems applicable in WBA4.</p>	A
5.5.2 Is there any other activity which can improve the achievement of OVIs set for each output significantly and efficiently?			A
5.6.1 Are there any other activities (implemented by JICA, DCC, other Donors, etc.) which significantly influence the achievement of the Outputs?		<p>DCC's planning practices for locating suitable places for mini transfer stations and motivating NGOs to construct mini transfer stations with their own fund in corporation with DCC also have significant effects on the achievement of Output 2 and Output 3.</p> <p>Progress of the Project has been delayed significantly due to delay of the establishment of WMD, which has significantly negative impact on the capacity development of Group 1 to achieve Output 1. Enhancement of C/Ps' capacity development in environmental education through the JOCV's Environmental Education Program would significantly influence the achievement of Output 2.</p>	-
5.6.2 Has there been any significant influence of external conditions in achieving the Outputs?			-
5.7 Others	5.7.1 Has the Project used lessons learned from other similar projects in other countries managed by the Japanese organizations?	<p>Since most of the JET members has engaged in other JICA Technical Cooperation Projects before, the experiences and lessons gained from those projects has been utilized in this Project in Dhaka. The method of cost analysis used in the Project is based on the experience in a SWM project in Palestine. Many expertise utilized in the Project are not from a specific project but from the accumulated experiences of the experts obtained from many other projects in Japan and other</p>	-

	<p>foreign countries.</p> <p>Some ideas were discussed based on the observations during India Study Tour for their actual implementation in Dhaka. The eco-bag campaign started to include community volunteers from the method learnt in Hanoi Study Tour. Some ideas from Japan, such as composting, were proposed for their implementation in Dhaka by a trainee who went to Japan for training. This is now being implemented as a pilot project in Dhaka. C/Ps experiences of visiting other sanitary landfills, such as Fukuoka Semi-aerobic Landfill in Japan and Penang Semi-aerobic Landfill in Malaysia, have been utilized for the improvement of the project activities.</p>
<p>5.7.2 Are the experiences of the Project being utilized in other cities in Bangladesh or in other developing countries?</p>	<p>The Project is one of the model projects influencing to the improvement and development of SWM services in Bangladesh. This Project is referred in the latest PRSP of Bangladesh as a good example applicable for other cities in Bangladesh. In the Bangladesh SWM Conferences held as a project activity, interim results of the Project were presented to the managers of other cities. This may have encouraged the improvement of SWM in other cities of Bangladesh. Khulna has started a pilot sanitary landfill based on Dhaka's experience, and some cities of Nepal and India has shared the experience of the Project. There have been many visitors to Manaul Landfill Site from other cities of Bangladesh and other countries including Nepal, Pakistan, Thai, etc.</p>

A2-6. 5 Criteria: Impact

Topic	Questions	Evaluation Results	Grade
<p>6.1 Overall Evaluation</p>	<p>6.1.1 Does the Project have significant impact on the achievement of the Overall Goal? (PDM2: the Overall Goal is "The solid waste management services of DCC are sustained and the sanitary environment of the city is improved")</p>	<p>Since the Project Purpose and the Overall Goal are on the same line in accordance with the MP with difference only in target levels, achievement of the Project Purpose will have strong and direct impact on the achievement of the Overall Goal. However, more intensive implementation of community SWM activities will be required within the 5 years after the end of the Project to expand WBA over the city consisting of 82 wards.</p>	<p>B</p>
<p>6.3 Causality between Project Purpose and Overall Goal</p>	<p>6.3.1 Is the consequence from the Project Purpose to the Overall Goal logically designed?</p>	<p>Both the Project Purpose and Overall Goal are in accordance with the MP, especially in terms of the target ratios of waters collected and properly disposed by the end of the Project and by 2015 respectively (52.5% and 66%). However, the target ratio of satisfied residents for the Overall Goal (70%) seems much more ambitious than that of the Project Purpose (50%) because of the following two reasons. 1) The required increase in the ratio during the 5 years after the end of the Project is 20% (4%/year) while that during the 7 years, between 2004 when the baseline ratio (36%) was surveyed and the end of the Project in February 2011, is only 14% (2%/year). 2) The designed expansion of WBA3 until the end of the Project covering 20 wards is expected to be enough for the achievement of the 50% due to the other influencing activities has also been improving the ratio gradually. On the other hand, the further increase to 70% by 2015 seems very difficult because it would require rapid extension of WBA3, which is the most effective approach to further enhance resident's satisfaction to higher level, within a limited time over almost all</p>	<p>A</p>

	<p>the wards in the city. Thus, this would require intensive inputs of many trained CIs and engineers within the 5 years without the help from JET.</p>	
<p>6.4.1 Are there any positive impacts of the Project on political, social or cultural aspects, except for the Overall Goals?</p>	<p>Developing a policy statement on SWM by a department of city corporation, such as the Directives of WMD is quite rare in Dhaka as well as in Bangladesh. Recently Bangladesh Government is considering the preparation of waste handling rules, which seems to have been affected positively by the Project. Community development through WBA3 have positive impacts not only on SWM but also on their community related issues such as improvement of sanitation, well maintenance, primary healthcare, etc. Improving the urban sceneries of Dhaka by the Project may result in the improvement of public awareness in the environment among the residents.</p>	A
<p>6.4.2 Are there any negative impacts of the Project on political, social or cultural aspects.</p>	<p>It is expected that aesthetic beauty and better sanitary conditions of DCC resulted from the Project will become a resources for tourism development. Better image of Dhaka City will enhance the investments in Dhaka from domestic and international investors. Possible reduction of city-wide health care expenses is also expected to happen. However, according to the JET comment, careless introduction of compactors may cause negative impact to recycle industry because compactors may reduce PCSPs' and waste pickers' opportunities to collect recyclable wastes.</p>	B
<p>6.4.3 Are there any positive impacts on economy?</p>	<p>Enhanced SWM will contribute to environmental protection. Street waste will be reduced, drains will become less frequently blocked, and garbage being discharged into natural water bodies will become less. Thus pollution of natural water bodies, as well as the city's living environment, will be improved while less floating matters originated from uncollected garbage in the drains, canals and rivers will help to maintain floodways and mitigate flooding in the town. Because the final disposal site in Matuail has been improved from open dumping to sanitary landfill with leachate treatment, the environment surrounding the final disposal site has been improved. By improving the Amin Bazar LF, the same positive impact is expected to occur on its surrounding environment including ponds and river near the landfill site. Reduction of smell over the city and the reduction of smell from the landfill site will occur.</p>	B
<p>6.4.4 Are there any negative impacts on environmental protection?</p>	<p>Annual Bangladesh SWM Conference is stimulating other city corporations' SWM-related staff for better municipal SWM management. In addition, there are some discussions during the 2nd Bangladesh SWM Conference on collaborating among city corporations under the cooperation of the Project, to develop the capacity of SWM-related staff. Other cities of Bangladesh are trained by DCC; some delegates from neighboring cities had shared the experiences of DCC in sanitary landfill development, community SWM activities, etc.</p>	A
<p>6.4.5 Are there any positive impacts on environmental protection?</p>	<p>There have been impacts on technological advancement in Bangladesh in some areas such as developing a sanitary landfill, providing new scheme for community SWM, scheduled and station collection system, holding various environmental campaigns which Dhaka has never seen before. The Matuail disposal site is the first sanitary landfill in Bangladesh. The experience of constructing and operating the semi-aerobic landfill in Matuail is quite valuable in Bangladesh. An integrated institutional arrangement of WMD and its management system to be developed could also be considered to make impact on advancement in SWM in Bangladesh.</p>	
<p>6.4.6 Are there any negative impacts on environmental protection?</p>	<p>DCC may receive more cooperation from Central Government after successful implementation of the Project.</p>	
<p>6.4.7 Are there any impacts on human resource development in the field of solid waste management in other cities in Bangladesh or neighboring countries?</p>		
<p>6.4.8 Are there any impacts on technological advancement in solid waste management in Bangladesh?</p>		
<p>6.4.9 Are there any other impacts of the Project?</p>		
<p>6.4 Other Impacts of the Project</p>		

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A2-7. 5 Criteria: Sustainability

Topic	Questions	Evaluation Results	Grade
<p>7.1 Overall Evaluation</p>	<p>7.1.1 Will the effects of the Project continuously expand even after the end of the Project?</p>	<p>This project has not yet developed mechanism for sustainable SWM in Dhaka City. If the mechanism for sustainability is not developed successfully, it will be difficult for DCC to continue the improvement after the completion of the Project without any assistance or supervision from donors. C/Ps are being trained and motivated by experiencing the Project implementation, which ensure the basement for sustainability of self-reliance SWM in Dhaka city.</p> <p>Other positive aspects are 1) DCC will remain the policy directions in SWM after the end of the Project because of the approved Directives of WMD, 2) Development of operation manuals and guidelines are included in the Project, 3) Prospect on WMD's future budget increase is positive since the revenue of DCC have been doubled for the last four years, 4) the methodologies applied in the Project such as WBA have been well accepted by C/Ps and communities, etc.</p> <p>How much management officers and decision makers of DCC, including new CWMO, would take initiative under the framework of newly established WMD after the Project, will probably decide whether the impacts of the Project will be sustained or not.</p>	-
<p>7.2 Political and institutional Sustainability</p>	<p>7.2.1 Will the policy directions in solid waste management be maintained by DCC after the end of the Project?</p> <p>7.2.2 Will regulations and legal framework regarding solid waste management be well developed by the end of the Project to enable DCC to pursue its policy directions?</p> <p>7.2.3 Will WMD continuously have sufficient institutional capacity (human resources, organizational structure, etc.) to take a lead in the establishment of proper solid waste management in Dhaka City after the end of the Project?</p> <p>7.2.4 Will there be any mechanism to enable utilization of the Outputs of the Project (training methodologies, training manuals, training curriculum) continuously over the city and then over the country after the end of the Project?</p>	<p>DCC will remain the policy directions in SWM after the end of the Project because the Directives of WMD has been authorized by the mayor. Moreover, it has been planned that by holding Bangladesh SWM Conference some advocacy will be given from the relevant organizations of the Central Government.</p> <p>Manuals and guidelines are the projects of the Project, but the Project is not dealing with the regulations and legal framework. Bangladesh there is not enough SWM related rules and regulation. An ordinance on SWM exists but it enforcement is not well done.</p> <p>Proposed posts of WMD were not fully approved by the Central Government. Current organization structure and staff allocation are far different from those proposed in the M/P. The approved institutional arrangement may block CIs' promotion to CO and demote COs. More discussion on the organizational structure of WMD and the salary scales of its new posts should be held between concerned authorities and DCC. Waste management service career minded personnel with knowledge, skills, abilities and other qualifications are required for all levels of WMD. Continuous strengthening of its institutional arrangement will probably be necessary even after the end of the Project in order to achieve the Overall Goal.</p> <p>Development of operation manuals and guidelines are included in the Project. The manuals and guidelines will contribute much for DCC to continue the improvement of SWM. It may help for other cities to some extent.</p>	-
<p>7.3 Organizational and Financial Sustainability</p>	<p>7.3.1 Will WMD have enough organizational capacities to expand their Ward Based Approach (WBA) continuously over Dhaka City?</p>	<p>Present inputs from the staff of WMD are not yet satisfactory level to manage SWM in this huge capital of Bangladesh. Appointment of all the posts and securing sufficient budget is a key for WMD to maintain a good service of waste in addition to the political involvement to improve the environment</p>	-

<p>7.3.2 Will Ward SWM Offices have organizational capacities to expand their WBA continuously over the communities in their wards?</p> <p>7.3.3 Will WMD continuously secure necessary budget for its activities for proper solid waste management after the Project?</p> <p>7.3.4 Would WMD be able to expect budgetary increase for solid waste management if required even after the Project?</p>	<p>for the capital city.</p> <p>Sustainability of expanding WBA over the wards belong to each zone based on Zone Offices and expanding over the different community units of each ward based on Ward Offices have been discussed in 1.6, 2.3, 6.1 and 6.3. WBA is integrated SWM. There is no position in DCC to coordinate WBA. WMD needs planning section for WBA.</p> <p>Prospect on WMD's future budget increase is positive since the revenue of DCC have been doubled for the last four years and this trend is expected to continue, as explained in 1.5. DCC is expected to provide WMD with enough O&M costs for its facilities, vehicles, equipment, etc in order to sustain proper services of WMD.</p>
<p>7.4.1 Are the techniques and methodologies of skill transfer used by the Project being accepted? (i.e. Level of skills, social and cultural appropriateness)</p> <p>7.4.2 Will WMD have technical capabilities to continuously carry out the training program to disseminate the knowledge/skills transferred in the Project to new staff?</p> <p>7.4.3 Will the level of technical capacity of the WMD staffs be sufficient to sustain their activities after the Project, including expansion of its public awareness raising activities?</p> <p>7.4.4 Will WMD have technical capabilities to maintain facilities and equipment properly after the Project termination?</p>	<p>The methodologies applied in the Project such as WBA have been well accepted by C/Ps and community WBA activities have been accepted by the city residents. Most of the C/Ps seem to be inspired by the project and will probably utilize the learned technologies by themselves for improvement of the SWM services in DCC after the end of the Project.</p> <p>Development of training curriculums and training manuals for WMD is not included in the Project. Therefore, WMD will need to develop prepare them to have enough organizational and technical capacities to continue its training activities after the Project. The technical guidelines and manuals developed in the Project would greatly help WMD to organize its training programs including a program for expanding public awareness raising activities continuously after the Project. Effective skill transfer from the CIs trained in the Project and now CIs have to be made for its successful expansion of community SWM activities.</p> <p>Storage and procurement of spare parts for vehicles and machinery were improved in the Project. A workshop for repair of collection vehicles, etc. should be constructed, and workshop staff of DCC should be trained by an expert having concerned expertise.</p>
<p>7.5.1 Should the Project be more concerned with the socially vulnerable groups (the poor, women, etc.) and cultural matters (religious activities, etc.) to enhance the social and cultural sustainability of the Project's impacts?</p> <p>7.5.2 Should the Project be more concerned with environmental issues to enhance the environmental sustainability of the Project's impacts?</p>	<p>The Project is already dealing with socially vulnerable group appropriately. Community meetings and campaigns always include while balancing various religious groups. Women are members of Safety and Sanitation Committee and Community Unit Working Groups. Public consultation meetings were held before the construction of Ward SWM Offices. One proposed site for construction was canceled due to an objection one religious group. DCC Cleaners mainly belong to Low Income Group. The Project Team has been conducting activities for the improvement of health and sanitation condition of cleaners. After the improvement of Matuail, the unauthorized access of the waste pickers has been controlled. The waste pickers are now sharing some facilities such as washing, toilet etc. Some dialogues with the waste pickers for systematic scavenging have started. However, the Project should consider more about the impacts of introducing new collection system on waste pickers and PCSPs.</p> <p>From the SWM point of view, this is an environmental project. However, pending matters regarding EIMP for Matuail LF and EIA for Amin Bazar LF should be solved before environmental damages are caused as already explained in 1.3.1 and 1.4.5 (Indicators 4.2, 4.4, and Others)</p>
<p>7.4 Technical Sustainability</p>	
<p>7.5 Social, Cultural and Environmental Sustainability</p>	

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7.6 Important factors for sustainability	<p>7.6.1 Will there be any promoting factors to sustain the project impact?</p> <p>7.6.2 Will there be any inhibiting factors against the project impact to be sustained?</p>	How much management officers and decision makers of DCC, including new CWMOs, would take initiatives after the Project will probably decide whether the impacts of the Project will be sustained or not. Progress in eliminating corruption could be another factor to promote or inhibit the project impacts to be sustained.	N/A
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ANNEX 3. TABLES OF IMPUTES

A3-1. Assignment of JICA Expert Team

(As of Nov. 4, 2008)

Japanese Fiscal Year 2006

Expert Name	Expertise	Duration		Man-Month
Naoki Hara	Chief advisor / Institutional setup	Feb, 17 2007	- Jun, 7 2007	3.7
Mahmoud Riad	Deputy chief advisor / Solid waste management	Apr, 2 2007	- May, 10 2007	1.3
Junko Okamoto	Community participation/ Communication	Feb, 23 2007	- May, 7 2007	2.5
Hiroshi Abe	Final disposal management	Apr, 5 2007	- May, 6 2007	1.1
Masahiro Saito	Project Administrator	Feb, 23 2007	- Mar, 24 2007	1.0
	Training for O&M of final disposal site	Mar, 25 2007	- Jun, 4 2007	2.4
Masaharu Takasugi	Waste collection vehicle and equipment maintenance	Apr, 5 2007	- Apr, 13 2007	0.3
Noboru Osakabe	Financial management	May, 1 2007	- May, 15 2007	0.5
Total				12.8

Japanese Fiscal Year 2007

Expert Name	Expertise	Duration		Man-Month
Naoki Hara	Chief advisor / Institutional setup	Jul, 15 2007	- Aug, 17 2007	1.1
		Dec, 14 2007	- Dec, 25 2007	0.4
		Feb, 6 2008	- Mar, 18 2008	1.3
Mahmoud Riad	Deputy chief advisor / Solid waste management	Sep, 6 2007	- Oct, 30 2007	1.8
		Jan, 6 2008	- Feb, 14 2008	1.2
Junko Okamoto	Community participation/ Communication	Jul, 15 2007	- Aug, 13 2007	1.0
		Oct, 20 2007	- Nov, 18 2007	1.0
		Dec, 25 2007	- Jan, 8 2008	0.5
Akio Ishii	Collection and Transport	Feb, 5 2008	- Mar, 15 2008	1.0
		Jul, 25 2007	- Sep, 22 2007	2.0
Hiroshi Abe	Final disposal management	Jan, 6 2008	- Mar, 5 2008	2.0
		Jul, 15 2008	- Aug, 13 2007	1.0
Masahiro Saito	Training for O&M of final disposal site	Nov, 11 2007	- Dec, 1 2007	0.7
		Sep, 13 2007	- Oct, 9 2007	0.9
Masaharu Takasugi	Waste collection vehicle and equipment maintenance	Feb, 18 2008	- Mar, 14 2008	0.9
		Aug, 5 2007	- Sep, 3 2007	1.0
Noboru Osakabe	Financial management	Dec, 31 2007	- Feb, 22 2008	1.8
		Sep, 2 2007	- Sep, 22 2007	0.7
Ko Takeuchi	Project Administrator	Dec, 10 2007	- Jan, 5 2008	0.9
		Jul, 15 2007	- Sep, 11 2008	2.0
Total				25.2

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Japanese Fiscal Year 2008

Expert Name	Expertise	Duration		Man-Month
Naoki Hara	Chief advisor / Institutional setup	Jul, 10 2008 - Aug, 15 2008	1.2	
		Nov, 4 2008 - Dec, 20 2008	1.5	
Mahmoud Riad	Deputy chief advisor / Solid waste management	May, 18 2008 - Jul, 1 2008	1.5	
		Aug, 17 2008 - Nov, 14 2008	3.0	
Junko Okamoto	Community participation I/ Communication	Jul, 3 2008 - Jul, 29 2008	0.9	
		Oct, 11 2008 - Nov, 10 2008	1.0	
Akio Ishii	Collection and Transport / PR I	Jul, 3 2008 - Aug, 1 2008	1.0	
		Oct, 11 2008 - Nov, 24 2008	1.5	
Ko Takeuchi	Project Administrator	Jun, 18 2008 - Jul, 2 2008	0.5	
		Sep, 1 2008 - Sep, 15 2008	2.0	
	Community participation II/PR II	Jul, 3 2008 - Aug, 31 2008	0.5	
Masahiro Saito	Training for O&M of final disposal site	May, 18 2008 - Jun, 16 2008	1.0	
		Aug, 1 2008 - Sep, 14 2008	1.5	
Masaharu Takasugi	Waste collection vehicle and equipment maintenance	Oct, 11 2008 - Nov, 6 2008	0.9	
Noboru Osakabe	Financial management	Aug, 19 2008 - Sep, 2 2008	0.7	
Total				17.2
Ground Total as of Oct. 27				55.2

A3-2. Assignment of Bangladesh Counterparts

as of May 20, 2007 (with additions made in Feb. and July 2008)

No.	Name	Designation	Remarks
Group1: Management and Coordination Group			
1	Commander Maksud R. Chowdhury	Chief Conservancy Officer	Project Manager and Group Leader, (part time, in parallel with conservancy control, beautification program, etc.)
2	Dr. Tariq Bin Yousuf	Executive Engineer, Engineering Division, Zone-5, Deputed as Project Director in Waste Management Division	Deputy Group Leader Also working as Group Leader of Landfill Management Group (full time)
3	Abul Hasnat Md. Ashraful Alam	Assistant Engineer, Mechanical Division-1, Deputed to Assistant Engineer, Waste Management Division	Also working as Group Leader of Collection and Transportation Group (full time)
Group2: Community SWM Group			
1	Dewan Md. Shah Alam	Deputy Chief Conservancy Officer	Group Leader (part time, in parallel with conservancy control etc.)
2	Md. Asaduzzman	Conservancy Supervising Inspector, Zone-9	Deputy Group Leader Leader of sub-group (Public Awareness and Environmental Education)
3	Md. Shafiqul Islam	Conservancy Inspector (Ward 33), Zone-4	Leader of Sub-group (Primary Collection) (part time, in parallel with conservancy inspection)
4	Abdul Motaleb	Conservancy Inspector (Ward 36), Zone-4	Leader of Sub-group (Ward SWM) (part time, in parallel with conservancy inspection)
C/P working continuously			
5	Md. Mofizur Rahman Bhuyan	Conservancy Officer, Zone-6	part time, in parallel with conservancy inspection and supervising

A - 33

[Handwritten signatures and initials]

No.	Name	Designation	Remarks
6	Md. Asgar	Conservancy Supervising Inspector, Zone-3	
7	Md. Mohashin	Conservancy Supervising Inspector, Zone-5	
8	Md. Shahidul Islam	Conservancy Inspector (Ward 65), Zone-3	
9	Md. Benazir Ahmed	Conservancy Inspector (Ward 6), Zone-8	
10	Md. Abu Taher	Conservancy Inspector (Ward 76), Zone-1	
Newly added upon the request by the Group in March 2007 and continuously working			
11	Mamunur Rahman	Conservancy Inspector (Ward 15), Zone-8, Conservancy Dept., DCC	part time, in parallel with conservancy inspection
12	Rakib Hasan	Conservancy Inspector (Ward 12), Zone-7	part time, in parallel with conservancy inspection
13	Md. Rabiullah	Conservancy Inspector (Ward 86), Zone-1	
14	Mohammad Farhad Hossain	Conservancy Inspector (Ward 17), Zone-9	
15	Md. Shah Kamal	Conservancy Inspector (Ward 63), Zone-3	
16	Md. Nazib Khan	Conservancy Inspector (Ward 58), Zone-3	
17	Md. Kamrul Hassan	Conservancy Inspector (Ward 69), Zone-2	
Newly appointed by CCO (19 persons)			
18	Md. Iqbal Karim	Conservancy Supervising Inspector, Zone 6	part time, in parallel with conservancy supervising
19	Md. Monwer Hossain	Conservancy Supervising Inspector, Zone 1	
20	Shahab Uddin	Conservancy Supervising Inspector, Zone 10	
21	Md. Wahiduzzaman Chowdhury	Conservancy Inspector, Zone 5	part time, in parallel with conservancy inspection
22	Radha Gobindo Biswas	Conservancy Inspector, Zone 7	part time, in parallel with conservancy inspection
23	Md. Abu Yusuf	Conservancy Inspector, Zone 8	
24	Bikash Chandro Das	Conservancy Inspector, Zone 1	
25	Md. Mowazzem Hossain	Conservancy Inspector, Zone 1	
26	Md. Anwer Hossain	Conservancy Inspector, Zone 1	
27	Md. Hanif Uddin	Conservancy Inspector, Zone 1	
28	Rashedur Rahman Rassel	Conservancy Inspector, Zone 5	
29	Md. Masum Hossain	Conservancy Inspector, Zone 8	
30	Md. Kamrul Hasan	Conservancy Inspector, Zone 2	
31	Mohammad Shahjahan	Conservancy Inspector. Ward 50, Zone 5 (letter 115/CD, dated 28 th Feb., 2008)	
32	Md. Mofizur Rahman Patwary	Conservancy Inspector. Ward 75, Zone 1 (letter 36/CD, dated 7 th July, 2008)	
33	M. A. Kuddus	Asst. CWMO, WMD (letter 125/CD, dated 17 th July, 2008)	
34	Abdul Hassan Chowdhury	Asst. CWMO, WMD (letter 125/CD, dated 17 th July, 2008)	
35	Md. Anisul Huq	Conservancy Officer (in charge), Zone 7 (letter 125/CD, dated 17 th July, 2008)	
36	Bashudeb Sarkar	Conservancy Supervising Inspector, Zone 7 (letter 125/CD, dated 17 th July, 2008)	
Group3: Collection and Transportation Group			
1	Abul Hasnat Md. Ashraful Alam	Assistant Engineer, Mechanical Division-1, Engineering Department, Deputed to Assistant Engineer, Waste Management Division	Group Leader (full time)

A - 34

No.	Name	Designation	Remarks
2	Maruf Hassan	Transport Manager, Transport Dept.	Deputy Group Leader (Vehicle Operation), part time
3	Md. Siddiqur Rahman	Assistant Engineer (in charge) Mechanical Div. Engineering Dept.	Deputy Group Leader (Vehicle Maintenance), part time
4	Rajib Khadem	Assistant Engineer, Zone-4, DCC In Addition Assistant Engineer, Waste Management Division	Also working for Landfill Group (limited time for Collection and Transportation Group)
5	Md. Shafiullah Siddique Bhuyian	Assistant Engineer, Zone-1 Deputed to Zone-5	part time
6	Md. Mahaboob Alam	Assistant Manager, Saidabad Bus Terminal, In Addition Assistant Engineer, Waste Management Division	Also working for Landfill Group (limited time for Collection and Transportation Group)
7	Maksud Alam	Asst. Manager, Mohakhali Bus Terminal, Transport Department	part time
8	Md. Aminur Rahman Biswas	Conservancy Inspector, Zone-6	
9	Golam Marshed	Asst. Transport Supervisor, Transport Department	
10	Faruque Ahmed	Account Assistant, Transport Supervisor In charge, Transport Department	part time
11	Mamun Uddin Ahmed	Asst. Transport Supervisor, Transport Department	
12	Siddiqur Rahman	Inspector, Mechanical Division-1, Engineering Dept.	
11	Habib Mohammed Al-Ahasan	Conservancy Inspector, Zone-4	
12	Dilbahar Ahmed	Research Officer, Urban Planning Department	
13	Kazi Hasiba Jahan	Geographer, Urban Planning Department, Engineering Department	
14	Ekramul Haque Khandker	Forman, Mech.-1, Engineering Department	
15	Md. Nuruzzaman	Forman, Mech.-2, Engineering Department	
16	Rakib Ahmed	Sub-Asst. Engineer (Mech. & Elect.), Store & Purchase Department	
Group 4: Landfill Management Group			
1	Dr. Tariq Bin Yousuf	Executive Engineer, Engineering Division, Zone-5, Deputed as Project Director in Waste Management Division	Group Leader, full time, working as Deputy Group Leader for Management and Coordination Group
2	Md. Mahaboob Alam	Assistant Manager, Waste Management Division	Deputy Group Leader (Operation), full time, Also working for Collection/Transport Group
3	Mohammad Towhid Siraj	Assistant Engineer, Environment Circle, In Addition DUTP & Waste Management Division	full time
4	Rajib Khadem	Assistant Engineer, Zone-4, In Addition Landfill Management	Also working for Collection/Transport Group, full time
5	A H M Abdulla Harun	Sub-Assistant Engineer, Environment Circle, In Addition DUTP & Waste Management Division	full time
6	Md. Faridul Islam	Sub-Assistant Engineer, Environment Circle, In Addition DUTP & Waste Management Division	full time
7	Md. Abu Tahir	Conservancy Inspector, Zone-1	full time (4hours for half shift)
8	Sheik Aminul Basher	Conservancy Inspector, Zone-1	full time (4hours for half shift)
9	Md. Asadul Islam	Conservancy Inspector, Zone-3	

A - 35

No.	Name	Designation	Remarks
10	Md. Rezaul Karim	Conservancy Inspector, Zone-4	
11	Md. Gaddafee Hossain	Conservancy Inspector, Zone-9	
12	Md. Masud Ahmed	Conservancy Inspector, Zone-9	
13	Md. Asif Hossain	Conservancy Inspector, Zone-10	
14	Md. Rafuqul Islam Chow	Conservancy Inspector, Nagar Bhaban	
15	Md. Abdul Aziz	Computer Operator, DUTP	full time
16	Rokeya Akther	Computer Operator, DUTP	
17	Md. Rabiul Alam Chowdhury	Office Assistant, DUTP,	
18	Atiqur Rahman	Lineman, Electrical, Zone-5	part time
19	Md. Alamgir Hossain	Mechanics, Mechanical Division-2, Engineering Dept.	
20	Motiur Islam	Heavy Equipment Operator, Mech. Division-2, Engineering Dept.	full time
21	Royal Ahmed	Heavy Equipment Operator, Mech. Division-2, Engineering Dept.	
22	Salim Khan	Heavy Equipment Operator, Mech. Division-2, Engineering Dept.	
23	Forhad Hossain	Heavy Equipment Operator, Mech. Division-2, Engineering Dept.	
24	Rafiqul Islam-2	Heavy Equipment Operator, Mech. Division-2, Engineering Dept.	
25	Ranu Miah	Pay-Loader-Driver, Mech. Division-2, Engineering Dept.	
26	Abdur Rashid	Dumper Driver, Mech. Division-2, Engineering Dept.	
27	Julfiquir Ali	Driver, Mech. Division-2, Engineering Dept.	
28	Shamsur Rahman	Driver, Mech. Division-2, Engineering Dept.	
29	Abul Khair	Machine Operator, Mech. Division-2, Engineering Dept.	
30	Shafi Miah	Machine Operator, Mech. Division-2, Engineering Dept.	
31	Dewan Nazrul Islam	Machine Operator, Mech. Division-2, Engineering Dept.	
32	Julhas Uddin	Machine Operator, Mech. Division-2, Engineering Dept.	
33	Delware Hossain	Machine Operator, Mech. Division-2, Engineering Dept.	
34	Kazi Zafar Ahmed	Machine Operator, Mech. Division-2, Engineering Dept.	
35	Kabir Ahmed	Machine Operator, Mech. Division-2, Engineering Dept.	
36	Md. Rafiq-1	Machine Operator, Mech. Division-2, Engineering Dept.	
37	Sultan Miah	Machine Operator, Mech. Division-2, Engineering Dept.	
38	Chan Miah	Machine Operator, Mech. Division-2, Engineering Dept.	
39	Jakir Hossain	Machine Operator, Mech. Division-2, Engineering Dept.	
40	Jashim Uddin	Machine Operator, Mech. Division-2, Engineering Dept.	
41	Md. Nur Shamim	Mechanics, Transport Department.	full time
42	Md. Shajahan	Asst. Mechanics, Transport Department	
43	Md. Robin	Truck Kully, Conservancy Department	full time (car wash 8-hours shift)

A - 36

No.	Name	Designation	Remarks
44	A K Changis	Truck Kully, Conservancy Department	full time (car wash 8-hour shift)
45	Md. Abul Hossain	Truck Kully, Conservancy Department	
46	Gonesh Das	Truck Kully, Conservancy Department	
47	Probir Kumar Saha	Truck Kully, Conservancy Department	
48	M A Shahed	Truck Kully, Conservancy Department	
49	Din Mohammad	Guard (Ward)	full time (8-hours shift)
50	Md. Sohel Rana	Guard (Ward)	
51	Md. Sheik Farid	Guard (Ward)	
52	Md. Aktaruzzaman	Guard (Ward)	
53	Md. Golam Mostafa	Guard (Ward)	
Group 5: Financial Management Group			
1	Bellal Hossain Mia	Deputy Chief Accounts Officer, Accounts Department	Group Leader (part time)
2	Md. Mizanur Rahman	Internal Audit Department	Deputy Group Leader, almost full time
3	A.K.M. Mahfuzur Rahman	Assistant Secretary (Administration)	part time
4	Md. Samir Uddin	UDA cum Accountant, Transport Dept.	
5	Abdul Mallak	Assistant Store & Purchase Officer (Purchase), Store & Purchase Dept.	
6	Md. Abul Kalam	UDA cum Accountant, Mechanical Division-2, Engineering Dept.	
7	Md. Abdus Sattar Sharker	LDA cum Typist, CCO Office, Conservancy Dept.	
8	Afzalul Azam Reza	Assistant Social Welfare Officer in Addition Administrative Officer, Waste Management Division	
9	Habib Mohammed Al-Ahasan	Conservancy Inspector, Zone-4	

A3-3. Machinery and Equipment Provided

No.	Equipment Name	JFY	Quantity	Price(BDT)	Price(¥)	Status
1	(1) Desktop Computer	JFY 2006	5	BDT 317,000	¥559,188.00	5 in use
	(2) Application software		6	BDT 156,000	¥275,184.00	6 in use
	(3) Printer		1	BDT 34,000	¥59,976.00	In use
	(4) Fax/Phone		1	BDT 8,000	¥14,112.00	In use
	(5) Multimedia projector		1	BDT 84,500	¥149,058.00	Broken
	(6) Laptop computer		1	BDT 92,500	¥163,170.00	In use
	(7) Digital DVD camera		1	BDT 52,990	¥93,474.36	In use
	(8) Printer		1	BDT 20,000	¥35,280.00	In use
	(9) Scanner		1	BDT 34,500	¥60,858.00	In use
	(10) Anti-virus software		6	BDT 28,200	¥49,744.80	In use
	(11) Digital camera		1	BDT 29,340	¥51,755.76	In use
	(12) Memory card		1	BDT 1,100	¥1,940.40	In use
	(13) UPS		1	BDT 5,500	¥9,702.00	In use
Sub-total				BDT 863,630	¥1,523,443.32	
2	(1) GIS software	JFY 2007	1	BDT 214,000	¥383,702.00	In use
	(2) GPS unit		2		¥40,191.00	2 in use
	(3) Accounting software		1	BDT 128,637	¥230,646.14	In use
	(4) Gas measure (O2, HsS)		1		¥265,345.00	In use
	(5) Gas measure equipment (Methane)		1		¥103,500.00	In use

A - 37

	(6) Water quality measure equipment (electric conductivity)		1		¥22,500.00	In use
	(7) Water quality measure equipment (pH)		1		¥32,900.00	In use
	Sub-total			BDT 342,637	¥1,078,784.14	
3	(1) Steel plate	JFY 2008	1	BDT 2,429,860	¥3,569,464.34	In use
	(2) Speed bump		1	BDT 24,584	¥36,113.90	In use
	(3) Warning sign billboard		1	BDT 20,800	¥30,555.20	In use
	(4) Steel bar		1	BDT 2,710	¥3,980.99	In use
	Sub-total			BDT 2,710	¥3,640,114.43	
Total					¥6,242,341.89	

JFY2006 1BDT = 1.764 Yen 1.764

JFY2007 1BDT = 1.793 Yen 1.793

JFY2008 1BDT = 1.469 Yen 1.469

(Rate at the time of contract for each FY)

A3-4. Operational Cost from the Japanese Side

items	FY2006	FY2007	FY2008 (as of Sep. '08)	Total
	Feb. 2007 - June. 2007	July. 2007 - Mar. 2007	May. 2008 - Sep. 2008	
	Yen	Yen	Yen	
Labor Cost	1,169,558	3,788,728	2,259,248	4,958,286
Vehicle Rental	274,623	764,183	287,323	1,038,806
Project Car Maintenance	-	111,786	95,647	111,786
Fuel	325,333	1,094,499	804,902	1,419,832
Documentation (printing, translation, etc.)	517,473	196,492	247,292	713,965
Workshop & Seminars	218,840	2,725,416	1,077,147	2,944,256
Total	2,505,827	8,681,104	4,771,558	11,186,931

* Local currency is converted to Yen according to JICA rate of the month of the expense

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A - 38

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List of Subcontracted Companies

Name of Study	Period	Price	Company
Public Awareness Baseline Survey (Cycle 1)	August 8, 2007 - October 4, 2007	¥270,010	Centre for Urban Studies, Dhaka University
Public Awareness Baseline Survey (Cycle 2)	September 17, 2008 - on going	¥534,044	TMSS
Ward Office Construction	August 26, 2008 - ongoing	¥2,876,400	M/S Rocky Builders
Container Design	October 14, 2008 - ongoing	\$270,728.00	MA-ENGINEERING

A3-5. Operational Cost from the Bangladesh Side

The operational costs from DCC specifically used for the activities of the Project have not been separately tabled because the Project covers the improvement of existing SWM related activities of DCC. The following table shows the SWM related costs spend from DCC's annual budgeted for the last two years.

SWM Costs of DCC for the Last Two Years (Taka)

	2006/07	2007/08
SMW Cost		
Personnel	446,141,083	479,757,545
Fuel	245,957,203	248,061,860
Repair	33,716,965	56,112,957
Material	10,430,661	5,021,856
Equipment	22,019,032	13,819,545
Subtotal	758,264,943	802,773,763
Depreciation	0	0
Total	758,264,943	802,773,763
(Privatization)	48,152,136	49,452,136
Grand Total	806,417,079	852,225,899
SWM Revenue		
Conservancy Tax	242,235,290	285,911,548

Source: DCC

The following table shows the costs of the items provided by DCC for the implementation of WBA in the selected wards in the Project.

Costs to the Items provided for the Implementation of WBA in the Selected Wards

Item	Cost (Taka)
Use of Additional Collection Vehicles for WBA activities	360,000
A Container in Ward 76	120,000

A-39

Moreover, lands have been prepared by DCC for the three Ward SWM Offices constructed with fund from JICA for the last two years. DCC has also committed to construct five Ward SWM Offices by March 2009 and DCC is currently preparing the tender documents for constructing two Ward SWM Offices.

The following costs for the construction and operation of sanitary LFs in Matuail and Amin Bazar are also inputs from the Bangladesh side significantly related to the Project.

Matuail LF Expansion Project by DCC (with Japanese Dept Cancellation Fund under disbursement from Bangladesh Government): 42 crore taka in total (completed by October 2008)

O&M of Matuail LF by DCC (from DCC annual budget): 2 crore take for BFY 2008, of which 1.5 crore for improvement/maintenance of the LF and 0.5 crore for operation of the LF

Amin Bazar LF Improvement Project by DCC (with Japanese Dept Cancellation Fund under disbursement from Bangladesh Government): 65 crore taka in total, of which 29 crore taka for BFY 2008 (27 crore taka for heavy equipment and trucks and 2 crore take for improvement of civil work including the reinforcement of the existing embankment)



A - 40



ANNEX 4. TABLES OF ACTIVITIES

A4-1. Plan and Progress of the Activities

(1) Progress on Activity Plan to achieve Output 1

Item	Activity	Status	Result	Person in charge		2007/2008		2008/2009													
				DCC	JET	Second FY						Third FY									
						4	5	6	7	8	9	10	11		12	1	2	3	4	5	6
1-1	To establish Waste Management Department (by DCC)	Plan	-WMD is approved by the central government as proposed Appropriate personnel is assigned to approved posts	CCO, CCO	Hara																
		Actual	WMD is established. The WMD is approved by the Ministry of Health, Labour and Welfare and assigned to the approved posts. Personnel is assigned to the approved posts.																		
1-2 To strengthen human resources and institution of Waste Management Department																					
1-2-1	Develop by-laws, regulations, guidelines (if needed)	Plan	By-laws, regulations, guidelines are prepared to decision makers when necessary	CCO, SE	Hara, Rad																
		Actual																			
1-2-2	Conduct training in third countries	Plan	- Participants (around 5) get knowledge and information to implement project activities - Participants (around 5) get connections for information exchange for SWM	CCO, SE	Hara																
		Actual	Participants (around 5) get knowledge and information to implement project activities. Participants (around 5) get connections for information exchange for SWM.																		
1-2-3	Establish ward SWM offices and strengthen office function	Plan	- Ward offices are to be constructed or renovated Functions of ward offices are to be strengthened	CCO, SE	Hara																
		Actual	Ward offices are constructed or renovated. Functions of ward offices are strengthened.																		
1-2-4	Provide safety gears and workers manual to improve working conditions	Plan	- Safety gears are to be distributed Working environment to be improved	CCO, SE	Hara																
		Actual	Safety gears are distributed. Working environment is improved.																		
1-3	To prepare Annual Activity Plans	Plan	Annual plans of activities of all groups are checked and coordinated	CCO, SE	Hara																
		Actual																			
1-4 To coordinate Project activities																					
1-4-1	Hold monthly Project Meetings among counterpart personnel of WMD, Japanese experts and concerned personnel in other departments (Project Team Meeting)	Plan	- Project Team meetings are held once in a month and when necessary Monitoring results of all groups are discussed Good practices are summarized for dissemination Necessary countermeasures are discussed to solve problems	CCO, SE	Hara, Rad																
		Actual	Project Team meetings are held once in a month and when necessary. Monitoring results of all groups are discussed. Good practices are summarized for dissemination. Necessary countermeasures are discussed to solve problems.																		
1-4-2	Conduct questionnaire surveys with beneficiaries of SWM service	Plan	- Reliable information with around 50 samples in a target ward on satisfaction of residents is obtained Reasons for non-satisfaction are identified	Dr Yusuf	Hara, Okamoto, Takahashi																
		Actual	Reliable information with around 50 samples in a target ward on satisfaction of residents is obtained. Reasons for non-satisfaction are identified.																		
1-4-3	Compile good practices and lessons from the Project activities	Plan	- Leaflets or articles at the web sites to introduce and disseminate more than two good practices are issued and distributed	PD	Hara, Rad																
		Actual																			
1-4-4	Convene Steering Committee	Plan	- Inception Reports and Progress Reports are accepted by the Steering Committee Annual Activity plans of all the five groups are approved by the Steering Committee	CCO, SE	Hara																
		Actual	Inception Reports and Progress Reports are accepted by the Steering Committee. Annual Activity plans of all the five groups are approved by the Steering Committee.																		
1-5 To raise awareness and conduct public relations campaigns on solid waste management																					
1-5-1	Promote public relations activities such as publication of newsletters and development of web pages	Plan	- Newsletters are issued and distributed twice a year Web articles are added or revised four times a year	Web PD	Hara, Rad, Takahashi																
		Actual	WMD launch event, EcoBag campaign, newsletters, leaflets, website updates have been done.																		
1-5-2	Advocate necessary actions to policy makers, related government organizations, city dwellers, etc.	Plan	- Necessary (two) policies, recommendations, rules, standards, or guidelines are advocated in a year	Dr Yusuf	Hara, Rad																
		Actual	Directives of WMD have been developed and approved.																		
1-5-3	To develop solid waste management network among city corporations	Plan	- Seminars/workshops are held once a year Bangladesh SWM Conferences are held in office in other cities once a year	PD	Hara, Rad																
		Actual																			
1-7	To review and modify Clean Dhaka Master Plan	Plan	- Necessary parts of Clean Dhaka Master Plan are reviewed in order to be suitable to the current conditions	CCO, SE, PD	Hara, Rad																
		Actual																			

Planned implementation period
Actual Implementation

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Item	Activity	Status	Result	Person in charge		2007/2008		2008/2009												
				DCC	JET	Second FY						Third FY								
						4	5	6	7	8	9	10	11		12	1	2	3	4	5
2-6	To coordinate among community people, primary collection service providers and DCC																			
2-6-1	Regular communication with CUWGs and PCSPs and organization of coordination meetings among DCC, CUWGs, and primary collection service providers	Plan	Good relationship is developed and local SWM problems are solved	Community Group	Diamolo															On time
		Actual	Regular communication with CUWGs and PCSPs are established																	
2-6-2	Coordinate with related organizations to improve the scattering waste around containers and dustbins	Plan	Containers' surrounding area are free from scattering waste, recyclable sorting (not always) and uncontrolled leachate flow	Community Group	Diamolo															On time
		Actual	Containers' surrounding area are free from scattering waste																	
2-7	To conduct training programs for the counterparts on participatory SWM																			
2-7-1	Basic Computer Education	Plan	Counterparts get skills of Word and Powerpoint	Community Group	Diamolo															NA
		Actual	Counterparts get skills of Word and Powerpoint																	
2-7-2	PRA Training	Plan	Counterparts gain the knowledge of participatory planning, implementation, monitoring, and evaluation, and facilitation skills																	On time
		Actual	Counterparts gain the knowledge of participatory planning, implementation, monitoring, and evaluation, and facilitation skills																	

Planned implementation period
 Actual implementation

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A - 43

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(3) Progress on Activity Plan to achieve Output 3

Item	Activity	Status	Result	Person in charge		2007/2008					2008/2009								
				DCC	Expert	3 JFY					4 JFY								
						4	5	6	7	8	9	10	11	12	1		2	3	4
3-1 To conduct surveys and data collection and analysis for improvement of collection efficiency																			
3-1-1	Data collection and analysis	Plan	Weightage database will be collected and analyzed, supplementary time and motion surveys will be made and low performing trucks will be identified	Safullah	Riad, Takasugi														
		Actual	Analysis of the April, May, June and July data are completed. Low performing trucks were identified. For easy analysis of the weightage data developing of some secondary software is going on																
3-1-2	Improve truck allocation and route	Plan	Improvement alternatives will be studied and trial optimum will be implemented and evaluated as to extent of the improvement	Hasnat, Safullah, Bewas	Takasugi, Riad														NA
		Actual																	
3-1-3	Improve reporting and monitoring system	Plan	Weightage database will be improved and records of pool workshop and CS will be properly maintained	Hasnat, Safullah, Bewas	Takasugi, Riad														On time
		Actual	Analysis of the records management is underway																
3-2 To improve efficiency of collection system																			
3-2-1	Improve existing collection system and introduce new collection system in WBA	Plan	Analysis of existing conditions in target wards, development of collection improvement plans and their implementation	Hasnat, Bewas	Riad, Isha														Delay
		Actual	Ward SHM maps are prepared for the targeted wards, and some field visits are also completed. On the basis of the field visit CTS has initiated some plan for the improvement of the existing collection system and also some new collection system with the discuss																
3-2-2	Evaluate and prepare expansion plans for new collection system in WBA and other wards	Plan	Monitor the implementation, evaluate and modify and prepare expansion plans for the new collection systems, including introduction to new wards	Hasnat, Safullah	Isha, Riad														NA
		Actual																	
3-2-3	Prepare procurement plans for collection equipments	Plan	Based on existing equipment and equipment developed in new collection system, procurement plans for equipment of the WPP will be reviewed and more realistic plans will be prepared	Hasnat, Safullah	Takasugi, Riad														On time
		Actual	The collection trucks types and capacities proposed for the environmental grant program were estimated																
3-3 To improve the system of repair and maintenance of equipments																			
3-3-1	Improvement of Procurement Procedures	Plan	Review the new procurement processes of DCC released on 6 th January 2008 and propose possible means for shortening the procurement processes and time for spare parts and for local work shop repair work	Hasnat	Riad, Takasugi														On time
		Actual	Analysis on new procurement process studied and reported in Progress Report 2																
3-3-2	Capacity development	Plan	The capacity development under the activity is implemented for the field staff directly engaged in the repair work. The major capacity development activities are to standardize the work process and upgrade the skills of repair and maintenance work.	Maksood, Hasnat	Takasugi														NA
		Actual																	
3-3-3	Procurement of repair tools and equipment	Plan	Existing repair tools and equipment are not sufficient in the number and the kind. The activity is targeting at procurement of supplemental tools and equipment essentially required for upgrading the quality of repair and maintenance work	Hasnat, Ebrahimi	Takasugi														NA
		Actual																	
3-3-4	Computerizing of book keeping	Plan	Aiming the four log books recorded in Mechanical Workshop-1, the stock books is most important to know the balance of remaining spare parts. The activity is mainly conducted for the regular inventory of spare parts of each type of vehicle.	Hasnat, Ebrahimi	Takasugi														NA
		Actual																	
3-4 To train technicians, repair mechanics, drivers, cleaners, and other workers																			
3-4-1	Improve Cleaners working methods	Plan	Distribution of the workers manuals to all cleaners and application of the manual in 15 wards under WBA program, including training workshops, etc.	Maksood, Bewas	Isha														On time
		Actual	Distribution of the workers manuals to all cleaners and application of the manual in 4 wards (33 58.63 69) under WBA program through workshop on 20 July																
3-4-2	Improve Cleaners working conditions	Plan	Distribution of workers safety gears in 13 wards, with distribution certificates and inspection of utilization	Bewas	Isha														On time
		Actual	Distribution of workers' safety gears in 4 wards (33 58.63 69) has already completed on August. Inspection should be done																
3-4-3	Development of Collection and Transport guidelines for engineers, CS and drivers	Plan	Technical guidelines will be developed through discussion workshops and meetings	Hasnat, Maksood, Bewas	Riad, Isha														On time
		Actual	Some guidelines is already taken under considerations, still need more attentiveness in the task																

Planned implementation period
 Actual implementation

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(5) Progress on Activity Plan to achieve Output 5

Item	Activity	Status	Result	Person in charge		FY 2008/2009												
				OCC	Expert	Third Year												
						4	5	6	7	8	9	10	11	12	1	2	3	
5-1 Develop a financial report																		
5-1-1	Regular monitoring for smooth data collection	Plan	Monitoring is made in month.	Mizanur Rahman	Oskabe	[Planned implementation period]												On time
		Actual	Monitoring has been made in every months			[Actual Implementation]												
5-1-2	Collect actual cost data and actual revenue data (periodically/monthly)	Plan	Necessary data is submitted to WMD by the related department regularly.	Mizanur Rahman (Rokya)	Oskabe	[Planned implementation period]												On time
		Actual	Necessary data is submitted to WMD by the related departments regularly			[Actual Implementation]												
5-1-3	Input data and output annual budget and monthly actual cost	Plan	Input and output operation is carried out correctly	Mizanur Rahman	Oskabe	[Planned implementation period]												On time
		Actual	Input and output operation of actual is carried out correctly			[Actual Implementation]												
5-2 Prepare proposal for financial plan																		
5-2-1	Analyze the data	Plan	Incorporate the SWM expenditure with revenue	Mizanur Rahman	Oskabe	[Planned implementation period]												On time
		Actual				[Actual Implementation]												
5-2-2	Analyze annual activity plans	Plan	Prepare Annual Plan of activities of 2008-09	Mizanur Rahman	Oskabe	[Planned implementation period]												On time
		Actual				[Actual Implementation]												
5-2-3	Prepare draft proposal	Plan	Prepare draft proposal when necessary	Mizanur Rahman	Oskabe	[Planned implementation period]												On time
		Actual				[Actual Implementation]												
5-3 To Improve Procurement and Payment Process																		
5-3-1	To analyse the existing process and identify the problems	Plan	Collect adequate information about procurement and payment process	Batal Hossain Mizanur Rahman	Oskabe, Hara	[Planned implementation period]												NA
		Actual				[Actual Implementation]												
5-3-2	To find solutions	Plan	Prepare proposal to improve existing process	Batal Hossain Mizanur Rahman	Oskabe Hara	[Planned implementation period]												NA
		Actual				[Actual Implementation]												
5-3-3	To Propose improvement	Plan	Conduct procurement and payment process	Batal Hossain Mizanur Rahman	Oskabe Hara	[Planned implementation period]												NA
		Actual				[Actual Implementation]												

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A - 46

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A4-2. Disseminated Information, Workshop, Seminars and Meetings

First year (JFY2006)

Information Dissemination		Date	Place	(Unit)
<i>1 Newsletter</i>				
1	Newsletter No. 1	May.29,2007	Dhaka City	3000
<i>2 Leaflets/Stickers/Posters</i>				
1	Leaflet No.1	May.29,2007	Dhaka City	3,000
2	Sticker (small)	Jun.5,2007	Dhaka City	3,000
3	Sticker (large)	Jun.5,2007	Dhaka City	1,050
<i>3 Others</i>				
1	Project logo design	May.30,2007	Dhaka City	1
2	Eco-bag	Jun.4,2007	Dhaka City	300
Workshops/Seminars/Meetings		Date	Place	(Persons)
<i>1 Workshop for DCC</i>				
1	PDM Workshop (Day 1)	Apr.18,2007	Nagar Bhaban, DCC	22
2	PDM Workshop (Day 2)	Apr.19,2007	Nagar Bhaban, DCC	29
<i>2 Seminar for DCC</i>				
1	Seminar on EIA of Matuail Landfill Site	May.8,2007	Nagar Bhaban, DCC	39
2	Seminar on Quantity Survey of Waste Carrying Vehicles to Existing Matuail Landfill Site	May.23,2007	Nagar Bhaban, DCC	23
Awareness Raising		Date	Place	(Persons)
<i>1 Community Meeting</i>				
1	Community C/P Meeting	6-Mar-07	WMD,DCC	18
2	Community C/P Meeting (Shearing)	7-Mar-07	WMD,DCC	31
3	Community C/P Meeting	8-Mar-07	WMD,DCC	18
4	Planning Meeting (Community)	10-Mar-07	Hotel Golden Deer, Gulshan	8
5	Planning of C/P Meeting (Community)	11-Mar-07	WMD,DCC	15
6	Shearing activities Meeting (Community)	14-Mar-07	WMD,DCC	4
7	Shearing activities of Hunger Project Meeting (Community)	14-Mar-07	WMD,DCC	10
8	Shearing activities of DAM EE Meeting (Community)	15-Mar-07	DAM Office, DAM Training Center	9
9	Shearing activities of EE Meeting (Community C/P)	18-Mar-07	WMD,DCC	17
10	Environmental Education, WSWM Meeting (Community C/P)	19-Mar-07	WMD,DCC	4
11	Environmental Education Guideline of WSWM Meeting (Community C/P)	20-Mar-07	WMD,DCC	12
12	Environmental Education Meeting (Community C/P)	22-Mar-07	WMD,DCC	11
13	Environmental Education Planning Meeting (Community C/P)	25-Mar-07	WMD,DCC	14
14	Planning Workshop (Community C/P)	28-Mar-07	WMD,DCC	11
15	Planning Workshop (Community C/P)	29-Mar-07	WMD,DCC	11
16	Environmental Education Meeting (Community C/P)	29-Mar-07	WMD,DCC	8
17	Environmental Education Meeting (Community C/P)	3-Apr-07	WMD,DCC	11
18	Environmental Education Meeting (Community C/P)	4-Apr-07	WMD,DCC	13
19	Fields of Training (Community C/P)	5-Apr-07	WMD,DCC	10
20	Community SWM Group Meeting	6-Apr-07	WMD,DCC	11
21	Clarification of outputs set in C/P Meeting	9-Apr-07	WMD,DCC	11
22	Monthly C/P Meeting (Community)	12-Apr-07	WMD,DCC	23
23	Community Group Meeting	15-Apr-07	Commissioner Office, W # 76	3

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A - 47

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24	Community SWM C/P Meeting	17-Apr-07	WMD,DCC	6
25	Community Discussion Meeting	25-Apr-07	WMD,DCC	7
26	Shearing past experience & upcoming activities of Community SWM Component Meeting	26-Apr-07	WMD,DCC	15
27	Setting up of activities of Community SWM Group Meeting	5-May-07	Golden Deer Hotel, Gulshan	4

Second year (JFY2006)

Information Dissemination		Date	Place	(Quantity)
<i>1 Newsletter</i>				
1	Newsletter No. 2	Sept.2007	Dhaka City	3000
2	Newsletter No. 3	Nov.2007	Dhaka City	1000
3	Newsletter No. 4 Newsletter Special Edition	Feb. 2008	Dhaka City	1000
4	Newsletter No. 5	Mar. 2008	Dhaka City	1000
<i>2 Leaflets/Stickers/Posters</i>				
1	Leaflet for awareness		Dhaka City	16000
2	Project sticker (small)		Dhaka City	3000
3	Project Sticker (large)		Dhaka City	1000
4	Poster (landfill)	February, 2008	Dhaka City	1
5	Poster for Pilot Project		Dhaka City	100
6	Sticker for awareness		Dhaka City	15000
7	Leaflet		Dhaka City	20000
8				
<i>3 Billboard</i>				
1	Billboard		Dhaka City	7
<i>4 Other promotional goods</i>				
1	Website		Dhaka City	1
2	Project T-shirt	Aug.16,2007	Dhaka City	300
3	Project Hats	Aug.16,2007	Dhaka City	300
4	Project Logo		Dhaka City	1
5	Eco-bags		Dhaka City	1000
6	Cleaners Manual		Dhaka City	400
7	Landfill DVD(Semi-aerobic)	March, 2008	Dhaka City	1
8	Landfill DVD(Waste collection)	March, 2008	Dhaka City	1
Workshops/Seminars/Meetings		Date	Place	
<i>1 2nd Bangladesh Solid Waste Management Conference</i>				
		Feb.11,2008	Sonargaon, DCC	144
<i>2 Project Progress Workshop</i>				
		Mar.13,2008	LGED, Dhaka City	54
<i>3 Workshop for DCC</i>				
1	Workshop for Conservancy Drivers and Cleaners	Aug.13,2007	Nagar Bhaban, DCC	93
2	Workshop for Cleaners	Sep.3,2007	Nagar Bhaban, DCC	126
3	Workshop for Drivers	Sep.6,2007	Nagar Bhaban, DCC	95
4	Workshop on Heavy Equipment Operators	Sep.27,2007	Matuail Landfill	30
5	Workshop on Matuail Landfill Operation	Oct.4,2007	Nagar Bhaban, DCC	9
Awareness Raising		Date	Place	(Persons)
<i>1 Clean Dhaka Ward Contest</i>				
<i>2 Community Kickoff Meeting for Ward Solid Waste Management</i>				
1	Community Kickoff Meeting at Ward 36	Aug.31,2007	Ward 36, Dhaka City	200
2	Community Kickoff Meeting at Ward 76	Nov.11,2007	Ward 76, Dhaka City	150
<i>3 Community Unit Meeting</i>				

A - 48

1	Community Unit Meeting at Ward 76	Feb.16,2008	Ward 76, Dhaka City	14
2	Community Unit Meeting at Ward 76	Mar.3,2008	Ward 76, Dhaka City	17
3	Community Unit Meeting at Ward 76	Mar.7,2008	Ward 76, Dhaka City	12
4	Organization of Community Unit Working Group & Explanation of ward SWM & roles of DCC, PCSPs & CUWG	29-Sep-07	Ward 36, Dhaka City	16
5	Organization of Community Unit Working Group & Explanation of ward SWM & roles of DCC, PCSPs & CUWG	1-Nov-07	Ward 36, Dhaka City	25
6	Organization of Community Unit Working Group	16-Nov-07	Ward 36, Dhaka City	23
7	Problem Analysis	30-Dec-07	Ward 36, Dhaka City	26
8	How to solve problems	10-Jan-08	Ward 36, Dhaka City	25
9	Problem and Solution & Preparation of the action plan	15-Jan-08	Ward 36, Dhaka City	23
10	Shearing concept of ward SWM with new participants & Planning of rally	24-Jan-08	Ward 36, Dhaka City	20
11	Completion of the action plan & Leaflet and sticker development	16-Feb-08	Ward 36, Dhaka City	24
12	Organization of Community Unit Working Group & Explanation of ward SWM & roles of DCC, PCSPs & CUWG	12-Dec-07	Ward 76, Dhaka City	32
13	Problem Analysis & Pilot Project	11-Jan-08	Ward 76, Dhaka City	35
14	Detailed explanation of Pilot Project & Planning of next activities with community people	12-Jan-08	Ward 76, Dhaka City	20
15	Explanation of ward SWM & roles of DCC, PCSPs & CUWG & Problem analysis	12-Jan-08	Ward 76, Dhaka City	34
16	Explanation of ward SWM & roles of DCC, PCSPs & CUWG & Explanation of Pilot Project	18-Jan-08	Ward 76, Dhaka City	44
17	Shearing activities of Pilot Project (collection & transportation improvement) & Identification of new volunteers	13-Feb-08	Ward 76, Dhaka City	33
18	Activities of DCC and primary collection service providers, Steps of community SWM activities & DVD screening	29-Feb-08	Ward 76, Dhaka City	200
4	<i>Rally/Campaign</i>			
1	Rally in Ward 36	Feb.22,2008	Ward 36, Dhaka City	
2	Rally in Ward 36	Feb.28,2008	Ward 36, Dhaka City	

Third year (JFY2006)

Information Dissemination		Date	Place	(Quantity)
1	<i>Newsletter</i>			
1	Newsletter No. 6	Sept. 2008	Dhaka City	2000
2	<i>Leaflets/Stickers/Posters</i>			
1	Leaflet (Project Activities)		Dhaka City	1000
2	Project sticker (medium)		Dhaka City	
3	Project Sticker (large)		Dhaka City	
4	Poster (landfill)		Dhaka City	
5	Poster for Pilot Project		Dhaka City	
Workshops/Seminars/Meetings		Date	Place	
1	<i>Ceremony</i>			
1	Inauguration Ceremony of Waste Management Department	Aug.14,2008	BCFCC, Dhaka City	78
2	<i>Workshop for DCC</i>	July.20,2008	Mahanagar Natto Mancho, Dhaka	200
1	Cleaners Workshop			
2	Heavy Equipment Operator's Workshop	Sep.11,2008	Matuail Landfill Site	18

A-49

Awareness Raising		Date	Place	(Persons)
1 Eco-bag Campaign				
1	Eco-bag campaign at grocery store	Sep.1,2008	Ward 42, Dhaka City	29 bags
2	Eco-bag campaign at vegetable market	Sep.5,2008	Ward 56, Dhaka City	150 bags
3	Eco-bag campaign at vegetable market	Sep. 19, 2008	Ward 76, Dhaka City	110 bags
2 Community Kickoff Meeting for Ward Solid Waste Management				
1	Community Kickoff Meeting at Ward 69	Jun.28,2008	Ward 69, Dhaka City	325
2	Community Kickoff Meeting at Ward 63	Jul.19,2008	Ward 63, Dhaka City	90
3	Community Kickoff Meeting at Ward 75	Aug.9,2008	Ward 75, Dhaka City	89
3 Community Unit Meeting				
1	Action Planning for Ward 36	May.31	Ward 36, Dhaka City	14
2	Sharing Progress of Action Plan at Ward 36	Jun.19	Ward 36, Dhaka City	6
3	Sharing Progress of Action Plan at Ward 36	Jul.19	Ward 36, Dhaka City	6
4	Forming CUWG for Ward 69	Jul.26	Ward 69, Dhaka City	42
5	Explanation of CUWG at Ward 63	Jul.27	Ward 63, Dhaka City	18
6	Forming CUWG for Ward 69	Aug.2	Ward 69, Dhaka City	100
7	Forming CUWG	Aug.13	Ward 63, Dhaka City	9
8	PRA Training (Field exercise) at Ward 69	Aug.13	Ward 69, Dhaka City	44
9	Social Mapping at Ward 63	Aug.13	Ward 63, Dhaka City	10
10	Forming CUWG for Ward 75	Aug.23	Ward 75, Dhaka City	15
11	Forming CUWG for Ward 75	Aug.27	Ward 75, Dhaka City	7
12	Forming CUWG for Ward 75	Sep. 4	Ward 75, Dhaka City	9
13	Forming CUWG for Ward 75	Sep. 6	Ward 75, Dhaka City	21
14	Problem Identification at Ward 75	Sep. 13	Ward 75, Dhaka City	30
15	Problem and solution identification at Ward 69	Sep. 13	Ward 69, Dhaka City	22
16	Solution Analysis and Action Planning at Ward 75	Sep. 20	Ward 75, Dhaka City	22
17	Action Planning and Sharing Actions at Ward 69	Sep. 20	Ward 69, Dhaka City	23
4 Rally/Campaign				
1	Rally in Ward 36	Jul.25,2008	Ward 36, Dhaka City	Approx. 90

A4-3. Overseas Counterpart Training

Counterpart Training:

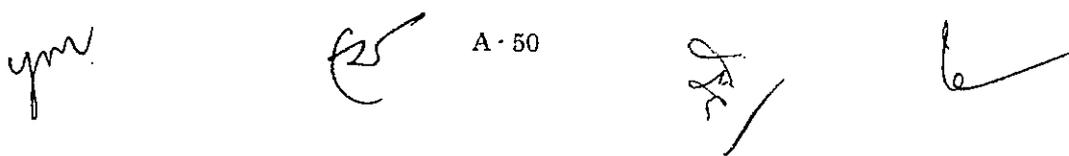
DCC participants of Counterpart Training for the Project

No.	Name	Designation
1	Md. Alauddin	Chief Executive Officer, DCC
2	M. R. Chowdhury I	Chief Conservancy Officer, DCC
3	Ashfakul Md. Islam	Chief Engineer, DCC

Study Tours:

DCC Participants of India Study Tour

No.	Name	Designation
1	Md. Shehab Ullah	Superintending Engineer, Waste Management Division
2	Md. Shah Kamal	Conservancy Inspector of Zone 3
3	Maksud Alam	Assistant Manager, Mohakhali Bus Terminal



4	Md. Ekramul Hoque Khondoker	Forman, Mech-1, Engineering Dept.
5	Golam Morshed	Assistant Transport Supervisor, Transport Dept.
6	Abu Tahir	Conservancy Inspector of Zone 1
7	Md. Gaddafee Hossain	Conservancy Inspector of Zone 9
8	Md. Mizanur Rahman	Internal Audit Dept.

DCC Participants of Hanoi Study Tour

No.	Name	Designation
1	Md. Alauddin	Chief Executive Officer, Dhaka City Corporation
2	Md. Abdus Satter	Manager of Transport, Transport Department
3	Md. Mofizur Rahman Bhuiyan	Conservancy Officer Zone 6, Waste Management Department
4	Md. Siddiqur Rahman	Assistant Engineer, Mechanical Division 2, Engineering Department
5	Mr. Mozibor Rahman	Assistant Secretary, Establishment Department
6	Mr. Ko Takeuchi	JICA Expert Team in charge of Project Administration/Community Participation/Public Relations

Participation of C/Ps for the Group Training Course in Japan (indirect input for the Project):

DCC Participants of Training in Japan

Batch	No.	Name	Job title (at that time)	Organization
1st	Seminar on Comprehensive Solid Waste Management			
	1	Mohammad Towhid Siraj	Assistant Engineer	DCC
2nd	Comprehensive Solid Waste Management			
	1	Mohammad Bengir Ahmed	Conservancy Officer	DCC
3rd	Promotion of enabling environment for civil society and community development			
	1	Md. Asaduzzaman	Conservancy Supervising Inspector	DCC
	2	Md. Shafiqul Islam	Conservancy Officer	DCC
4th	Solid Waste Management for Southwest Asia - Discussion for realizing the Improvement Measures			
	1	Md. Shafiullah Siddique Bhuiyan	Assistant Engineer	DCC

Note: First Batch: May. to Jul 2007

Second Batch: May. to Aug. 2007

Third Batch: Oct. to Nov. 2007

Fourth Batch: Oct. to Dec. 2007

Batch	No.	Name	Job title (at that time)	Organization
1st	Seminar on Comprehensive Solid Waste Management			
	1	A. H. M. Abdulla Harun	Sub-Assistant Engineer	DCC
	2	Aminur Rahman Biswas	Conservancy Officer	DCC
2nd	Comprehensive Solid Waste Management			
	1	Md. Rokib Hasan	Conservancy Officer	DCC
	2	Aminur Rahman Biswas	Conservancy Officer	DCC

Note: First Batch: May. to Jul 2008

Second Batch: May. to Aug. 2008

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A - 51

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A4-4. Prepared Manual and Guideline

No.	Field	Prepared Manuals and Guidelines	English	Bengali
1	Community	Ward-based Solid Waste Management Guideline	<input type="radio"/>	<input type="radio"/>
2	Landfill	Landfill Operationa Manual	<input type="radio"/>	
3	Collection	Cleaners Working Manual	<input type="radio"/>	<input type="radio"/>
4	General SWM	Directives of Waste Management Department	<input type="radio"/>	

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A - 52

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ANNEX 5. RECORD OF MEDIA COVERAG

July'06- March'07

Sr. No.	Event	Date of Event	Date of Coverage	Media Type	Media	Column x Inch	Photo
1	Article		20-Feb-07	Newspaper	Bangla Bazer	2 Col x 5.5 Inch	No
2	Article		19-Feb-07	Newspaper	Dinkal	2 Col x 6 Inch	No
3	Kickoff Meeting Ward 36	20-Jan-07	21-Jan-07	Newspaper	New Age	3 Col x 6 Inch	Yes
4	Kickoff Meeting Ward 36	20-Jan-07	21-Jan-07	Newspaper	The News Today	3 Col x 8 Inch	Yes
5	Kickoff Meeting Ward 36	20-Jan-07	21-Jan-07	Newspaper	The Bangladesh Observer	1 Col x 6.5 Inch	Yes
6	Kickoff Meeting Ward 36	20-Jan-07	21-Jan-07	Newspaper	The Independent	2 Col x 4 Inch	Yes
7	Kickoff Meeting Ward 36	20-Jan-07	21-Jan-07	Newspaper	Amader Shomoy	2 Col x 5 Inch	No
8	Kickoff Meeting Ward 36	20-Jan-07	21-Jan-07	Newspaper	Jaijai Din	2 Col x 5 Inch	No
9	Kickoff Meeting Ward 36	20-Jan-07	21-Jan-07	Newspaper	Dinkal	1 Col x 8 Inch	No
10	Kickoff Meeting Ward 36	20-Jan-07	21-Jan-07	Newspaper	The Bangladesh Today	2 Col x 6 Inch	No
11	Kickoff Meeting Ward 36	20-Jan-07	21-Jan-07	Newspaper	The New Nation	3 Col x 2 Inch	No
12	Kickoff Meeting Ward 36	20-Jan-07	21-Jan-07	Newspaper	Financial Express	3 Col x 4.5 Inch	No
13	Article on sanitary landfill at Matuail			Newspaper	New Age (Metro)	4 Col x 4 Inch	No
14	Article on sanitary landfill at Matuail		24-Jul-06	Newspaper	Daily Star	8 Col x 6.5 Inch	Yes

July'07- March'08

Sr. No.	Event	Date of Event	Date of Coverage	Media Type	Media	Column x Inch	Photo
1	Second Bangladesh WMD Conference-2008	11-Feb-08	12-Feb-08	Newspaper	Daily Star	4 Col x 8 Inch	Yes
2	Article		23-Jan-08	Newspaper	Daily Star	4 Col x 4 Inch	Yes
3	Opening of Matuail Landfill		28-Sep-07	Newspaper	New Age	5 Col x 4 Inch	Yes
4	Sanitary Landfill Workshop	27-Sep-07	27-Sep-07	Newspaper	Daily Star	1 Col x 4 Inch	No
5	Sanitary Landfill Workshop	27-Sep-07	27-Sep-07	Newspaper	The New Nation	2 Col x 7 Inch	No
6	Sanitary Landfill Workshop	27-Sep-07	27-Sep-07	Newspaper	The News Today	2 Col x 5 Inch	No
7	Sanitary Landfill Workshop	27-Sep-07	27-Sep-07	Newspaper	The New Nation	1 Col x 5 Inch	No
8	Sanitary Landfill Workshop	27-Sep-07	27-Sep-07	Newspaper	The Independent	1 Col x 7 Inch	No
9	Sanitary Landfill Workshop	27-Sep-07	27-Sep-07	Newspaper	The Bangladesh Today	1 Col x 4 Inch	No
10	Sanitary Landfill Workshop	27-Sep-07	27-Sep-07	Newspaper	The Bangladesh Observer	1 Col x 6 Inch	No

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A - 53

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11	DCC's steps to reduce health hazards		7-Sep-07	Newspaper	Daily Star	1 Col x 3 Inch	No
12	Initiates community based WM		2-Sep-07	Newspaper	The News Today	3 Col x 3 Inch	No
13	Initiates community based WM		2-Sep-07	Newspaper	The Bangladesh Observer	2 Col x 5 Inch	No
14	Initiates community based WM		2-Sep-07	Newspaper	New Age	3 Col x 3Inch	No
15	Initiates community based WM		2-Sep-07	Newspaper	The Independent	3 Col x 4 Inch	No
16	Initiates community based WM		2-Sep-07	Newspaper	Khabor Patra	2 Col x 4 Inch	No
17	Initiates community based WM		2-Sep-07	Newspaper	The Bangladesh Today	2 Col x 3 Inch	No
18	Awareness for SWM Project		31-Aug-07	Newspaper	The Independent	4 Col x 8 Inch	Yes
19	Article		25-Aug-07	Newspaper	Daily Star	8 Col x 7 Inch	Yes
20	Study		2-Aug-07	Newspaper	Daily Star	3 Col x 4 Inch	No

July'08-March'09

Sr. No.	Event	Date of Event	Date of Coverage	Media Type	Media	Column x Inch	Photo
1	Cleaners Workshop	20-Jul-08	20-Jul-08	Newspaper	Daily Star	1 Col x 1 Inch	No
2	Cleaners Workshop	20-Jul-08	20-Jul-08	Newspaper	Independent		No
3	Cleaners Workshop	20-Jul-08	21-Jul-08	Newspaper	Daily Star	1 Col x 6 Inch	No
4	Cleaners Workshop	20-Jul-08	21-Jul-08	Newspaper	New Age	1 Col x 5 Inch	No
5	Cleaners Workshop	20-Jul-08	22-Jul-08	Newspaper	Jugantor	2 Col x 4 Inch	No
6	Cleaners Workshop	20-Jul-08	20-Jul-08	TV Channel	BTV		
7	Community Rally	25-Jul-08	26-Jul-08	Newspaper	Daily Star	3 Col x 5 Inch	Yes
8	Article		10-Aug-08	Newspaper	New Age	2 Col x 5.5 Inch	No
9	WMD Launch Event	14-Aug-08	14-Aug-08	Newspaper	Daily Star	1 Col x 7 Inch	No
10	WMD Launch Event	14-Aug-08	14-Aug-08	Newspaper	New Age	1 Col x 4 Inch	No
11	WMD Launch Event	14-Aug-08	15-Aug-08	Newspaper	Daily Inqulab	2 Col x 5.5 Inch	Yes
12	WMD Launch Event	14-Aug-08	15-Aug-08	Newspaper	Naya diganto	2 Col x 7 Inch	Yes
13	WMD Launch Event	14-Aug-08	15-Aug-08	Newspaper	Daily Janata	2 Col x 3 Inch	Yes
14	WMD Launch Event	14-Aug-08	15-Aug-08	Newspaper	Daily Khabor Patra	2 Col x 3 Inch	Yes
15	WMD Launch Event	14-Aug-08	15-Aug-08	Newspaper	DailyShangram	1 Col x9 inch	No
16	WMD Launch Event	14-Aug-08	15-Aug-08	Newspaper	Daily janakantha	2 Col x 9 Inch	No
17	WMD Launch Event	14-Aug-08	15-Aug-08	Newspaper	Daily Jajaidin	2 Col x 2.5 Inch	No
18	WMD Launch Event	14-Aug-08	15-Aug-08	Newspaper	Daily Star	4 Col x 2.5 Inch	No

A - 54

19	WMD Launch Event	14-Aug-08	15-Aug-08	Newspaper	New Age	2 Col x 8 Inch	No
20	WMD Launch Event	14-Aug-08	16-Aug-08	Newspaper	Ittafaq	1 Col x 2.5 Inch	No
21	WMD Launch Event	14-Aug-08	18-Aug-08	Newspaper	Prothom Alo	1Col x 5 Inch	No
22	Article		16-Aug-08	Newspaper	Daily Star	4Col x 10 Inch	Yes
23	Article		16-Aug-08	Newspaper	New Age	4Col x 4 Inch	No
24	Article		16-Aug-08	Newspaper	Prothom Alo	3Col x 4.5 Inch	Yes
25	Article		18-Aug-08	Newspaper	Shamokal	1Col x 8.5 Inch	No

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A - 55

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ANNEX 6. RECORD OF THE ENVIRONMENTAL MONITORING AT MATUAIL LANDFILL SITE

Water Quality Analysis at Matuail Landfill Site

Date & Time	Sample Collection Point	Weather	Water Temperature (degree)	pH	EC (microseimens/cm)	COD (mg/l)	NH ₄ (mg/l)
07.10.07, 15.15	L-2	Cloud	35	5.6	17.8	7000	
	L-1	Cloud	30	5.8	18.6	4000	
	S-1	Cloud	29	5.6	0.45	40	
11.12.07, 15.00	L-1	Sunny	28.5	5.1	44	6000	
	L-2	Sunny	32	4.9	45	7500	
	S-1	Sunny	23	5.7	0.61	35	
26.02.08 15.30	L-1	Sunny	29	8.1	14.5	4000	80
	L-2	Sunny	34	8.2	17.6	4500	90
	S-1	Sunny	28.5	9.2	0.76	90	1.8
	S-2	Sunny	28	9.1	0.58	80	1.82
28.03.08 15.31	L-1	Sunny	36	7.7	17.7	7000	80
	L-2	Sunny	37	6.9	20	6000	92
	S-1	Sunny	31	6.7	0.63	80	0.8
22.07.08 11.00	L-1	Cloud	35.5	7.8	17.2	7500	40
	L-2	Cloud	37	7.9	15.8	7000	80
	S-1	Cloud	28	7.6	0.39	30	0.4
	S-2	Cloud	28	7.5	0.45	25	0.6
01.09.08 11.01	L-1	Sunny	34	7.9	18.7	3500	70
	L-2	Sunny	35	7.9	17.8	5000	80
	S-1	Sunny	30	7.6	0.33	10	0.3
	S-2	Sunny	30	7.2	0.46	8	0.2
23.10.08 12.30	L-1	Sunny	30	8.1	5.6	800	60
	L-2	Sunny	33	8	24	1000	80
	S-1	Sunny	30	8.5	0.52	6	0.4
	S-2	Sunny	29	7.3	0.82	7	0.4

L1: In the inspection pit on the North-West corner of dumping area

L2: In the main outlet of Leahate

S1: Water body on the eastern side

S2: Water body on the western side

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Result of Gas Measurement

Date	Weather	No.	Type of Gas pipe	Height of filled waste	Age of waste (Month)	CH ₄ (%)	O ₂ (%)	Comb (% LEL)	CO (ppm)	H ₂ S (ppm)
01.09.2008	Sunny	G-1	Type-A	4.5m	11	9.1	15.4	0	47	1.2
		G-2	Type-A	3.0m	5	0.0	21.0	0	0	0
		G-3	Type-B	4.5m	2	2.8	19.4	82	2	2.0
		G-4	Type-B	5.0m	2	2.1	19.9	53	0	0
		G-5	Type-A	5.0m	0.5	25.0	9.0	55	13	3.0
08.06.08	Cloudy	G-1	Type-A	4.5m	10	5.6	15.5	0	61	37
		G-2	Type-A	3.0m	4	0.0	21.0	4	0	0
		G-3	Type-B	4.5m	1	0.3	18.5	83	0	0
		G-4	Type-B	5.0m	1	10.0	15.5	0	53	0
		G-5	Type-A	4.5m	Just now	27.0	5.5	51	23	79.5
30.05.08	Cloudy	G-1	Type-A	4.5m	10	4.4	16.6	0	65	2.9
		G-2	Type-A	3.0m	4	0.5	21.0	14	1	0
		G-3	Type-B	4.5m	1	0.3	21.0	5	0	0
		G-4	Type-B	5.0m	1	6.9	16.6	0	87	1.4
		G-5	Type-A	4.5m	Just now	27.0	4.8	56	31	70
20.04.08	Sunny	G-1	Type-A	4.5m	9	0.57	16.7	0	40	67
26.02.08	Sunny	G-1	Type-A	4.5m	7	6.3	15.7	0	43	0
03.01.08	Sunny	G-1	Type-A	4.5m	6.5	6.3	15.2	0	45	0

Comb. : The chief ingredient of the combinations gas is nitrogen

Type-A : This pipe is the ventilation pipe which is connected to the Leachate pipe.

Type-B: This pipe is the pipe which only extracts the landfill gas from the inside of the landfill site, and is not connected to the Leachate pipe.

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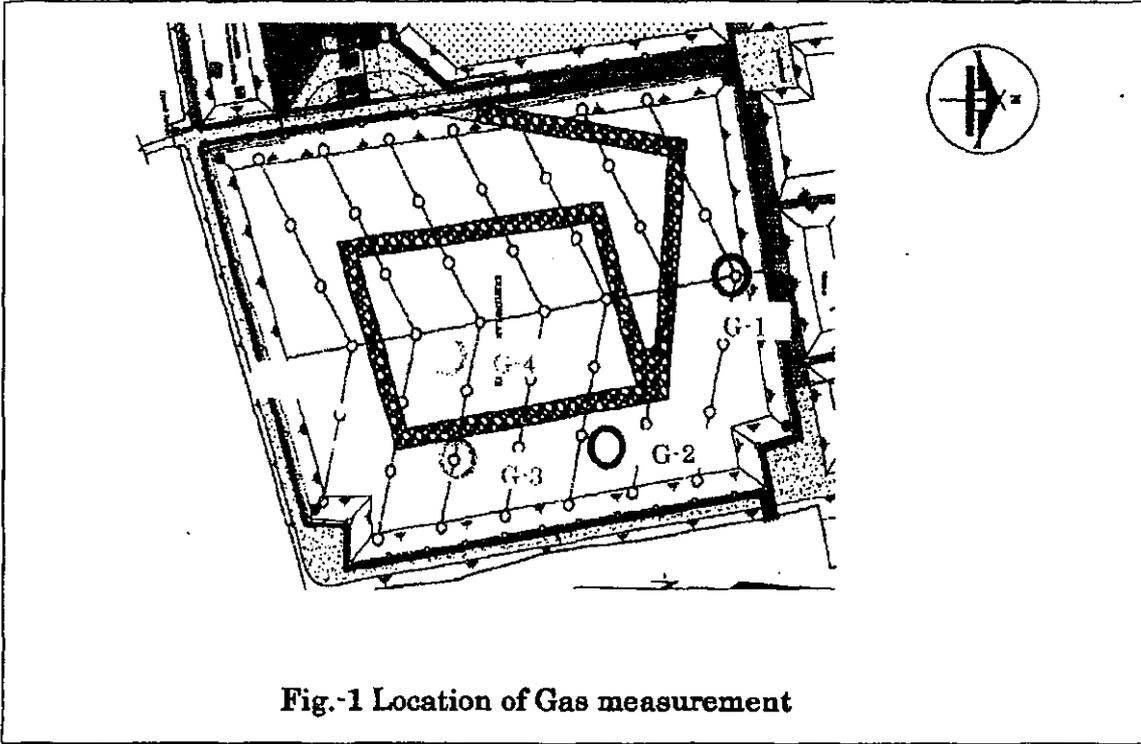


Fig.-1 Location of Gas measurement

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ANNEX 7. ATTENDANT LIST OF THE WRAP-UP MEETING

Japan International Cooperation Agency
Dhaka City Corporation



The Project for Strengthening of Solid Waste Management in Dhaka City

Attendance Sheet

Name of the Meeting: CP's Evaluation mission wrapup meeting

Time: 11:00AM Date: 12.11.08 Place: WMD, DCC

SL. No	Name	Designation	Contact Number	Signature
1	HIROSAWA Jin	JICA Representative		
2	Deewan Md. Akh. Ham	D.A. C. MO	9562281	
3	M. A. Qudus	D.C.W.M.O	0175229715	
4	BULASH CHANDRA DAS	C.I-64	01719101007	
5	MD. ASGER	C.S.T. zone-6	01911709878	
6	Mr. Mofizur Rahman Bhuiyan	C.C. zone-6	0171577474	
7	MA. Shakedul Islam	C.I-10=10 zone 6	01712188988	
8	Mahmoud R. HAD	JET		
9	Md. Mamunur Rahman	C.I-zone-8	01552-329847	
10	Md. Arzomur Rahman Biswas	C.I-zone-6		
11	Md. Rokib Hossain	C.I-zone-6		
12	Md. Bengtaz Ahmed	C.I-52 zone-8		
13	MA. Masum Hossain	C.I-05 zone-8	01722052088	
14	高橋 真衣子 Mayuko Takahashi	JOCV		
15	WAHIDUZZAMAN CHOWDHARY	C.I.-56		
16	Hirohisa Matsuyama	JOCV		
17	Mohammad Abu Eunus	C.I. W-2, Z-8	01911214686	
18	Md. Rasedul Rahman Rasel	C.I-57		
19	Radha Gobinda Biswas	C.I-W-12	01717637067	
20	Itaru Chiba	JICA		
21	Akio Ishii	JET		
22	Naoki HARA	JET		
23	Shozo Mori	Japan Mid-term Evaluation Team		
24	Hiroyuki MIYAKE	Japan Mid-term Evaluation Team		
25	Mohammed Shajahan	C.I-W-49	01712235129	
26	Abdul Motalib	C.I-36	01711463205	
27	Md. Shafikul Islam	C.I-33	01711340046	
28	Mitsuo YOSHIDA	JICA senior advisor		

List of Participants of the Meetings

1. Confirmation of the Process of the Joint Evaluation with DCC (from 11:30 on Oct. 27)

Evaluator	Name	Organization	Designation
	Mr. Syed Qudratullah	WMD, DCC	Superintending Engineer
○	Dr. Tariq Bin Yousuf	WMD, DCC	Project Director, Landfill Improvement Project
○	Mr. Abul Hasnat Md. Ashrafal Alam	WMD, DCC	Executive Engineer
	Mr. Shafiqul Islam	WMD, DCC	Waste Management Officer (Community)
	Mr. Mizarur Rahman	WMD, DCC	Waste Management Officer (Budget)
○	Mr. Jin Hirosawai	JICA Bangladesh Office	Representative
○	Mr. Shozo Mori	Nihon Suido Consultants Co., LTD.	Private Consultant
	Mr. Itaru Chiba	JICA Bangladesh Office	Assistant Representative
	Mr. Z. M. Ziaul Islam	JICA Bangladesh Office	Program Officer, National Staff
	Mr. Mahmoud Riad	JICA Expert Team	Deputy Chief Advisor / Solid Waste Management
	Mr. Akio Ishii	JICA Expert Team	Collection and Transport / PR I
	Mr. Masaharu Takasugi	JICA Expert Team	Waste Collection Vehicle and Equipment Maintenance
	Mr. Junko Okamoto	JICA Expert Team	Community Participation / Communication

1. Confirmation of the Process of the Joint Evaluation with LGD (from 15:00 on Nov. 4)

Evaluator	Name	Organization	Designation
○	Mr. Md. Delwar Hossain	LGD, Ministry of Local Government, Rural Development and Co-operatives	Senior Assistant Secretary (Paura - 1)
○	Mr. Jin Hirosawai	JICA Bangladesh Office	Representative
○	Mr. Shozo Mori	Nihon Suido Consultants Co., LTD.	Private Consultant
	Mr. Z. M. Ziaul Islam	JICA Bangladesh Office	Program Officer, National Staff

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5. Preparation of the Conclusions and Recommendations for the Final Draft of the Report
(from 11:00 on Nov. 11)

Evaluator	Name	Organization	Designation
○	Commander M. R. Chowdhury	WMD, DCC	Chief Waste Manager Officer (CWMO)
○	Dr. Tariq Bin Yousuf	WMD, DCC	Project Director, Landfill Improvement Project
○	Mr. Abul Hasnat Md. Ashraful Alam	WMD, DCC	Executive Engineer
	Mr. Dewan Md. Shah Alam	WMD, DCC	Additional CWMO
○	Dr. Mitsuo Yoshida	JICA Headquarters	Senior Advisor
○	Prof. Hiroyuki Miyake	The University of Kitakyusyu, Japan	Professor
○	Mr. Jin Hirosawai	JICA Bangladesh Office	Representative
○	Mr. Hiromichi Kano	Global Environmental Department, JICA Headquarters	Program Officer
○	Mr. Shozo Mori	Nihon Suido Consultants Co., LTD.	Private Consultant
	Mr. Itaru Chiba	JICA Bangladesh Office	Assistant Representative
	Mr. Z. M. Ziaul Islam	JICA Bangladesh Office	Program Officer, National Staff
	Mr. Naoki Hara	JICA Expert Team	Chief Advisor / Institutional Setup

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3. Sharing the Findings from the Data Collection (from 14:00 on Nov. 6)

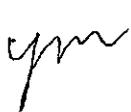
Evaluator	Name	Organization	Designation
	Mr. Syed Qudratullah	WMD, DCC	Superintending Engineer
○	Dr. Tariq Bin Yousuf	WMD, DCC	Project Director, Landfill Improvement Project
○	Mr. Abul Hasnat Md. Ashraful Alam	WMD, DCC	Executive Engineer
○	Mr. Jin Hirosawai	JICA Bangladesh Office	Representative
○	Mr. Shozo Mori	Nihon Suido Consultants Co., LTD.	Private Consultant
	Mr. Itaru Chiba	JICA Bangladesh Office	Assistant Representative
	Mr. Z. M. Ziaul Islam	JICA Bangladesh Office	Program Officer, National Staff
	Mr. Naoki Hara	JICA Expert Team	Chief Advisor / Institutional Setup

4. Preparation of the Results for the Final Draft of the Report (from 9:00 on Nov. 10)

Evaluator	Name	Organization	Designation
○	Commander M. R. Chowdhury	WMD, DCC	Chief Waste Manager Officer (CWMO)
○	Dr. Tariq Bin Yousuf	WMD, DCC	Project Director, Landfill Improvement Project
○	Mr. Abul Hasnat Md. Ashraful Alam	WMD, DCC	Executive Engineer
	Mr. Md. Asaduzzaman	WMD, DCC	Assistant CWMO
○	Dr. Mitsuo Yoshida	JICA Headquarters	Senior Advisor
○	Prof. Hiroyuki Miyake	The University of Kitakyusyu, Japan	Professor
○	Mr. Jin Hirosawai	JICA Bangladesh Office	Representative
○	Mr. Hiromichi Kano	Global Environmental Department, JICA Headquarters	Program Officer
○	Mr. Shozo Mori	Nihon Suido Consultants Co., LTD.	Private Consultant
	Mr. Itaru Chiba	JICA Bangladesh Office	Assistant Representative
	Mr. Z. M. Ziaul Islam	JICA Bangladesh Office	Program Officer, National Staff
	Mr. Naoki Hara	JICA Expert Team	Chief Advisor / Institutional Setup

5. Preparation of the Conclusions and Recommendations for the Final Draft of the Report
(from 11:00 on Nov. 11)

Evaluator	Name	Organization	Designation
○	Commander M. R. Chowdhury	WMD, DCC	Chief Waste Manager Officer (CWMO)
○	Dr. Tariq Bin Yousuf	WMD, DCC	Project Director, Landfill Improvement Project
○	Mr. Abul Hasnat Md. Ashrafal Alam	WMD, DCC	Executive Engineer
	Mr. Dewan Md. Shah Alam	WMD, DCC	Additional CWMO
○	Dr. Mitsuo Yoshida	JICA Headquarters	Senior Advisor
○	Prof. Hiroyuki Miyake	The University of Kitakyusyu, Japan	Professor
○	Mr. Jin Hirosawai	JICA Bangladesh Office	Representative
○	Mr. Hiromichi Kano	Global Environmental Department, JICA Headquarters	Program Officer
○	Mr. Shozo Mori	Nihon Suido Consultants Co., LTD.	Private Consultant
	Mr. Itaru Chiba	JICA Bangladesh Office	Assistant Representative
	Mr. Z. M. Ziaul Islam	JICA Bangladesh Office	Program Officer, National Staff
	Mr. Naoki Hara	JICA Expert Team	Chief Advisor / Institutional Setup







2. 評価グリッド

実績(Performance)

調査小項目	調査の視点/調査事項	必要なデータ	判断基準	情報源	調査手法
1. 総合評価	プロジェクトを通して十分な実施が得られているか？	下記のデータ	下記のデータ	下記の情報源	下記の調査手法
2. 前提条件の確保	廃棄物管理局(WMD)がバングラディッシュ政府により承認されたか？	WMD承認にかんする進捗状況		専門家・CP	資料レビュー、確認表、聞き取り
	プロジェクトコンセプト、プロジェクトの関係者の役割や責任が彼らの間で共有され、明らかに理解されたか？	プロジェクトについての広報資料、ミーティング等の実施状況		専門家・CP	資料レビュー、確認表、聞き取り
3. 投入の実施状況	バングラディッシュ側投入(CP配置、施設機材、予算配置、運営費等)について計画通り実施されたか？(総合的評価)また、投入に関する以下の9つの条件は満たされたか？(個別評価) 1. 訓練を受けたカウンターパートが頻繁に異動しない。 2. マトワイルの環境管理計画やアミンバザールの環境アセスメントが環境森林省、環境局により遅延なく承認される。 3. マトワイル埋め立て拡張のために日本債務削減相当資金がバングラディッシュ政府によって遅延なく支出される。 4. アミンバザール処理場建設計画がバングラディッシュ政府によ	投入計画、投入実績		プロジェクト進捗報告書、投入実績表、専門家・CP	資料レビュー、確認表、聞き取り
	バングラディッシュ側投入は十分であったか？また、今後予定されている投入は十分であるか？	投入計画、投入実績		プロジェクト進捗報告書、投入実績表、専門家・CP	
	日本側投入(専門家配置、CP研修、施設機材、運営費等)は計画通り実施されたか？	投入計画、投入実績		プロジェクト進捗報告書、投入実績表、専門家・CP	資料レビュー、確認表、聞き取り
	日本側投入は十分であったか？また、今後予定されている投入は十分であるか？	投入計画、投入実績		プロジェクト進捗報告書、投入実績表、専門家・CP	
	活動を通じた5つの成果の達成についての下記の4つの外部条件の充足しているか？ 1. 「クリーンダッカ・マスタープラン」の実現に向けてのコミットメントが、ダッカ市や他の関係者の間で維持される。 2. 洪水などの自然災害、選挙などの政治状況がプロジェクトの実施に大きな影響を及ぼさない。 3. ダッカ市が廃棄物管理に適切な予算を配分する。 4. 中央政府がダッカ市の廃棄物管理に必要な支援を行う。	●原稿どおり		プロジェクト進捗報告書、専門家・CP	資料レビュー、確認表、聞き取り
	アウトプット1: 以下の活動を通して、「廃棄物管理活動の管理・調整のための能力が向上する」は達成されたか。(PR3: CP執筆)	総合評価		下記の情報源	下記の調査手法
	関連する活動: 1-1 廃棄物管理局を設立する(ダッカ市役所による)。 1-2 廃棄物管理局の人材、組織を強化する。WBA①② 1-3 年間活動計画を作成する。 1-4 プロジェクト活動を調整する。 1-5 廃棄物管理に関する認識を高めるために広報キャンペーンを実施する。 1-6 市役所間の廃棄物管理ネットワークを構築する。 1-7 クリーンダッカマスター	1.1 廃棄物管理局(WMD)のマネージャーの年間活動計画と予算提案への関与状況および今後の予定(目標:終了時までには作成可能となる)(特に、活動1-3と関連) 1.2 これまでのプロジェクト活動での完了の遅れの発生割合の減少傾向および削減のための検討(目標:5年次(2010年4月~2011年3月)に遅れる活動の割合が見込みを定性的に評価70%まで減る)(特に、活動1-4と関連)	これまでの状況から終了時までの目標達成を難しくしているならかの問題があるかを確認 減少傾向と今後の削減見込みを定性的に評価	プロジェクト進捗報告書、専門家・CP インセプションレポート、プロジェクト進捗報告書、プロジェクト年次計画書、プロジェクト年次報告書、専門家・CP	資料レビュー、質問票調査、聞き取り 資料レビュー、質問票調査、聞き取り

		1.3 これまでに広報した成功事例を示す資料(目標:プロジェクトにより8つの成功事例を広報)(特に、活動1-5と関連)	種類別資料数及びその広報対象人口、それらの作成におけるWMDの関わりを確認	プロジェクト進捗報告書、リーフレット、ニュースレター、エコバック関連資料、新聞記事、TVニュース、ステッカー、Website、DVD、Bangladesh SWM Conferences Proceedings、活動1-4-3によりGood Practiceと教訓が認められた資料、PR効果のベースライン調査結果、専門家・CP	資料レビュー 質問票調査 聞き取り
		1.4 市民の環境意識と社会状況の変化にあわせ、クリーンダッカマスタープランを改訂する能力の向上傾向と今後の計画(目標:終了時までには改正される)(特に、活動1-7と関連)	向上傾向を定性的に確認	プロジェクト進捗報告書、改正マスタープラン報告書(3年次に作成される予定はない)、Directives、専門家・CP	資料レビュー 質問票調査 聞き取り
		その他(特に、活動1-1,2,6と関連)		プロジェクト進捗報告書、専門家・CP	資料レビュー 質問票調査 聞き取り
	アウトプット2: 以下の活動を通して、「参加型廃棄物管理プログラムのための能力が向上する」は達成されたか。(PR3: CP執筆)	総合評価		下記の情報源	下記の調査手法
	関連する活動: 2-1 ワード廃棄物管理ガイドラインを作成する。 2-2 住民を組織化し、住民レベルの廃棄物管理活動を支援する。 WBA①③ 2-3 1次収集認可とモニタリングシステムを改善する。 2-4 1次収集サービス改善のため1次収集サービス提供者を支援する。 WBA④ 2-5 対象ワードで環境教育と意識向上プログラムを実施する。 WBA③ 2-6	2.1 ワードレベルの住民廃棄物管理を推進するための清掃検査官の知識・技能と意力の向上傾向と今後の対策・計画(目標:終了時までには、20人以上の清掃検査官が十分な知識・技能を習得し、意欲を持つ)(特に、活動2-2,7と関連)	向上傾向を定性的に確認	プロジェクト進捗報告書、実地検証、ニュースレター6に記載されている清掃検査官のスピーチ、清掃検査官の各種活動への出席簿、CUWGs and PCSPs、JOCVs、専門家・CP、CI	資料レビュー 質問票調査 聞き取り
		2.2 ワード廃棄物管理ガイドラインの作成時期、使用体制、内容(目標:バンラデシ会計年度2007/2008終了(2008年6月)までにはワード廃棄物管理ガイドラインが作成され、使用できる状態になる。)(特に、活動2-1と関連)		プロジェクト進捗報告書、発行されたガイドライン、ガイドラインの今後の改善点について継続した資料(あれば)、専門家・CP	資料レビュー 質問票調査 聞き取り
		2.3 登録された1次収集サービス提供者のモニタリング及びサービス改善のための定期的フィードバックの実施状況と内容(特に、活動2-3,4と関連)		プロジェクト進捗報告書、意識調査、モニタリング結果、一次収集サービス業者について改善すべき内容の概要をまとめた資料(あれば)、PCSPsとのミーティング議事録、専門家・CP	資料レビュー 質問票調査 聞き取り
		2.4 対象地域での、住民、ダッカ市役所、1次回収サービス提供者間の調整の改善状況と対策(特に、活動2-2,6と関連)		プロジェクト進捗報告書、コミュニティミーティング議事録、専門家・CP、CI、CUWG、一次収集業者	資料レビュー 質問票調査 聞き取り
		2.5 廃棄物管理において住民が率先して行った活動の成功数(目標:プロジェクト終了までに20となる)(特に、活動2-2と関連)		プロジェクト進捗報告書、各WBAの実施計画書もしくは活動報告、コミュニティミーティング議事録、CUWG meeting memos、専門家・CP、CI	資料レビュー 質問票調査 聞き取り
		その他(特に、活動2-5と関連)		プロジェクト進捗報告書、専門家・CP	資料レビュー 質問票調査 聞き取り
	アウトプット3: 以下の活動を通して、「廃棄物収集運搬のための能力が向上する」は達成されたか。(PR3: 専門家執筆?)	総合評価		下記の情報源	下記の調査手法
4. アウトプットの達成状況	関連する活動: 3-1 収集効率改善のために収集運搬に関する調査、データ収集、分析を行う。WBA④ 3-2 収集システムの効率性を改善する。WBA②④ 3-3 機材の修理・管理システムを改善する。 3-4 技術者、修理工、運転手、清掃人などを訓練する。WBA②	3.1 適切な収集運搬システム策定の状況(目標:プロジェクト終了までに、ダッカ市役所管轄の代表的な地域で策定される)(特に、活動3-1,2と関連)		プロジェクト進捗報告書、GIS整備の状況、WBA4 Activities、専門家・CP、	資料レビュー 質問票調査 聞き取り
		3.2 清掃検査官、清掃員、運転手、作業場職員による収集運搬の効率性向上のための訓練の実施状況と改善する意欲の向上傾向、及び今後の対策・計画(特に、活動3-2,4と関連)		プロジェクト進捗報告書、清掃員のマニュアル、CI及び運転手へのガイドライン、訓練の資料と出席簿、専門家・CP	資料レビュー 質問票調査 聞き取り

	3.3 対象地域において収集運搬の効率改善のための1次収集と2次収集との間の調整の強化状況と今後の対策(特に、活動3-1.2と関連)		プロジェクト進捗報告書、ワードでの収集運搬の改善計画、専門家・CP、CUWIG	資料レビュー 質問票調査 聞き取り
	3.4 収集車の修理時間の短縮状況と今後の対策(特に、活動3-3と関連)		プロジェクト進捗報告書、環境技術無償の報告書、Engineering Department、専門家・CP	資料レビュー 質問票調査 聞き取り
	その他		プロジェクト進捗報告書、専門家・CP	資料レビュー 質問票調査 聞き取り
アウトプット4: 以下の活動を通して、「最終処分場の運用管理のための能力が向上する」は達成されたか。(PR3: CP執筆)	総合評価		下記の情報源	下記の調査手法
関連する活動: 4-1 衛生的な処分場を開発する(ダツカ市役所による)。 4-2 衛生的な処分場を運営管理する。WBA① 4-3 環境モニタリングを実施する。 4-4 処分場運営改善の評価を行う。	4.1 マトワイル処分場運用管理のための職員が配置と運用管理の状況(目標: 2008年7月までに配置され、適切な運転管理が行われる)(特に、活動4-2.4と関連)		プロジェクト進捗報告書、WMD(LMU)の組織構成、LMU出勤簿、マトワイル処分場作業日誌、Weekly meetingの議事録、Regulatory Bodyのための管理ガイドライン(作成中)、Minutes of training workshops held at the landfill、専門家・CP	資料レビュー 質問票調査 聞き取り
	4.2 マトワイル処分場での環境パラメーターについてのモニタリング状況(目標: 2008年7月から環境管理計画のとおり、実施される)(特に、活動4-3と関連)		プロジェクト進捗報告書、MOEのスタンダード、処分場テクニカルガイドライン作成中、EMPのモニタリング計画、Laboの運用報告、専門家・CP	資料レビュー 質問票調査 聞き取り
	4.3 ごみ投棄、転圧、覆土、法面維持の実施状況(目標: 運用管理マニュアルのとおり、適切に行われる)(特に、活動4-2と関連)		プロジェクト進捗報告書、運用管理マニュアル、マトワイル処分場作業日誌、O&Mサイン(絵)ボード、DVD、活動4-4-1に関する作成中のLMUの報告書、専門家・CP	資料レビュー 質問票調査 聞き取り
	4.4 浸出液の処理状況(目標: 運用管理マニュアルのとおり、が適切に行われる)(特に、活動4-2と関連)		プロジェクト進捗報告書、処理の計画、運用管理マニュアル、専門家・CP	資料レビュー 質問票調査 聞き取り
	4.5 計量台の運用状況と廃棄物管理局の本部への定期的なデータの提出状況、及びそれらに関わる対策・計画(特に、活動4-2.4と関連)		プロジェクト進捗報告書、協力しないドライバー等の記録、管理を徹底するための指示書、O&Mサイン(絵)ボード、O&Mステッカー、データの内容(ゴミの種類等)、専門家・CP	資料レビュー 質問票調査 聞き取り
	その他(特に、活動4-1と関連)		プロジェクト進捗報告書、専門家・CP	資料レビュー 質問票調査 聞き取り
	アウトプット5: 以下の活動を通して、「廃棄物管理の財務管理のための能力が向上する」は達成されたか。(専門家執筆?)	総合評価		下記の情報源
関連する活動: 5-1 財務報告書を作成する。 5-2 財政計画の提案書を作成する。 5-3 調達と支払い手順を改善する。	5.1 会計年度毎の財務報告書の作成状況と今後の対策(目標: 終了時までに、次年度の9月以前に作成されるようになる)(特に、活動5-1と関連)		プロジェクト進捗報告書、2財政年のコスト比較分析結果、専門家・CP	資料レビュー 質問票調査 聞き取り
	5.2 会計年度についての財政計画報告書の作成状況と今後の対策(目標: 終了時までに、4月以前に次年度の財政計画報告書が作成されるようになる)(特に、活動5-2と関連)		プロジェクト進捗報告書、歳入にSWMの支出を計上した結果(5-2-2(a))、専門家・CP	資料レビュー 質問票調査 聞き取り
	5.3 実際の収入・支出についての月間報告書の作成状況(目標: プロジェクト終了までに、翌月第2週以前に作成されるようになる)(特に、活動5-1と関連)		プロジェクト進捗報告書、PCへの入力状況、専門家・CP	資料レビュー 質問票調査 聞き取り
	5.4 廃棄物管理のための支出管理の状況(特に、活動5-1.2と関連)		プロジェクト進捗報告書、FMGが行ったStore & Purchase Departmentの問題点の分析結果(Solutionはまだ)、専門家・CP	資料レビュー 質問票調査 聞き取り

		その他(特に、活動5-3と関連)		プロジェクト進捗報告書、専門家・CP	資料レビュー 質問票調査 聞き取り
5. プロジェクト目標達成の見込み	5つの成果を通したプロジェクト目標の達成についての下記の2つの外部条件の充足しているか？ 1.「クリーンダッカ・マスタープラン」の実現に向けてのコミットメントが、ダッカ市や他の関係者間で維持される。 2. ダッカ市の財政能力が強化される。	外部条件の充足状況	外部条件の充足状況	プロジェクト進捗報告書、専門家・CP	資料レビュー 確認表、聞き取り
	プロジェクト終了時までに、「ダッカ市役所の廃棄物管理サービスが改善される」見込みがあるか？	総合評価		下記の情報源	下記の調査手法
		1. プロジェクト終了までにゴミの52.5%以上(もしくは2053トン/日)が処分場に運搬され、適切に処分される。		プロジェクト進捗報告書、廃棄物管理局の報告書、MPで設定している目標収集率の根拠を示す資料、特に影響が大きい活動への投入量、MP報告書、専門家・CP	資料レビュー 質問票調査 聞き取り
		2. プロジェクト終了までに、ダッカ市(もしくは民間委託地域での民間企業)による収集サービスに対する、ダッカ市民の満足度が現在の36%(マスタープラン調査2005年)から50%に向上する。		プロジェクト進捗報告書、住民意識調査(将来、市が実施)、MPでのベースライン調査、活動1-4-2として準備されている受益者へのアンケート結果、特に影響が大きい活動への投入量、MP報告書、ワード・ユニット別の人口データ、専門家・CP	資料レビュー 質問票調査 聞き取り
		その他		プロジェクト進捗報告書、専門家・CP	資料レビュー 質問票調査 聞き取り
6. 上位目標達成の見込み	上位目標の達成についての下記の外部条件の充足しているか？ 1. 廃棄物管理を重視する政府方針が維持される。	外部条件の充足状況	外部条件の充足状況	プロジェクト進捗報告書、専門家・CP	資料レビュー 確認表、聞き取り
	プロジェクト終了後、2015年までに、プロジェクトのもたらしたアウトカムを用いて「ダッカ市役所の廃棄物管理サービスが持続し、市の衛生環境が改善される」見込みがあるか？	総合評価		下記の情報源	下記の調査手法
		1. 2015年までに、ゴミの66%以上(もしくは3054トン/日)が処分場に運搬され、適切に処分される。		上記(プロジェクト目標について)に加えて、他のプロジェクトの報告書、改正されるMP報告書(未作成)、長期的な財務予測	資料レビュー 質問票調査 聞き取り
		2. 2015年までに、ダッカ市(もしくは民間委託地域での民間企業)による収集サービスに対する、ダッカ市民の満足度が現在の36%(マスタープラン調査2005年)から70%に向上する。		上記(プロジェクト目標について)に加えて、他のプロジェクトの報告書、改正されるMP報告書(未作成)、長期的な財務予測	資料レビュー 質問票調査 聞き取り
		その他		プロジェクト進捗報告書、専門家・CP	資料レビュー 質問票調査 聞き取り

*WBA① この活動はワード・ベース・アプローチ1(ワード事務所機能の強化)を含む。

*WBA② この活動はワード・ベース・アプローチ2(DCC清掃員の作業環境の改善)を含む。

*WBA③ この活動はワード・ベース・アプローチ3(コミュニティによる廃棄物管理の推進)を含む。

*WBA④ この活動はワード・ベース・アプローチ4(2次収集の改善)を含む。

実施プロセス (IMPLEMENTATION PROCESS)

調査小項目	調査の視点/調査事項	必要なデータ		情報源	調査手法
1. 総合評価	プロジェクト実施のプロセスは適切か？	下記のデータ	下記のデータ	下記の情報源	下記の調査手法
2. 活動実施状況	活動は計画通り実施されたか？	活動の実施状況		インセプション、プログレス報告書、モニタリング報告書、ロジェクト年次計画書と年次報告書、専門家・CP	資料レビュー 質問票調査 聞き取り
	活動の実施方法・内容に問題はなかったか？	活動内容、活動の実施方法、関連するC/Pの名前、C/Pの数		インセプション、プログレス報告書、モニタリング報告書、ロジェクト年次計画書と年次報告書、投入実績表、専門家・CP	資料レビュー 質問票調査 聞き取り
	日本人専門家からの投入は、DCC職員の能力を著しく向上するためのサポートとして十分であるか？	活動内容、活動の実施方法、関連するC/Pの名前、C/Pの数		インセプション、プログレス報告書、モニタリング報告書、ロジェクト年次計画書と年次報告書、投入実績表、専門家・CP	資料レビュー 質問票調査 聞き取り
3. ワード・ベース・アプローチ	ワード・ベース・アプローチ (WBA)の総合評価	下記の情報		下記の情報源	下記の調査手法
	WBAは計画通り実施されたか？	WBAの実施状況		プログレス報告書、モニタリング報告書、ロジェクト年次計画書と年次報告書、投入実績表、Community Unit Action Plans、専門家・CP、CI、CUWGs、PCSPs、運転手、清掃人、JOCVs	資料レビュー 質問票調査 聞き取り
	WBAの実施方法・内容に問題はなかったか？	活動内容、活動の実施方法、関連するステークホルダーの構成		プログレス報告書、モニタリング報告書、ロジェクト年次計画書と年次報告書、投入実績表、Community Unit Action Plans、専門家・CP、CI、CUWGs、PCSPs、運転手、清掃人、JOCVs	資料レビュー 質問票調査 聞き取り
	今後、他のワードへ持続的に展開していくか？	DCCによる今後のWBA実施計画		プログレス報告書、DCCの関連報告書、専門家・CP、CI、CUWGs、JOCVs	資料レビュー 質問票調査 聞き取り
4. モニタリング及び意思決定プロセス	モニタリングはどのように行われたか？モニタリングの結果はプロジェクトの活動に反映されたか？	モニタリングの体制、その結果の利用状況		モニタリング報告書、専門家・CP	資料レビュー 質問票調査 聞き取り
	活動の変更、軌道修正および人員の選定等にかかる決定はどのようなプロセスでなされたか？	意思決定のプロセス、それに起因する問題点		インセプション、プログレス報告書、モニタリング報告書、ロジェクト年次計画書と年次報告書、Bangladesh事務所、専門家・CP	資料レビュー 質問票調査 聞き取り
	活動計画の修正はいつ、どのように行われたか？	意思決定のプロセス、それに起因する問題点		インセプション、プログレス報告書、モニタリング報告書、ロジェクト年次計画書と年次報告書、Bangladesh事務所、専門家・CP	資料レビュー 質問票調査 聞き取り

5. 関係者との関わり方 (コミュニケーション)	プロジェクト内コミュニケーションの問題(連絡の頻度、内容、方法等)	コミュニケーションの頻度、方法、計画変更時の対応状況、共同で取り組む課題の解決方法、語学、習慣等に関する問題はないか?その対策は採っているか?		専門家・CP	資料レビュー 質問票調査 聞き取り
	受益者(NGO、学校、モスク、CUWGs、PCSPs、住民等)の参加意識及び彼らとのコミュニケーションはどうか?	活動への参加状況、コミュニケーションの頻度、方法、内容、		キックオフミーティングへの出席簿、住民意識調査、RPA/PLAの研修内容、CUWGs、PCSPs、Pis、専門家・CP	資料レビュー 質問票調査 聞き取り
	JICA本部・ Bangladesh事務所、および日本の関係機関のサポート体制: プロジェクトに対するサポートは十分だったか? コミュニケーション(連絡の頻度、内容、方法等)は効果的に行われたか?	コミュニケーションの頻度、方法、計画変更時の対応状況、協力内容、共同作業時間、頻度、共同で取り組む課題の解決方法		専門家・CP、JICA本部・ Bangladesh事務所	資料レビュー 質問票調査 聞き取り
	プロジェクトにおいて、DCC(WMD)中央とワード事務所とのコミュニケーション及び連携は効果的に行われているか?	コミュニケーションの頻度、方法、計画変更時の対応状況、共同で取り組む課題の解決方法、信頼関係の確立、協力内容		専門家・CP、 Bangladeshの関係機関	資料レビュー 質問票調査 聞き取り
	DCCの他部局とコミュニケーション及び業務上での連携は効果的に行われているか?	組織図、データの交換状況、会議等の実施状況		プロGRESS報告書、DCCの関連報告書、専門家・CP、Engineering Department、Transportation Department, etc.	資料レビュー 質問票調査 聞き取り
6. 他の調査、プロジェクト等との連携	開発調査との連続性及び継続性は保たれているか?	開発調査で作成された実施計画、開発調査からのプロジェクト内容およびアプローチの変更点		調査計画報告書及びそのフォローアップ報告書、プロGRESS報告書、モニタリング報告書、ロジェクト年次計画書と年次報告書、投入実績表、専門家・CP	資料レビュー 質問票調査 聞き取り
	JOCVとの連携は効果的か?	JOCVの参加状況、JOCV側からの提案内容		プロGRESS報告書、JOCVの関連報告書、モニタリング報告書、ロジェクト年次計画書と年次報告書、投入実績表、専門家・CP、CI、CUWGs、JOCVs	資料レビュー 質問票調査 聞き取り
	環境技術無償案件との連携は効果的か?	環境技術無償案件の内容とタイミング		プロGRESS報告書、環境技術無償案件の関連報告書、モニタリング報告書、ロジェクト年次計画書と年次報告書、専門家・CP、環境無償案件関係者	資料レビュー 質問票調査 聞き取り
	Bangladesh側が行っている他の調査、プロジェクトとの連携は効果的か?	アミンバザールLFの内容とタイミング	組織図、データの交換状況、会議等の実施状況	プロGRESS報告書、DCCの関連報告書、専門家・CP、アミンバザールLFの関係者	資料レビュー 質問票調査 聞き取り
	他ドナーが行っている他の調査、プロジェクトとの連携は効果的か?	他ドナーが行っている調査やプロジェクトの内容及とタイミング		プロGRESS報告書、DCCの関連報告書、専門家・CP	資料レビュー 質問票調査 聞き取り

7. オーナーシップ	Bangladesh側から必要な予算・人員・機材等が手当てされているか？	Bangladesh側の予算・人員配置状況	Inセプション、プログレス報告書、モニタリング報告書、投入実績表、専門家・CP、Bangladesh側関係機関職員	資料レビュー 質問票調査 聞き取り
	CPの配置は適切だったか？	配置されたCPの人数・専門分野・レベル・ポジションなど	投入実績表 専門家・CP	資料レビュー 質問票調査 聞き取り
	CPのプロジェクトへの参加度は高いか？	従事時間、CPの上司の理解度、コミュニケーションの頻度、方法、計画変更時の対応状況、共同で取り組む課題の解決方法、信頼関係の確立、CPの主体性・参加意識	Inセプション、プログレス報告書、モニタリング報告書、投入実績表、専門家・CP、Bangladesh側関係機関職員	資料レビュー 質問票調査 聞き取り
	Bangladesh側責任者(プロジェクト責任者、DCC(MWD)責任者、関係機関の責任者)のプロジェクトマネジメントへの参加の度合いは適切か？	Bangladesh側責任者の意識と参加度合い	Inセプション、プログレス報告書、モニタリング報告書、専門家・CP、Bangladesh側関係機関職員	資料レビュー 質問票調査 聞き取り
8. その他	業務実施型による案件実施に何か課題はあったか？	実施方法、計画変更時の対応状況、共同で取り組む課題の解決方法、信頼関係の確立	Inセプション、プログレス報告書、モニタリング報告書、専門家・CP、Bangladesh側関係機関職員	資料レビュー 質問票調査 聞き取り
	その他、プロジェクトの実施過程で生じた問題や、効果発現に影響を与えた問題はあるか？ その原因は何か？ どうやって克服したか？	これまでプロジェクトの実施過程で提示された問題点と原因、およびその対処の状況	プログレス報告書、モニタリング報告書、専門家・CP、Bangladesh側関係機関職員	資料レビュー 質問票調査 聞き取り

