

評価調査結果要約表

I. Outline of the Project	
Country : Bangladesh	Project title : Project for Strengthening of Solid Waste Management in Dhaka City
Issue/Sector : Environmental Management	Cooperation scheme : Technical cooperation
Division in charge : JICA Bangladesh office	Total cost : 500million yen
Period of Cooperation	(R/D): December 11, 2006 4 years (February, 2007-February, 2011)
	Partner Country's Implementing Organization : Waste Management Department (WMD) at Dhaka City Cooperation (DCC)
	Supporting Organization in Japan : Yachiyo Engineering CO., Ltd
	Related Cooperation : Development Study(November 2003-March 2006), Environmental Cooperation Grant Aid Project(EGAP), and Japan Debt Cancellation Fund(JDCF)
1-1 Background of the Project	
<p>The Japan International Cooperation Agency (JICA) has started their cooperation on solid waste management (SWM) with the Dhaka City Corporation (DCC) since 2000. During the period from November 2003 to March 2006, "Development study" was implemented. Clean Dhaka Master Plan, the main output of that Study was the first master plan 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 the 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).</p> <p>In parallel with the technical cooperation activities, the Government of Japan supported other SWM activities in DCC. Improvement and expansion of the Matuail Landfill was implemented by DCC under the Japan Debt Cancellation Fund (JDCF) as well as the construction of the Amin Bazar Landfill. Two Japan Overseas Cooperation Volunteers (JOCVs) have been dispatched to DCC for environmental education. A Grass-roots Grant Aid has been utilized to implement a project for medical waste management by local NGO. Waste collection vehicles and a maintenance workshop were provided under the Grant Aid for Environment and Climate Change scheme in 2009 in order to enhance the capacity of waste collection and transportation of DCC. Thus, the Project is regarded as a latest part of 10 years long cooperation program.</p>	
1-2Project Overview	
(1) Overall Goal	
The solid waste management services of Dhaka City Corporation are sustained and the sanitary environment of the city is improved.	
(2) Project Purpose	
The solid waste management services of the Dhaka City Corporation are improved.	
(3) 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.	

<p>4) Capacity for operation and management of landfill is improved.</p> <p>5) Capacity for financial management in solid waste management is improved.</p> <p>(4) Inputs</p> <p>Japanese side :</p> <table border="0"> <tr> <td>Long-term Expert: 0 experts</td> <td>Equipment</td> <td>9.9 million yen</td> </tr> <tr> <td>Short-term Expert: 10 experts</td> <td>Local cost</td> <td>46.1 million yen</td> </tr> <tr> <td colspan="3">Trainees received: 30 personnel</td> </tr> </table> <p>Bangladesh Side :</p> <p>Counterpart: Around 100 personnel</p> <p>Provision of land, building, and other necessary facilities and allocation of operational costs</p>			Long-term Expert: 0 experts	Equipment	9.9 million yen	Short-term Expert: 10 experts	Local cost	46.1 million yen	Trainees received: 30 personnel		
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2. Evaluation Team											
Members of Evaluation Team	<p><u>Leader</u></p> <p>Dr. YOSHIDA Mitsuo, Senior Advisor, JICA</p> <p><u>Social Consideration</u></p> <p>Prof. MIYAKE Hiroyuki, Professor, The University of Kitakyusyu</p> <p><u>Environment Cooperation</u></p> <p>Ms. SANADA Akiko, Program Officer, Environmental Management Division 1, Environmental Management Group, Global Environmental Department, JICA</p> <p><u>Cooperation Planning I</u></p> <p>Ms. MAKIMOTO Saeda, Senior Representative, JICA Bangladesh Office, JICA</p> <p><u>Cooperation Planning II</u></p> <p>Mr. KASHIMURA Masanobu, Representative, JICA Bangladesh Office, JICA</p> <p><u>Evaluation Analysis</u></p> <p>Mr. OSEKO Masahiro, Consultant, Nevka Co., Ltd.</p>										
Period of Evaluation	8, August 2010~ 27, August 2010	Type of Evaluation : Terminal Evaluation									
3. Results of Evaluation											
3-1 Review of achievements											
(1) Project purpose											
Project purpose will be mostly achieved. Details have been shown below.											
<p>1) Targeted amount of collected waste (52.5%, 2,053ton/day) has been almost achieved. Further improvements are also identified.</p> <p>2) 50% of Dhaka citizen satisfies the service of waste collection.</p>											
(2) Output											
<p>1) Output1: Capacity for management and coordination of solid waste management activities is improved.</p> <p>Expected to be almost achieved. Output1 targets the enhancement of organization and system by the Waste Management Department (WMD). In particular, the diffusion of good practice will be achieved by confirming the project and budget plan making process. Participatory solid waste management programme, improvement of the system for safe environment for cleaner, formulation and evaluation of annual project plan, implementation of</p>											

project for waste management based on project plan and review of master plan are relatively proceeded, however, C/Ps still need support by the JICA Expert Team (JET) for budget management and diffusion of good practice.

2) Capacity for participatory solid waste management program is improved.

Expected to be achieved. Output2 targets that improvement of primary waste collection by participatory solid waste management programme at each ward (WBA). Increasing of capacity and motivation of Conservancy Officer (CO), Conservancy Inspector (CI), and Cleaner encourage WBA. Formulation of WBA guideline and installation of registration system for Primary Collection Service Provider (PCSP) has contributed to achievement of Output2 in 20 wards out of 90 wards. Furthermore, it can be seen the significant increase of capacity and motivation among several CIs, and it also contributes to expanding their capability of job. This point is remarkable as CI is significantly important actor for this project.

3) Capacity for solid waste collection and transportation is improved.

Expected to be almost achieved. Output3 targets that design and installation of appropriate waste collection system for each ward. This output includes inputs of new compactors to 20 wards by EGAP.

On the other hand, some compactors provided by EGAP have not been operated due to lack of drivers that are supposed to be inputted by DCC. Therefore, operation of all 100 compactors inputted by EGAP is urgent issues to be resolved.

4) Capacity for operation and management of landfill is improved.

Expected to be achieved. Output4 targets appropriate operation and maintenance in the Matuail and the Amin Bazar landfill sites. In terms of operation and maintenance of the Matuail landfill, it has some issues such as delayed staffing of WMD, hierarchy in organization in waste management and use of heavy machine, objection by driver's Union and lack of budget. However, it could be said that it might be the best performance under current severe circumstances. The construction of the Amin Bazar landfill is delayed but partially operation has started. All operation will be expected to start after October 2010.

5) Capacity for financial management in solid waste management is improved.

Expected to be achieved. Output5 targets improvement of budgetary control regarding waste management. Formulations of budget and financial reporting have started. In terms of expenditure, "Budget for community" which had never been implemented, has been gradually implemented. Cost efficiency regarding waste management is under investigation.

3-2 Summary of Evaluation Results

(1) Relevance

Relevance of the Project is evaluated "Very High" from the following perspective.

1) Consistency with national environment policies of Bangladesh

Strategic Goal 19 of the "Bangladesh: Poverty Reduction Strategy Paper, Nov. 2005" is "Caring for Environment and Sustainable Development." In this strategy, efficient collection and transportation of municipal waste to the disposal site is targeted.

2) Consistency with Japanese ODA policy

Japan's ODA Rolling Plan for Bangladesh (2009) aims at the achievement of sustainable development of the urban areas for ensuring sound urban life including solid waste management.

3) Consistency with the needs of target group

Environmental and sanitary issues relating to waste are still widely prevailing in Dhaka City and threatening the healthy life of citizen.

4) The approach and methodology of the Project

DCC in collaboration with JICA has been implemented a variety of cooperation schemes for the improvement of SWM in Dhaka City such as the development study, JDCF, Grass-roots Grant Aid, EGAP and JOCV. This combination of different approaches realized the holistic and dynamic program approaches and created a variety of positive effects.

(2) Effectiveness

Effectiveness of the Project is evaluated "Fair" from the following perspective.

Achievements of each output contributed the capacity development of waste management service that is the project purpose. Moreover, outputs include capacity development in financial management and this point will lead to "sustainability" of waste management service.

(3) Efficiency

Efficiency of the Project is evaluated "Fair" from the following perspective.

Bangladeshi counterparts and JET members have had to spend unexpectedly much time for the establishment of WMD. Additionally, the delay of staffing of WMD caused less involvement of DCC personnel and significant proportion of counterparts could not participate in the activities. Therefore, above discussion indicates that projects inputs were not efficiently transferred to project outputs.

(4) Impact

Impact of the Project is evaluated "High" from the following perspective.

1) Expectation to achieve the Overall Goal

It is necessary to attain the Overall Goal to continue data collection of waste amount for estimation of future waste management. This project has not contributed to data collection process directly. However, the capacity development in whole waste management process will be able to lead to appropriate technical transfer by DCC itself. Therefore, it is possible to achieve overall goal by C/P itself by knowledge and techniques that are gained in this project.

2) Other impacts

- CIs have been significantly empowered and expanded their vocational functions through the activities of WBA.
- SWM services were integrated and holistic approach has become realized by WBA activities. Furthermore, the mindset of CIs and cleaners towards SWM has been motivated through WBA activities.
- Communication and cooperation between citizens in Dhaka city have been enhanced. As the ward office has been utilized as open public space for community, accountability and transparency of DCC activities have also

improved. Moreover, complain from citizen has been resolved quicker than before due to the ward office.

- It seems that the Matuail and Amin Bazar landfill sites have not made negative environmental impacts on surrounded area.

(5) Sustainability

Sustainability of the Project is evaluated “Low” as shown below.

1) Political aspect

Although there is an Environment Act 1995, there are no guidelines or strategies of SWM that would back up the sustainable operation of WMD. It is highly expected that DCC and WMD will distribute the guideline of daily job called “Clean Dhaka-Directives of Waste Management Department ” to all workers of SWM.

2) Organizational aspect

Staffing of WMD largely delayed and caused the ineffective and inefficient operation of SWM in Dhaka City. Due to the frequent change of top management, the consistency of management and policy is hardly maintained in DCC and in WMD. Through the activities of the Project, SWM service providers such as CIs and cleaners, who used to be lowly recognized by other people, started to develop confidence and pride in their job. Nevertheless, rigid human affairs system does not reward to them and discouraging them in a way.

3) Financial aspect

SWM budget of DCC is constantly increasing However; still the total amount of SWM budget is not enough for DCC to procure all the necessary goods and services.

4) Technical aspect

Core member of CI and staff in the Matuail landfill has improved their technical ability. However, most of WMD staffs are deputies or transferred from other institution. Therefore, DCC may lose technical transfer when trained staff goes back to original institution. In particular, C/P who is in charge of financial management is highly motivated and well trained but he is also transferred from the National Audit Office. Thus, there is not enough technical sustainability in financial management area.

3-3 Factors that promoted realization of effects

1) Planning

Holistic approach including the development study, JDCF, Grass-roots Grant Aid, EGAP and JOCV, have contributed to the improvement of SWM of Dhaka city.

2) Implementation

“WBA” has contributed to improvement of organizational inefficiency in WMD. Also, appropriate adjustment of project has led to maximum outcomes under limited circumstances. In particular, waste collection routes were supposed to be reconsidered for improvement of efficiency of waste collection. However, redesign of waste collection routes was impossible due to traffic situation. Therefore, the project has changed and supplied 100 waste collection vehicles by EGAP and it has led to increasing of capacity in waste collection.

3-4 Factors that impeded realization of effects

1) Planning

Delay and insufficient institutionalization of WMD including staffing, contributed to negative impact on project. It might be prevented more detailed feasibility studies

2) Implementation

Frequent change of top management in DCC and WMD, miscommunications between staff in management and staff in field, miscommunications between the Transport Department and the Mechanical Division, conflicts between the Driver's Union and WMD, could be said main obstacles to maximize project outcome.

3-5 Conclusion

High Relevance indicates the high requirement of DCC and citizens in Dhaka City for the Project. Although the sincere efforts of counterparts and JET members, the Project's performance are relatively low as a whole, particularly in regard to "Sustainability" due to the insufficient institutional preparation of WMD. However, WBA activities were effectively conducted and left a variety of positive legacies under the current circumstance. A number of CIs and cleaners have significantly developed their capacities through participating WBA activities. Moreover, the satisfaction towards SWM among citizens is increased due to high participation to community activities through PCSP. In the future, it is strongly expected that continues operation of WBA for further improvement of SWM in Dhaka city by effective utilization of inputs such as utilization of all 100 waste collection vehicles provided by EGAP.

3-6 Recommendation

- 1) Complete allocation of necessary staff for the Waste Management Department (WMD)

In order to ensure project sustainability, It is strongly required that WMD complete allocation of necessary staff immediately.

- 2) Encourage communication in various levels

- Further information sharing among CEO, CWMO, group leaders, WBA core members, JET, PCSP, driver and cleaners is needed. Promoting collaboration between WMD and other related departments in DCC are required.

- Under strong leadership of CEO and CWMO, WMD is recommended to strengthen communication and relationship with other departments like Transportation Department and Engineering Department

- 3) Expand WBA

- It is recommended that WMD promote the establishment of ward office in all wards in the city.

- To expand WBA activities to all wards in Dhaka city, WMD is needed to effectively utilize WBA core group members' ability and experience acquired in the Project.

- Awareness raising of citizens through Environmental education and other activities for proper SWM is also indispensable.

- 4) Improve the Landfill Operation and Management

- WMD is strongly recommended to complete necessary permanent staff allocation to Landfill Management Unit in the Matuail and the Amin Bazar immediately.

- DCC is strongly recommended to improve cooperation and collaboration between heavy equipment operators and other operators for managing the Matuail landfill site properly.

- It is strongly expected that DCC negotiate with electric company for getting stable power supply in order to improve the landfill management.

3-7 Lessons Learned

- Negative impact of delay of WMD staffing

Official establishment of WMD and allocation of necessary WMD's officials were so essential for capacity

development of SWM that these delay has been always critical obstructs. For future planning, more thorough feasibility examination of preconditions and important assumptions are required.

- Integrated SWM by WBA

WBA has contributed to increase of the understanding of DCC C/Ps for the importance of integration of SWM work across the different fields in DCC such as conservancy, transportation, and mechanic. WBA contributed that C/Ps have understand SWM as a whole system.

- Enhancement of motivation and dignity for SWM

The Project strategically enhances motivation and dignity of SWM personnel in DCC, especially CIs and cleaners who have critical roles in SWM. In developing countries, it is usual that low income or low social standing worker engage waste collection and management. Therefore, it is significantly important to take social and cultural background into account.

- Effectiveness of programme approach

Programme approach, which various interrelated inputs such as technical cooperation and actual improvement of environment by construction of landfill sites and procurement of collection vehicle, was effective to strengthen the overall capacity of SWM in Dhaka.