

Chapter L

*Estimated demand of initial cost for
sanitary landfill project
in local authorities*

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L.1 Population in local authorities based on observational study

As mentioned earlier, The Ministry of Home Affairs Provincial Councils & Local Government has been carried out of observational study of “Need assessment survey on funding for solid waste management in local authorities”. We have received the answer from 35 of authorities out of 75 of authorities (as at 10th Oct 2003).

Based on survey results the most of the local authority have demand of building of sanitary landfill facilities (Refer to observational study results). The required capacity of sanitary landfill site shall be calculated by based on population.

Distribution map of population is shown in Figure L-1.

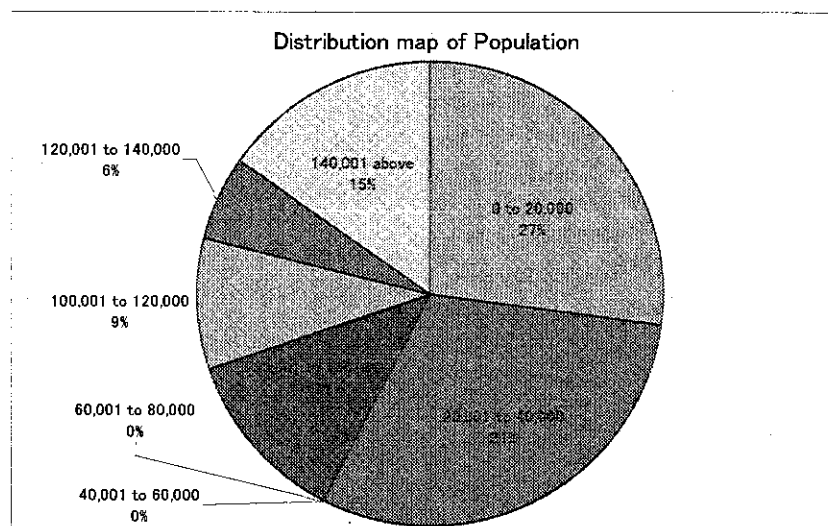


Figure L-1: Distribution map of population by observational survey

L.2 Estimate demand of initial investment cost for sanitary landfill project in local authorities

As mentioned earlier, suitable sanitary landfill type is categorized based on daily waste generation. Daily waste generation shall be calculated by formula as below;

$$DWG = (\text{Population}) \times (\text{Daily rate of waste})$$

Where:

DWG: Daily waste generation (ton/day)

Population: Persons

Daily rate of waste: 0.80 kg/day.person

Also the required capacity of sanitary landfill site shall be calculated by formula as below;

$$RQC = (DWG) \times (\text{Life time}) \times (\text{coefficient})$$

Where : Population (Persons)
Daily rate of waste = 0.80 kg/day
Life time = 20 years
Coefficient = 1.2 Total volume of waste (1.0) + covering soil (0.2)

Initial cost for sanitary landfill shall be estimated based on DWG and RQC from Figure12-1 and compost system shall be estimated from Table12-3. The result is summarised in Table L-1.

Table L-1: Estimate initial investment cost for sanitary landfill in local authorities

ID	Name	Category	Population	Weight of waste (ton/day) Rate of Waste (0.8kg/person.day)	Weight of waste (ton/year)	Weight of waste in 20years (ton)	Required Exrent Capacity (Cum)	Suitable Type of SWM Project	Estimated Initial Investment Cost	
									Rs/ton	Amount
1	Negombo Municipal Council	MC	158,237	127	46,355	927,100	1,310,000	Landfill (Large)	50	46,355,000
2	Kandy Municipal Council	MC	140,000	112	40,880	817,600	1,150,000	Landfill (Large)	50	40,880,000
3	Kalmunai Municipal Council	MC	99,316	79	28,835	576,700	810,000	Landfill (Large)	60	34,602,000
4	Galle Municipal Council	MC	84,099	67	24,455	489,100	690,000	Landfill (Large)	68	33,259,000
5	Batticaloa Municipal Council	MC	83,101	66	24,090	481,800	680,000	Landfill (Large)	69	33,244,000
6	Jaffna Municipal Council	MC	80,563	64	23,360	467,200	660,000	Landfill (Large)	70	32,704,000
7	Kurunagala Municipal Council	MC	26,391	21	7,665	153,300	220,000	Landfill (Medium)	117	17,936,000
8	Dehiwala- Mt. lavinia Municipal Council	MC	209,787	168	61,320	1,226,400	1,730,000	Landfill (Large)	50	61,320,000
9	Matale Municipal Council	MC	38,000	30	10,950	219,000	310,000	Landfill (Medium)	81	17,739,000
10	Maharagama Pradeshiya Sabha	PS	180,112	144	52,560	1,051,200	1,480,000	Landfill (Large)	50	52,560,000
11	Wattala Pradeshiya Sabha	PS	160,000	128	46,720	934,400	1,320,000	Landfill (Large)	50	46,720,000
12	Attanagalla Pradeshiya Sabha	PS	154,358	123	44,895	897,900	1,270,000	Landfill (Large)	50	44,895,000
13	Katana Pradeshiya Sabha	PS	149,734	120	43,800	876,000	1,240,000	Landfill (Large)	50	43,800,000
14	Mahara Kadawata Pradeshiya Sabha	PS	104,708	84	30,660	613,200	870,000	Landfill (Large)	54	33,113,000
15	Seethawaka Pradeshiya Sabha	PS	112,531	90	32,850	657,000	930,000	Landfill (Large)	52	34,164,000
16	Ambilipitiya Pradeshiya Sabha	PS	138,431	111	40,515	810,300	1,140,000	Landfill (Large)	50	40,515,000
17	Kelaniya Pradeshiya Sabha	PS	104,708	84	30,660	613,200	870,000	Landfill (Large)	54	33,113,000
18	Kattankudy Urban Council	UC	36,601	29	10,585	211,700	300,000	Landfill (Medium)	82	17,359,000
19	Panadura Urban Council	UC	33,432	27	9,855	197,100	280,000	Landfill (Medium)	90	17,739,000
20	Peliyagoda Urban Council	UC	31,880	26	9,490	189,800	270,000	Landfill (Medium)	90	17,082,000
21	Hikkaduwa Urban Council	UC	27,500	22	8,030	160,600	230,000	Landfill (Medium)	101	16,221,000
22	Gampola Urban Council	UC	24,283	19	6,935	138,700	200,000	Landfill (Medium)	120	16,644,000
23	Chilaw urban Council	UC	24,105	19	6,935	138,700	200,000	Landfill (Medium)	120	16,644,000
24	Weligama Urban Council	UC	21,783	17	6,205	124,100	180,000	Landfill (Medium)	180	22,338,000
25	Point Pedro Urban Council	UC	20,545	16	5,840	116,800	160,000	Landfill (Medium)	240	28,032,000
26	Valrettiturai Urban Council	UC	18,000	14	5,110	102,200	140,000	Compost Palnt		2,000,000
27	Balangoda Urban Council	UC	14,982	12	4,380	87,600	120,000	Compost Palnt		1,500,000
28	Nawalapitiya urban council	UC	13,533	11	4,015	80,300	110,000	Compost Palnt		1,200,000
29	Talawakelle-Lindula urban Council	UC	12,500	10	3,650	73,000	100,000	Compost Palnt		1,000,000
30	Hambantota Urban Council	UC	11,213	9	3,285	65,700	90,000	Compost Palnt		1,000,000
31	Horana Urban Council	UC	10,099	8	2,920	58,400	80,000	Compost Palnt		1,000,000
32	Haputale urban Council	UC	8,862	7	2,555	51,100	70,000	Compost Palnt		1,000,000
33	Minuwangoda Urban Council	UC	7,658	6	2,190	43,800	60,000	Compost Palnt		1,000,000
34	Bandarawela Urban Council	UC	7,318	6	2,190	43,800	60,000	Compost Palnt		1,000,000
35	Hatton-Dikoya urban Council	UC	n/a							
Total			2,348,370	1,876	684,740	13,694,800	19,330,000			809,678,000

Total demand of initial investment cost is about Rs 809million. However this result is based on answer from only 34 authorities (except Hatton-Dikoya UC) out of 75 authorities. Therefore total demand of project cost would be presumed more than 1,500million Rs.

Chapter M

Financial Scheme for SWM Improvement

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M.1 Introduction

The solid waste collection and disposal are the services to be provided by the Local Authorities in Sri Lanka. This function, however, is not well performed by the Local Authorities due to several reasons such as the shortage of financial resources and lack of implementation capability. While the improvement of SWM services will be further required to cope with rapid urbanization in the future, the current Local Authorities' fiscal system may not allow their initiatives to improve SMW services. The problem is twofold. On one hand, the annual grants and other fiscal allocations are inadequate. On the other, these institutions have not shown enough capability and commitment to planning resource generation and utilization. In most local government areas, the rates are not properly collected and local political leadership obstructs the rationalization of assessment rates in keeping with the government policy and the rates structure. Most local authorities do not see revenue collection as part of their development functions. The law adequately empowers them to generate revenues locally by rates, taxes and license duties. In this Chapter, a financial scheme is developed that supports Local Authorities to implement self-sustainable SWM program with initial financial assistance from the central government.

M.2 Model Project and Medium Term Funding Requirement

A Model Project is designed to estimate financial burden on Local Authorities. As the Model Project is only for grasping fiscal impact to Local Authorities, simplified project is designed based on the pilot projects implemented under this study and the Prototype Project appeared in early chapter of this report. The medium term funding requirement for solid waste management improvement in secondary cities is also estimated by using the Model Project and the results of questionnaire survey on Local Authorities.

M.2.1 The Model Project and Its Cost

The volume of solid waste can be reasonably estimated based on the population and economic activities. The incremental cost for improved services, however, depends on the current service level and associated expenditure, because all Local Authorities have already undertaken solid waste collection and disposal to some extent. Explained below is the Model Project for a city with the population of 50,000. The initial investment cost with contingencies is Rs. 30,000,000 and annual operation and maintenance cost is Rs. 15,000,000. The initial investment cost consists of Rs. 20,000,000 for Landfill Site Development with one unit of Bulldozer, Rs. 7,500,000 for Tractors with Trailer for collection and transport, and Rs. 2,500,000 as contingency. Only a half of the required Tractor/Trailer cost is included as initial investment, assuming that the Authority already has a half of them for on-going services. With another assumption that the Authority is spending Rs 10,000,000 annually for on-going solid waste related services, the incremental expenditure of the Authority is arrived by deducting current expenditure from the total cost.

➤ Population : 50,000

- Volume of Solid Waste : 40ton/day (15,000ton/year)
- Current Expenditure for SWM : Rs. 10,000,000/year
- Investment and O&M Cost under New Project:

Table M-1: Initial Investment Cost for Model Project

Item	Cost (Rs.)	Lifetime (Yr)	Remarks
1. Landfill for Disposal			
1.1 Landfill Site Dev.	13,000,000	20	Capacity: 300,000ton
1.2 Bulldozer	7,000,000	7	D4 Class 1 unit
2. Collection			
2.1 Tractor/Trailer	7,500,000	7	Unit cost: Rs. 1,500,000 Requirement: 10 units Existing: 5 units; New: 5
3. Contingency	2,500,000		
TOTAL	30,000,000		

Note: JICA Study Team Estimates

Table M-2: Annual Operation and Maintenance Cost

Item	Cost (Rs.)	Remarks
1. Disposal at Landfill Site	3,000,000	Rs. 200/ton (manpower, material, operation and maintenance)
2. Collection and Transport	12,000,000	Rs. 800/ton (collection and sweeping; manpower, material, operation and maintenance)
TOTAL	15,000,000	

Note: JICA Study Team Estimates

M.2.2 Medium Term Funding Requirement

The pace of urbanization of Sri Lanka is relatively slow in Asia Region. But, it is surely accelerated in the future if the industrialization and expansion of service sector are taken place as the Government so expects. Among total 300 Local Authorities, about 10%, say 30 LAs, require the modernized solid waste management system urgently. In this case, total investment cost would be around Rs. one billion. It is not necessary to start all projects immediately, but the first 30 Local Authorities might commence the project within next five years, as the number of cities which requires new investment increases with the pace of urbanization in Sri Lanka.

M.3 Financial Scheme

The Financial Scheme proposed in this Chapter, is the system for the Local Authorities to implement solid waste management project with their own initiatives and plans, and with the financial support from the Central Government.

M.3.1 The Principles

The Financial Scheme is designed and operated with the following principles.

- The Scheme is to provide financial support from the Central Government to Local Authorities to carry out solid waste management improvement projects.
- The support under the Financial Scheme covers a part of the initial investment costs.
- The mode of financial support is both grant and low-interest loan. The share of grant and loan is determined based on the affordability and financial strength of the Local Authorities.
- The Local Authorities, who apply to the Scheme, has to allocate a part of the initial investment costs, at least for the land acquisition and compensation, and to develop and implement the revenue enhancement measures to generate necessary funds for recurrent expenditure and debt service for the loan.

M.3.2 Management of Financial Scheme

The operating entity of the Financial Scheme is the Central Government. The Ministry of Home Affairs, Provincial Councils and Local Government (MOHAPDLG) assumes control and full responsibility of this Scheme. Under the guidance of the MOHAPDLG, the proposed Nation Support Center for the Improvement of SWM in LAs (NSCISWM) will be functioning as the secretariat of the Scheme. The relevant authorities' roles and functions are as follows;

- Ministry of Home Affairs, Provincial Councils and Local Government (MOHAPDLG): The Ministry assumes overall responsibility of the Scheme. The decision on granting assistance to Local Authorities is jointly made with the Ministry of Finance and the Ministry of Policy Development and Implementation. The secretarial work is done at NSCISWM.
- Nation Support Center for the Improvement of SWM in LAs (NSCISWM): The Support Center is established in the MOHAPDLG, and provides the comprehensive support to Local Authorities who is planning and implementing the solid waste management improvement projects. The support in technical and engineering aspects is the main function of the Support Center. Consultation for revenue enhancement of Local Authorities is also provided in cooperation with the Sri Lanka Institute for Local Government (SLILG). For the Financial Scheme, the Support Center will have the

functions for appraising the technical and financial feasibility. The appraisal of financial aspects is done with the financial institutions.

- Financial Institution(s): The Financial Institution administers the disbursement and repayment of the loan component. At the appraisal stage of the project, the Financial Institution will prepare the financial appraisal documents. The candidates for the Financial Institution are the Local Loan Development Fund (LLDF), Development Banks, and Commercial Banks.
- Local Authorities: The Local Authorities prepare the implementation plan of the project. The implementation plan includes, but not limited to, the Long Term Solid Waste Management Plan, Project Implementation Plan, and Financial Plan including Revenue Enhancement Program. The Local Authorities may utilize the resources and support of the Support Center, if required.

M.3.3 The Financial Scheme

The proposed Financial Scheme for Solid Waste Management Improvement Project is designed as follows;

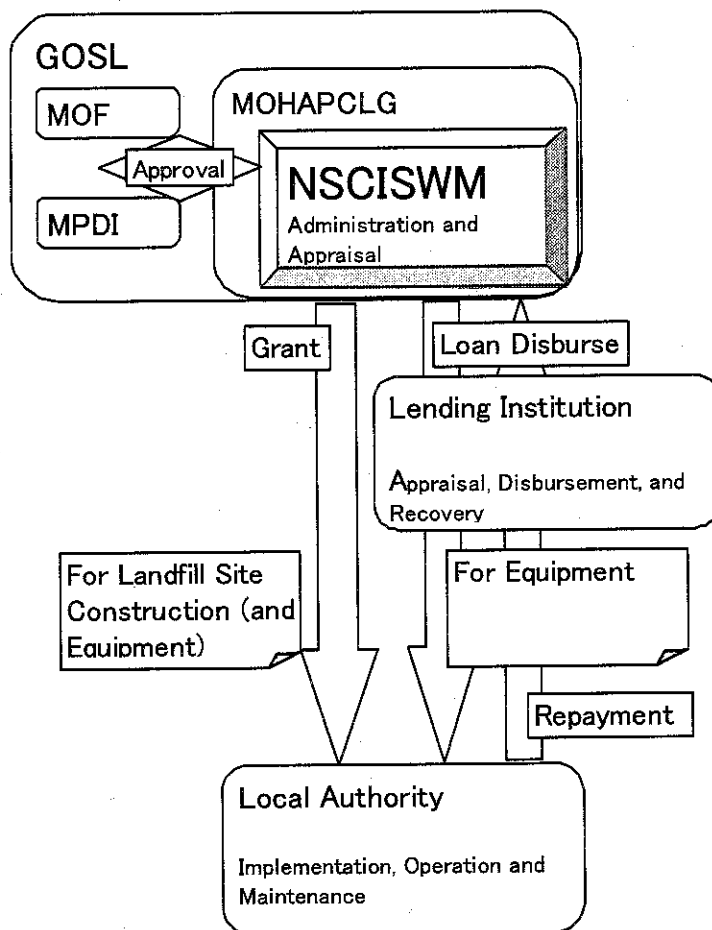


Figure M-1: Financial Scheme for SWM Improvement Project

Under the Financial Scheme, the Central Government shares the burden for initial investment in the form of grant and low-interest loan. The true cost for the Central Government depends on the ratio of grant and loan for initial investment support, and the terms of the loan. In order to reduce the burden of the Central Government to the extent possible, and in view of sustainability of the project undertaken by the Local Authorities, it is recommended that the cost for the equipment which requires re-investment periodically, be provided in the form of the loan. The loan may be extended again for renewal of equipment, if the repayment is completed. In the Model Project, the ratio of grant and loan is one to one. This ratio may vary depending on the affordability of the Local Authorities. If weakness is observed in affordability, part of the equipment may also be covered with the grant from the Central Government¹. The repayment of the loan is within seven years, taking into account the renewal cycle of equipment. The interest rate of the loan is recommended to reduce to 4% per annum, from the current interest rate of 6.5% provided for the same purpose by LLDF, considering the declining trend of interest rate in Sri Lanka.

M.3.4 Source of Fund

The projects are implemented with the subsidies from the Central Government. The Central Government is required to appropriate the fund in the Budget. The fiscal condition, however, does not easily allow the addition of Rs. one billion, and may require additional issue of Government Bond. Funding in local market becomes another heavy burden to the Central Government Budget. On the other hand, the Project objectives are to improve environment and sanitary conditions, and to strengthening Local Authorities capacity, for which major donors place the high priorities of their assistance. The donors may favourably consider providing assistance to the project of this nature. For the Government, grant assistance may be the best solution. In case the grant assistance is not available, alternative may be to obtain concessional loan from the donors such as the World Bank, ADB, or from the JBIC².

M.4 Sustainability of the Project

In this section, financial calculation is made to estimate the additional expenditure of the project, and to test the financial sustainability. The following assumptions are used for this purpose;

- Landfill Site Construction : Rs. 13,000,000 (Grant)
- Equipment : Rs. 14,500,000 (Loan, 4%p.a., 7 years repayment)
[Annual Debt Service: Rs, 2,400,000]

¹ In case of water supply project in rural areas, 80% of the total investment is covered with the grant of Central Government.

² In case of JBIC ODA loan, the project may be qualified for preferential term; interest rate of 0.75% and 40 years repayment, under the category of Waste Treatment.

- Operation and Maintenance : Rs. 15,000,000/year
[Incremental Expenditure: Rs. 5,000,000]

The Figure M-2 indicates the project cost stream. In the first year, the investment for landfill site and equipment is included in addition to the operation and maintenance. In the eighth year, the cost for renewal of equipment is added.

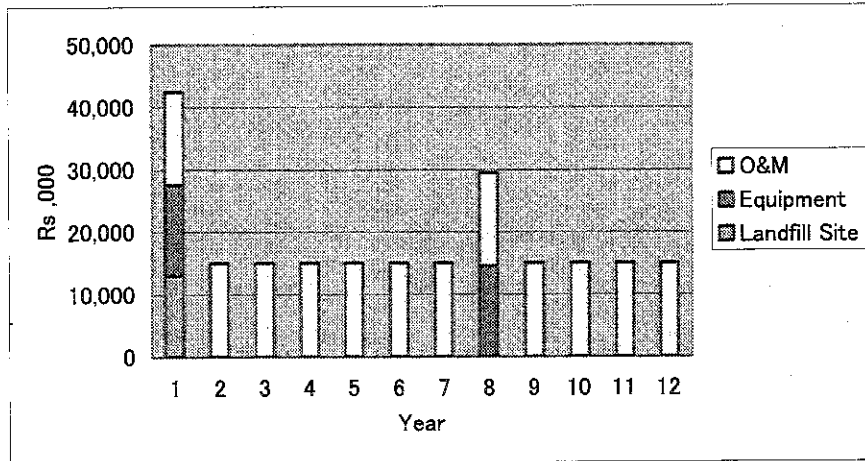


Figure M-2: Total Expenditure of Model Project

Of the total expenditure of the above, the effect of reducing burden of Local Authority by mobilizing grant and loan is shown in Figure M-3. Of the total initial investment, the cost for landfill site construction is provided as a grant. Thus, it is deducted from the expenditure of the Local Authority. The cost for equipment is also deducted from initial expenditure as it is covered with the loan, and distributed to seven years as the repayment of principal and interest of the loan. As a result, the real cash-flow of the Local Authority is the annual expenditure of Rs. 2,400,000 for initial investment.

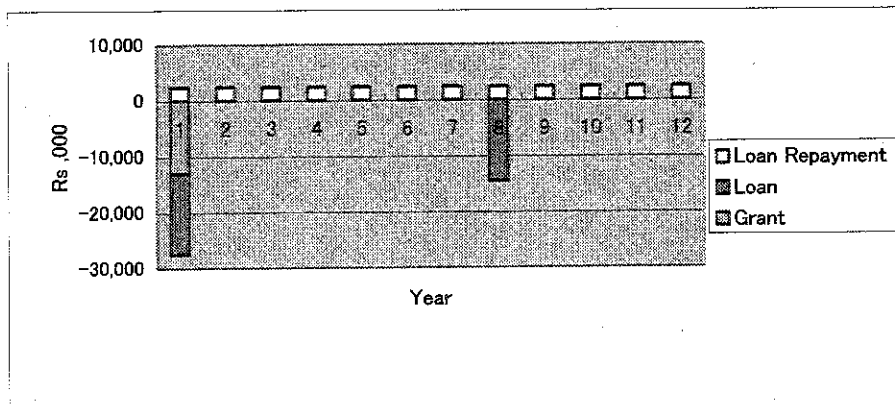


Figure M-3: Effect of Grant and Loan under the Financial Scheme

The cash-flow of the Project is shown in Figure M-4. Annual expenditure of this Local Authority will be Rs. 17,400,000, consisting of Rs. 15,000,000 for operation and maintenance, and Rs. 2,400,000 for debt services. Assuming that this Local Authority has been spending Rs. 10,000,000 annually for

on-going solid waste management services, the additional expenditure of improved services would be Rs. 7,400,000.

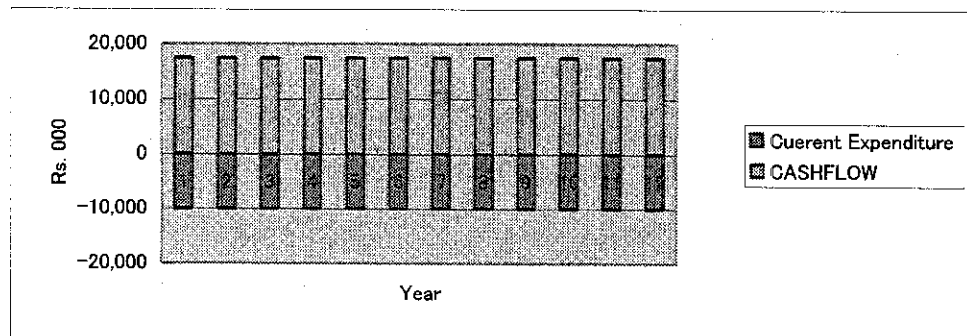


Figure M-4: Cash-flow for Local Authority

What would be the impact of this additional expenditure on fiscal operation of this Local Authority? The revenue collected by the Local Authorities of seven Pilot Municipalities under this study is around Rs. 1,000 per capita. Suppose the population of this Model Project Municipality is 50,000, the generated total revenue would be in the range of Rs. 50,000,000. The additional cost to be born for the implementation of the Model Project is Rs. 7,400,000, which is about 15% of the total revenue, or equal to Rs. 150 per capita. Since present level of revenue collection by the Local Authorities is far below the adequate level, revenue enhancement of 15% would be in the quite feasible range. The willingness to pay for improved solid waste management services, which was surveyed in this study, shows an encouraging result. The willingness to pay is about Rs. 1,000 per family per year, which is enough to cover the required Rs. 150 per person. IF appropriate revenue enhancement measures are taken, the proposed Financial Scheme would be concluded as a feasible and sustainable option for the Local Authorities.

M.5 Preconditions for Financial Scheme

In order to maintain the efficiency and sustainability of the project, it is important to seek the commitment for better SWM services from the participating Local Authorities. The following are the conditions to the participating Local Authorities and the Central Government as well.

- The Local Authority prepares the Long Term Solid Waste Management Plan associated with the implementation project of the Project.
- The Local Authority develops revenue enhancement measures, and obtains approval of these measures at the Council in the course of budget process.
- The Local Authority secures the fund for land acquisition and compensation for the Project in the annual budget, and obtains the Council approval for the same.
- The Local Authority prepares the full accounts for SWM services to understand the cost of solid waste management services, and makes the same available to the public.

- The Local Authority carries a study of subcontracting the work to private sector for efficiency improvement, and implements it to the extent possible.
- The Central Government encourages the Local Authorities initiatives for revenue enhancement, and strengthen the programs of the Support Center and SLILG for Local Authorities capacity development.

The Financial Scheme proposed here is a model to implement a project with own revenue enhancement, and with the support from the Central Government. In this context, it is worth to note that the project is not only for the better solid waste management, but also for better management in Local Authorities in general. It may be concluded that the project process is an important exercise to strengthen the governance mechanism in the Local Authorities.

M.6 Measures to Strengthen Revenue Collections

The success of overall administration of a Local Authority depends on the implementation of a sound financial policy and measures adopted by the Authority. With regard to revenue enhancement, measures include identification of new sources of revenue and regular revision of revenue tariffs and applicable percentages in order to enhance revenue and to keep pace with inflation of the economy.

M.6.1 Program for Regular Revision of Local Tax Bases³

It appears that Local Authorities generally do not adhere to an equitable time frame for revision of tax bases in respect of self generated revenues. It may be owing to lack of coordinated and efficient management of the revenue administration system. Therefore, a time frame for the purpose has to be proposed for consideration by respective councils. The following general items of self generated revenues with time frames are presented for consideration. Time frames are necessary to be observed in view of inflationary conditions and to keep up with the rising costs of services.

Source of Revenue	Proposed Time Frame for Revision
1. Property Rates	Every Five-years
2. Rents on Council Properties	Every Three-year
3. Trade Licence Fees/Trade Tax	Annually
4. Entertainment Tax	Every Three-year
5. Service Charges	Annually
6. Vehicles and Animal Tax	Annually
7. Miscellaneous	Annually

³ How to Establish and Maintain An Efficient and Effective Revenue Administration System in An Urban Local Authority, Financial Management Training Programme Sub-Module 03, SLILG, March 2003

Chapter N

Scope of Work and Minutes of Meetings

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Chapter N Scope of Work and Minutes of Meetings

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N.1 Scope of Work for The Study on Improvement of Solid Waste Management in Secondary Cities in Sri Lanka

SCOPE OF WORK

FOR

THE STUDY ON IMPROVEMENT OF SOLID WASTE MANAGEMENT IN
SECONDARY CITIES IN SRI LANKA

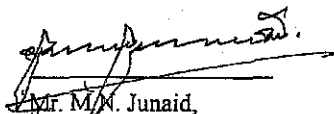
AGREED UPON BETWEEN

MINISTRY OF PUBLIC ADMINISTRATION, HOME AFFAIRS, PROVINCIAL
COUNCILS, LOCAL GOVERNMENT AND SOUTHERN DEVELOPMENT

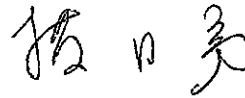
AND

THE JAPAN INTERNATIONAL COOPERATION AGENCY

Colombo: 3 October 2001

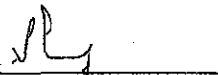


Mr. M/N. Junaid,
Secretary,
Ministry of Public Administration, Home Affairs,
Provincial Councils, Local Government and
Southern Development



Prof. Isamu Yokota,
Team Leader,
Preparatory Study Team,
Japan International Cooperation Agency

Witnessed by:



Mrs. Sujatha Cooray
Director,
Japan Division,
Department of External Resources,
Ministry of Finance and Planning

I. INTRODUCTION

In responses to the request of the Government of Democratic Socialist Republic of Sri Lanka (hereinafter referred to as "the Government of Sri Lanka"), the Government of Japan decided to conduct the Study on Improvement of Solid Waste Management in Secondary Cities in Sri Lanka (hereinafter referred to as "the Study") in accordance with the relevant laws and regulations in force in Japan.

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programmes of the Government of Japan, will undertake the Study in close cooperation with the authorities concerned of the government of Sri Lanka.

The present document sets forth the scope of work with regard to the Study.

II. OBJECTIVES OF THE STUDY

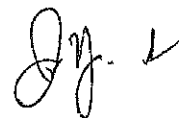
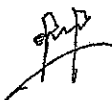
The objectives of the Study are:

1. to formulate a solid waste management plan for the selected local authorities
2. to jointly implement pilot projects aiming at improvement of some aspects of solid waste management
3. to prepare guidelines for local authorities for improvement of solid waste management
4. to prepare policy recommendations for the central government
5. to transfer technology to the counterpart personnel in the course of the Study

III. STUDY AREA

The Ministry of Public Administration, Home Affairs, Provincial Councils, Local Government and Southern Development (hereinafter referred to as "the Ministry") has recommended that the following cities be considered as candidate model cities for the Study.

1. Negombo Municipal Council
2. Gampaha Urban Council
3. Dehiwala-Mt. Lavinia Municipal Council
4. Ratnapura Urban Council
5. Kandy Municipal Council
6. Matale Municipal Council
7. Nuwara-Eliya Municipal Council
8. Badulla Urban Council
9. Bandarawela Urban Council
10. Kataragama Pradeshiya Sabha
11. Chilaw Urban Council



Through the discussion, both the Ministry and the JICA Preparatory Study Team have agreed that model cities shall be no more than eight (8) cities, and selected after completion of field surveys of the Preparatory Study.

IV. SCOPE OF THE STUDY

1. Formulation of Solid Waste Management Plan
 - (1) Collection and analysis of the related data and information
 - (2) Site observation and analysis
 - (3) Field surveys
 - (4) Basic strategy
 - (5) Facility plan
 - (6) Operation and maintenance plan
 - (7) Institutional and organizational plan
 - (8) Preliminary cost estimation
 - (9) Evaluation
 - (10) Identification of pilot projects
2. Joint Implementation of Pilot Projects
3. Preparation of Guidelines for Local Authorities for Improvement of Solid Waste Management
4. Preparation of Policy Recommendations for the Central Government

V. REPORTS

JICA shall prepare and submit the following reports in English to Government of Sri Lanka.

1. Inception Report
Forty (40) copies will be submitted at the commencement of the Study in Sri Lanka.
2. Progress Report
Forty (40) copies will be submitted.
3. Interim Report
Forty (40) copies will be submitted.
4. Draft Final Report
Fifty (50) copies will be submitted.
5. Final Report
Sixty (60) copies will be submitted.

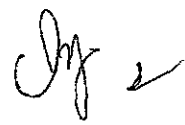
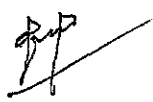


VI. STUDY SCHEDULE

A tentative schedule of the Study is shown in Annex 1.

VII. UNDERTAKING OF THE GOVERNMENT OF SRI LANKA

1. To facilitate the smooth conduct of the Study the Government of Sri Lanka shall take necessary measures.
 - (1) to secure the safety of the Japanese Study team;
 - (2) to permit the members of the Japanese study team to enter, leave and sojourn in Government of Sri Lanka for the duration of their assignment therein and exempt them from alien registration requirements and consular fees;
 - (3) to exempt the members of the Japanese study team from taxes, duties and other charges on equipment, machinery and other materials brought into Sri Lanka for the conduct of the Study;
 - (4) to exempt the members of the Japanese study team from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Japanese study team for their services in connection with the implementation of the Study;
 - (5) to provide necessary facilities to the Japanese study team for remittance as well as utilization of the funds introduced into Sri Lanka from Japan in connection with the implementation of the Study;
 - (6) to secure permission for entry into private properties or restricted areas for the conduct of the Study;
 - (7) to secure permission for the Japanese study team to take all data and documents including photographs and maps related to the Study out of Sri Lanka to Japan, and
 - (8) to provide medical services as needed. Its expenses will be chargeable to members of the Japanese study team.
2. The Government of Sri Lanka shall bear claims, if any arise against members of the Japanese study team resulting from, occurring in the course of, or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful mis-conduct on the part of the members of the Japanese study team.



3. Ministry of Public Administration, Home Affairs, Public Provincial Councils, Local Government and Southern Development (hereinafter referred to as "the Ministry") shall set as a counterpart agency to the Japanese study team and also as a coordinating body in relations with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.
4. The Ministry shall, at its own expense, provide the Japanese study team with the following, in cooperation with other organizations concerned:
 - (1) available data and information related to the Study,
 - (2) counterpart personnel,
 - (3) suitable office spaces with necessary equipment in Colombo, and respective cities, if required.
 - (4) credentials or identification cards.

VIII. UNDERTAKING OF JICA

For the implementation of the Study, JICA shall take the following measures:

1. to dispatch at its own expense, study teams to Sri Lanka, and
2. to pursue technology transfer to the Sri Lanka counterpart personnel in the course of the Study.

IX. CONSULTATION

JICA and the Ministry shall consult with each other in respect of any matter that may arise from or in connection with the Study.



Annex 1

The Study On Improvement Of Solid Waste Management In Secondary Cities In Sri Lanka

Tentative Schedule

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Work Schedule	[Solid black bar indicating work schedule across all months]																		
Report Presentation	▲					▲		▲							▲			▲	
	I/R					P/R		IT/R							DF/R			F/R	

NOTE IC/R: Inception Report
 P/R: Progress Report
 IT/R: Interim Report
 DF/R: Draft Final Report
 F/R: Final Report

9-N

N.2 Minutes of Meeting

The Study on Improvement of Solid Waste Management in Secondary Cities in Sri Lanka

Minutes of Meeting

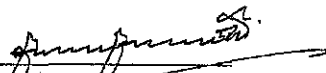
The Study on Improvement of Solid Waste Management in Secondary Cities in Sri Lanka

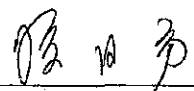
Agreed upon between

Ministry of Public Administration, Home Affairs, Provincial Councils, Local
Government and Southern Development
And


The Japan International Cooperation Agency

Colombo, October 3, 2001.


Mr. M.N. Sumaid
Secretary,
Ministry of Public Administration, Home Affairs,
Provincial Councils, Local Government
and Southern Development


Prof. Isamu Yokota,
Team Leader,
Preparatory Study Team,
Japan International Cooperation Agency

Witnessed by:


Mrs. Sujatha Cooray
Director,
Japan Division,
Department of External Resources,
Ministry of Finance and Planning

Minutes of Meeting

In response to the official request of the Government of Democratic Socialist Republic of Sri Lanka (hereinafter referred to as "the Government of Sri Lanka"), the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Preparatory Study Team, headed by Prof. Isamu Yokota (hereinafter referred to as "the Team"), to Sri Lanka from 24 September to 18 October, 2001 to discuss the Scope of Work (hereinafter referred to as "S/W") for the Study on the Improvement of Solid Waste Management in Secondary Cities in Sri Lanka (hereinafter referred to as "the Study").

The Team carried out field surveys and held a series of discussions with officials of Ministry of Public Administration, Home Affairs, Provincial Councils, Local Government and Southern Development (hereinafter referred to as "the Ministry"), and some cities and other relevant organizations. The list of attendants is shown in Appendix 1.

This document sets forth the main issues discussed in the course of the preparation of S/W for the purpose of better understanding on S/W.

1. Title of the Study

Both sides agreed that the title of the Study is "The Study on Improvement of Solid Waste Management in Secondary Cities in Sri Lanka".

2. The Model Cities Subject to the Study for Waste Management Plan

The model cities subject to the study for waste management plan shall be no more than 8 cities, and be selected after completion of field surveys of the Preparatory Study.

3. Target Year of the Master Plan

The target year for the solid waste management plan will be decided through the consultation between the Sri Lanka side and the JICA Study Team.

4. Steering Committee

Both sides agreed that the Government of Sri Lanka would establish a Steering Committee consisting of representatives of the following organizations under the chairmanship of the secretary of the Ministry.

Sri Lanka Side

- (1) Ministry of Public Administration, Home Affairs, Provincial Councils, Local Government and Southern Development
- (2) Ministry of Finance and Planning
- (3) Ministry of Health, Indigenous Medicine and Social Services

- (4) Ministry of Urban Development, Public Utilities, Housing and Sports
- (5) Ministry of Transport and Environment

Japanese Side

- (1) Embassy of Japan
- (2) JICA Office
- (3) JICA Study Team

Other Organization(s)

Other organization(s) upon agreement between the Ministry and the JICA Study Team
The Sri Lanka side will provide the Study Team with a list of above members before the arrival of the Study Team.

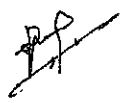
The role of Steering Committee is mainly to discuss and make comments on the reports mentioned on Scope of Work and other important matters arising in connection with the study in Sri Lanka side.

5. Undertaking of the Government of Sri Lanka

The Ministry of Public Administration, Home Affairs, Provincial Councils, Local Government and Southern Development has agreed the following:

- (1) to provide the JICA Study Team with:
 - a. counterpart personnel
 - b. an office equipped with the following:
 - (i) Desks and chairs for 10 persons
 - (ii) Air conditioning
 - (iii) Two (2) telephone lines
 - (iv) One meeting table with 10 chairs
- (2) to ensure that participating cities will provide the JICA Study Team with
 - a. counterpart personnel
 - b. an office equipped with the following:
 - (i) Desks and chairs for 5 persons
 - (ii) Two (2) telephone lines

The Ministry requested that JICA would provide vehicles necessary for conducting the Study.
The Preparatory Mission agreed to convey the request to JICA Headquarters.



Appendix 1

List of Attendance

Sri Lanka Side

Ministry of Public Administration, Home Affairs, Provincial Councils, Local Government and Southern Development

Ms. N. Mohottala, Additional Secretary
Mr. Sunil Fernando, Senior Assistant Secretary
Mr. Eric Illayaparachchi, Director (Planning)
Mr. P.P. Noordeen, Assistant Director, Planning
Mr. Viraj Perera, Assistant Secretary

Japanese Side

Embassy of Japan

Ms. Noriko Iseki, First Secretary

JICA Office

Mr. Seiji Kaiho, Resident Representative
Mr. Yoshihisa Onoe, Assistant Resident Representative

Preparatory Study Team

Prof. Isamu Yokota, The Team Leader of JICA Preparatory Study Team
Mr. Yataka Fukase, JICA Preparatory Study Team
Mr. Kiichiro Sakaguchi, JICA Preparatory Study Team
Mr. Akio Ishii, JICA Preparatory Study Team



Minutes of Meeting

The Study on Improvement of Solid Waste Management in
Secondary Cities in Sri Lanka

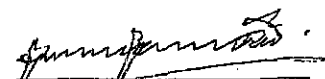
Agreed upon between

Ministry of Public Administration, Home Affairs, Provincial Councils, Local Government and
Southern Development

And

The Japan International Cooperation Agency

Colombo, 26 November 2001

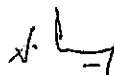


Mr. M.N. Junaid
Secretary,
Ministry of Public Administration, Home Affairs,
Provincial Councils, Local Government
and Southern Development



Mr. Seiji Kaiho
Resident Representative
Japan International Cooperation Agency
Sri Lanka Office

Witnessed by:



Mrs. Sujatha Cooray
Director,
Japan Division,
Department of External Resources,
Ministry of Finance and Planning

Minutes of Meeting

The Japan International Cooperation Agency (JICA) dispatched the Preparatory Study Team headed by Prof. Isamu Yokota (herein referred to as "the Team") to Sri Lanka to discuss the Scope of Work (S/W) for the Study on Improvement of Solid Waste Management in Secondary Cities in Sri Lanka (herein referred to as "the Study").

The Team has continued carrying out field surveys and holding a series of discussions with officials of Ministry of Public Administration, Home Affairs, Provincial Councils, Local Government and Southern Development (herein referred to as "the Ministry"), and some cities and other relevant organizations after having signed the S/W and the minutes of meeting (M/M) on 3rd October.

This document sets forth main issues discussed in connection with the S/W and M/M for the purpose of better understanding on the S/W and revising the M/M.

1. Model Cities subject to the Study for Solid Waste Management Plan

Both the Ministry and the JICA have agreed the following:

(1) Factors Considered for Selection of Model Cities

In selection of cities subject to the study for waste management plan, the factors such as the following have been considered:

- a. Characteristics and Typicality of city in terms of solid waste management
- b. Current and Planned Activities of other aid agencies and/or personnel
- c. Regional Distribution
- d. Security Considerations

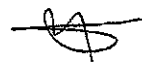
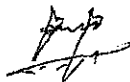
(2) Selected Model Cities

Based upon the factors mentioned above, the model cities subject to the study for solid waste management plan shall be as follows (alphabetical order) :

- a. Badulla
- b. Chilaw
- c. Gampaha
- d. Kandy
- e. Matale
- f. Negombo
- g. Nuwara Eliya

2. Study Schedule

The Tentative Study schedule will be revised as shown in the attachment. The Study duration is expected to be approximately 24 months.



2

Annex :

Tentative Study Schedule

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Work Schedule																								
Report	▲ Inception Report								▲ Progress Report	▲ Interim Report												▲ Draft Final Report	▲ Final Report	

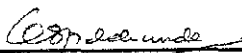
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N.3 Minutes of meeting for the inception report of the study on improvement of solid waste management in Sri Lanka

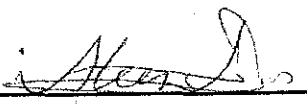
Minutes of Meeting
for
The Inception Report
of
The Study on Improvement of Solid Waste Management
in
Secondary Cities in Sri Lanka

Agreed upon between
Ministry of Home Affairs, Provincial Councils and Local Government
and
JICA Study Team


16 May, 2002



Mrs. K. P. M. Speldewinde
Secretary
Ministry of Home Affairs, Provincial
Councils & Local Government



Mr. Akira Doi
Leader of JICA Study Team



Mrs. Sujatha Cooray
Director
Japan Division
Department of External Resources,
Ministry of Policy Development & Implementa-
tion.

1. Introduction

The Study Team has submitted forty (40) copies of the Inception Report to the Government of Sri Lanka. Consequently, the steering committee meeting was held on May 8th to discuss this report. A list of officials attended this meeting is given in Appendix 1.

2. Counterpart Agency

The Ministry of Home Affairs, Provincial Councils and Local Government will be the counterpart agency and the co-ordinating body of the Study instead of the former Ministry of Public Administration, Home Affairs, Provincial Councils, Local Government and Southern Development.

3. Steering Committee

The Sri Lankan side informed the JICA Study Team that the Steering Committee has been established. This committee comprises of representatives of the following ministries:

- Ministry of Policy Development & Implementation
- Ministry of Health, Nutrition & Welfare
- Ministry of Housing and Plantation Infrastructure
- Ministry of Environment & Natural Resources
- Ministry of Home Affairs, Provincial Councils & Local Government

4. Reports

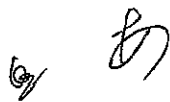
The Study Team requested that the Public Sri Lanka should have access to all reports submitted by them. This was accepted by the Sri Lankan side.

5. Model Towns

The Study Team proposed to use the term "model towns" to describe the seven towns to be targeted in the Study instead of "model cities" which was the term used in the Scope of Work signed on October 3rd, 2001. The Sri Lankan side accepted this.

6. Relevant Studies and Projects

The Steering Committee Members agreed to provide information on studies and projects relating to Solid Waste Management in Sri Lanka. All the participants of the view that the study team will be able to utilise effecting those studies and reports.



APPENDIX 1

List of Attendees

Sri Lankan Side

Ministry of Provincial Councils & Local Government (MPCLG)

Mrs. K.P.M. Speldewinde Secretary
Mr. M.L. Sunil Fernando Senior Asst. Secretary
Mr. P. Noordeen Asst. Director
Mr. V. Perera Asst. Secretary

Other Organisations

Ms. L. Padmini Batuwitage Director / Environment, Ministry of Environment & Natural Resources
Mr. C.K. Shanmugarajah Director / Primary Health Care, Ministry of Health & Indigenous Medicine
Mr. G.R.D. Sunil Asst. Director, External Resource Department
Mr. U.W. Ranawe CEO, "Local Loans and Development Funds (the funding organisation under MPCLG)"

Japanese Side

JICA Office

Mr. G.W. Kaveendraraja Senior Advisor, JICA Sri Lanka Office

Study Team

Mr. Akira Doi Team Leader
Mr. Naofumi Sato Deputy Leader
Dr. Sean Finnigan Member
Mrs. Misa Oishi Member
Subhashini Seneviratne Interpreter

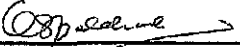


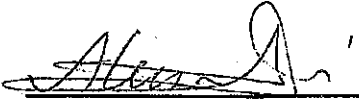
N.4 Minutes of meeting for the formulated pilot project of the study on improvement of solid waste management in secondary cities in Sri Lanka

Minutes of Meeting
for
The Formulated Pilot Project
of
The Study on Improvement of Solid Waste Management
in
Secondary Cities in Sri Lanka

Agreed upon between
Ministry of Home Affairs, Provincial Councils and Local Government
and
JICA Study Team

14 November, 2002


Mrs. K. P. M. Speldewinde
Secretary
Ministry of Home Affairs, Provincial
Councils & Local Government


Mr. Akira Doi
Leader of JICA Study Team

1. Introduction

The Study Team has submitted thirty (30) copies of the Report on the formulated pilot projects to the Government of Sri Lanka. The steering committee meeting was held on November 12th to discuss this report.

A list of officials who attended this meeting is given in Appendix 1.

The Report on the Formulated Pilot Projects submitted is given in Appendix 2.

The list of items requiring JICA's assistance for the implementation of formulated pilot projects is given in Appendix 3.

2. Agenda of Meeting

The following issues were explained and discussed in the steering committee meeting.

- Welcome address, by the secretary Mrs. K.P.M. Speldewinde
- Brief report on the present solid waste management conditions in local towns, by Mr. Akira Doi
- Study schedule in the year 2003, by Mr. Akira Doi
- Explanation of formulated pilot projects, by Mr. Akira Doi
- Prioritisation of formulated pilot projects, by Mr. Akira Doi
- Report on the study trip to Japan, by Mr. Wijetunga

3. Conclusion

The members attended the Steering Committee meeting approved both the formulated pilot projects and their prioritisation made by the Study Team.

APPENDIX 1

List of Attendees

Sri Lankan Side

Ministry of Home Affairs, Provincial Councils & Local Government (MHALG)

Mrs. K.P.M. Speldewinde	Secretary
Mr. M. L. Sunil Fernando	Additional Secretary
Mr. A. Wijetunga	Additional Secretary
Mr D.P.Hettiarachchi	Senior Assistant Secretary
Mr. P. Noordeen	Assistant Director
Mr. Viraj Perera	Assistant Secretary

Model Towns

Mr. Hilmy Mohamad	Mayor, Matale Municipal Council
Mr. M.D.A. Hemachandra	Mayor, Badulla Municipal Council
Mr. N.W.A.C. Sweeney Perera	Chariman, Chilaw Urban Council
Mr. L.B. Ahuvihare	Deputy Mayor, Kandy Municipal Council
Mr. P. Sivaraja	Deputy Mayor, Nuwara Eliya Municipal Council
Mr. S. Balasubramaniam	Commissioner, Nuwara Eliya Municipal Council

Other organizations

Ms. L. Padmini Batuwitage	Director / Environment, Ministry of Environment & Natural Resources
Mr. R.M.D.B. Meegasmulla	Provincial Commissioner of Local Government (Central), Dept. of Local Government (Central Province)
Mr. R.M.T.B. Hatiyaldeniya	Provincial Commissioner of Local Government (Uva), Dept. of Local Government (Uva Province)
Mr. A.P. Leslie	Civil Engineer, Dept. of Local Government (Western Province)
Mrs. Kusum Samarawikrama	Asst. Secretary, Ministry of Housing and Plantation Infrastructure

Japanese Side

JICA Office

Mr. Jitsuya Ishiguro	Asst. Resident Representative, JICA Sri Lanka Office
Mr. G.W. Kaveendaraja	Senior Advisor, JICA Sri Lanka Office

Study Team

Mr. Akira Doi	Team Leader
Mr. Naofumi Sato	Deputy Leader
Mrs. Misa Oishi	Member
Mr. Norio Ishijima	Administrative Coordinator

Appendix 2

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
Ministry of Home Affairs, Provincial Councils and Local Government
Democratic Socialist Republic of Sri Lanka

**THE STUDY ON
IMPROVEMENT OF
SOLID WASTE MANAGEMENT IN
SECONDARY CITIES IN
SRI LANKA**

Formulated Pilot Projects

November 2002

KOKUSAI KOGYO CO., LTD.

Contents

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1 Background and Objectives

The objective of the Study is to improve the solid waste management condition in all local towns in Sri Lanka. The Study targets seven model towns and jointly formulates a long-term management plan for each model town with municipality staff as well as jointly implements the pilot projects. Through these processes, the following objectives will be achieved:

- 1) The actual improvement of solid waste management by using locally available materials, equipment, technologies and human resources.
- 2) The motivating of counterparts by actually improving the conditions with their available resources.
- 3) The transfer of technologies and the development of the counterparts' capacities through the joint implementation of the pilot projects.
- 4) After the counterparts deeply understand the management plan through the experience of the joint implementation of the pilot projects, they will improve the management plan by themselves in order to empower the plan.
- 5) Assistance to municipal councils so that the management plan they implement by themselves is able to take off.
- 6) The many valuable lessons which will be obtained through these actual experiences will be included in the Solid Waste Management Guideline for Local Governments and the Policy Recommendation for the Central Government which are to be prepared in the Study.

2 Attentions Paid in the Formulation of the Pilot Projects

- 1) Not only local governments but also the central government holds many relevant issues that have to be improved. Considering the fact that some of them affect solid waste management in local towns, pilot projects targeting improvement at the national level are formulated as well.
- 2) The Study Team actively motivated the staffs in each model municipal council and the citizens in some model towns as well during the first study period in Sri Lanka. If the Study does not go ahead to the pilot project stage, it is expected to have a negative impact on these towns. Therefore, the pilot projects were formulated based on the condition that all pilot projects will be implemented by the Study Team, providing that the model municipal council has the commitment to implement the project.
- 3) The results of similar pilot projects can be different depending on their backgrounds. These results are very valuable lessons, which should be reflected in the Solid Waste Management Guideline for Local Governments. Therefore, similar projects are formulated in plural municipal councils that have different backgrounds.
- 4) The pilot projects have to be continued even after the pilot project implementation period because they target actual improvement. The Study Team will only assist in the technical aspect, environmental education aspect, management aspect and financial support for the investment, not in the operation and maintenance cost.
- 5) The pilot projects place importance on the software such as the economic aspects, social aspects, public cooperation, etc. because the major cause of project failure in past solid waste management projects was a policy oriented too much on technology.

3 Common Problems in Most Municipal Councils

The following problems, which have to be solved in order to improve solid waste management problems, are dominant in most municipal councils.

1) *Low status of solid waste management in municipal councils*

The status of solid waste management in the municipal council is very low although it generally occupies more than 20% of total municipal expenditure and more than 30% of the total municipal staff.

2) *Operation and maintenance function only*

The function of the section in charge of the solid waste management is generally only operation and maintenance, not planning, cost analysis, public affairs, public promotion, engineering, etc.

3) *Lack of promotion of public cooperation*

Most municipal councils take few measures to encourage public cooperation to decrease their work load, such as the promotion and supervision of the compliance with waste discharge rules, waste minimization, the promotion of recycling, etc. They concentrate on conventional works such as waste collection, transportation and disposal. They have not fully realized the necessity for them to promote public cooperation. Even though some of municipal councils have realized this need, they lack the tools to encourage citizens, a transportation means visiting citizens, etc.

4) *National Strategy for the Solid Waste Management is not reflected in municipal councils' policies*

Municipal councils' solid waste management policies have not reflected the National Strategy for the Solid Waste Management, which was formulated by the Ministry of Environment and Natural Resources in 2000.

5) *Budget allocation conflict*

Budget allocation for the investment and cost to contract out is very limited. In addition, the increase of employees has become too difficult.

4 Formulated Pilot Projects

4.1 Pilot Projects for the National Level

4.1.1 Formulation of model by-laws for local governments

The policy proposed in the National Strategy for Solid Waste Management formulated by the Ministry of Environment and Natural Resources in 2000 has scarcely been practiced. In order to help put it in practice, by-laws used by local governments, which are responsible for the execution of the solid waste management, should be in compliance with the thought of the National Strategy. However, local governments do not have the capacity to prepare the new by-laws for solid waste management in compliance with the National Strategy.

The objective of this pilot project is, therefore, to assist local governments in preparing the by-laws by providing a model by-law. The model by-law in line with the National Strategy will be jointly prepared by the Study Team and the Ministry of Home Affairs, Provincial Councils and Local Government.

The Study Team will employ a lawyer to help to do this work.

4.1.2 Introduction of the Bell Collection system

Waste scattering in towns is dominant throughout all of Sri Lanka. This is because the common waste storage systems such as conventional communal garbage bins and plastic garbage bags recently getting popular are not able to prevent the scattering of waste by the many existing stray dogs, goats, cows, horses, monkeys and crows. In other word, they are not suitable for the present social condition. Kerb side collection using plastic containers is not suitable either due to the high possibility of the plastic containers getting stolen.

Considering the present condition in local towns in Sri Lanka, the waste collection system that is the most suitable and widely applicable for the present social condition is the bell collection method. In the bell collection system, collection trucks play music to inform residents they are approaching. When they hear the music, the residents gather their household waste and take it directly to the collection workers. If this method functions, it will reduce the amount of scattered waste and waste heaps in towns, and eventually improve the efficiency of waste collection. It is highly likely that the bell collection system will be able to function in local towns because there is usually somebody in most houses and shops in the daytime in most local towns.

A Japanese music teacher, a JOCV volunteer who teaches music at the Mahaweli National College of Education, has composed the music for the bell collection for local towns in Sri Lanka.

In this pilot project, the bell collection system will be implemented in seven model towns after the speaker units to play the music are installed in all waste collection trucks in order to determine its applicability to the other towns and to learn the appropriate usage method.

4.1.3 Production of sub-textbooks on waste for kids

In order to promote waste education for children, a sub-textbook on waste will be produced. This has been found to be highly necessary because no such educational materials exist at present and the seriousness of waste problems will grow with the expected economic development. The Study Team, the Ministry of Environment and Natural Resource and the Central Environmental Agency will jointly produce this. The proposed number of printing is 100,000 books.

4.1.4 Trial lecture on solid waste management in PHI (Public Health Inspector) training course

PHIs are dealing with solid waste management in most local governments at present. The PHI training course, which has one and half years' duration, is executed regularly at the National Institute of Public Health and Science. However, the programme on the solid waste management is very scanty because of the lack of education materials, lecturers, etc.

For the pilot project, the Study Team will hold a trial lecture for PHI course students using the draft solid waste management guideline for local governments to be prepared in the Study in order to determine its applicability and the points to be reviewed.

In addition, because the Study is examining the necessity of establishing the new training course for solid waste management inspectors, the findings through the execution of this trial will be reflected in the recommendation.

4.1.5 Lecture for university students and university staff on the social issues in the solid waste management

Most of the solid waste management experts in Sri Lanka are engineers because only the agriculture department or the mechanical engineering department in universities deals with solid waste management. This situation has led to technology-oriented projects and has caused the failure of many solid waste management projects. Therefore, the Study Team will hold a lecture for university students and staff on waste focusing on necessary socio-economic considerations in solid waste management in the universities by explaining various cases in Japan.

4.1.6 Seminar for environmental NGOs on the findings through the Study

Quite a number of environmental NGOs in Sri Lanka are keen to improve solid waste management. However, they have many problems and cases of failure in their activities because they do not have a scientific understanding of present solid waste management. Therefore, the Study Team will explain to them the scientific findings obtained through the Study and discuss the role of NGOs and their expected policies.

4.1.7 Seminar on solid waste management for politicians and high-ranking officers in local governments

Politicians and high-ranking officers are key persons in local governance due to the dominance of the top-down system in local governments. It is, therefore, necessary to ensure they have correct knowledge and understanding of solid waste management in order for the materialization of short-term improvement.

The Ministry of Home Affairs, Provincial Councils and Local Government established the Sri Lankan Institute of Local Governance (SLILG) as their training institute in 1999. The pilot project aims to help SLILG in its activities to train them in solid waste management. The seminar targeting politicians and high-ranking officers in local governments will be held at five places.

4.2 Pilot Project for Chilaw

General condition

The Chairman and the PHI responsible for SWM works in Chilaw Urban Council are very cooperative and keen on the Study and very positive about public education activities. However, they are lacking equipment, materials and knowledge.

Only Chilaw among the seven model towns has a compost plant being operated by an NGO. Therefore, public education activities as a part of the project might urge people to help out in operating the compost plant.

The pilot project for Chilaw seems very appropriate because the staff is very cooperative and keen and it will also be a good model for small local governments.

4.2.1 Strengthening the Organisational Capacity

The PHI in Chilaw urban council has to be in charge of dual tasks because of insufficient human resources. Therefore, it is too difficult for them to fulfil their tasks with the present available resources because the covered area per staff is very wide and the covered scope of work is various. The following programmes will be executed in order to strengthen the present organisation.

- (a) Assistance to urban council in preparing the by-law for SWM based on the model by-law.
- (b) Training of PHI and supervisors in supervision works, solid waste management, public promotion, etc.
- (c) Improvement of necessary transportation for supervision and public promotion activities.

4.2.2 Waste Collection Improvement

The following improvement programmes will be integrally executed in order to improve the waste collection efficiency together with reducing the scattered waste amount.

- (a) Introduction of the bell collection method
- (b) Introduction of stationary collection by trailers for markets, bus stations, etc. where many people gather.
- (c) Installation of a waste transfer station

- (d) Installation of fixed half barrel type bins in parks, etc.
- (e) Occasional provision of movable half barrel type bins for events, festivals, Sunday bazaar, etc.
- (f) Municipal Council commissions shops to take care of litter bins for the public.

4.2.3 Environmental Education

The following programmes will be assisted because the Chairman, the responsible staff for the SWM works and a central environmental officer are unanimously very keen on the promotion of public cooperation.

- (a) Educational materials, which contain lots of actual information in Chilaw to raise their awareness, will be produced and promoted. The Study Team will transfer the educational material production know-how to municipal staff.
- (b) A part of the town hall building will be converted to an environmental education centre where visitors can learn about environmental protection.
- (c) The environmental education centre will sell composts produced in the compost plant in Chilaw to desired visitors at the environmental education centre in order to raise people's awareness and to assist NGOs in compost production.
- (d) The environmental centre will also hold educational activities at sites such as communities and schools using the equipment and materials used at the centre.
- (e) In order to encourage them not to litter, making the town beautiful so that people feel guilty about throwing litter in the streets is more effective than warning notice boards. Therefore, Urban Council will promote the beautifying of Chilaw town by public participation.

4.3 Pilot Project for Negombo

General Condition

To prevent waste from scattering is a very important issue for Negombo because there are many domestic and foreign tourists. Scattered waste can be seen along main roads and in commercial areas, although it cannot be seen in residential areas. Therefore, the reduction of waste scattering is a good and useful pilot project for Negombo. Because there is very experienced Chief PHI in charge of solid waste management in Negombo, this project will be manageable.

The necessary public promotion in Negombo has to be done by PHIs and supervisors in the health department because of insufficient human resources for public promotion. Therefore, the strengthening of the organisational system is essential as well.

The improvement of the existing landfill site is not suitable for the pilot project because the remaining life of the site is very short. This site should be closed as soon as possible.

4.3.1 Strengthening the Organisational Capacity

The solid waste management unit will be established in the health department. PHIs and supervisors will deal with public promotion as well due to insufficient human resources. Therefore, it is too difficult for them to fulfil their tasks with the present available resources because the covered scope of work is various. The following programmes will be executed in order to strengthen the present organisation.

- (a) Assistance to municipal council in preparing the by-law for SWM based on the model by-law.
- (b) Training of PHI and supervisors in supervision works, solid waste management, public promotion, etc.
- (c) Improvement of the necessary transportation for supervision and public promotion activities

Besides above programme, Municipal Council should establish the environmental committee in accordance with CEA's regulation in order to strengthen the organizational system.

4.3.2 Waste Collection Improvement

The following improvement programmes will be integrally executed in order to improve the waste collection efficiency together with reducing the scattered waste amount.

- (a) Introduction of the bell collection method

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- (b) Introduction of stationary collection by trailers for markets, bus stations, etc. where many people gather.
- (c) Installation of a waste transfer station
- (d) Installation of fixed half-barrel type bins in parks, etc.
- (e) Occasional provision of movable half-barrel type bins for events, festivals, the Sunday bazaar, etc.
- (f) Municipal Council commissions shops to take care of litter-bins for the public.

4.3.3 Environmental Education

In order to assist in the promotion of waste scattering reduction and the improvement of waste collection efficiency, the following activities will be conducted.

- (a) Leaflets will be produced and distributed to citizens.

4.4 Pilot Project for Gampaha

General Condition

Gampaha Municipal Council was just established in 2002 by the consolidation of Gampaha urban council and Yakkalamulla Urban Council. However, the administration system and the existing human resources and equipment are still very weak.

The possibilities of the pilot project under the present condition are, therefore, very limited. Capacity building will also be difficult to do because of a lack of proper human resources. However, the environmental committee is working quite actively. Therefore, the pilot project targets the followings.

- Programmes that can deal with improvement by only technical measures.
- Programmes that the environmental committee can control.

4.4.1 Waste Collection Improvement

- (a) Introduction of the bell collection method
- (b) Installation of a waste transfer station

At present the waste collected by primary collection is transferred to trailers for secondary transportation at the yard beside the town hall. The waste transfer efficiency will be improved by the provision of the proper facilities because efficiency is very low at present.

4.4.2 Promotion of School Recycling

1) Recycling of in-organic recyclables through schools

The waste in Gampaha town contains a relatively higher percentage of in-organic recyclables and traditional recycling is less active than other model towns because of the proximity to Colombo. The amount of recyclables in the waste in Gampaha is expected to rapidly increase with the economic growth and will result in the necessity to introduce education on recycling and the introduction of separate collection.

This programme aims to teach students the value of some waste through the experience of recycling activities.

Students will be encouraged to bring specified in-organic recyclables from their houses to schools. They will be kept in a store to be installed until it reaches a sufficient amount for selling. The income obtained from the sale of recyclables will be spent on some educational or sporting

good such as whiteboards, cricket bats, footballs, etc. Then students will learn the value of waste and the importance of recycling.

2) Food waste recycling at schools

Students are encouraged to try producing compost at their schools from leftover food using compost barrels and *Jeewa Kotu*, which is the traditional composting method in Sri Lanka.

Students will learn the value of food waste and the traditional compost method by using the compost on the flowerbeds at their schools.

4.4.3 Environmental Education

In order to assist in the promotion of the school recycling programme, the following activities will be conducted.

- (a) Leaflets will be produced and distributed to students and citizens.
- (b) Environmental education activities using the draft sub-textbook on waste for kids will be conducted at targeted schools to examine it and to strengthen the programme.
- (c) Ten panels will be produced for environmental education.

4.5 Pilot Project for Matale

General Condition

The Matale Municipal Council, which has good administrative function and human resources, is very keen and cooperative in the Study, in particular, the commissioner who hold a M.Sc for solid waste management and the senior PHI who participated in the JICA solid waste management group training course.

However, as it is a very old historical town, the style of the solid waste management system is quite old and does not promote public participation in spite of still maintaining a very active traditional recycling system. Therefore, there is much room for improvement in the solid waste management system. The improvement of such condition and problems can be referred to Kandy because it has similar characteristics and problems. Implementing the pilot project focusing on public cooperation in Matale seems easier than in Kandy because of the high cooperation level and adequate human resources.

The improvement of the existing landfill site is not suitable for the pilot project because the remaining life of the site is very short. This site should be closed as soon as possible.

4.5.1 Strengthening the Organisational Capacity

Strengthening the organisation capacity is very necessary because the present organizational condition where PHIs have dual tasks is very weak. Therefore, the following programmes will be executed in order to strengthen the present organisation.

- (a) Assistance to urban council in preparing the by-law for SWM based on the model by-law.
- (b) Training of PHI and supervisors in supervision works, solid waste management, public promotion, supporting private recyclers, the large amount of waste dischargers, etc.
- (c) Improvement of necessary transportation for supervision and public promotion activities (5 motorbikes, one for each collection area)

4.5.2 Promotion of Waste Minimization

Considering the narrowness of Matale and the difficulties of acquiring a new landfill site, the promotion of waste minimization to minimize the required land area for landfill development is the most important measure. Therefore, the following measures will be executed.

- (a) Promotion of home composting by the compost pit method, compost barrel method, and Jeewa Kotu method.
- (b) Giving support to private recyclers, recycle middlemen, etc. who are social capital in SWM. Examples of assistance methods are as follows.
 - Renting of handcarts and bells to recyclers
 - Introduction of how to access micro-credit to middlemen
 - Promotion of separate discharge by the people
- (c) Reduction of food waste. Examples are as follows.
 - Promotion of the usage of a lunch box instead of disposable packages
 - Promotion of different prices of lunch depending on the amount.
- (d) Reduction of polyethylene shopping bags
 - Promotion of the usage of "my bag" (The programme currently promoted by JOCV will be assisted.)

4.5.3 Waste Collection Improvement

The majority of citizens maintain the old understanding that the waste they discharge on the road should be collected by waste collectors. This understanding has greatly affected the efficiency of waste collection work. The following improvement programmes will be integrally executed in order to improve waste collection efficiency together with reducing the scattered waste amount.

- (a) Establishment of a proper waste discharge and collection rule
 - The discharge rule will be informed to the citizens by waste notice boards.
- (b) Introduction of the combination of the bell collection method and the kerb side collection method.
- (c) Introduction of stationary collection by trailers for markets, bus stations, etc. where many people gather.
- (d) Installation of fixed half barrel type bins in parks, etc.
- (e) Occasional provision of movable half barrel type bins for events, festivals, Sunday bazaar, etc.
- (f) Municipal Council commissions shops to take care of litter bins for the public.
- (g) Installation of a waste transfer station

4.5.4 Examination on the New Landfill Site

The Study Team will still continue to assist Municipal Council in the acquisition of a new landfill site. The Study Team will provide Municipal Council with the technical assistance to evaluate candidate lands for landfill development. If it is found too difficult or too expensive, the Study Team will also examine the possibility of the introduction of compost technology. All technical assistance work for this purpose will be executed based on the existing data.

4.5.5 Environmental Education

The following programmes will be executed.

- (a) Educational materials, which contain lots of actual information in Matale to raise their awareness will be produced and promoted. The Study Team will transfer the educational material production know-how to municipal staff.
- (b) A part of the municipal council's buildings will be converted to an environmental education centre where visitors can learn about environmental protection.
- (c) "My Bags" promoted by JOCV aiming at the reduction of polyethylene waste are displayed for sale at the environmental education centre.
- (d) The environmental centre will also hold education activities at sites such as communities and schools using the equipment and materials used at the centre.
- (e) In order to encourage them not to litter, making the town beautiful so that people feel guilty about throwing litter on the street is more effective than warning notice boards. Therefore, Municipal Council will promote the beautifying of Matale town by public participation.

4.6 Pilot Project for Kandy

General Condition

The solid waste management condition in Kandy is very serious not only due to the huge waste discharge amount but also their internal problems. Although strengthening the organisational system is the top priority for Kandy, it is too serious a subject to be dealt with in the pilot project. Therefore, the content of pilot projects has to be limited.

4.6.1 Implementation of the bell collection method

4.6.2 Improvement of the Gohagoda Landfill Site

The present negative impact of the landfill operation at Gohagoda on the surroundings is terrible because no environmental protection measures have been taken. Municipal Council often receives complaints from neighbourhoods and the court has started summoning municipal council staff in response to complaints filed by NGOs. This is one of the landfill sites watched by many people.

The improvement of Gohagoda landfill site will be an example of a filling type landfill site. Since Kandy Municipal Council received a bulldozer for landfill operation in 2001 by the Grass Roots Grant Aid scheme and the technical transfer of landfill operation on site by two JICA experts in 2000, the surrounding condition for the implementation of landfill improvement seems relatively good.

In addition, a monitoring system to ensure the proper landfill operation will be introduced. The monitoring committee involving citizens and environmental NGOs will be established and will execute periodical joint monitoring based on the monitoring list to be prepared by the Study Team.

The facilities to be improved are listed below.

- (a) Provision of a drainage system for intercepting rainwater
- (b) Installation of a leachate treatment system by modifying the existing night soil treatment pond.
- (c) Construction of an embankment and access road on it to surround the disposal area
- (d) Improvement of the slope of waste filled
- (e) Installation of a net fence to prevent waste scattering
- (f) Installation of gas ventilation pipes

4.7 Pilot Project for Nuwara Eliya

General Condition

The waste collection and transport conditions are quite good and the people's waste discharge habits are good as well. The waste scattering is, therefore, less than the other towns. However, the landfill condition is very bad, as no environmental protection measures have been taken. There is almost always fire in the waste and many trees are dying.

As for public education, Municipal Council has produced digital education material on the environment with JOCV's assistance, but it is hardly used at present, as there is no available projector. Nuwara Eliya M.C. is quite keen on public involvement because they promote home composting and paper bags replacing polyethylene shopping bags.

The Mayor and staff in the SWM works are all very keen on the improvement of the SWM works and cooperative in the Study. The internal coordination in Municipal Council is very good and therefore conditions for implementing the pilot project are ideal.

4.7.1 Strengthening the Organisational Capacity

Strengthening the organisation capacity is very necessary because the present organizational condition where PHIs have dual tasks is very weak. In addition, the condition in Nuwara Eliya, which has a widely scattered population and steep topography, makes it difficult for Municipal Council to execute the proper supervision work. Therefore, the following programmes will be executed in order to strengthen the present organisation.

- (a) Assistance to urban council in preparing the by-law for SWM based on the model by-law.
- (b) Training of PHI and supervisors in supervision works, solid waste management, public promotion, supporting private recyclers, the large amount waste dischargers, etc.
- (c) Improvement of necessary transportation for supervision and public promotion activities

4.7.2 Promotion of Waste Minimization

In order to minimize the negative impacts of the SWM works on the abundant environment in Nuwara Eliya for the preservation of the environment, the promotion of waste minimization to minimize the required land area for landfill development is the most important measure. Therefore, the following measures will be taken.

- (a) Promotion of home composting by the compost pit method, compost barrel method, and Jeewa Kotu method.
- (b) Giving support to private recyclers, recycle middlemen, etc. who are social capital in SWM. Examples of assistance methods are as follows.
 - Renting of handcarts and bells to recyclers
 - Introduction of how to access micro-credit to middlemen
 - Promotion of separate discharge by the people
- (c) Reduction of food waste. Examples are as follows.
 - Reduction of food waste discharged by hotels
 - Promotion of the usage of a lunch box instead of disposal packages
 - Promotion of different prices of lunch depending on the amount
- (d) Reduction of polyethylene shopping bags
 - Promotion of the usage of "my bags" (The programme currently promoted by JOCV will be assisted.)

4.7.3 Waste Collection Improvement

The following improvement programmes will be integrally executed in order to improve waste collection efficiency together with reducing the scattered waste amount.

- (a) Establishment of the Proper Waste Discharge and Collection System
 - Introduction of the combination of the bell collection method and the kerb side collection method
- (b) Implementation of the separate collection of health care waste
 - The health care waste to be disposed of at the medical waste disposal pit to be constructed as a part of the pilot projects in the Moon Plains Landfill Site will be separately collected by a three wheeler.
- (c) Investigation of the collection efficiency of three wheelers for comparison with handcart collection.

4.7.4 Improvement of the Moon Plains Landfill Site

The existing landfill site has few neighbourhoods and valley topography very suitable for a sanitary landfill site and impermeable ground. It is socially and naturally very suitable for the landfill site. It will be able to accommodate the waste discharged in Nuwara Eliya for 20 years. This site will be able to be improved to the best and sole sanitary landfill site in Sri Lanka. Therefore, the improved landfill site shall have an education facility for the sanitary landfill as the sanitary landfill model for the whole country.

In addition, a monitoring system to ensure the proper landfill operation will be introduced. The monitoring committee involving citizens and environmental NGOs will be established and will execute periodical joint monitoring based on the monitoring list to be prepared by the Study Team.

The following facilities will be constructed.

- (a) Site office, store house, garage for a bulldozer
- (b) Education facility for sanitary landfill
- (c) Security facilities (gate, fence)
- (d) Sanitary waste disposal facilities (access road, etc.)
- (e) Leachate collection facility
- (f) Leachate treatment facility
- (g) Storm water drain
- (h) Gas ventilating facility
- (i) Disposal pit for health care waste

4.7.5 Environmental Education

The following programmes will be executed.

- (a) Educational materials, which contain lots of actual information in Nuwara Eliya to raise their awareness, will be produced and promoted. The Study Team will transfer the educational material production know-how to municipal staff.
- (b) A part of the public library building will be converted to an environmental education centre where visitors can learn about environmental protection.
- (c) "My Bags" promoted by JOCV aiming at the reduction of polyethylene waste are displayed for sale at the environmental education centre.
- (d) The environmental centre will also hold educational activities at sites such as communities and schools using the equipment and materials used at the centre.

4.8 Pilot Project for Badulla

Although the solid waste management condition in Badulla is the worst among the seven model towns, Municipal Council hasn't got so interested in the Study. We have been encouraging Municipal Council staff but more time should be spent before the joint formulation of the pilot projects. Therefore, the formulation of pilot projects for Badulla will be postponed until after January. While the Study Team will be in Japan from November till January, 2003, Municipal Council is supposed to strengthen the organizational system for solid waste management by conducting the following measures.

1. Establishment of permanent solid waste management unit
2. Establishment of advisory committee for solid waste management unit (This may be replaced with the establishment of the environmental committee.)

5 Priority of the Pilot Projects Evaluated by the Study Team

Name of town	Keeness & cooperation to the Study	Organizational efficiency & strength	Existing Human resource	Seriousness of waste problems	Activeness of Environmental Committee	Lessons for other towns	Total rating	Priority ranking	Remarks
National Level	+++	+++	+++	+++	N.A.	+++	15	1	Strengthening the National level will assist all local governments. This is the top priority.
Chilaw	+++	++	++	+	++	++	12	4	Most staff in Chilaw are very cooperative in the Study. It will be a good example for small local governments.
Negombo	+	+	+	++	none	+	6	8	The waste collection in the residential area is good, but the commercial and tourist areas are not good. This should be improved.
Gampaha	+	+	+	++	++	++	9	6	The present organisational capacity is a problem for the Study and pilot project. Therefore, it should involve only the environmental committee which is functioning.
Matale	+++	+++	++	++	++	++	14	3	The environmental committee and the city watch committee are actively working. They have well understood the SWM through the 1st study phase.
Kandy	++	+	++	+++	only once in Sep. 2001	++	10	5	The present organisational weakness is a problem for the Study and pilot project. But the positive impact on other towns by the improvement of Gohagoda landfill site seems big.
Nuwara Eliya	+++	+++	++	++	++	+++	15	2	There are rich potential human resources in Municipal Council. The existing landfill site will be able to be improved as the best sanitary landfill site in Sri Lanka. The priority of Nuwara Eliya is very high.
Badulla	+	+	+	+++	none	++	8	7	The waste problem in Badulla is the most serious of the 7 model towns. To raise Municipal Council's awareness for the improvement is the top priority.

Legend: +: low, ++: medium, +++: high

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6 Implementation Schedule

a. Pilot Projects

The implementation schedule of formulated pilot projects is shown below.

Pilot projects of three model towns, i.e. Chilaw, Negombo and Gampaha, will be implemented between January and March, 2003.

Pilot projects of four model towns, i.e. Matale, Kandy, Nuwara Eliya and Badulla, will be implemented between May and September, 2003.

As for pilot projects for the National level, some will be implemented between January and March, and some will be implemented between May and September, 2003.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
National Level									
1 Formulation of model by-laws for local governments	■								
2 Introduction of the Bell Collection system	■	■							
3 Production of sub-textbooks on waste for kids	■	■	■						
4 Trial lecture on SWM in Public Health Inspector training course							▲		
5 Lecture for university students and university staff on the social issues in the SWM						▲	▲		
6 Seminar for environmental NGOs on the findings through the Study					▲				
7 Seminar on SWM for politicians and high-ranking officers in local governments						▲	▲	▲	▲
Chilaw	■	■	■			■	■	■	■
Negombo	■	■	■			■	■	■	■
Gampaha	■	■	■			■	■	■	■
Matale	■	■	■	■	■	■	■	■	■
Kandy	■	■	■	■	■	■	■	■	■
Nuwara Eliya	■	■	■	■	■	■	■	■	■
Badulla	■	■	■	■	■	■	■	■	■

■ Implementation
 ■ Preparation
 ■ Following up

b. Seminar

The seminar explaining the study findings will be held in next year.

Place	Period	Expected number of participants
Colombo	In January	up to 60 people
Each 7 towns	In January or February	up to 50 people

Appendix 3

List of items requiring JICA's Assistance for the implementation of pilot projects

Towns	Items	Quantity
National level	1. Employment of a lawyer to assist the model by law	15 manday
	2. Speaker unit for bell collection for seven model towns	68 sets
	3. a) Production of sub-textbook on waste for kids	more than 100,000 books
	b) Production of teaching manual for the sub-textbook	10,000 books
	4. Lecture on solid was management to PFI	1 time
	5. Seminar at universities	3 times
	6. Seminar for environmental NGOs	1 time
	7. Seminar for officer and council members in local governments	5 times
Chilaw U.C.	Management and supervision improvement	
	1. SWM control board	1 set
	2. Motorbike	2 units
	3. Helmet	2 nos.
	Waste collection improvement	
	1. Modified handcart	5 nos.
	2. 100 litre barrel fixed type litter bins	20 nos.
	3. 100 litre barrel movable type litter bins	20 nos.
	4. 30-40 litre barrel litter bins	50 nos.
	5. Fabrication of waste transfer platform	2 units
	6. Closed type trailer for stationary waste transportation	3 nos.
	Environmental education	
	1. Lap top computer	1 nos.
	2. Projector	1 nos.
	3. Screen	1 nos.
4. Digital camera	1 nos.	
5. Colour printer	1 nos.	
6. Education panel	10 nos.	
7. Education leaflet	6,000 sheets	
8. Public notice board for waste discharge	50 plates	
9. Refurbishing the office room to the environmental education centre	1 set	
Negombo M.C.	Management and supervision improvement	
	1. SWM control board	1 set
	2. Motorbike	2 units
	3. Small motorbike	4 units
	4. Helmet	6 nos.
	Waste collection improvement	
	1. Modified handcart	10 nos.
	2. 100 litre barrel fixed type litter bins	20 nos.
	3. 100 litre barrel movable type litter bins	20 nos.
	4. 30-40 litre barrel litter bins	50 nos.
	5. Fabrication of waste transfer platform	1 nos
	6. Closed type trailer for stationary waste transportation	3 units
Environmental education		
1. Leaflets	30,000 sheets	
2. Public notice board for waste discharge rule	50 plates	
Gampaha M.C.	Waste collection improvement	
	1. Construction of a waste transfer station	1 set
	2. Closed type trailer for secondary waste transportation	2 units
	Promotion of School Recycling	
	1. Store for in-organic recyclables	6 units
	2. Compost barrels (concrete type)	36 nos.
	3. Brick	4,800 nos.
Environmental education		
1. Leaflets	6,000 sheets	

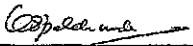
Towns	Items	Quantity
	2. Education panel	10 plates
Matale M.C.	Management and supervision improvement	
	1. SWM control board	1 set
	2. Motorbike	4 units
	3. Helmet	4 nos.
	Waste collection improvement	
	1. Modified handcart	10 nos.
	2. 100 litre barrel fixed type litter bins	20 nos.
	3. 100 litre barrel movable type litter bins	20 nos.
	4. 30-40 litre barrel litter bins	40 nos.
	5. Fabrication of waste transfer platform	1 unit
	6. Closed type trailer for stationary waste transportation	2 nos.
	Environmental education	
	1. Lap top computer	1 nos.
	2. Projector	1 nos.
	3. Screen	1 nos.
	4. Digital camera	1 nos.
	5. Colour printer	1 nos.
	6. Education panel	10 nos.
	7. Education leaflet	7,000 sheets
	8. Poster	300 sheets
	9. Sticker	3,000 sheets
	10. Public notice board for waste discharge rule	50 plates
	11. Building the environmental education centre	1 set
Kandy M.C.	Landfill Site Improvement	
	1. Improvement of the Gohagoda Landfill Site	1 set
Nuwara Eliya M.C.	Management and supervision improvement	
	1. SWM control board	1 set
	2. Motorbike	5 units
	3. Helmet	5 nos.
	Waste collection improvement	
	1. Three wheeler for collecting healthcare waste	1 unit.
	Landfill Site Improvement	
	1. Improvement of the Moon Plains Landfill Site	1 set
	2. Small bulldozer	1 unit
	Environmental education	
	1. Lap top computer	1 nos.
	2. Projector	1 nos.
	3. Screen	1 nos.
	4. Digital camera	1 nos.
	5. Colour printer	1 nos.
	6. Education panel	10 nos.
	7. Education leaflet	6,000 sheets
	8. Poster	300 sheets
	9. Sticker	3,000 sheets
	10. Public notice board for waste discharge rule	50 plates
	11. Refurbishing the office room to the environmental education centre	1 set
Badulla M.C.	to be formulated in January and February 2003	

N.5 Minutes of meeting for the formulated pilot project of the study on improvement of solid waste management in secondary cities in Sri Lanka


Minutes of Meeting
for
The Formulated Pilot Project
of
The Study on Improvement of Solid Waste Management
in
Secondary Cities in Sri Lanka

Agreed upon between
Ministry of Home Affairs, Provincial Councils and Local Government
and
JICA Study Team

31 January 2003



Mrs. K. P. M. Speldewinde
Secretary
Ministry of Home Affairs, Provincial
Councils & Local Government



Mr. Akira Doi
Leader of JICA Study Team

1. Introduction

The Study Team has submitted forty (40) copies of Progress Report 1 to the Government of Sri Lanka. The steering committee meeting was held on 13 January 2003 to discuss this report.

A list of officials who attended this meeting is given in Appendix 1.

2. Agenda of Meeting

The following issues were explained and discussed in the steering committee meeting.

- Welcome address, by secretary Mrs. K.P.M. Speldewinde
- Brief report on the pilot projects to be conducted between January and March, 2003. The list of equipment and facilities to be provided by JICA was explained and each party's responsibilities in the implementation of the pilot projects were clarified.
- The draft recommendation for the Central Government was explained by the Study Team.

3. Issues Discussed in the Meeting

3.1. Institutional System

The Study Team proposed the establishment of a national commission for supporting solid waste management. However, it was pointed out that the national coordinating committee that has been set up may duplicate its roles. It was agreed that this issue would be further examined during the study period.

3.2. Pilot Project for Gampaha Municipal Council

The Mayor of Gampaha M.C. pointed out that the scale of the pilot project for Gampaha M.C. was smaller than those for the other model towns. The Study Team explained that each pilot project was fairly formulated together with the counterparts, taking account of the nature of each town and council's capacity and needs. The Mayor of Gampaha accepted this.

4. Conclusion

The members who attended the Steering Committee meeting approved the pilot projects to be implemented and Progress Report 1, except the issue stated in item 3.1 in this minutes of meeting.

APPENDIX 1

List of Attendees

Sri Lankan Side

Ministry of Home Affairs, Provincial Councils & Local Government (MHALG)

Mrs. K.P.M. Speldewinde	Secretary
Mr. M. L. Sunil Fernando	Additional Secretary
Mr. A. Wijetunga	Additional Secretary
Mr. D. P. Hettiarachchi	Senior Assistant Secretary
Mr. P. Noordeen	Assistant Director
Mr. S.P.S. Senadheera	Additional Director, Sri Lankan Institute of Local Governance
Ms. Nandani Gunasekera	Deputy Director, Sri Lankan Institute of Local Governance
Mr. V. M. Lanauira	Chief Executive Officer, Local Loan of Development Fund
Mr. K.W.M. Premachandra	Deputy Commissioner of Local Government, Western Province
Mr. W.D. Wimalaratna	Assistant Commissioner of Local Government
Mr. S.M. Jayatilaka	Provincial Council of Local Government, North Western Province

Model Towns

Mr. Ajith Mannappenm	Mayor, Gampaha Municipal Council
Mr. Anton Fernando	PHI, Chilaw Urban Council

Other organizations

Mrs. Asoka Fernando	Acting Director of Japan Division, Department of External Resource, Ministry of Policy Development & Implementation
Ms. L. Padmini Batuwitige	Director / Environment, Ministry of Environment & Natural Resources

Japanese Side

JICA Headquarter

Mr. Satoru Narahara	Second Development Study Division, Social Development Study Department
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JICA Office

Mr. G.W. Kaveendraraja	Senior Advisor, JICA Sri Lanka Office
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Study Team

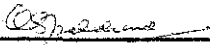
Mr. Akira Doi	Team Leader
Mr. Susumu Shimura	Deputy Leader
Mr. Naofumi Sato	Deputy Leader

Mr. Sean Finnigan	Member
Mrs. Misa Oishi	Member
Mrs. Tomomi Kitajima	Member
Mr. Lei Penfong	Administrative Coordinator


Minutes of Meeting
for
Progress Report 2
of
The Study on Improvement of Solid Waste Management
in
Secondary Cities in Sri Lanka

Agreed upon between
Ministry of Home Affairs, Provincial Councils and Local Government
and
JICA Study Team


7 March 2003



Mrs. K. P. M. Speldewinde
Secretary
Ministry of Home Affairs, Provincial
Councils & Local Government



Mr. Akira Doi
Leader of JICA Study Team



witness by
Mrs. Asoka Fernando
~~Assistant~~ Director
Japan Division, Department of External Resources,
Ministry of Policy Development & Implementation

1. Introduction

The Study Team has submitted forty (40) copies of Progress Report 2 to the Government of Sri Lanka. The Steering Committee meeting was held on 7th March 2003 to discuss this report.

A list of officials who attended this meeting is given in Appendix 1.

2. Agenda of Meeting

The following items were discussed in the Steering Committee Meeting.

- ◆ Progress of the on-going pilot projects from January and March, 2003.
- ◆ Progress of the proposed pilot projects for Badulla M.C. and amendments in the other pilot projects (Gampaha & Negombo)
- ◆ Strengthening of Local Loans and Development Fund to undertake Solid waste Management Projects.

3. Issues discussed in the meeting

3.1 Institutional System

Obtaining assistance of the JICA team to provide technical support and guidance to National Committee on Solid Waste Management was discussed. It was decided that a request should be made to JICA in this regard. The Steering Committee approved the above proposal.

3.2 Model By-Laws for S.W.M.

Ministry of Home Affairs, Provincial Councils and Local Government reported the completion of model by-laws for Solid Waste Management. They will take the further action to get the by-laws approved.

3.3 Textbook on Solid Waste Management for children.

Ministry of Environment and Natural Resources expressed their appreciation to the Study Team for the textbook. In addition, Ms. Batuwitige stated that 100,000 books were insufficient for distribution among all children in Sri Lanka. The Ministry of Health & Indigenous Medicine proposed to utilize this book in their Health Education Programme. Various ideas such as the utilization of NGOs funds for additional copies and selling the book etc. were proposed. Finally the conclusion was as follows.

- ◆ Distribution of 100,000 books in a manner to obtain maximum benefit.
- ◆ Printing of additional copies to be considered after the evaluation of the progress of the distribution of books printed already.

4. Conclusion

The Steering Committee approved the pilot projects included in Progress Report 2.

APPENDIX I

List of Attendees

Sri Lankan Side

Ministry of Home Affairs, Provincial Councils & Local Government (MHALG)

Mrs. K.P.M. Speldewinde	Secretary
Mr. A. Wijetunga	Additional Secretary
Mr. M. L. Sunil Fernando	Additional Secretary
Mr. D. P. Hettiarachchi	Senior Assistant Secretary
Ms. S. P. S. Senadheera	Additional Director, Sri Lankan Institute of Local Governance

Other organizations

Ms. Dammika Ranashinghe	Deputy Director, Department of External Resource, Ministry of Policy Development & Implementation
Ms. L. Padmini Batuwitige	Director / Environment, Ministry of Environment & Natural Resources
Mr. K.W.M. Premachandra	Deputy Commissioner of Local Government, Western Province
Dr. C.K. Shanmugarajah	Director / Primary Health Care, Ministry of Health & Indigenous Medicine
Ms. Dammika Wijeshinghe	Assistant Director, Ministry of Housing and Plantation Infrastructure
Mr. A.P. Leslie	Civil Engineer, Dept. of Local Government (Western Province)

Japanese Side

JICA Office

Mr. G.W. Kaveendaraja	Senior Advisor, JICA Sri Lanka Office
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Study Team

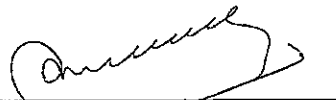
Mr. Akira Doi	Team Leader
Mr. Naofumi Sato	Deputy Leader

N.6 Minutes of meeting for draft final report of the study on improvement of solid waste management in secondary cities in Sri Lanka

Minutes of Meeting
for
Draft Final Report
of
The Study on Improvement of Solid Waste Management
in
Secondary Cities in Sri Lanka

Agreed upon between
Ministry of Home Affairs, Provincial Councils and Local Government
and
JICA Study Team

6 November 2003



Mr. K.W.E. Karaliyadda

Secretary

Ministry of Home Affairs, Provincial
Councils & Local Government



Mr. Akira Doi

Leader of JICA Study Team



witness by

Mrs. Asoka Fernando

Director

Japan Division, Department of External Resources,
Ministry of Policy Development & Implementation

1. Introduction

The Study Team has submitted forty (40) copies of draft final reports to the Government of Sri Lanka. The steering committee meeting was held on 30th November 2003 to discuss this report. A list of officials who attended this meeting is given in Appendix 1.

2. Agenda of Meeting

The following issues were explained and discussed in the steering committee meeting.

- a) Welcome address, by secretary Mr. K.W.E. Karalliyadda
- b) Reporting on the present situations of pilot projects implemented by the Study Team.
- c) Explanation on the recommendation for the Central Government by the Study Team.

3. Issues Discussed in the Meeting

- a) Sri Lankan side stated that the grant aid cooperation instead of loan aid cooperation was favoured due to the current difficult financial condition of the Sri Lankan government and most of local authorities.
- b) Sri Lankan side stated that the introduction of Polluter Pays Principle (PPP) should take account of the negative impact to poor people who can't afford. The Study Team explained that PPP should target business entities at the initial stage which discharge of waste through their business activities instead of residents.
- c) The Ministry of Home Affairs, Provincial Councils and Local Government expressed its strong commitment to establish and to operate a National Support Centre for the Improvement of Solid Waste Management in Local Authorities under its responsibility.
- d) The Ministry of Home Affairs, Provincial Councils and Local Government proposed that Local Loan and Development Fund would be utilized as a lending agency for solid waste management projects with the necessary improvement. Finally, both sides agreed which lending institution to be utilized would be selected at the implementation time.
- e) Sri Lankan side agreed to actively promote the implementation of recommendations to cope with solid waste problems which are getting serious more and more.

4. Conclusion

The members who attended the Steering Committee meeting approved Draft Final Report. The Study team asked Sri Lankan side to send to the Study Team their comments on draft final reports by November 19th, 2003 through the Ministry of Home Affairs, Provincial Councils and Local Government, if there are any.



APPENDIX I

List of Attendees

Sri Lankan Side

Ministry of Home Affairs, Provincial Councils & Local Government (MHALG)

Mr. K.W.E. Karalliyadda Secretary
Mr. M. L. Sunil Fernando Additional Secretary
Mr. V. Perera Assistant Secretary

Other organizations

Ms. L. Padmini Batuwitige Director / Environment, Ministry of Environment & Natural Resources
Dr. C.K. Shanmugarajah Director / Primary Health Care, Ministry of Health & Indigenous Medicine
Mr. K.W.M. Premachandra Deputy Commissioner of Local Government, Western Province
Ms. Dammika Wijeshinghe Assistant Director, Ministry of Housing and Plantation Infrastructure
Mrs. Asoka Fernando Director, Japan Division, Department of External Resources, Ministry of Policy Development & Implementation
Mr. J.W. Silva Assistant Director of Planning, Western Province

Japanese Side

JICA Office

Mr. G.W. Kaveendraraja Senior Advisor, JICA Sri Lanka Office

Study Team

Mr. Akira Doi Team Leader
Mr. Naofumi Sato Deputy Leader
Mrs. Misa Oishi Member
Mr. Susumu Shimura Member
Mr. Hachiro Ida Member

