

# *Section I Capacity Assessments*

- I Capacity Assessments..... I-1**
  - I.1 EPWMD.....I-1
    - I.1.1 Individual Assessment ..... I-1
    - I.1.2 Organizational Assessment ..... I-14
  - I.2 CMPUA .....I-17
    - I.2.1 Individual Assessment ..... I-17
    - I.2.2 Organizational Assessment ..... I-26

# I Capacity Assessments

## I.1 EPWMD

### I.1.1 Individual Assessment

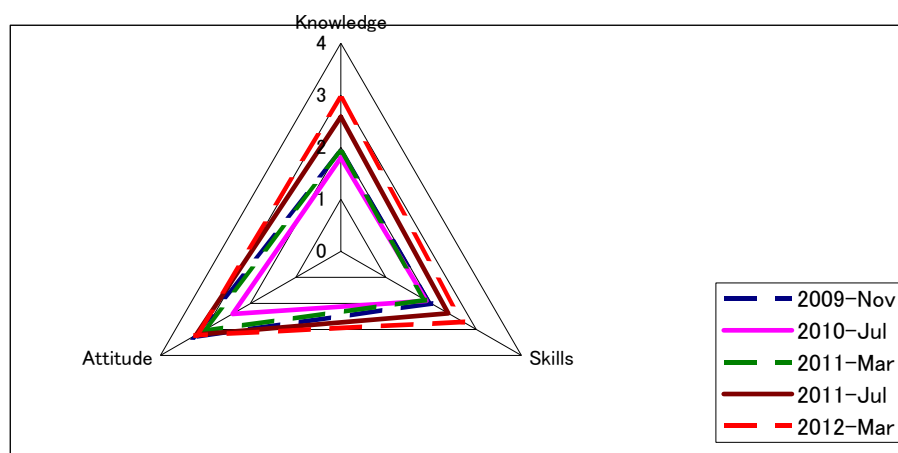
#### a. Summary

Items		Assessment for Individual EPWMD							Average
		A	B	C	D	E	F	G	
Nov-09	Knowledge	1.1	2.3	2.1	2.9	1.5	1.2		1.9
	Skills	1.6	1.8	2.1	1.9	1.7	2.3		2
	Attitude	2.7	3.0	3.0	3.9	2.9	3.1		3.3
	Average	1.8	2.4	2.4	2.9	2.0	2.2		2.4
Jul-10	Knowledge	1.5	2.2	2.3	2.2	2.2	1		1.8
	Skills	2.3	2.3	2.2	2.1	2.2	1.3		1.9
	Attitude	2.9	2.1	3.0	2.3	3.0	2		2.4
	Average	2.2	2.2	2.5	2.2	2.5	1.4		2.0
Mar-11	Knowledge	2.1	2.3	2.4		2.4	1.5	0.7	1.9
	Skills	2.4	2.4	2.3		2.3	1.8	0	1.9
	Attitude	3.0	3.0	3.0		3.0	3.1	3.3	3.1
	Average	2.5	2.6	2.6		2.6	2.1	1.3	2.3
Jul-11	Knowledge	2.7	2.9	2.9		2.9	2.3	1.8	2.6
	Skills	2.8	2.7	2.8		2.7	2.4	0.9	2.4
	Attitude	3.4	3.0	3.3		3.0	3.1	3.4	3.2
	Average	3.0	2.9	3.0		2.9	2.6	2.0	2.7
Mar-12	Knowledge	3.2	3.2	3.1		3.0	2.7	2.4	2.9
	Skills	3.4	2.9	2.9		2.8	2.7	1.5	2.7
	Attitude	3.4	3.1	3.3		3.0	3.1	3.4	3.2
	Average	3.3	3.1	3.1		2.9	2.8	2.4	3.0

#### Attendance Rate

#### Individual Average

Items	2009-Nov	2010-Jul	2011-Mar	2011-Jul	2012-Mar
Knowledge	1.9	1.8	1.9	2.6	2.9
Skills	2	1.9	1.9	2.4	2.7
Attitude	3.3	2.4	3.1	3.2	3.2
Average	2.4	2.0	2.3	2.7	3.0



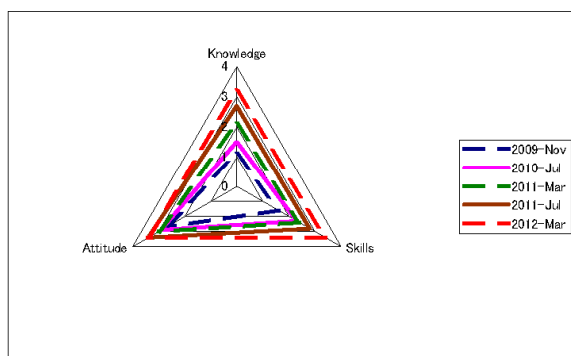
**b. Person A**

Organization: EPWMD  
Evaluation: Excellent: 4, Good: 3, Fair: 2, Poor: 1 None: 0  
A

Code	Items					
		2009-Nov	2010-Jul	2011-Mar	2011-Jul	2012-Mar
<b>A</b>	<b>Knowledge</b>					
<b>A.1</b>	<b>Basic Subjects</b>					
A.1.1	I know problems caused by waste.	3	3	3	3	4
A.1.2	I know the objectives by SWM	3	3	3	3	4
A.1.3	I know the basic components of SWM technical system.	3	3	3	3	4
A.1.4	I know the survey method of waste generation amount.	3	2	2	3	4
A.1.5	I know the method of determine the various waste amounts	2	2	2	3	4
A.1.6	I know the method of physical waste composition survey	2	2	2	3	4
A.1.7	I know the various survey methods of waste properties.	2	2	2	3	4
A.1.8	I know the properties of each waste composition.	2	1	2	3	4
A.1.9	I know the waste properties by source	2	1	2	3	4
A.1.10	I know how to understand the waste stream.	3	3	3	3	4
	Average for A.1	2.5	2.2	2.4	3.0	4.0
<b>A.2</b>	<b>Discharge, Storage, Collection, Transportation</b>					
A.2.1	I know various waste discharge and storage system.	1	2	2	3	4
A.2.2	I know various waste collection methods.	2	2	2	3	4
A.2.3	I know various waste transportation methods	2	2	2	3	4
A.2.4	I know various equipment of waste transportation	2	2	2	3	4
	Average for A.2	1.8	2.0	2.0	3.0	4.0
<b>A.3</b>	<b>Waste Processing and Treatment</b>					
A.3.1	I know the mechanism of composting	0	0	2	2	3
A.3.2	I know disadvantage of composting	0	0	1	2	3
A.3.4	I know the incineration technology	1	1	2	2	2
A.3.5	I know the RDF technology	0	1	2	2	3
A.3.6	I know the waste separation technology	2	2	2	3	3
	Average for A.3	0.5	0.8	1.8	2.2	2.8
<b>A.4</b>	<b>Waste Separation and Recycling</b>					
A.4.1	I know the advantages of waste separation at generation source.	2	2	2	3	4
A.4.2	I know the disadvantages of waste separation at generation source	2	2	2	3	4
A.4.3	I know the advantages of Recycling	2	2	2	2	3
A.4.4	I know the disadvantages of Recycling	2	2	2	2	3
	Average for A.4	2	2	2	2.5	3.5
<b>A.5</b>	<b>Final Disposal</b>					
A.5.1	I know the problems caused by waste disposal	1	2	2	3	3
A.5.2	I know the required facility of waste disposal in accordance with waste type	0	1	2	3	3
A.5.3	I know the leachate control system	1	0	2	3	3
A.5.4	I know various gas vent system.	1	0	2	2	2
A.5.5	I know the necessity of security facilities.	1	2	2	3	3
A.5.6	I know the landfill method.	2	2	2	3	3
	Average for A.5	0.9	1.2	2	2.8	2.8
<b>A.6</b>	<b>Healthcare Waste</b>					
A.6.1	I know the type of healthcare wastes and their risk.	0	2	2	2	2
A.6.2	I know how to handle healthcare waste.	0	2	2	2	2
	Average for A.6	0	2	2	2	2
<b>A.7</b>	<b>Law, Regulation, Guideline</b>					
A.7.1	Law on Household and Industrial Wastes	2	3	3	4	4
A.7.2	Ordinance of Minister for Health of Mongolia: Regulation on collection, transportation and disposal of hospital generated waste	1	2	2	2	2
A.7.3	Joint Ordinance of Minister for Environment and Minister for Health: Approval of list and regulation /Methodological instructions to collect, store, transport and dispose poisonous chemical waste in environment sound manner	1	1	1	1	2
A.7.4	Ordinance of Minister for Environment :Approval of Regulation /Regulation on waste disposal operations, special waste disposal facilities, requirements for such facilities, and activities of individuals, companies and organizations that conduct activities related to the waste disposal and removal/	1	1	1	1	2
A.7.5	Decree of Presidium of City Council :Approval of Regulation on Establishment of buffer zone for waste disposal sites and their operations	1	2	2	2	3
A.7.6	Decree of Presidium of City Council: Approval of Regulation on Waste Fund	3	2	2	2	2
A.7.7	Decree of Presidium of City Council: Regulation to involve organizations, companies and individuals in the activities related to cleaning, maintenance and protection of streets and squares of Ulaanbaatar city on contract basis	2	3	3	4	4
A.7.8	Decree of Presidium of City Council: Approval of renewing of service fee /Service fee to collect and transport waste of organizations, companies and households of Ulaanbaatar	4	2	4	4	4
A.7.9	Decree of Presidium of City Council: Approval of renewing of service expenses /Tariff for hunting street dogs and cats, waste transportation tariff/	4	3	4	4	4
A.7.10	Decree of Presidium of City Council: Approval of Regulation /Regulation for organizations, companies and individuals to conduct city renovation and cleaning	4	3	4	4	4
	Average for A.7	2.3	2.2	2.6	2.8	3.1
<b>A.8</b>	<b>Social Environmental Consideration</b>					
A.8.1	I know NIMBY Syndrome	0	1	1	3	3
A.8.2	I know the environment aspects to be considered.	2	1	1	2	3
A.8.3	I know the social aspects to be considered.	2	1	1	2	3
	Average for A.8	1.5	1.0	1.0	2.3	3.0

<b>A.9</b>	<b>Contract Management</b>					
A.9.1	I know advantages and disadvantages of various types of Contracts.	1	2	2	3	4
A.9.2	I know how to estimate costs.	1	2	2	3	3
A.9.3	I know how to monitor progress	1	2	2	3	3
A.9.4	I know how to manage contract.	1	2	2	3	3
	Average for A.9	1	2	2	3	3.3
<b>A.10</b>	<b>Basic principals and measures</b>					
A.10.1	I know Polluter Pay Principles.	1	2	2	3	4
A.10.2	I know Extensive Producers Responsibility	0	2	2	3	4
A.10.3	I know the administrative measures for the environmental management.	0	1	1	3	3
	Average for A.10	0.3	1.7	1.7	3	3.7
<b>A.11</b>	<b>Site Investigations (Geological Survey, Topographical Survey, Social Survey)</b>					
A.11.1	I know how to conduct geological survey	0	0	3	3	3
A.11.2	I know how to conduct topographic survey	0	0	1	2	3
A.11.3	I know how to conduct social survey	2	0	3	3	4
	Average for A.11	0.7	0	2.3	2.7	3.3
<b>A.12</b>	<b>Environmental Protection Measures</b>					
A.12.1	I know the meaning of pollution source and pollution load	0	1	3	3	3
A.12.2	I know how to consider the environmental protection; Environmental permissible amount, Life cycle assessment, Risk management	0	0	3	3	3
	Average for A.12	0	0.5	3	3	3
	<b>Average for A</b>	<b>1.1</b>	<b>1.5</b>	<b>2.1</b>	<b>2.7</b>	<b>3.2</b>
<b>B</b>	<b>Skills</b>					
B.1	I can do the waste discharge rate survey	2	1	3	4	4
B.2	I can do the waste physical composition survey.	2	2	2	4	4
B.3	I can survey and draw the waste stream	3	3	3	3	3
B.4	I can project the waste amount	2	3	3	3	3
B.5	I can project the waste composition	2	2	2	3	3
B.6	I can calculate the required number of waste collection trucks	3	3	3	3	4
B.7	I can calculate the waste disposal amount	3	3	3	3	4
B.8	I can calculate the required volume of waste disposal	3	3	3	3	4
B.9	I can plan the waste treatment and disposal system	1	3	3	3	3
B.10	I can select the optimum waste treatment and disposal system	1	2	2	2	3
B.11	I can estimate or understand the cost of SWM facilities.	1	2	2	3	3
B.12	I can estimate or understand the cost of equipment	1	2	2	3	3
B.13	I can estimate or understand the cost of waste collection	2	3	3	3	4
B.14	I can estimate or understand the cost of landfilling Operation	2	2	2	3	3
B.15	I can estimate or understand the cost of maintenance of equipment	1	2	2	3	4
B.16	I can formulate the operation and maintenance plan of equipment	0	2	2	2	3
B.17	I can understand EIA report	0	2	2	2	3
B.18	I can prepare financial report.	0	1	2	2	3
B.19	I can draft regulation and/or guideline on SWM	2	2	2	2	3
	Average for B	1.6	2.3	2.4	2.8	3.4
<b>C</b>	<b>Attitude</b>					
C.1	I can actively think over the SWM conditions and problems and behave toward the solution	3	3	3	3	3
C.2	I can actively contribute the improvement of public health and the environmental preservation.	2	2	3	4	4
C.3	I can involve colleague and staff for taking action	2	3	3	3	3
C.4	I can prepare the realistic proposal taking fully the present conditions into account.	3	3	3	3	3
C.5	I can flexibly deal with the problems based on the characteristics of the problems and resources own.	3	3	3	4	4
C.6	I can listen people's voices and explain them their social duties.	3	3	3	3	3
C.7	I can explain to the people about SWM plan.	3	3	3	4	4
	Average for B	2.7	2.9	3	3.4	3.4
	<b>Overall Average Score</b>	<b>1.8</b>	<b>2.2</b>	<b>2.5</b>	<b>3</b>	<b>3.3</b>

	Summary	2009-Nov	2010-Jul	2011-Mar	2011-Jul	2012-Mar
A	Knowledge	1.1	1.5	2.1	2.7	3.2
B	Skills	1.6	2.3	2.4	2.8	3.4
C	Attitude	2.7	2.9	3	3.4	3.4



c. **Person B**

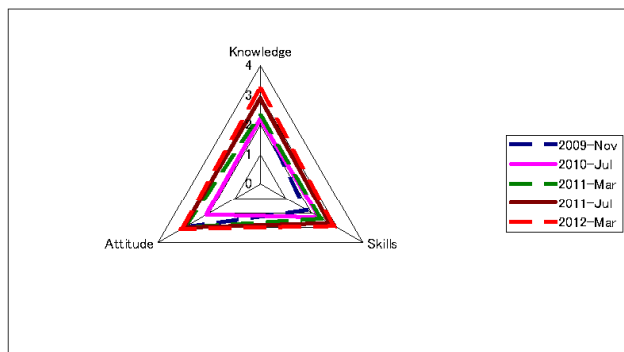
**Capacity Assessment Evaluation Result for Individual**

Organization: EPWMD  
Evaluation: Excellent: 4, Good: 3, Fair: 2, Poor: 1 None: 0

**B**

Code	Items					
		2009-Nov	2010-Jul	2011-Mar	2011-Jul	2012-Mar
<b>A</b>	<b>Knowledge</b>					
<b>A.1</b>	<b>Basic Subjects</b>					
A.1.1	I know problems caused by waste.	4	3	3	4	4
A.1.2	I know the objectives by SWM	3	3	3	4	4
A.1.3	I know the basic components of SWM technical system.	2	3	3	4	4
A.1.4	I know the survey method of waste generation amount.	3	2	3	4	4
A.1.5	I know the method of determine the various waste amounts	3	2	3	3	3
A.1.6	I know the method of physical waste composition survey	2	2	2	3	3
A.1.7	I know the various survey methods of waste properties.	3	2	2	3	3
A.1.8	I know the properties of each waste composition.	3	2	2	3	3
A.1.9	I know the waste properties by source	3	3	3	3	3
A.1.10	I know how to understand the waste stream.	1	2	2	3	3
	Average for A.1	2.7	2.4	2.6	3.4	3.4
<b>A.2</b>	<b>Discharge, Storage, Collection, Transportation</b>					
A.2.1	I know various waste discharge and storage system.	1	2	2	3	4
A.2.2	I know various waste collection methods.	3	2	2	3	4
A.2.3	I know various waste transportation methods	1	2	2	3	3
A.2.4	I know various equipment of waste transportation	3	2	2	3	3
	Average for A.2	2.0	2.0	2.0	3.0	3.5
<b>A.3</b>	<b>Waste Processing and Treatment</b>					
A.3.1	I know the mechanism of composting	1	2	2	3	3
A.3.2	I know disadvantage of composting	1	2	2	3	3
A.3.4	I know the incineration technology	1	3	3	3	3
A.3.5	I know the RDF technology	1	2	2	3	4
A.3.6	I know the waste separation technology	2	3	3	4	4
	Average for A.3	1.2	2.4	2.4	3.2	3.4
<b>A.4</b>	<b>Waste Separation and Recycling</b>					
A.4.1	I know the advantages of waste separation at generation source.	3	3	3	4	4
A.4.2	I know the disadvantages of waste separation at generation source	1	2	2	4	4
A.4.3	I know the advantages of Recycling	3	3	3	3	3
A.4.4	I know the disadvantages of Recycling	1	2	2	2	3
	Average for A.4	2.0	2.5	2.5	3.3	3.5
<b>A.5</b>	<b>Final Disposal</b>					
A.5.1	I know the problems caused by waste disposal	2	3	3	3	4
A.5.2	I know the required facility of waste disposal in accordance with waste type	3	2	2	3	4
A.5.3	I know the leachate control system	2	2	2	3	3
A.5.4	I know various gas vent system.	3	2	2	3	3
A.5.5	I know the necessity of security facilities.	4	2	2	3	3
A.5.6	I know the landfill method.	1	3	3	3	3
	Average for A.5	2.6	2.3	2.3	3.0	3.3
<b>A.6</b>	<b>Healthcare Waste</b>					
A6.1	I know the type of healthcare wastes and their risk.	3	2	2	3	3
A6.2	I know how to handle healthcare waste.	3	2	2	3	4
	Average for A.6	3.0	2.0	2.0	3.0	3.5
<b>A.7</b>	<b>Law, Regulation, Guideline</b>					
A.7.1	Law on Household and Industrial Wastes	4	3	4	4	4
A.7.2	Ordinance of Minister for Health of Mongolia: Regulation on collection, transportation and disposal of hospital generated waste	4	2	2	3	3
A.7.3	Joint Ordinance of Minister for Environment and Minister for Health: Approval of list and regulation /Methodological instructions to collect, store, transport and dispose poisonous chemical waste in environment sound manner.	4	2	2	3	3
A.7.4	Ordinance of Minister for Environment: Approval of Regulation /Regulation on waste disposal operations, special waste disposal facilities, requirements for such facilities, and activities of individuals, companies and organizations that conduct activities related to the waste disposal and removal/	4	2	4	4	4
A.7.5	Decree of Presidium of City Council: Approval of Regulation on Establishment of buffer zone for waste disposal sites and their operations	4	2	4	4	4
A.7.6	Decree of Presidium of City Council: Approval of Regulation on Waste Fund	4	2	2	3	3
A.7.7	Decree of Presidium of City Council: Regulation to involve organizations, companies and individuals in the activities related to cleaning, maintenance and protection of streets and squares of Ulaanbaatar city on contract basis	4	2	4	4	4
A.7.8	Decree of Presidium of City Council: Approval of renewing of service fee /Service fee to collect and transport waste of organizations, companies and households of Ulaanbaatar	4	2	4	4	4
A.7.9	Decree of Presidium of City Council: Approval of renewing of service expenses /Tariff for hunting street dogs and cats, waste transportation tariff/	4	3	4	4	4
A.7.10	Decree of Presidium of City Council: Approval of Regulation /Regulation for organizations companies and individuals to conduct city renovation and cleaning activities.	4	3	4	4	4
	Average for A.7	4.0	2.3	3.4	3.7	3.7
<b>A.8</b>	<b>Social Environmental Consideration</b>					
A.8.1	I know NIMBY Syndrome	0	2	2	3	4
A.8.2	I know the environment aspects to be considered.	2	2	2	2	2
A.8.3	I know the social aspects to be considered.	2	2	2	2	2
	Average for A.8	1.8	2.0	2.0	2.3	2.7

<b>A.9</b>	<b>Contract Management</b>					
A.9.1	I know advantages and disadvantages of various types of Contracts.	1	2	2	3	3
A.9.2	I know how to estimate costs.	3	2	2	3	3
A.9.3	I know how to monitor progress	3	2	2	3	3
	Average for A.9	2.5	2.0	2.0	3.0	3.0
<b>A.10</b>	<b>Basic principals and measures</b>					
A.10.1	I know Polluter Pay Principles.	2	2	2	3	3
A.10.2	I know Extensive Producers Responsibility	2	2	2	3	3
A.10.3	I know the administrative measures for the environmental management.	1	2	2	2	3
	Average for A.10	1.7	2.0	2.0	2.7	3.0
<b>A.11</b>	<b>Site Investigations (Geological Survey, Topographical Survey, Social Survey)</b>					
A.11.1	I know how to conduct geological survey	3	2	2	2	3
A.11.2	I know how to conduct topographic survey	2	2	2	2	3
A.11.3	I know how to conduct social survey	3	2	2	3	3
	Average for A.11	2.7	2.0	2.0	2.3	3.0
<b>A.12</b>	<b>Environmental Protection Measures</b>					
A.12.1	I know the meaning of pollution source and pollution load	1	2	2	3	3
A.12.2	I know how to consider the environmental protection; Environmental permissible amount, Life cycle assessment, Risk management	1	2	2	2	2
	Average for A.12	1.0	2.0	2.0	2.5	2.5
	<b>Average for A</b>	<b>2.3</b>	<b>2.2</b>	<b>2.3</b>	<b>2.9</b>	<b>3.2</b>
<b>B</b>	<b>Skills</b>					
B.1	I can do the waste discharge rate survey	2	2	3	3	3
B.2	I can do the waste physical composition survey.	2	3	3	3	3
B.3	I can survey and draw the waste stream	1	3	3	3	3
B.4	I can project the waste amount	1	2	3	3	3
B.5	I can project the waste composition	1	2	2	3	3
B.6	I can calculate the required number of waste collection trucks	3	2	2	3	4
B.7	I can calculate the waste disposal amount	3	3	3	3	3
B.8	I can calculate the required volume of waste disposal	2	2	2	3	3
B.9	I can plan the waste treatment and disposal system	2	2	2	2	2
B.10	I can select the optimum waste treatment and disposal system	1	2	2	2	3
B.11	I can estimate or understand the cost of SWM facilities.	1	2	3	3	3
B.12	I can estimate or understand the cost of equipment	3	2	2	2	2
B.13	I can estimate or understand the cost of waste collection	3	2	2	2	4
B.14	I can estimate or understand the cost of landfilling Operation	3	3	3	3	3
B.15	I can estimate or understand the cost of maintenance of equipment	1	2	2	2	2
B.16	I can formulate the operation and maintenance plan of equipment	1	2	2	2	2
B.17	I can understand EIA report	1	2	2	4	4
B.18	I can prepare financial report.	1	2	2	3	3
B.19	I can draft regulation and/or guideline on SWM	2	3	3	3	3
	<b>Average for B</b>	<b>1.8</b>	<b>2.3</b>	<b>2.4</b>	<b>2.7</b>	<b>2.9</b>
<b>C</b>	<b>Attitude</b>					
C.1	I can actively think over the SWM conditions and problems and behave toward the	3	2	3	3	3
C.2	I can actively contribute the improvement of public health and the environmental preservation.	3	2	3	3	3
C.3	I can involve colleague and staff for taking action	3	2	3	3	3
C.4	I can prepare the realistic proposal taking fully the present conditions into account.	3	2	3	3	3
C.5	I can flexibly deal with the problems based on the characteristics of the problems and resources own.	3	2	3	3	3
C.6	I can listen people's voices and explain them their social duties.	3	2	3	3	3
C.7	I can explain to the people about SWM plan.	3	3	3	3	4
	<b>Average for C</b>	<b>3.0</b>	<b>2.1</b>	<b>3.0</b>	<b>3.0</b>	<b>3.1</b>
	<b>Overall Average Score</b>	<b>2.4</b>	<b>2.2</b>	<b>2.6</b>	<b>2.9</b>	<b>3.1</b>
	<b>Summary</b>	2009-Nov	2010-Jul	2011-Mar	2011-Jul	2012-Mar
A	Knowledge	2.3	2.2	2.3	2.9	3.2
B	Skills	1.8	2.3	2.4	2.7	2.9
C	Attitude	3	2.1	3	3	3.1



d. Person C

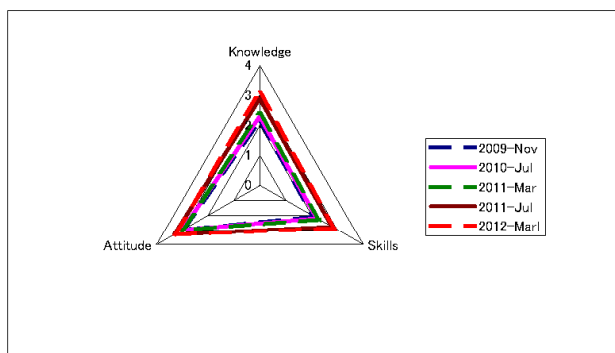
Capacity Assessment Evaluation Result for Individual

Organization: EPWMD  
Evaluation: Excellent: 4, Good: 3, Fair: 2, Poor: 1 None: 0  
C

Code	Items					
		2009- Nov	2010- Jul	2011-Mar	2011- Jul	2012-Mar
<b>A</b>	<b>Knowledge</b>					
<b>A.1</b>	<b>Basic Subjects</b>					
A.1.1	I know problems caused by waste.	3	3	3	3	3
A.1.2	I know the objectives by SWM	3	3	3	3	3
A.1.3	I know the basic components of SWM technical system.	3	3	3	3	3
A.1.4	I know the survey method of waste generation amount.	2	2	3	3	3
A.1.5	I know the method of determine the various waste amounts	2	2	2	3	3
A.1.6	I know the method of physical waste composition survey	2	2	2	3	3
A.1.7	I know the various survey methods of waste properties.	2	2	2	3	3
A.1.8	I know the properties of each waste composition.	2	2	2	3	3
A.1.9	I know the waste properties by source	2	2	2	3	3
A.1.10	I know how to understand the waste stream.	0	2	2	3	3
	Average for A.1	2.1	2.3	2.4	3.0	3.0
<b>A.2</b>	<b>Discharge, Storage, Collection, Transportation</b>					
A.2.1	I know various waste discharge and storage system.	3	3	3	3	3
A.2.2	I know various waste collection methods.	3	2	3	3	3
A.2.3	I know various waste transportation methods	3	2	2	3	3
A.2.4	I know various equipment of waste transportation	3	3	3	3	3
	Average for A.2	3.0	2.5	2.8	3.0	3.0
<b>A.3</b>	<b>Waste Processing and Treatment</b>					
A.3.1	I know the mechanism of composting	0	2	2	3	3
A.3.2	I know disadvantage of composting	1	2	2	3	3
A.3.4	I know the incineration technology	3	2	2	2	2
A.3.5	I know the RDF technology	0	3	3	3	4
A.3.6	I know the waste separation technology	3	3	3	4	4
	Average for A.3	1.3	2.4	2.4	3.0	3.2
<b>A.4</b>	<b>Waste Separation and Recycling</b>					
A.4.1	I know the advantages of waste separation at generation source.	3	3	3	4	4
A.4.2	I know the disadvantages of waste separation at generation source	3	3	3	4	4
A.4.3	I know the advantages of Recycling	3	3	3	3	3
A.4.4	I know the disadvantages of Recycling	3	3	3	3	3
	Average for A.4	3.0	3.0	3.0	3.5	3.5
<b>A.5</b>	<b>Final Disposal</b>					
A.5.1	I know the problems caused by waste disposal	2	2	2	3	3
A.5.2	I know the required facility of waste disposal in accordance with waste type	3	2	2	3	3
A.5.3	I know the leachate control system	2	2	2	3	3
A.5.4	I know various gas vent system.	1	2	2	3	3
A.5.5	I know the necessity of security facilities.	2	2	2	3	3
A.5.6	I know the landfill method.	3	3	3	3	3
	Average for A.5	2.0	2.2	2.2	3.0	3.0
<b>A.6</b>	<b>Healthcare Waste</b>					
A.6.1	I know the type of healthcare wastes and their risk.	1	2	2	2	2
A.6.2	I know how to handle healthcare waste.	1	2	2	2	2
	Average for A.6	1.0	2.0	2.0	2.0	2.0
<b>A.7</b>	<b>Law, Regulation, Guideline</b>					
A.7.1	Law on Household and Industrial Wastes	3	2	3	3	3
A.7.2	Ordinance of Minister for Health of Mongolia: Regulation on collection, transportation and disposal of hospital generated waste	2	2	2	3	3
A.7.3	Joint Ordinance of Minister for Environment and Minister for Health: Approval of list and regulation /Methodological instructions to collect, store, transport and dispose poisonous chemical waste in environment sound manner/	1	2	2	3	3
A.7.4	Ordinance of Minister for Environment :Approval of Regulation /Regulation on waste disposal operations, special waste disposal facilities, requirements for such facilities, and activities of individuals, companies and organizations that conduct activities related to the waste disposal and removal/	2	2	2	3	3
A.7.5	Decree of Presidium of City Council :Approval of Regulation on Establishment of buffer zone for waste disposal sites and their operations	1	2	2	3	3
A.7.6	Decree of Presidium of City Council: Approval of Regulation on Waste Fund	3	2	3	3	3
A.7.7	Decree of Presidium of City Council: Regulation to involve organizations, companies and individuals in the activities related to cleaning, maintenance and protection of streets and squares of Ulaanbaatar city on contract basis	3	2	3	3	3
A.7.8	Decree of Presidium of City Council: Approval of renewing of service fee /Service fee to collect and transport waste of organizations, companies and households of Ulaanbaatar	3	2	3	3	3
A.7.9	Decree of Presidium of City Council: Approval of renewing of service expenses /Tariff for hunting street dogs and cats, waste transportation tariff/	3	2	3	3	3
A.7.10	Decree of Presidium of City Council: Approval of Regulation /Regulation for organizations companies and individuals to conduct city renovation and cleaning activities/	3	2	3	3	3
	Average for A.7	2.4	2.0	2.6	3.0	3.0
<b>A.8</b>	<b>Social Environmental Consideration</b>					
A.8.1	I know NIMBY Syndrome	2	3	3	4	4
A.8.2	I know the environment aspects to be considered.	2	2	3	3	3
A.8.3	I know the social aspects to be considered.	2	2	2	3	3
	Average for A.8	2.3	2.3	2.7	3.3	3.3

<b>A.9</b>	<b>Contract Management</b>					
A.9.1	I know advantages and disadvantages of various types of Contracts.	3	2	2	2	3
A.9.2	I know how to estimate costs.	2	2	2	2	3
A.9.3	I know how to monitor progress	2	2	2	3	3
	Average for A.9	2.3	2.0	2.0	2.3	3.0
<b>A.10</b>	<b>Basic principals and measures</b>					
A.10.1	I know Polluter Pay Principles.	3	2	3	3	4
A.10.2	I know Extended Producers Responsibility	2	2	2	3	4
	Average for A.10	2.3	2.0	2.5	3.0	4.0
<b>A.11</b>	<b>Site Investigations (Geological Survey, Topographical Survey, Social Survey)</b>					
A.11.1	I know how to conduct geological survey	1	2	2	2	3
A.11.2	I know how to conduct topographic survey	1	2	2	2	3
A.11.3	I know how to conduct social survey	3	3	3	4	4
	Average for A.11	1.7	2.3	2.3	2.7	3.3
<b>A.12</b>	<b>Environmental Protection Measures</b>					
A.12.1	I know the meaning of pollution source and pollution load	2	2	2	3	3
A.12.2	I know how to consider the environmental protection; Environmental permissible amount, Life cycle assessment, Risk management	2	2	2	2	2
	Average for A.12	2.0	2.0	2.0	2.5	2.5
	<b>Average for A</b>	2.1	2.3	2.4	2.9	3.1
<b>B</b>	<b>Skills</b>					
B.1	I can do the waste discharge rate survey	3	2	3	4	4
B.2	I can do the waste physical composition survey.	2	2	3	4	4
B.3	I can survey and draw the waste stream	2	3	3	3	3
B.4	I can project the waste amount	2	2	3	3	3
B.5	I can project the waste composition	2	2	2	2	2
B.6	I can calculate the required number of waste collection trucks	3	2	2	3	3
B.7	I can calculate the waste disposal amount	2	2	2	3	3
B.8	I can calculate the required volume of waste disposal	2	2	2	3	3
B.9	I can plan the waste treatment and disposal system	2	2	2	2	2
B.10	I can select the optimum waste treatment and disposal system	2	2	2	2	2
B.11	I can estimate or understand the cost of SWM facilities.	2	2	2	2	2
B.12	I can estimate or understand the cost of equipment	2	2	2	3	3
B.13	I can estimate or understand the cost of waste collection	2	2	2	3	4
B.14	I can estimate or understand the cost of landfilling Operation	2	2	2	3	3
B.15	I can estimate or understand the cost of maintenance of equipment	2	2	2	2	4
B.16	I can formulate the operation and maintenance plan of equipment	2	2	2	2	2
B.17	I can understand EIA report	2	3	3	3	3
B.18	I can prepare financial report.	1	2	2	3	3
B.19	I can draft regulation and/or guideline on SWM	3	3	3	3	3
	<b>Average for B</b>	2.1	2.2	2.3	2.8	2.9
<b>C</b>	<b>Attitude</b>					
C.1	I can actively think over the SWM conditions and problems and behave toward the	3	3	3	3	3
C.2	I can actively contribute the improvement of public health and the environmental preservation.	3	3	3	4	4
C.3	I can involve colleague and staff for taking action	3	3	3	3	3
C.4	I can prepare the realistic proposal taking fully the present conditions into account.	3	3	3	3	3
C.5	I can flexibly deal with the problems based on the characteristics of the problems and resources own.	3	3	3	3	3
C.6	I can listen people's voices and explain them their social duties.	3	3	3	3	3
C.7	I can explain to the people about SWM plan.	3	3	3	4	4
	<b>Average for B</b>	3.0	3.0	3.0	3.3	3.3
	<b>Overall Average Score</b>	2.4	2.5	2.6	3.0	3.1

	Summary	2009 May	2010 Jul	2011-Mar	2011- Jul	2012- Mar
A	Knowledge	2.1	2.3	2.4	2.9	3.1
B	Skills	2.1	2.2	2.3	2.8	2.9
C	Attitude	3	3	3	3.3	3.3





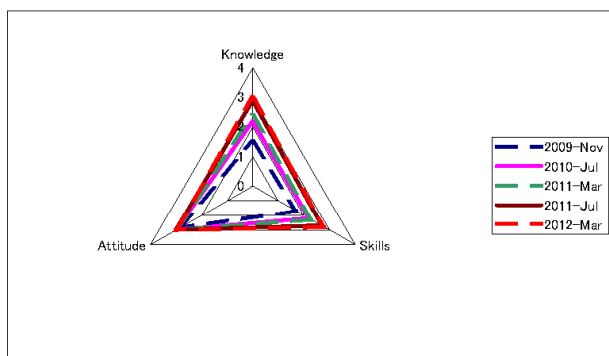
e. **Person D**

**Capacity Assessment Evaluation Result for Individual**

Organization: EPWMD  
Evaluation: Excellent: 4, Good: 3, Fair: 2, Poor: 1 None: 0  
**D**

Code	Items					
		2009-Nov	2010-Jul	2011-Mar	2011-Jul	2012-Mar
<b>A</b>	<b>Knowledge</b>					
<b>A.1</b>	<b>Basic Subjects</b>					
A.1.1	I know problems caused by waste.	3	2	2	3	3
A.1.2	I know the objectives by SWM	3	2	2	3	3
A.1.3	I know the basic components of SWM technical system.	1	2	2	3	3
A.1.4	I know the survey method of waste generation amount.	1	2	2	3	3
A.1.5	I know the method of determine the various waste amounts	1	3	3	3	3
A.1.6	I know the method of physical waste composition survey	1	2	2	3	3
A.1.7	I know the various survey methods of waste properties.	1	2	2	2	2
A.1.8	I know the properties of each waste composition.	1	2	2	3	3
A.1.9	I know the waste properties by source	1	2	2	3	3
A.1.10	I know how to understand the waste stream.	1	3	3	3	3
	Average for A.1	1.4	2.2	2.2	2.9	2.9
<b>A.2</b>	<b>Discharge, Storage, Collection, Transportation</b>					
A.2.1	I know various waste discharge and storage system.	2	3	3	3	3
A.2.2	I know various waste collection methods.	2	3	3	3	3
A.2.3	I know various waste transportation methods	2	2	2	3	3
A.2.4	I know various equipment of waste transportation	2	2	2	3	3
	Average for A.2	2.0	2.5	2.5	3.0	3.0
<b>A.3</b>	<b>Waste Processing and Treatment</b>					
A.3.1	I know the mechanism of composting	1	2	2	3	3
A.3.2	I know disadvantage of composting	1	2	2	3	3
A.3.4	I know the incineration technology	1	2	2	3	3
A.3.5	I know the RDF technology	1	2	2	3	3
A.3.6	I know the waste separation technology	2	3	3	3	3
	Average for A.3	1.2	2.2	2.2	3.0	3.0
<b>A.4</b>	<b>Waste Separation and Recycling</b>					
A.4.1	I know the advantages of waste separation at generation source.	2	3	3	4	4
A.4.2	I know the disadvantages of waste separation at generation source	1	3	3	4	4
A.4.3	I know the advantages of Recycling	2	3	3	3	3
A.4.4	I know the disadvantages of Recycling	1	3	3	3	3
	Average for A.4	1.5	3.0	3.0	3.5	3.5
<b>A.5</b>	<b>Final Disposal</b>					
A.5.1	I know the problems caused by waste disposal	1	3	3	3	3
A.5.2	I know the required facility of waste disposal in accordance with waste type	1	3	3	3	3
A.5.3	I know the leachate control system	2	2	2	3	3
A.5.4	I know various gas vent system.	1	2	2	3	3
A.5.5	I know the necessity of security facilities.	1	2	2	3	3
A.5.6	I know the landfill method.	2	3	3	3	3
	Average for A.5	1.3	2.5	2.5	3.0	3.0
<b>A.6</b>	<b>Healthcare Waste</b>					
A.6.1	I know the type of healthcare wastes and their risk.	1	2	2	2	2
A.6.2	I know how to handle healthcare waste	1	2	2	2	2
	Average for A.6	1.0	2.0	2.0	2.0	2.0
<b>A.7</b>	<b>Law, Regulation, Guideline</b>					
A.7.1	Law on Household and Industrial Wastes	3	3	3	3	3
A.7.2	Ordinance of Minister for Health of Mongolia: Regulation on collection, transportation and disposal of hospital generated waste	2	3	3	3	3
A.7.3	Joint Ordinance of Minister for Environment and Minister for Health: Approval of list and regulation /Methodological instructions to collect, store, transport and dispose poisonous chemical waste in environment sound manner	2	3	3	3	3
A.7.4	Ordinance of Minister for Environment: Approval of Regulation /Regulation on waste disposal operations, special waste disposal facilities, requirements for such facilities, and activities of individuals, companies and organizations that conduct activities related to the waste disposal and removal/	2	2	2	3	3
A.7.5	Decree of Presidium of City Council: Approval of Regulation on Establishment of buffer zone for waste disposal sites and their operations	3	2	2	3	3
A.7.6	Decree of Presidium of City Council: Approval of Regulation on Waste Fund	3	3	3	3	3
A.7.7	Decree of Presidium of City Council: Regulation to involve organizations, companies and individuals in the activities related to cleaning, maintenance and protection of streets and squares of Ulaanbaatar city on contract basis	3	3	3	3	3
A.7.8	Decree of Presidium of City Council: Approval of renewing of service fee /Service fee to collect and transport waste of organizations, companies and households of Ulaanbaatar	3	2	2	3	3
A.7.9	Decree of Presidium of City Council: Approval of renewing of service expenses /Tariff for hunting street dogs and cats, waste transportation tariff	3	3	3	3	3
A.7.10	Decree of Presidium of City Council: Approval of Regulation /Regulation for organizations companies and individuals to conduct city renovation and cleaning activities.	3	3	3	3	3
	Average for A.7	2.7	2.7	2.7	3.0	3.0
<b>A.8</b>	<b>Social Environmental Consideration</b>					
A.8.1	I know NIMBY Syndrome	1	2	3	3	3
A.8.2	I know the environment aspects to be considered.	1	2	2	3	3
A.8.3	I know the social aspects to be considered.	1	2	2	3	3
	Average for A.8	1.3	2.0	2.3	3.0	3.0

<b>A.9</b>	<b>Contract Management</b>					
A.9.1	I know advantages and disadvantages of various types of Contracts.	2	2	2	3	4
A.9.2	I know how to estimate costs.	2	2	2	3	3
A.9.3	I know how to monitor progress	2	2	2	3	3
	Average for A.9	2.0	2.0	2.0	3.0	3.3
<b>A.10</b>	<b>Basic principals and measures</b>					
A.10.1	I know Polluter Pay Principles.	1	2	3	3	3
A.10.2	I know Extensive Producers Responsibility	1	2	3	3	3
A.10.3	I know the administrative measures for the environmental management.	1	2	3	3	3
	Average for A.10	1.0	2.0	3.0	3.0	3.0
<b>A.11</b>	<b>Site Investigations (Geological Survey, Topographical Survey, Social Survey)</b>					
A.11.1	I know how to conduct geological survey	1	2	2	2	2
A.11.2	I know how to conduct topographic survey	1	2	2	2	2
A.11.3	I know how to conduct social survey	2	2	2	3	4
	Average for A.11	1.3	2.0	2.0	2.3	2.7
<b>A.12</b>	<b>Environmental Protection Measures</b>					
A.12.1	I know the meaning of pollution source and pollution load	1	1	2	3	3
A.12.2	I know how to consider the environmental protection; Environmental permissible amount, Life cycle assessment, Risk management	1	1	2	3	3
	Average for A.12	1.0	1.0	2.0	3.0	3.0
	<b>Average for A</b>	<b>1.5</b>	<b>2.2</b>	<b>2.4</b>	<b>2.9</b>	<b>3</b>
<b>B</b>	<b>Skills</b>					
B.1	I can do the waste discharge rate survey	2	2	3	3	3
B.2	I can do the waste physical composition survey.	2	2	3	3	3
B.3	I can survey and draw the waste stream	2	2	2	3	3
B.4	I can project the waste amount	2	2	2	3	3
B.5	I can project the waste composition	2	2	2	3	3
B.6	I can calculate the required number of waste collection trucks	2	2	2	2	3
B.7	I can calculate the waste disposal amount	1	2	2	3	3
B.8	I can calculate the required volume of waste disposal	1	2	2	3	3
B.9	I can plan the waste treatment and disposal system	2	2	2	2	2
B.10	I can select the optimum waste treatment and disposal system	1	2	2	2	2
B.11	I can estimate or understand the cost of SWM facilities.	2	2	2	2	2
B.12	I can estimate or understand the cost of equipment	2	2	2	3	3
B.13	I can estimate or understand the cost of waste collection	2	2	2	3	3
B.14	I can estimate or understand the cost of landfilling Operation	1	2	2	3	3
B.15	I can estimate or understand the cost of maintenance of equipment	1	2	2	3	3
B.16	I can formulate the operation and maintenance plan of equipment	1	2	2	2	2
B.17	I can understand EIA report	2	3	3	3	3
B.18	I can prepare financial report.	2	3	3	3	3
B.19	I can draft regulation and/or guideline on SWM	2	3	3	3	3
	<b>Average for B</b>	<b>1.7</b>	<b>2.2</b>	<b>2.3</b>	<b>2.7</b>	<b>2.8</b>
<b>C</b>	<b>Attitude</b>					
C.1	I can actively think over the SWM conditions and problems and behave toward the	2	3	3	3	3
C.2	I can actively contribute the improvement of public health and the environmental preservation.	3	3	3	3	3
C.3	I can involve colleague and staff for taking action	3	3	3	3	3
C.4	I can prepare the realistic proposal taking fully the present conditions into account.	3	3	3	3	3
C.5	I can flexibly deal with the problems based on the characteristics of the problems and resources own.	3	3	3	3	3
C.6	I can listen people's voices and explain them their social duties.	3	3	3	3	3
C.7	I can explain to the people about SWM plan.	3	3	3	3	3
	<b>Average for C</b>	<b>2.9</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>
	<b>Overall Average Score</b>	<b>2</b>	<b>2.5</b>	<b>2.6</b>	<b>2.9</b>	<b>2.9</b>
	<b>Summary</b>	2009-Nov	2010-Jul	2011-Mar	2011-Jul	2012-Mar
A	Knowledge	1.5	2.2	2.4	2.9	3
B	Skills	1.7	2.2	2.3	2.7	2.8
C	Attitude	2.9	3	3	3	3



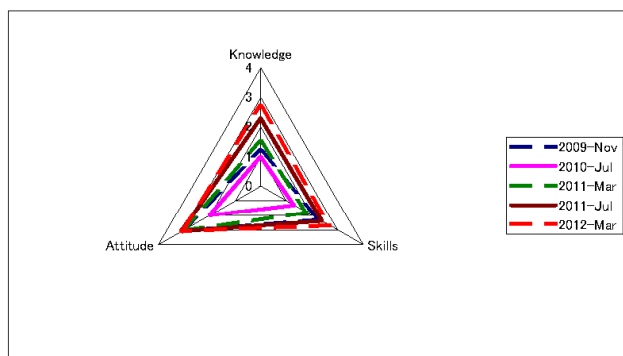
f. Person E

Capacity Assessment Evaluation Result for Individual

Organization: EPWMD  
Evaluation: Excellent: 4, Good: 3, Fair: 2, Poor: 1 None: 0  
E

Code	Items					
		2009-Nov	2010-Jul	2011-Mar	2011-Jul	2012-Mar
<b>A</b>	<b>Knowledge</b>					
<b>A.1</b>	<b>Basic Subjects</b>					
A.1.1	I know problems caused by waste.	3	2	2	3	3
A.1.2	I know the objectives by SWM	3	2	2	3	3
A.1.3	I know the basic components of SWM technical system.	2	2	2	3	3
A.1.4	I know the survey method of waste generation amount.	3	2	2	3	3
A.1.5	I know the method of determine the various waste amounts	2	2	2	3	3
A.1.6	I know the method of physical waste composition survey	0	1	2	3	3
A.1.7	I know the various survey methods of waste properties.	0	1	2	2	3
A.1.8	I know the properties of each waste composition.	0	1	2	2	3
A.1.9	I know the waste properties by source	0	1	2	2	2
A.1.10	I know how to understand the waste stream.	0	1	3	3	3
	Average for A.1	1.3	1.5	2.1	2.7	2.9
<b>A.2</b>	<b>Discharge, Storage, Collection, Transportation</b>					
A.2.1	I know various waste discharge and storage system.	3	2	2	3	3
A.2.2	I know various waste collection methods.	3	2	2	3	3
A.2.3	I know various waste transportation methods	3	2	2	3	3
A.2.4	I know various equipment of waste transportation	1	2	2	3	3
	Average for A.2	2.5	2.0	2.0	3.0	3.0
<b>A.3</b>	<b>Waste Processing and Treatment</b>					
A.3.1	I know the mechanism of composting	1	1	2	3	3
A.3.2	I know disadvantage of composting	0	1	2	3	3
A.3.3	I know the bio-gas technology	0				
A.3.4	I know the incineration technology	1	2	2	2	2
A.3.5	I know the RDF technology	0	1	1	2	3
A.3.6	I know the waste separation technology	3	1	3	3	3
	Average for A.3	0.8	1.2	2.0	2.6	2.8
<b>A.4</b>	<b>Waste Separation and Recycling</b>					
A.4.1	I know the advantages of waste separation at generation source.	1	2	2	3	3
A.4.2	I know the disadvantages of waste separation at generation source	1	2	2	3	3
A.4.3	I know the advantages of Recycling	1	2	2	3	3
A.4.4	I know the disadvantages of Recycling	1	2	2	3	3
	Average for A.4	1.0	2.0	2.0	3.0	3.0
<b>A.5</b>	<b>Final Disposal</b>					
A.5.1	I know the problems caused by waste disposal	0	2	2	3	3
A.5.2	I know the required facility of waste disposal in accordance with waste type	1	2	2	2	3
A.5.3	I know the leachate control system	1	1	1	2	3
A.5.4	I know various gas vent system.	1	1	1	2	3
A.5.5	I know the necessity of security facilities.	0	1	1	2	3
A.5.6	I know the landfill method	0	1	1	2	3
A.5.7	I know how to dispose healthcare waste.	0				
	Average for A.5	0.4	1.3	1.3	2.2	3.0
<b>A.6</b>	<b>Healthcare Waste</b>					
A6.1	I know the type of healthcare wastes and their risk.	0	1	1	2	2
A6.2	I know how to handle healthcare waste.	0	1	1	2	2
	Average for A.6	0.0	1.0	1.0	2.0	2.0
<b>A.7</b>	<b>Law, Regulation, Guideline</b>					
A.7.1	Law on Household and Industrial Wastes	2	1	3	3	3
A.7.2	Ordinance of Minister for Health of Mongolia: Regulation on collection, transportation and disposal of hospital generated waste	1	1	1	2	2
A.7.3	Joint Ordinance of Minister for Environment and Minister for Health: Approval of list and regulation /Methodological instructions to collect, store, transport and dispose poisonous chemical waste in environment sound manner/	2	1	1	2	2
A.7.4	Ordinance of Minister for Environment :Approval of Regulation /Regulation on waste disposal operations, special waste disposal facilities, requirements for such facilities, and activities of individuals, companies and organizations that conduct activities related to the waste disposal and removal/	1	1	1	2	3
A.7.5	Decree of Presidium of City Council :Approval of Regulation on Establishment of buffer zone for waste disposal sites and their operations	2	1	1	2	3
A.7.6	Decree of Presidium of City Council: Approval of Regulation on Waste Fund	2	2	2	2	2
A.7.7	Decree of Presidium of City Council: Regulation to involve organizations, companies and individuals in the activities related to cleaning, maintenance and protection of streets and squares of Ulaanbaatar city on contract basis	2	2	2	2	3
A.7.8	Decree of Presidium of City Council: Approval of renewing of service fee /Service fee to collect and transport waste of organizations, companies and households of Ulaanbaatar	2	2	2	2	3
A.7.9	Decree of Presidium of City Council: Approval of renewing of service expenses /Tariff for hunting street dogs and cats, waste transportation tariff/	2	2	2	2	2
A.7.10	Decree of Presidium of City Council: Approval of Regulation /Regulation for organizations companies and individuals to conduct city renovation and cleaning activities	2	2	2	2	3
	Average for A.7	1.8	1.5	1.7	2.1	2.6
<b>A.8</b>	<b>Social Environmental Consideration</b>					
A.8.1	I know NIMBY Syndrome	0	0	1	2	3
A.8.2	I know the environment aspects to be considered.	0	0	1	2	3
A.8.3	I know the social aspects to be considered.	2	0	1	2	3
A.8.4	I know the principal of waste disposal.	2				
	Average for A.8	1.0	0.0	1.0	2.0	3.0

<b>A.9</b>	<b>Contract Management</b>					
A.9.1	I know advantages and disadvantages of various types of Contracts.	2	1	1	3	3
A.9.2	I know how to estimate costs.	2	1	1	2	2
A.9.3	I know how to monitor progress	2	1	1	2	2
	Average for A.9	2.0	1.0	1.0	2.3	2.3
<b>A.10</b>	<b>Basic principals and measures</b>					
A.10.1	I know Polluter Pay Principles.	1	1	1	2	3
A.10.2	I know Extensive Producers Responsibility	1	1	1	2	3
A.10.3	I know the administrative measures for the environmental management.	1	1	1	2	2
	Average for A.10	1.0	1.0	1.0	2.0	2.7
<b>A.11</b>	<b>Site Investigations (Geological Survey, Topographical Survey, Social Survey)</b>					
A.11.1	I know how to conduct geological survey	1	0	2	2	3
A.11.2	I know how to conduct topographic survey	1	0	2	2	3
A.11.3	I know how to conduct social survey	3	0	3	3	3
	Average for A.11	1.7	0.0	2.3	2.3	3.0
<b>A.12</b>	<b>Environmental Protection Measures</b>					
A.12.1	I know the meaning of pollution source and pollution load	1	0	1	2	2
A.12.2	I know how to consider the environmental protection; Environmental permissible amount, Life cycle assessment, Risk management	0	0	0	1	2
	Average for A.12	0.5	0.0	0.5	1.5	2.0
	<b>Average for A</b>	<b>1.2</b>	<b>1.0</b>	<b>1.5</b>	<b>2.3</b>	<b>2.7</b>
<b>B</b>	<b>Skills</b>					
B.1	I can do the waste discharge rate survey	3	2	2	3	3
B.2	I can do the waste physical composition survey.	2	2	2	3	3
B.3	I can survey and draw the waste stream	2	2	2	3	3
B.4	I can project the waste amount	2	1	2	3	3
B.5	I can project the waste composition	2	1	2	3	3
B.6	I can calculate the required number of waste collection trucks	4	2	2	2	3
B.7	I can calculate the waste disposal amount	4	2	2	2	3
B.8	I can calculate the required volume of waste disposal	3	1	1	2	3
B.9	I can plan the waste treatment and disposal system	2	1	2	2	2
B.10	I can select the optimum waste treatment and disposal system	1	1	1	1	2
B.11	I can estimate or understand the cost of SWM facilities.	2	1	2	2	2
B.12	I can estimate or understand the cost of equipment	2	1	2	2	2
B.13	I can estimate or understand the cost of waste collection	3	1	1	2	3
B.14	I can estimate or understand the cost of landfilling Operation	2	1	2	2	3
B.15	I can estimate or understand the cost of maintenance of equipment	2	1	1	2	2
B.16	I can formulate the operation and maintenance plan of equipment	1	1	1	2	2
B.17	I can understand EIA report	1	1	3	3	3
B.18	I can prepare financial report.	2	1	2	3	3
B.19	I can draft regulation and/or guideline on SWM	3	1	2	3	3
	<b>Average for B</b>	<b>2.3</b>	<b>1.3</b>	<b>1.8</b>	<b>2.4</b>	<b>2.7</b>
<b>C</b>	<b>Attitude</b>					
C.1	I can actively think over the SWM conditions and problems and behave toward the	2	2	2	2	2
C.2	I can actively contribute the improvement of public health and the environmental preservation.	3	2	3	3	3
C.3	I can involve colleague and staff for taking action	3	2	3	3	3
C.4	I can prepare the realistic proposal taking fully the present conditions into account.	3	2	3	3	3
C.5	I can flexibly deal with the problems based on the characteristics of the problems and resources own.	4	2	4	4	4
C.6	I can listen people's voices and explain them their social duties.	3	2	3	3	3
C.7	I can explain to the people about SWM plan.	4	2	4	4	4
	<b>Average for B</b>	<b>3.1</b>	<b>2.0</b>	<b>3.1</b>	<b>3.1</b>	<b>3.1</b>
	<b>Overall Average Score</b>	<b>2.2</b>	<b>1.4</b>	<b>2.1</b>	<b>2.6</b>	<b>2.8</b>
	<b>Summary</b>	<b>2009-Nov</b>	<b>2010-Jul</b>	<b>2011-Mar</b>	<b>2011-Jul</b>	<b>2012-Mar</b>
A	Knowledge	1.2	1	1.5	2.3	2.7
B	Skills	2.3	1.3	1.8	2.4	2.7
C	Attitude	3.1	2	3.1	3.1	3.1



g. **Person F**

**Capacity Assessment Evaluation Result for Individual**

Organization: EPWMD

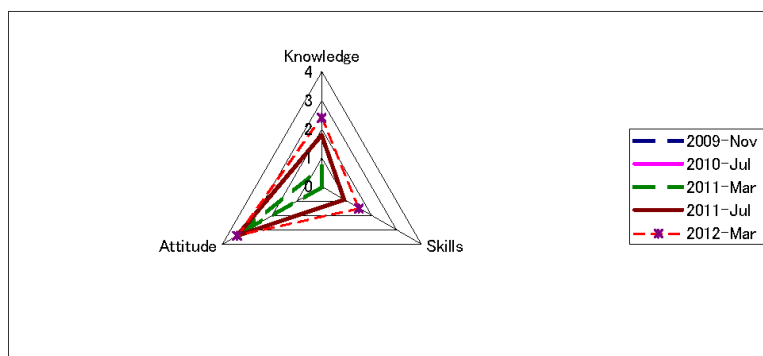
Evaluation: Excellent: 4, Good: 3, Fair: 2, Poor: 1 None: 0

F

Code						
		2009-Nov	2010-Jul	2011-Mar	2011-Jul	2012-Mar
<b>A</b>	<b>Knowledge</b>					
<b>A.1</b>	<b>Basic Subjects</b>					
A.1.1	I know problems caused by waste.			0	1	2
A.1.2	I know the objectives by SWM			0	1	2
A.1.3	I know the basic components of SWM technical system.			0	1	2
A.1.4	I know the survey method of waste generation amount.			0	1	2
A.1.5	I know the method of determine the various waste amounts			0	1	2
A.1.6	I know the method of physical waste composition survey			0	1	2
A.1.7	I know the various survey methods of waste properties.			0	1	2
A.1.8	I know the properties of each waste composition.			0	1	2
A.1.9	I know the waste properties by source			0	1	2
A.1.10	I know how to understand the waste stream.			0	1	2
	Average for A.1			0.0	1.0	2.0
<b>A.2</b>	<b>Discharge, Storage, Collection, Transportation</b>					
A.2.1	I know various waste discharge and storage system.			0	1	2
A.2.2	I know various waste collection methods.			0	1	2
A.2.3	I know various waste transportation methods			0	1	2
A.2.4	I know various equipment of waste transportation			0	1	2
	Average for A.2			0.0	1.0	2.0
<b>A.3</b>	<b>Waste Processing and Treatment</b>					
A.3.1	I know the mechanism of composting			0	1	1
A.3.2	I know disadvantage of composting			0	1	1
A.3.3	I know the bio-gas technology					
A.3.4	I know the incineration technology			0	1	1
A.3.5	I know the RDF technology			0	1	3
A.3.6	I know the waste separation technology			0	1	3
	Average for A.3			0.0	1.0	1.8
<b>A.4</b>	<b>Waste Separation and Recycling</b>					
A.4.1	I know the advantages of waste separation at generation source.			2	3	3
A.4.2	I know the disadvantages of waste separation at generation source			2	3	3
A.4.3	I know the advantages of Recycling			2	3	3
A.4.4	I know the disadvantages of Recycling			2	3	3
	Average for A.4			2.0	3.0	3.0
<b>A.5</b>	<b>Final Disposal</b>					
A.5.1	I know the problems caused by waste disposal			0	1	2
A.5.2	I know the required facility of waste disposal in accordance with waste type			0	1	2
A.5.3	I know the leachate control system			0	1	2
A.5.4	I know various gas vent system.			0	1	2
A.5.5	I know the necessity of security facilities.			0	1	2
A.5.6	I know the landfill method.			3	3	3
A.5.7	I know how to dispose healthcare waste.			4	4	4
	Average for A.5			0.5	1.3	2.2
<b>A.6</b>	<b>Healthcare Waste</b>					
A6.1	I know the type of healthcare wastes and their risk.			4	4	4
A6.2	I know how to handle healthcare waste.			4	4	4
	Average for A.6			4.0	4.0	4.0
<b>A.7</b>	<b>Law, Regulation, Guideline</b>					
A.7.1	Law on Household and Industrial Wastes			4	4	4
A.7.2	Ordinance of Minister for Health of Mongolia: Regulation on collection, transportation and disposal of hospital generated waste			4	4	4
A.7.3	Joint Ordinance of Minister for Environment and Minister for Health: Approval of list and regulation /Methodological instructions to collect, store, transport and dispose poisonous chemical waste in environment sound manner/			4	4	4
A.7.4	Ordinance of Minister for Environment :Approval of Regulation /Regulation on waste disposal operations, special waste disposal facilities, requirements for such facilities, and activities of individuals, companies and organizations that conduct activities related to the waste disposal and removal/			0	1	2
A.7.5	Decree of Presidium of City Council :Approval of Regulation on Establishment of buffer zone for waste disposal sites and their operations			0	1	2
A.7.6	Decree of Presidium of City Council: Approval of Regulation on Waste Fund			0	1	2
A.7.7	Decree of Presidium of City Council: Regulation to involve organizations, companies and individuals in the activities related to cleaning, maintenance and protection of streets and squares of Ulaanbaatar city on contract basis			0	1	2
A.7.8	Decree of Presidium of City Council: Approval of renewing of service fee /Service fee to collect and transport waste of organizations, companies and households of Ulaanbaatar/			3	3	3
A.7.9	Decree of Presidium of City Council: Approval of renewing of service expenses /Tariff for hunting street dogs and cats, waste transportation tariff/			0	1	1
A.7.10	Decree of Presidium of City Council: Approval of Regulation /Regulation for organizations companies and individuals to conduct city renovation and cleaning activities/			4	4	4
	Average for A.7			1.9	2.4	2.8
<b>A.8</b>	<b>Social Environmental Consideration</b>					
A.8.1	I know NIMBY Syndrome			0	3	3
A.8.2	I know the environment aspects to be considered.			0	1	2
A.8.3	I know the social aspects to be considered.			0	1	2
	Average for A.8			0.0	1.5	2.3
<b>A.9</b>	<b>Contract Management</b>					
A.9.1	I know advantages and disadvantages of various types of Contracts.			0	1	2
A.9.2	I know how to estimate costs.			0	1	1
A.9.3	I know how to monitor progress			0	1	2
	Average for A.9			0.0	1.0	1.7
<b>A.10</b>	<b>Basic principals and measures</b>					
A.10.1	I know Polluter Pay Principles.			0	2	3
A.10.2	I know Extensive Producers Responsibility			0	2	3
A.10.3	I know the administrative measures for the environmental management.			0	2	2

		Average for A.10			0.0	2.0	2.7
<b>A.11</b>	<b>Site Investigations (Geological Survey, Topographical Survey, Social Survey)</b>						
A.11.1	I know how to conduct geological survey				0	1	2
A.11.2	I know how to conduct topographic survey				0	1	2
A.11.3	I know how to conduct social survey				0	3	4
		Average for A.11			0.0	1.7	2.7
<b>A.12</b>	<b>Environmental Protection Measures</b>						
A.12.1	I know the meaning of pollution source and pollution load				0	2	2
A.12.2	I know how to consider the environmental protection; Environmental permissible amount, Life cycle assessment, Risk management				0	1	2
		Average for A.12			0.0	1.5	2.0
		Average for A			0.7	1.8	2.4
<b>B</b>	<b>Skills</b>						
B.1	I can do the waste discharge rate survey				0	2	2
B.2	I can do the waste physical composition survey.				0	2	2
B.3	I can survey and draw the waste stream				0	2	2
B.4	I can project the waste amount				0	2	2
B.5	I can project the waste composition				0	2	2
B.6	I can calculate the required number of waste collection trucks				0	1	2
B.7	I can calculate the waste disposal amount				0	1	1
B.8	I can calculate the required volume of waste disposal				0	1	1
B.9	I can plan the waste treatment and disposal system				0	1	1
B.10	I can select the optimum waste treatment and disposal system				0	1	1
B.11	I can estimate or understand the cost of SWM facilities.				0	0	1
B.12	I can estimate or understand the cost of equipment				0	0	1
B.13	I can estimate or understand the cost of waste collection				0	0	2
B.14	I can estimate or understand the cost of landfilling Operation				0	0	1
B.15	I can estimate or understand the cost of maintenance of equipment				0	0	1
B.16	I can formulate the operation and maintenance plan of equipment				0	0	1
B.17	I can understand EIA report				0	0	1
B.18	I can prepare financial report.				0	0	1
B.19	I can draft regulation and/or guideline on SWM				0	3	3
		Average for B			0.0	0.9	1.5
<b>C</b>	<b>Attitude</b>						
C.1	I can actively think over the SWM conditions and problems and behave toward the I can actively contribute the improvement of public health and the environmental preservation.				2	3	3
C.2	I can involve colleague and staff for taking action				3	3	3
C.3	I can prepare the realistic proposal taking fully the present conditions into account.				4	4	4
C.4	I can flexibly deal with the problems based on the characteristics of the problems and resources own.				3	3	3
C.5	I can listen people's voices and explain them their social duties.				4	4	4
C.6	I can explain to the people about SWM plan.				4	4	4
		Average for C			3.3	3.4	3.4
		<b>Overall Average Score</b>			<b>1.3</b>	<b>2.0</b>	<b>2.4</b>

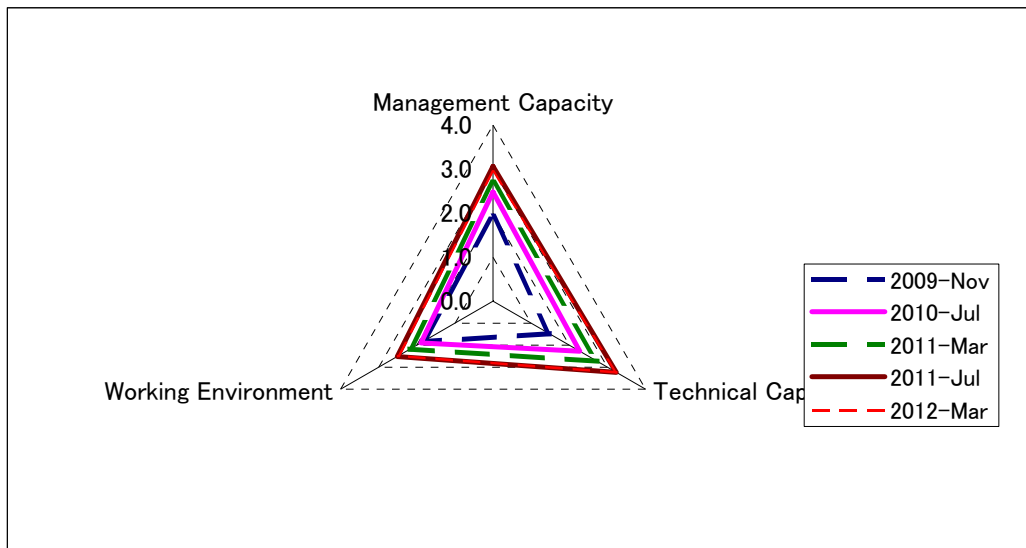
Summary		2009-Nov	2010-Jul	2011-Mar	2011-Jul	2012-Mar
A	Knowledge	0	0	0.7	1.8	2.4
B	Skills	0	0	0	0.9	1.5
C	Attitude	0	0	3.3	3.4	3.4



## I.1.2 Organizational Assessment

### a. Summary

Item		Assessment				
		2009-Nov	2010-Jul	2011-Mar	2011-Jul	2012-Mar
A	<b>Management Capacity</b>	1.9	2.5	2.7	3.1	2.9
B	<b>Technical Capacity</b>	1.5	2.3	2.7	3.2	3.2
C	<b>Working Environment</b>	1.8	1.9	2.2	2.5	2.5
<b>Average</b>		1.8	2.2	2.5	2.9	2.9



**b. Detail**

Capacity Assessment Evaluation Sheet							Remarks
Interviewee: B Organization: EPWMD Position: Director Date of Evaluation: 9th Nov 2009, Jul 2010, Mar 2011, Jul 2011, Mar 2012 Evaluation: Excellent: 4, Good: 3, Fair: 2, Poor: 1 None: 0							
Code	Subjects	D 2009-Nov	D 2010-Jul	B 2011-Mar	B 2011-Jul	B 2012-Mar	
<b>A</b>	<b>Management Capacity</b>						
<b>A.1</b>	<b>Planning</b>						
A.1.1	We know the objectives and roles of EPWMD	2	3	3	3	4	給与以外のプロジェクトに対する予算を申請する。Degiiが担当
A.1.2	We have action plan of EPWMD including the policy, goal, targets, strategy, stage development schedule	0	3	3	4	3	部には4つの主要な事業がある
A.1.3	The appropriate budget for EPWMD can be prepared.	2	3	3	3	3	1. 不法投棄場のクリーンアップ
A.1.4	We can assist district government to prepare waste collection plan.	0	3	2	3	3	2. 公共トイレの設置
	Average	1.0	3.0	2.8	3.3	3.3	3. ゴミ箱の設置 PPの成果 4. 凍結防止剤の購入
<b>A.2</b>	<b>Communication</b>						
A.2.1	We know EPWMD's activity schedule of this year.	3	3	3	3	3	
A.2.2	We know EPWMD's activity schedule of this month.	3	3	3	3	3	
A.2.3	We have periodical meeting among department staff.	3	3	3	3	3	毎週1回
A.2.4	We always report my findings to my boss and other staff.	2	2	3	3	3	
A.2.5	We have opportunities to discuss my opinions with my colleagues.	2	3	2	2	2	横の意志の疎通がない
	Average	2.6	2.8	2.8	2.8	2.8	Topがかわってから進展がない。
<b>A.3</b>	<b>Human Resource Management</b>						
A.3.1	There are sufficient number of staffs for the works	1	2	2	2	2	100万人の清掃を管理する部が7名
A.3.2	The staffs have sufficient capacities (knowledge, skill, attitude, qualification, etc.) to do the work.	2	2	3	3	3	少しずつ向上している
A.3.3	Attendance is properly recorded.	4	2	4	4	4	指紋認証の出勤管理システムを導入
A.3.4	Leaves are properly recorded	4	2	4	4	4	管理は人事部
	Average	2.8	2	3.3	3.3	3.3	
<b>A.4</b>	<b>Directions</b>						
A.4.1	There are clear instructions from head of the department	3	3	3	3	3	
A.4.2	Instructions are not inconsistent	3	2	3	3	3	
A.4.3	Instructions are made according to the capacity of the staffs	3	2	3	3	3	
	Average	3.0	2.3	3.0	3.0	3.0	進展なし
<b>A.5</b>	<b>Waste Fund Management</b>						
A.5.1	We can obtain necessary data from district waste fund	1	2	2	4	2	報告は受けているが内容まで入り込めない
A.5.2	We can analyze financial status of district waste fund	1	2	2	2	2	担当は一人の女性のみ
A.5.3	We can assist to improve district waste fund operation.	1	2	2	2	2	
	Average	1.0	2.0	2.0	2.7	2.0	DWSFはCHDを除いて廃止された
<b>A.6</b>	<b>Contract Management</b>						
A.6.1	EPWMD can hire local consultant	1	2	2	2	2	コンサルは雇わず、全て自分たちでやる
A.6.2	EPWMD can assist District Government to prepare tender document	2	2	2	2	2	標準入札図書ができた
A.6.3	EPWMD can assist District Government to control private companies	1	2	2	3	3	不法投棄のクリーンアップのための業者選定の入札業務はやっている
	Average	1.3	2.0	2.0	2.3	2.3	
<b>A.7</b>	<b>Coordination with relevant organizations</b>						
A.7.1	EPWMD can prepare the proposals to donors.	2	3	3	3	3	医療廃棄物の焼却炉とオートクレーブの事業でMOHと共同で事業を推進中
A.7.2	EPWMD can correspond to the donors.	2	3	3	4	3	KOICA
A.7.3	EPWMD can coordinate with relevant organizations such as Ministry of Nature, Environment and Tourism, Ministry of Health, Specialized Inspection Agency	2	3	3	4	4	学校教育 Autocrave
	Average	2.0	3.0	3.0	3.7	3.3	援助機関の受皿としての能力は確保
<b>A.8</b>	<b>Publicity</b>						
A.8.1	EPWMD can update web-site	2	2	2	3	3	WEBの更新は専門の部署が担当
A.8.2	EPWMD can publish Newsletters	0	3	3	3	3	
A.8.3	EPWMD can publish leaflet, posters.	2	3	3	4	4	PPの成果
A.8.4	EPWMD can respond or dispatch messages through media	3	3	3	4	4	TV program
	Average	1.8	2.8	2.8	3.5	3.5	
	<b>Average for A</b>	<b>1.9</b>	<b>2.5</b>	<b>2.7</b>	<b>3.1</b>	<b>2.9</b>	
<b>B</b>	<b>Technical Capacity</b>						
<b>B.1</b>	<b>Understanding the current conditions</b>						
B.1.1	EPWMD knows basic data in each district and khoroo	2	3	3	4	4	担当あり
B.1.2	EPWMD knows the cleanliness in each district	2	2	3	4	4	キャンペーン
B.1.3	EPWMD knows discharge and collection system in each khoroo.	1	2	3	3	3	
B.1.4	EPWMD knows waste collection and disposal amount in each khoroo	1	3	3	3	3	WBDB配信システム完備
B.1.5	EPWMD knows waste fee collection rate in each khoroo	1	3	3	4	4	プロジェクトの成果
	Average	1.4	2.6	3	3.6	3.6	
<b>B.2</b>	<b>Technical Support</b>						
B.2.1	We can obtain necessary data from district government	1	2	3	3	3	POS
B.2.2	We can assist district government to formulate necessary plan	1	3	3	3	3	
B.2.3	We can assist CMPUA to obtain necessary data from weighbridge record.	2	3	3	4	4	データ配信
B.2.4	We can obtain waste disposal amount from CMPUA timely.	2	3	3	4	4	データ配信
	Average	1.5	2.8	3.0	3.5	3.5	
<b>B.3</b>	<b>Public Awareness Raising</b>						
B.3.1	We can assist district government to conduct public awareness raising campaign regarding SWM	2	2	3	4	4	キャンペーンの予算は、City WSFであったり、助役の緊急予算であったりする。
B.3.2	We can develop educational tools for public awareness raising regarding	2	2	3	3	3	PPの成果
B.3.3	EPWMD can assist district government to get consensus from the public to conduct waste separation at generation source	2	2	2	3	3	PPの成果
	Average	2.0	2.0	2.7	3.3	3.3	
<b>B.4</b>	<b>Project Implementation</b>						
B.4.1	EPWMD can take initiative to implement the separate discharge and separate collection pilot project.	1	2	2	3	3	PP1 Phase2
B.4.2	EPWMD can formulate project implementation plan.	1	2	2	2	2	
B.4.3	EPWMD can examine and realize the necessary cost for operation and advantages and disadvantages of each plan for promoting recycling	1	1	2	2	2	
B.4.4	EPWMD can prepare guideline for promoting recycling	1	2	3	3	3	
	Average	1.0	1.8	2.3	2.5	2.5	
	<b>Average for B</b>	<b>1.5</b>	<b>2.3</b>	<b>2.7</b>	<b>3.2</b>	<b>3.2</b>	



C Working Environment						
<b>C.1 Education and Training</b>						
C.1.1	There is a training programme for the staff	2	1	1	2	2
C.1.2	The objective of the training course is presented to all the staff	2	2	3	3	3
C.1.3	Anybody can attend training course when they request.	2	3	3	3	3
C.1.4	Chances of attending training course are even to all the staff	2	3	3	3	3
	Average	2.0	2.3	2.5	2.8	2.8
<b>C.2 Salary</b>						
C.2.1	We are receiving appropriate salary according to the type of work.	2	1	2	2	2
C.2.2	We are receiving appropriate salary according to the amount of work	2	1	1	2	2
C.2.3	We are receiving appropriate salary according to the position	2	1	2	2	2
C.2.4	Salary scheme is fair to all the staff.	2	3	3	3	3
	Average	2.0	1.5	2.0	2.3	2.3
<b>C.3 Quality of Work</b>						
C.3.1	Our work is useful to build better society.	4	3	4	4	4
C.3.2	Our work is closely related with people's life.	4	3	4	4	4
C.3.3	Information regarding our work are frequently come out in the media.	3	3	3	3	3
C.3.4	We are proud of doing my work.	3	3	3	3	3
	Average	3.5	3	3.5	3.5	3.5
<b>C.4 Amount of Work</b>						
C.4.1	Our work can be completed within the working hours	2	0	1	2	2
C.4.2	We feel amount of work is appropriate	2	1	1	2	2
C.4.3	Overtime is paid according to the actual working hour	0	0	0	1	1
C.4.4	We can take a paid vacation without difficulty	1	1	3	4	4
	Average	1.3	0.5	1.3	2.3	2.3
<b>C.5 Office equipment</b>						
C.5.1	The size and number of desks, chairs, drawers, cabinets, etc. is sufficient.	3	2	3	3	3
C.5.2	There are enough computers.	3	3	3	3	3
C.5.3	The number and types of application software is sufficient.	3	3	3	3	3
C.5.4	There are enough printers.	1	1	1	2	2
C.5.5	There are enough photocopiers.	3	3	3	3	3
C.5.6	There are enough meeting spaces	1	3	2	3	2
	Average	2.3	2.5	2.5	2.8	2.7
<b>C.6 Communication means</b>						
C.6.1	There are enough telephone lines.	1	3	3	3	3
C.6.2	Telephone bill is paid by the municipality	1	3	3	3	3
C.6.3	Broadband internet is accessible.	2	3	3	3	3
	Average	1.3	3.0	3.0	3.0	3.0
<b>C.7 Transportation</b>						
C.7.1	There are enough vehicles for the work.	1	1	1	1	1
C.7.2	Transportation cost for the work is refundable	0	0	0	1	1
	Average	0.5	0.5	0.5	1	1
	<b>Average for C</b>	<b>1.8</b>	<b>1.9</b>	<b>2.2</b>	<b>2.5</b>	<b>2.5</b>
	<b>Total Average</b>	<b>1.8</b>	<b>2.2</b>	<b>2.5</b>	<b>2.9</b>	<b>2.9</b>

Donor Programme

給与は低いが副収入がある模様  
3年間やめるものがない。  
3年間やめるものがない。

職員はそのほとんどが20代だが残業は  
支払われない。  
新Directorのもと容易になった。

Meeting Roomが一つに減った

固定電話から携帯への電話に制限があ  
個人で所有する携帯電話を使って仕事を  
してもリファンドされない

部に所属する車は1台  
交通費はリファンドされない。

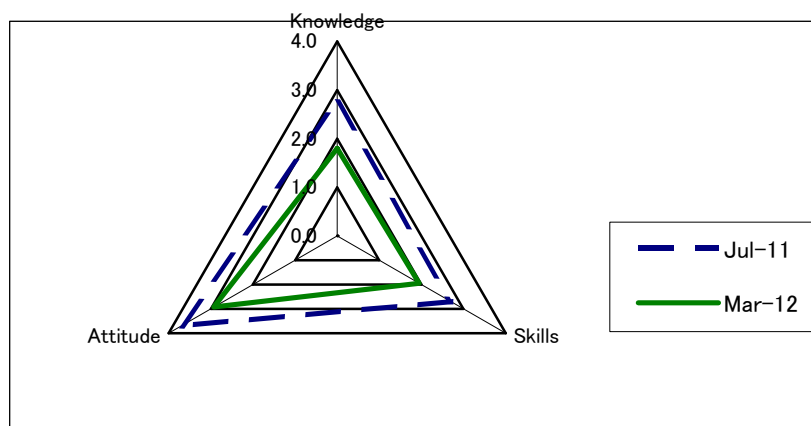
**I.2 CMPUA**

**I.2.1 Individual Assessment**

**a. Summary**

Items		Assessment				
		A	B	C	D	Average
2011 Jul	<b>Knowledge</b>	0.3	3.1			2.8
	<b>Skills</b>	0.1	2.6			2.7
	<b>Attitude</b>	3.0	4.0			3.7
	<b>Average</b>	1.1	3.2			3.1
2012 Mar	<b>Knowledge</b>	1.4	3.3	0.9	1.6	1.8
	<b>Skills</b>	1.3	2.9	2.1	1.5	2.0
	<b>Attitude</b>	3.3	4.0	2.4	2.0	2.9
	<b>Average</b>	2.0	3.4	1.8	1.7	2.2
<b>Attendance Rate</b>		73%				

Individual Summary		Assessment	
A	Item	Jul-11	Mar-12
B	<b>Knowledge</b>	2.8	1.8
C	<b>Skills</b>	2.7	2.0
	<b>Attitude</b>	3.7	2.9
	<b>Average</b>	3.1	2.2

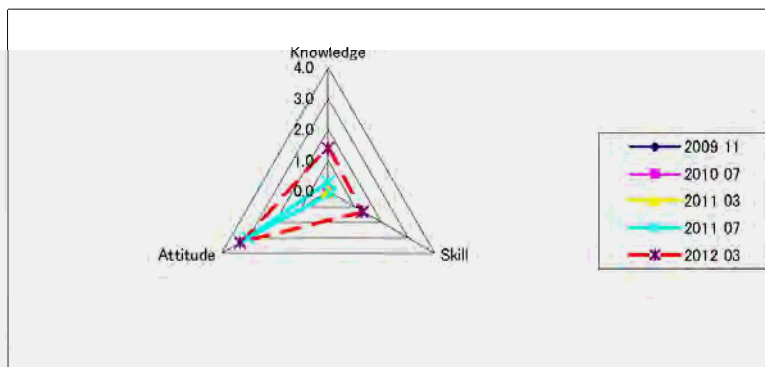


**b. Person A**

Capacity Assessment Evaluation Sheet					
Organization: CMPUA					
Date of Evaluation: 11, 16 Nov 2009, July 2010, March 2011					
Evaluation: Excellent: 4, Good: 3, Fair: 2, Poor: 1, None: 0					
<b>A</b>					
Code	Items	Assessment			
		2009/11	2010/07	2011/03	2011/07
<b>A</b>	<b>Knowledge</b>				
<b>A.1</b>	<b>Basic Subjects</b>				
A.1.1	I know problems caused by waste.			2	2
A.1.2	I know the objectives by SWM			2	2
A.1.3	I know the basic components of SWM technical system			0	1
A.1.4	I know the survey method of waste generation amount.			0	1
A.1.5	I know the method of physical waste composition survey			0	1
A.1.6	I know the properties of each waste composition.			0	1
A.1.7	I know the waste properties by source			0	1
A.1.8	I know how to understand the waste flow.			0	1
	Average			0.5	1.3
<b>A.2</b>	<b>Discharge, Storage, Collection, Transportation</b>				
A.2.1	I know various waste discharge and storage system.			1	2
A.2.2	I know various waste collection methods.			1	2
A.2.3	I know various waste transportation methods			1	2
A.2.4	I know various equipment of waste transportation			1	2
	Average			1.0	2.0
<b>A.3</b>	<b>Waste Processing and Treatment</b>				
A.3.1	I know the mechanism of composting			0	1
A.3.2	I know the incineration technology			0	1
A.3.3	I know the RDF technology			0	2
A.3.4	I know the waste separation technology			0	2
	Average			0.0	1.5
<b>A.4</b>	<b>Waste Separation and Recycling</b>				
A.4.1	I know the advantages of waste separation at generation source.			1	2
A.4.2	I know the disadvantages of waste separation at generation source			1	2
A.4.3	I know the advantages of Recycling			1	2
A.4.4	I know the disadvantages of Recycling			1	2
	Average			1.0	2.0
<b>A.5</b>	<b>Final Disposal</b>				
A.5.1	I know the problems caused by waste disposal			1	2
A.5.2	I know the required facility of waste disposal in accordance with waste type			0	2
A.5.3	I know the leachate control system			0	1
A.5.4	I know various gas vent system.			0	2
A.5.5	I know the necessity of security facilities.			0	2
A.5.6	I know the landfill method.			0	2
	Average			0.2	1.8
<b>A.6</b>	<b>Healthcare Waste</b>				
A.6.1	I know the type of healthcare wastes and their risk.			0	1
A.6.2	I know how to handle healthcare waste.			0	1
	Average			0.0	1.0
<b>A.7</b>	<b>Law, Regulation, Guideline</b>				
A.7.1	Law on Household and Industrial Wastes			0	1
A.7.2	Ordinance of Minister for Health of Mongolia: Regulation on collection, transportation and disposal of hospital generated waste			0	0
A.7.3	Joint Ordinance of Minister for Environment and Minister for Health: Approval of list and regulation /Methodological instructions to collect, store, transport and dispose poisonous chemical waste in environment sound manner/			0	0
A.7.4	Ordinance of Minister for Environment :Approval of Regulation /Regulation on waste disposal operations, special waste disposal facilities, requirements for such facilities, and activities of individuals, companies and organizations that conduct activities related to the waste disposal and removal/			0	1
A.7.5	Decree of Presidium of City Council :Approval of Regulation on Establishment of buffer zone for waste disposal sites and their			0	1
A.7.6	Decree of Presidium of City Council: Approval of Regulation on Decree of Presidium of City Council: Regulation to involve			0	1
A.7.7	organizations, companies and individuals in the activities related to cleaning, maintenance and protection of streets and squares of			0	1
A.7.8	Decree of Presidium of City Council: Approval of renewing of service fee /Service fee to collect and transport waste of organizations, companies and households of Ulaanbaatar city/			0	1
A.7.9	Decree of Presidium of City Council: Approval of renewing of service expenses /Tariff for hunting street dogs and cats, waste			0	1
A.7.10	Decree of Presidium of City Council: Approval of Regulation /Regulation for organizations, companies and individuals to conduct city renovation and cleaning activities/			0	1
	Average			0.0	0.8
<b>A.8</b>	<b>Social Environmental Consideration</b>				
A.8.1	I know NIMBY Syndrome			0	2
A.8.2	I know the environment aspects to be considered for SWM			1	1
A.8.3	I know the social aspects to be considered for SWM			1	1
	Average			0.7	1.3

<b>A.9</b>	<b>Contract Management</b>					
A.9.1	I know advantages and disadvantages of various types of Contracts.				0	1
A.9.2	I know how to estimate costs.				0	1
A.9.3	I know how to monitor progress				0	1
	Average				0.0	1.0
<b>A.10</b>	<b>Basic principals and measures</b>					
A.10.1	I know Polluter Pay Principles.				0	2
A.10.2	I know Extended Producers Responsibility				0	2
A.10.3	I know the administrative measures for the environmental management.				0	1
	Average				0.0	1.7
<b>A.11</b>	<b>Site Investigations (Geological Survey, Topographical Survey, Social Survey)</b>					
A.11.1	I know how to conduct geological survey				0	1
A.11.2	I know how to conduct topographic survey				0	1
A.11.3	I know how to conduct social survey				0	1
	Average				0.0	1.0
<b>A.12</b>	<b>Environmental Protection Measures</b>					
A.12.1	I know the meaning of pollution source and pollution load				0	1
A.12.2	I know how to consider the environmental protection; Environmental permissible amount, Life cycle assessment, Risk management				0	1
	Average				0.0	1.0
	<b>Average for A</b>				<b>0.3</b>	<b>1.4</b>
<b>B</b>	<b>Skills</b>					
B.1	I can do the waste discharge rate survey				0	1
B.2	I can do the waste physical composition survey				0	1
B.3	I can survey and draw the waste flow				0	1
B.4	I can project the waste amount				0	1
B.5	I can project the waste composition				0	1
B.6	I can calculate the required number of waste collection trucks				0	1
B.7	I can calculate the waste disposal volume based on weighbridge data				0	2
B.8	I can calculate another how many years NEDS become full.				0	1
B.9	I can make a basic plan for sorting facilities in NEDS.				0	2
B.10	I can take preventive measures for causing fire				1	2
B.11	I can estimate the cost of SWM facilities.				0	1
B.12	I can estimate the cost of equipment				0	1
B.13	I can estimate the cost for operation of heavy equipment				0	2
B.14	I can estimate the cost of landfilling Operation				0	2
B.15	I can estimate the cost of maintenance of equipment				0	2
B.16	I can formulate the operation and maintenance plan of equipment				0	1
B.17	I can understand EIA report				0	1
B.18	I can conduct environmental monitoring				0	1
B.19	I can pain and implement dam construction for next stage.				0	1
	<b>Average for B</b>				<b>0.1</b>	<b>1.3</b>
<b>C</b>	<b>Attitude</b>					
C.1	I can actively think over the SWM conditions and problems and behave toward the solution				3	3
C.2	I can actively contribute the improvement of public health and the environmental preservation.				3	3
C.3	I can involve colleague and staff for taking action				3	4
C.4	I can prepare the realistic proposal taking fully the present conditions into account				3	3
C.5	I can flexibly deal with the problems based on the characteristics of the problems and resources own.				3	4
C.6	I can listen people's voices and explain them their social duties.				3	3
C.7	I can explain to the people about SWM plan.				3	3
	<b>Average for C</b>				<b>3.0</b>	<b>3.3</b>
	<b>Overall Average Score</b>				<b>1.1</b>	<b>2.0</b>

	Summary	2009.11	2010.04	2011.03	2011.07	2012.03
A	Knowledge	0.0	0.0	0.0	0.3	1.4
B	Skill	0.0	0.0	0.0	0.1	1.3
C	Attitude	0.0	0.0	0.0	3.0	3.3



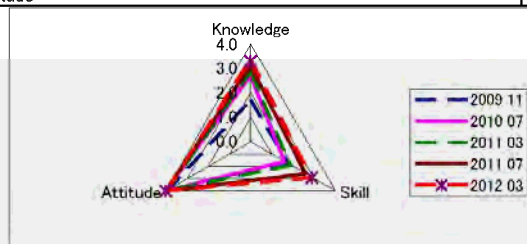
c. **Person B**

**Capacity Assessment Evaluation Sheet**  
Organization: CMPUA  
Date of Evaluation: 11, 16 Nov 2009, July 2010, March 2011  
Evaluation: Excellent: 4, Good: 3, Fair: 2, Poor: 1 None: 0

**B**

Code	Items	Assessment				
		2009/11	2010/07	2011/03	2011/07	2012/03
<b>A</b>	<b>Knowledge</b>					
<b>A.1</b>	<b>Basic Subjects</b>					
A.1.1	I know problems caused by waste.	3	4	4	4	4
A.1.2	I know the objectives by SWM	2	3	3	3	3
A.1.3	I know the basic components of SWM technical system.	2	3	3	3	3
A.1.4	I know the survey method of waste generation amount.	2	2	2	3	3
A.1.5	I know the method of physical waste composition survey	2	2	2	3	3
A.1.6	I know the properties of each waste composition.	1	2	2	3	3
A.1.7	I know the waste properties by source	1	2	2	3	3
A.1.8	I know how to understand the waste flow.	1	2	2	2	3
	Average	1.8	2.5	2.5	3.0	3.1
<b>A.2</b>	<b>Discharge, Storage, Collection, Transportation</b>					
A.2.1	I know various waste discharge and storage system.	3	4	4	4	4
A.2.2	I know various waste collection methods.	3	4	4	4	4
A.2.3	I know various waste transportation methods	3	3	3	3	3
A.2.4	I know various equipment of waste transportation	3	3	3	3	3
	Average	3.0	3.5	3.5	3.5	3.5
<b>A.3</b>	<b>Waste Processing and Treatment</b>					
A.3.1	I know the mechanism of composting	1	3	3	3	3
A.3.2	I know the incineration technology	2	3	3	3	3
A.3.3	I know the RDF technology	0	3	3	3	4
A.3.4	I know the waste separation technology	1	3	3	4	4
	Average	1.0	3.0	3.0	3.3	3.5
<b>A.4</b>	<b>Waste Separation and Recycling</b>					
A.4.1	I know the advantages of waste separation at generation source.	1	4	4	4	4
A.4.2	I know the disadvantages of waste separation at generation source	1	4	4	4	4
A.4.3	I know the advantages of Recycling	2	4	4	4	4
A.4.4	I know the disadvantages of Recycling	1	4	4	4	4
	Average	1.3	4.0	4.0	4.0	4.0
<b>A.5</b>	<b>Final Disposal</b>					
A.5.1	I know the problems caused by waste disposal	2	3	3	4	4
A.5.2	I know the required facility of waste disposal in accordance with waste typ	1	2	2	4	4
A.5.3	I know the leachate control system	1	2	2	4	4
A.5.4	I know various gas vent system.	2	3	3	3	3
A.5.5	I know the necessity of security facilities.	1	2	2	3	3
A.5.6	I know the landfill method.	2	3	3	3	3
	Average	1.5	2.5	2.5	3.5	3.5
<b>A.6</b>	<b>Healthcare Waste</b>					
A6.1	I know the type of healthcare wastes and their risk.	2	4	4	4	4
A6.2	I know how to handle healthcare waste.	2	3	3	3	3
	Average	2.0	3.5	3.5	3.5	3.5
<b>A.7</b>	<b>Law, Regulation, Guideline</b>					
A.7.1	Law on Household and Industrial Wastes	4	4	4	4	4
A.7.2	Ordinance of Minister for Health of Mongolia: Regulation on collection, transportation and disposal of hospital generated waste	4	4	4	4	4
A.7.3	Joint Ordinance of Minister for Environment and Minister for Health: Approval of list and regulation /Methodological instructions to collect, store, transport and dispose poisonous chemical waste in environment sound manner/	4	4	4	4	4
A.7.4	Ordinance of Minister for Environment :Approval of Regulation /Regulation on waste disposal operations, special waste disposal facilities, requirements for such facilities, and activities of individuals, companies and organizations that conduct activities related to the waste disposal and removal/	3	4	4	4	4
A.7.5	Decree of Presidium of City Council :Approval of Regulation on Establishment of buffer zone for waste disposal sites and their	3	4	4	4	4
A.7.6	Decree of Presidium of City Council: Approval of Regulation on	3	3	3	3	3
A.7.7	Decree of Presidium of City Council: Regulation to involve organizations, companies and individuals in the activities related to cleaning, maintenance and protection of streets and squares of	3	3	3	3	3
A.7.8	Decree of Presidium of City Council: Approval of renewing of service fee /Service fee to collect and transport waste of organizations, companies and households of Ulaanbaatar city/	2	3	3	3	3
A.7.9	Decree of Presidium of City Council: Approval of renewing of service expenses /Tariff for hunting street dogs and cats, waste	3	3	3	3	3
A.7.10	Decree of Presidium of City Council: Approval of Regulation /Regulation for organizations, companies and individuals to conduct city renovation and cleaning activities/	2	3	3	3	3
	Average	3.1	3.5	3.5	3.5	3.5
<b>A.8</b>	<b>Social Environmental Consideration</b>					
A.8.1	I know NIMBY Syndrome	0	3	3	4	4
A.8.2	I know the environment aspects to be considered for SWM	0	3	3	3	3
A.8.3	I know the social aspects to be considered for SWM	0	3	3	3	3
	Average	0.0	3.0	3.0	3.3	3.3

<b>A.9</b>	<b>Contract Management</b>					
A.9.1	I know advantages and disadvantages of various types of Contracts.	4	4	4	4	4
A.9.2	I know how to estimate costs.	1	1	2	2	2
A.9.3	I know how to monitor progress	1	2	2	2	2
	Average	2.0	2.3	2.7	2.7	2.7
<b>A.10</b>	<b>Basic principals and measures</b>					
A.10.1	I know Polluter Pay Principles.	4	4	4	4	4
A.10.2	I know Extended Producers Responsibility	3	3	3	4	4
A.10.3	I know the administrative measures for the environmental management.	3	2	2	2	2
	Average	3.3	3.0	3.0	3.3	3.3
<b>A.11</b>	<b>Site Investigations (Geological Survey, Topographical Survey, Social Survey)</b>					
A.11.1	I know how to conduct geological survey	0	0	1	2	3
A.11.2	I know how to conduct topographic survey	0	0	1	2	3
A.11.3	I know how to conduct social survey	2	0	2	2	3
	Average	0.7	0.0	1.3	2.0	3.0
<b>A.12</b>	<b>Environmental Protection Measures</b>					
A.12.1	I know the meaning of pollution source and pollution load	0	1	2	2	3
A.12.2	I know how to consider the environmental protection; Environmental permissible amount, Life cycle assessment, Risk management	0	1	1	2	3
	Average	0.0	1.0	1.5	2.0	3.0
	<b>Average for A</b>	1.6	2.7	2.8	3.1	3.3
<b>B</b>	<b>Skills</b>					
B.1	I can do the waste discharge rate survey	3	3	3	4	4
B.2	I can do the waste physical composition survey	2	1	2	4	4
B.3	I can survey and draw the waste flow	2	1	2	2	3
B.4	I can project the waste amount	0	1	1	2	3
B.5	I can project the waste composition	0	1	1	2	3
B.6	I can calculate the required number of waste collection trucks	0	1	1	2	3
B.7	I can calculate the waste disposal volume based on weighbridge data	4	3	3	3	3
B.8	I can calculate another how many years NEDS become full.	3	1	2	3	3
B.9	I can make a basic plan for sorting facilities in NEDS.	0	1	1	3	3
B.10	I can take preventive measures for causing fire	4	3	3	3	3
B.11	I can estimate the cost of SWM facilities.	1	3	3	3	3
B.12	I can estimate the cost of equipment	1	1	2	2	2
B.13	I can estimate the cost for operation of heavy equipment	1	2	2	2	2
B.14	I can estimate the cost of landfilling Operation	4	2	2	2	3
B.15	I can estimate the cost of maintenance of equipment	2	0	1	2	2
B.16	I can formulate the operation and maintenance plan of equipment	2	1	1	2	2
B.17	I can understand EIA report	2	1	1	2	2
B.18	I can conduct environmental monitoring	0	1	2	2	3
B.19	I can pain and implement dam construction for next stage.	4	4	4	4	4
	<b>Average for B</b>	1.8	1.6	1.9	2.6	2.9
<b>C</b>	<b>Attitude</b>					
C.1	I can actively think over the SWM conditions and problems and behave toward the solution	4	4	4	4	4
C.2	I can actively contribute the improvement of public health and the environmental preservation.	4	4	4	4	4
C.3	I can involve colleague and staff for taking action	4	4	4	4	4
C.4	I can prepare the realistic proposal taking fully the present conditions into account.	4	4	4	4	4
C.5	I can flexibly deal with the problems based on the characteristics of the problems and resources own.	4	4	4	4	4
C.6	I can listen people's voices and explain them their social duties.	4	4	4	4	4
C.7	I can explain to the people about SWM plan.	4	4	4	4	4
	<b>Average for C</b>	4.0	4.0	4.0	4.0	4.0
	<b>Overall Average Score</b>	2.5	2.8	2.9	3.2	3.4
	<b>Summary</b>	2009.11	2010.07	2011.03	2011.07	2012.03
A	Knowledge	1.6	2.7	2.8	3.1	3.3
B	Skill	1.8	1.6	1.9	2.6	2.9
C	Attitude	4.0	4.0	4.0	4.0	4.0

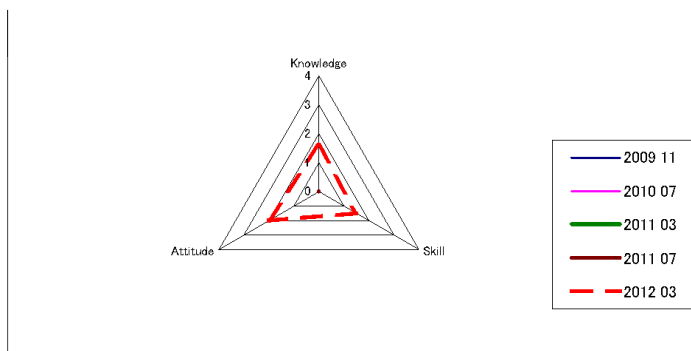


d. Person C

Capacity Assessment Evaluation Sheet						
Organization: CMPUA						
Date of Evaluation: 14 March 2012						
Evaluation: Excellent: 4, Good: 3, Fair: 2, Poor: 1 None: 0						
C						
Code	Items	Assessment				
		2009.11	2010.07	2011.03	2011.07	2012.03
<b>A</b>	<b>Knowledge</b>					
<b>A.1</b>	<b>Basic Subjects</b>					
A.1.1	I know problems caused by waste.					2
A.1.2	I know the objectives by SWM					2
A.1.3	I know the basic components of SWM technical system.					1
A.1.4	I know the survey method of waste generation amount.					2
A.1.5	I know the method of physical waste composition survey					0
A.1.6	I know the properties of each waste composition.					0
A.1.7	I know the waste properties by source					0
A.1.8	I know how to understand the waste flow.					3
	Average					1.3
<b>A.2</b>	<b>Discharge, Storage, Collection, Transportation</b>					
A.2.1	I know various waste discharge and storage system.					3
A.2.2	I know various waste collection methods					2
A.2.3	I know various waste transportation methods					2
A.2.4	I know various equipment of waste transportation					2
	Average					2.3
<b>A.3</b>	<b>Waste Processing and Treatment</b>					
A.3.1	I know the mechanism of composting					0
A.3.2	I know the incineration technology					2
A.3.3	I know the RDF technology					3
A.3.4	I know the waste separation technology					2
	Average					1.8
<b>A.4</b>	<b>Waste Separation and Recycling</b>					
A.4.1	I know the advantages of waste separation at generation source.					3
A.4.2	I know the disadvantages of waste separation at generation source					2
A.4.3	I know the advantages of Recycling					2
A.4.4	I know the disadvantages of Recycling					2
	Average					2.25
<b>A.5</b>	<b>Final Disposal</b>					
A.5.1	I know the problems caused by waste disposal					3
A.5.2	I know the required facility of waste disposal in accordance with waste type					0
A.5.3	I know the leachate control system					1
A.5.4	I know various gas vent system.					2
A.5.5	I know the necessity of security facilities.					2
A.5.6	I know the landfill method.					2
	Average					1.7
<b>A.6</b>	<b>Healthcare Waste</b>					
A6.1	I know the type of healthcare wastes and their risk.					1
A6.2	I know how to handle healthcare waste.					2
	Average					1.5
<b>A.7</b>	<b>Law, Regulation, Guideline</b>					
A.7.1	Law on Household and Industrial Wastes					2
A.7.2	Ordinance of Minister for Health of Mongolia: Regulation on collection, transportation and disposal of hospital generated waste					0
A.7.3	Joint Ordinance of Minister for Environment and Minister for Health: Approval of list and regulation /Methodological instructions to collect, store, transport and dispose poisonous chemical waste in environment sound manner/					0
A.7.4	Ordinance of Minister for Environment :Approval of Regulation /Regulation on waste disposal operations, special waste disposal facilities, requirements for such facilities, and activities of individuals, companies and organizations that conduct activities related to the waste disposal and removal/					0
A.7.5	Decree of Presidium of City Council :Approval of Regulation on Establishment of buffer zone for waste disposal sites and their					0
A.7.6	Decree of Presidium of City Council: Approval of Regulation on Decree of Presidium of City Council: Regulation to involve					0
A.7.7	organizations, companies and individuals in the activities related to cleaning, maintenance and protection of streets and squares of					0
A.7.8	Decree of Presidium of City Council: Approval of renewing of service fee /Service fee to collect and transport waste of organizations, companies and households of Ulaanbaatar city/					2
A.7.9	Decree of Presidium of City Council: Approval of renewing of service expenses /Tariff for hunting street dogs and cats. waste					2
A.7.10	Decree of Presidium of City Council. Approval of Regulation /Regulation for organizations, companies and individuals to conduct city renovation and cleaning activities/					0
	Average					0.6
<b>A.8</b>	<b>Social Environmental Consideration</b>					
A.8.1	I know NIMBY Syndrome					0
A.8.2	I know the environment aspects to be considered for SWM					2
A.8.3	I know the social aspects to be considered for SWM					2
	Average					1.3

<b>A.9</b>	<b>Contract Management</b>					
A.9.1	I know advantages and disadvantages of various types of Contracts.					3
A.9.2	I know how to estimate costs.					2
A.9.3	I know how to monitor progress					3
	Average					2.7
<b>A.10</b>	<b>Basic principals and measures</b>					
A.10.1	I know Polluter Pay Principles.					2
A.10.2	I know Extended Producers Responsibility					2
A.10.3	I know the administrative measures for the environmental management.					3
	Average					2.3
<b>A.11</b>	<b>Site Investigations (Geological Survey, Topographical Survey, Social Survey)</b>					
A.11.1	I know how to conduct geological survey					0
A.11.2	I know how to conduct topographic survey					0
A.11.3	I know how to conduct social survey					2
	Average					0.7
<b>A.12</b>	<b>Environmental Protection Measures</b>					
A.12.1	I know the meaning of pollution source and pollution load					1
A.12.2	I know how to consider the environmental protection; Environmental permissible amount, Life cycle assessment, Risk management					0
	Average					0.5
	<b>Average for A</b>					<b>1.6</b>
<b>B</b>	<b>Skills</b>					
B.1	I can do the waste discharge rate survey					2
B.2	I can do the waste physical composition survey.					2
B.3	I can survey and draw the waste flow					3
B.4	I can project the waste amount					2
B.5	I can project the waste composition					2
B.6	I can calculate the required number of waste collection trucks					1
B.7	I can calculate the waste disposal volume based on weighbridge data					3
B.8	I can calculate another how many years NEDS become full.					1
B.9	I can make a basic plan for sorting facilities in NEDS.					1
B.10	I can take preventive measures for causing fire					2
B.11	I can estimate the cost of SWM facilities.					0
B.12	I can estimate the cost of equipment					0
B.13	I can estimate the cost for operation of heavy equipment					0
B.14	I can estimate the cost of landfilling Operation					1
B.15	I can estimate the cost of maintenance of equipment					1
B.16	I can formulate the operation and maintenance plan of equipment					1
B.17	I can understand EIA report					2
B.18	I can conduct environmental monitoring					2
B.19	I can pain and implement dam construction for next stage.					2
	Average for B					<b>1.5</b>
<b>C</b>	<b>Attitude</b>					
C.1	I can actively think over the SWM conditions and problems and behave toward the solution					1
C.2	I can actively contribute the improvement of public health and the environmental preservation.					2
C.3	I can involve colleague and staff for taking action					3
C.4	I can prepare the realistic proposal taking fully the present conditions into account.					2
C.5	I can flexibly deal with the problems based on the characteristics of the problems and resources own.					2
C.6	I can listen people's voices and explain them their social duties.					2
C.7	I can explain to the people about SWM plan.					2
	Average for C					<b>2</b>
	<b>Overall Average Score</b>					

	Summary	2009.11	2010.07	2011.03	2011.07	2012.03
A	Knowledge	0.0	0.0	0.0	0.0	1.6
B	Skill	0.0	0.0	0.0	0.0	1.5
C	Attitude	0.0	0.0	0.0	0.0	2.0

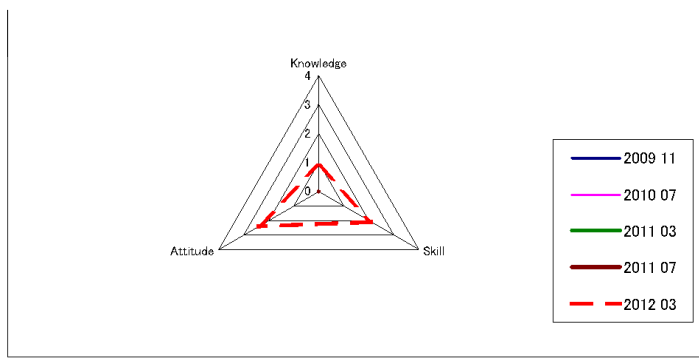




e. **Person D**

Capacity Assessment Evaluation Sheet						
Organization: CMPUA						
Date of Evaluation: 14 March 2012						
Evaluation: Excellent: 4, Good: 3, Fair: 2, Poor: 1, None: 0						
<b>D</b>						
Code	Items	Assessment				
		2009.11	2010.07	2011.03	2011.07	2012.03
<b>A</b>	<b>Knowledge</b>					
<b>A.1</b>	<b>Basic Subjects</b>					
A.1.1	I know problems caused by waste.					4
A.1.2	I know the objectives by SWM					3
A.1.3	I know the basic components of SWM technical system.					0
A.1.4	I know the survey method of waste generation amount.					1
A.1.5	I know the method of physical waste composition survey					1
A.1.6	I know the properties of each waste composition.					0
A.1.7	I know the waste properties by source					1
A.1.8	I know how to understand the waste flow.					1
	Average					1.4
<b>A.2</b>	<b>Discharge, Storage, Collection, Transportation</b>					
A.2.1	I know various waste discharge and storage system.					2
A.2.2	I know various waste collection methods					2
A.2.3	I know various waste transportation methods					3
A.2.4	I know various equipment of waste transportation					3
	Average					2.5
<b>A.3</b>	<b>Waste Processing and Treatment</b>					
A.3.1	I know the mechanism of composting					0
A.3.2	I know the incineration technology					2
A.3.3	I know the RDF technology					1
A.3.4	I know the waste separation technology					2
	Average					1.3
<b>A.4</b>	<b>Waste Separation and Recycling</b>					
A.4.1	I know the advantages of waste separation at generation source.					2
A.4.2	I know the disadvantages of waste separation at generation source					1
A.4.3	I know the advantages of Recycling					2
A.4.4	I know the disadvantages of Recycling					1
	Average					1.5
<b>A.5</b>	<b>Final Disposal</b>					
A.5.1	I know the problems caused by waste disposal					3
A.5.2	I know the required facility of waste disposal in accordance with waste type					0
A.5.3	I know the leachate control system					1
A.5.4	I know various gas vent system.					1
A.5.5	I know the necessity of security facilities.					1
A.5.6	I know the landfill method.					2
	Average					1.3
<b>A.6</b>	<b>Healthcare Waste</b>					
A6.1	I know the type of healthcare wastes and their risk.					1
A6.2	I know how to handle healthcare waste.					0
	Average					0.5
<b>A.7</b>	<b>Law, Regulation, Guideline</b>					
A.7.1	Law on Household and Industrial Wastes					3
A.7.2	Ordinance of Minister for Health of Mongolia: Regulation on collection, transportation and disposal of hospital generated waste					1
A.7.3	Joint Ordinance of Minister for Environment and Minister for Health: Approval of list and regulation /Methodological instructions to collect, store, transport and dispose poisonous chemical waste in environment sound manner/					1
A.7.4	Ordinance of Minister for Environment :Approval of Regulation /Regulation on waste disposal operations, special waste disposal facilities, requirements for such facilities, and activities of individuals, companies and organizations that conduct activities related to the waste disposal and removal/					1
A.7.5	Decree of Presidium of City Council :Approval of Regulation on Establishment of buffer zone for waste disposal sites and their					1
A.7.6	Decree of Presidium of City Council: Approval of Regulation on Decree of Presidium of City Council: Regulation to involve					1
A.7.7	organizations, companies and individuals in the activities related to cleaning, maintenance and protection of streets and squares of					1
A.7.8	Decree of Presidium of City Council: Approval of renewing of service fee /Service fee to collect and transport waste of organizations, companies and households of Ulaanbaatar city/					1
A.7.9	Decree of Presidium of City Council: Approval of renewing of service expenses /Tariff for hunting street dogs and cats, waste					1
A.7.10	Decree of Presidium of City Council: Approval of Regulation /Regulation for organizations, companies and individuals to conduct city renovation and cleaning activities/					1
	Average					1.2
<b>A.8</b>	<b>Social Environmental Consideration</b>					
A.8.1	I know NIMBY Syndrome					0
A.8.2	I know the environment aspects to be considered for SWM					0
A.8.3	I know the social aspects to be considered for SWM					0
	Average					0

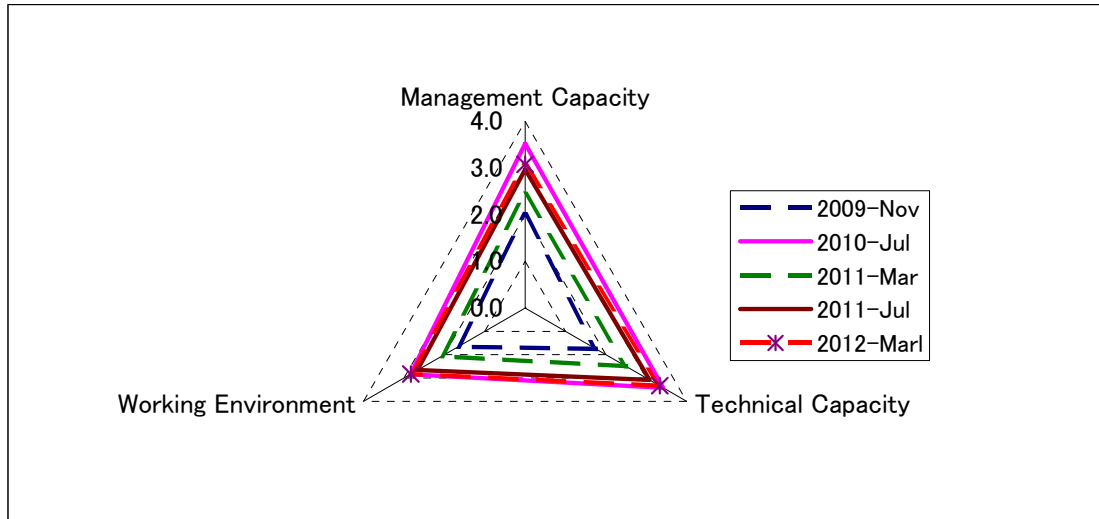
<b>A.9</b>	<b>Contract Management</b>					
A.9.1	I know advantages and disadvantages of various types of Contracts.					1
A.9.2	I know how to estimate costs.					1
A.9.3	I know how to monitor progress					1
	Average					1
<b>A.10</b>	<b>Basic principals and measures</b>					
A.10.1	I know Polluter Pay Principles.					0
A.10.2	I know Extended Producers Responsibility					0
A.10.3	I know the administrative measures for the environmental management.					1
	Average					0.3
<b>A.11</b>	<b>Site Investigations (Geological Survey, Topographical Survey, Social Survey)</b>					
A.11.1	I know how to conduct geological survey					0
A.11.2	I know how to conduct topographic survey					0
A.11.3	I know how to conduct social survey					0
	Average					0
<b>A.12</b>	<b>Environmental Protection Measures</b>					
A.12.1	I know the meaning of pollution source and pollution load					0
A.12.2	I know how to consider the environmental protection; Environmental permissible amount, Life cycle assessment, Risk management					0
	Average					0
	<b>Average for A</b>					<b>0.9</b>
<b>B</b>	<b>Skills</b>					
B.1	I can do the waste discharge rate survey					2
B.2	I can do the waste physical composition survey.					1
B.3	I can survey and draw the waste flow					1
B.4	I can project the waste amount					1
B.5	I can project the waste composition					1
B.6	I can calculate the required number of waste collection trucks					3
B.7	I can calculate the waste disposal volume based on weighbridge data					4
B.8	I can calculate another how many years NEDS become full.					2
B.9	I can make a basic plan for sorting facilities in NEDS.					2
B.10	I can take preventive measures for causing fire					1
B.11	I can estimate the cost of SWM facilities.					1
B.12	I can estimate the cost of equipment					2
B.13	I can estimate the cost for operation of heavy equipment					4
B.14	I can estimate the cost of landfilling Operation					4
B.15	I can estimate the cost of maintenance of equipment					4
B.16	I can formulate the operation and maintenance plan of equipment					3
B.17	I can understand EIA report					2
B.18	I can conduct environmental monitoring					0
B.19	I can pain and implement dam construction for next stage.					1
	Average for B					<b>2.1</b>
<b>C</b>	<b>Attitude</b>					
C.1	I can actively think over the SWM conditions and problems and behave toward the solution					1
C.2	I can actively contribute the improvement of public health and the environmental preservation.					1
C.3	I can involve colleague and staff for taking action					3
C.4	I can prepare the realistic proposal taking fully the present conditions into account.					3
C.5	I can flexibly deal with the problems based on the characteristics of the problems and resources own.					2
C.6	I can listen people's voices and explain them their social duties.					4
C.7	I can explain to the people about SWM plan.					3
	Average for C					<b>2.4</b>
	<b>Overall Average Score</b>					<b>1.8</b>
	<b>Summary</b>	2009.11	2010.07	2011.03	2011.07	2012.03
A	Knowledge	0.0	0.0	0.0	0.0	0.9
B	Skill	0.0	0.0	0.0	0.0	2.1
C	Attitude	0.0	0.0	0.0	0.0	2.4



## I.2.2 Organizational Assessment

### a. Summary

Item		Assessment				
		2009-Nov	2010-Jul	2011-Mar	2011-Jul	2012-Mar
A	<b>Management Capacity</b>	2.0	3.5	2.4	3.0	3.1
B	<b>Technical Capacity</b>	1.8	3.4	2.5	3.1	3.3
C	<b>Working Environment</b>	1.7	2.8	2.1	2.7	2.8
	<b>Average</b>	1.8	3.3	2.3	2.9	3.1



**b. Detail**

<b>Capacity Assessment Evaluation Sheet</b>						
Organization: CMPUA						
Position: Director						
Date of Evaluation: Jul 2011						
Evaluation: Excellent: 4, Good: 3, Fair: 2, Poor: 1 None: 0						
No	Organization: CMPUA	2009 11	2010 07	2011 03	2011 07	2012 03
<b>A</b>	<b>Management Capacity</b>					
<b>A.1</b>	<b>Planning</b>					
A.1.1	We know the objectives and roles of CMPUA	3	4	4	4	4
A.1.2	The appropriate budget for CMPUA can be prepared.	3	4	3	4	4
A.1.3	We can formulate operation plan of equipment.	1	4	2	3	3
A.1.4	We can formulate maintenance plan of equipment.	1	4	2	3	3
	Average	2.0	4.0	2.8	3.5	3.5
<b>A.2</b>	<b>Communication</b>					
A.2.1	We know CMPUA's activity schedule of this year.	3	4	4	4	4
A.2.2	We know CMPUA's activity schedule of this month.	2	4	3	3	3
A.2.3	We have periodical meeting among department staff.	2	4	3	4	4
A.2.4	We always report my findings to my boss and other staff.	2	4	2	3	3
A.2.5	We have opportunities to discuss my opinions with my colleagues.	2	4	2	3	3
	Average	2.2	4.0	2.8	3.4	3.4
<b>A.3</b>	<b>Human Resource Management</b>					
A.3.1	There are sufficient number of staffs for the works	2	4	3	3	3
A.3.2	The staffs have sufficient capacities (knowledge, skill, attitude, qualification, etc.) to do the work.	2	3	3	3	3
A.3.3	Attendance is properly recorded.	3	4	4	4	4
A.3.4	Leaves are properly recorded	3	3	3	3	3
	Average	2.5	3.5	3.3	3.3	3.3
<b>A.4</b>	<b>Directions</b>					
A.4.1	There are clear instructions from head of the department	2	4	3	4	4
A.4.2	Instructions are not inconsistent	3	3	3	4	4
A.4.3	Instructions are made according to the capacity of the staffs	3	3	3	3	3
	Average	2.7	3.3	3.0	3.7	3.7
<b>A.5</b>	<b>Financial Management</b>					
A.5.1	CMPUA can arrange necessary budget for operation of NEDS.	3	3	3	4	4
A.5.2	CMPUA can claim waste collection and transportation fees from WSF timely	3	1	3	3	3
A.5.3	CMPUA can make a payment to his workers without delay.	3	4	3	4	4
	Average	3.0	2.7	3.0	3.7	3.7
<b>A.6</b>	<b>Maintenance Management</b>					
A.6.1	CMPUA has spare parts record and update periodically	1	3	3	4	4
A.6.2	CMPUA has written procedure to order spare parts	2	3	3	4	4
A.6.3	CMPUA stores the necessary spare parts in order to save the idling time of	1	3	2	3	3
A.6.4	CMPUA has allocated necessary budget for the consumables and spare parts for heavy equipment.	1	4	2	3	3
A.6.5	CMPUA prepare and submit report on maintenance of equipment periodically	1	3	2	3	3
	Average	1.2	3.2	2.4	3.4	3.4
<b>A.7</b>	<b>Operation Management</b>					
A.7.1	CMPUA prepare report on operation of equipment periodically	1	3	2	2	3
A.7.2	CMPUA prepare waste collection plan periodically	1	3	1	2	2
A.7.3	CMPUA manage the waste collection area visually.	1	4	1	2	3
	Average	1.0	3.3	1.3	2.0	2.7
<b>A.8</b>	<b>Coordination with relevant organizations</b>					
A.8.1	CMPUA can prepare the proposals to donors.	2	3	2	2	2
A.8.2	CMPUA can correspond to the donors.	1	4	1	2	3
A.8.3	CMPUA can coordinate with relevant organizations such as Ministry of Nature, Environment and tourism, Ministry of Health, Specialized Inspection Agency, etc.	3	4	3	3	3
	Average	2.0	3.7	2.0	2.3	2.7
<b>A.9</b>	<b>Publicity</b>					
A.9.1	CMPUA can update web-site	0	4	0	0	0
A.9.2	CMPUA can respond or dispatch messages through media	3	4	3	3	3
	Average	1.5	4	1.5	1.5	1.5
	<b>Average for A</b>	<b>2.0</b>	<b>3.5</b>	<b>2.4</b>	<b>3.0</b>	<b>3.1</b>

<b>B</b>	<b>Technical Capacity</b>					
<b>B.1</b>	<b>Understanding the current conditions</b>					
B.1.1	CMPUA can compile and analyze weighbridge data	2	4	3	4	4
B.1.2	CMPUA knows the weigh bridge data in a digital file format everyday.	1	3	3	4	4
B.1.3	CMPUA knows the waste collection amount everyday.	2	4	3	4	4
	Average	1.7	3.7	3.0	4.0	4.0
<b>B.2</b>	<b>Technical Support</b>					
B.2.1	CMPUA can organize the monitoring committee for the assessment of sanitary	2	3	3	3	3
B.2.2	CMPUA can prepare and submit environmental monitoring report periodically.	2	2	3	3	4
B.2.3	CMPUA can train other Aimag officers for the operation of sanitary landfilling	2	3	3	3	4
	Average	2.0	2.7	3.0	3.0	3.7
<b>B.3</b>	<b>Social Consideration</b>					
B.3.1	CMPUA can pay attention of working conditions of waste pickers	1	4	2	2	2
B.3.2	CMPUA can manage waste pickers for safety operation of landfill.	2	4	2	2	3
B.3.3	CMPUA can coordinate waste pickers to implement waste separation in NEDS	2	4	3	4	4
	Average	1.7	4.0	2.3	2.7	3.0
<b>B.4</b>	<b>Project Implementation</b>					
B.4.1	CMPUA can take initiative to implement the separate discharge and separate collection pilot project	1	4	1	3	3
B.4.2	CMPUA can formulate project implementation plan.	2	3	2	2	2
B.4.3	CMPUA can examine and realize the necessary cost for operation and advantages and disadvantages of each plan for promoting recycling	2	3	2	3	3
	Average	1.7	3.3	1.7	2.7	2.7
	<b>Average for B</b>	<b>1.8</b>	<b>3.4</b>	<b>2.5</b>	<b>3.1</b>	<b>3.3</b>
<b>C</b>	<b>Working Environment</b>					
<b>C.1</b>	<b>Education and Training</b>					
C.1.1	There is a training programme for the staff	1	2	1	1	2
C.1.2	Anybody can attend training course when they request.	1	2	2	2	2
C.1.3	Chances of attending training course are even to all the staff	1	4	1	2	2
	Average	1.0	2.7	1.3	1.7	2.0
<b>C.2</b>	<b>Salary</b>					
C.2.1	We are receiving appropriate salary according to the type of work.	2	3	3	3	3
C.2.2	We are receiving appropriate salary according to the amount of work	2	2	2	2	3
C.2.3	We are receiving appropriate salary according to the position	2	3	3	3	3
	Average	2.0	2.7	2.7	2.7	3.0
<b>C.3</b>	<b>Quality of Work</b>					
C.3.1	Our work is useful to build better society.	3	4	3	3	3
C.3.2	Our work is closely related with people's life.	3	4	3	4	4
C.3.3	Information regarding our work are frequently come out in the media.	3	4	3	4	4
C.3.4	We are proud of doing my work.	3	4	3	4	4
	Average	3.0	4.0	3.0	3.8	3.8
<b>C.4</b>	<b>Amount of Work</b>					
C.4.1	Our work can be completed within the working hours	2	4	2	3	4
C.4.2	We feel amount of work is appropriate	2	3	2	3	4
C.4.3	Overtime is paid according to the actual working hour	1	4	1	1	1
C.4.4	We can take a paid vacation without difficulty	1	4	2	3	3
	Average	1.5	3.8	1.8	2.5	3.0
<b>C.5</b>	<b>Office equipment</b>					
C.5.1	The size and number of desks, chairs, drawers, cabinets, etc. is sufficient.	2	3	3	3	3
C.5.2	There are enough computers.	2	3	3	3	3
C.5.3	There are enough printers.	2	3	2	3	3
C.5.4	There are enough photocopiers.	1	3	2	3	3
C.5.5	There are enough meeting spaces	1	2	1	2	2
	Average	1.6	2.8	2.2	2.8	2.8
<b>C.6</b>	<b>Communication means</b>					
C.6.1	NEDS has fixed telephone line.	0	0	0	0	0
C.6.2	Central Workshop has fixed telephone line	3	4	3	3	3
C.6.3	Broadband internet is accessible at NEDS	0	0	2	3	3
C.6.4	Broadband internet is accessible at CMPUA Office	3	0	3	3	3
	Average	1.5	1.0	2.0	2.3	2.3
<b>C.7</b>	<b>Transportation</b>					
C.7.1	There are enough vehicles for the work.	1	4	2	3	3
C.7.2	Transportation cost for the work is refundable	1	2	1	3	3
	Average	1.0	3.0	1.5	3.0	3.0
	<b>Average for C</b>	<b>1.7</b>	<b>2.8</b>	<b>2.1</b>	<b>2.7</b>	<b>2.8</b>
	<b>Total Average</b>	<b>1.8</b>	<b>3.3</b>	<b>2.3</b>	<b>2.9</b>	<b>3.1</b>


# *Section J Public Relations*

**J Public Relations..... J-1**

- J.1 Newsletter No.1 .....J-1
- J.2 Newsletter No.2 .....J-3
- J.3 Newsletter No.3 .....J-5
- J.4 Newsletter No.4 .....J-7
- J.5 Newsletter No.5 .....J-9
- J.6 Newsletter No.6 .....J-11
- J.7 Newsletter No.7 .....J-13

# J Public Relations

## J.1 Newsletter No.1



**Technical Cooperation Project for Strengthening the Capacity for Solid Waste Management in Ulaanbaatar City in Mongolia**

**Content**

1. Introduction
2. Current Conditions of SWM in Ulaanbaatar City
3. Outline of the Project
4. About us and how to contact us

**1. Introduction**

At present, Municipality of Ulaanbaatar (MUB) is implementing the Master Plan (MP) for Improvement of Solid Waste Management (SWM) in Ulaanbaatar City, which was formulated in 2007 under the development study by Japan International Cooperation Agency (JICA).

New Naranagin Erger Disposal Site was constructed and equipment such as waste collection vehicles and heavy machineries were procured by the Japanese grant aid project and also MUB's own financial sources.

SWM system is improving rapidly through the implementation of the MP, but there is still a room for improvement. Furthermore, due to rapid change of organization and introduction of new concepts such as 3Rs, development of capacities of human resources and organizations for SWM is urgently required.

We, the Japanese Expert Team (JET), were selected by JICA as a consultant to implement the project for strengthening the Capacity for Solid Waste Management in Ulaanbaatar city in Mongolia.

The project started in the beginning of October 2009 and the first group of JET arrived in Ulaanbaatar on the 8th of October. The project will last 3 years. During the project period, we will issue News Letters regularly to inform you of the progress of the project. This is the first volume of the news letter.

**2. Current Conditions of SWM in Ulaanbaatar City**

The fundamental goal of the MP for SWM in MUB is: "to establish an environmentally sound SWM system in MUB by the target year 2020".

The abovementioned goal will be achieved progressively and the Master Plan is divided into the three stages and Phase 1 short term improvement to be realized from 2006 to 2010. Comparison is made between current achievement as of end of 2006 and the target in Phase 1, and we realize three main differences as follows.

- Population increases rapidly, compared with the estimation in 2004, especially, population in apartment area did not increase as the target, in the case of increased people state in the Ger area.
- As a result, waste generation in UBC might increase much more than estimated since the waste generation rate in the Ger area is double the generation rate in apartment area.
- There is no concrete achievement for recycling and intermediate treatment.

It must be required to identify the difference between MP and the current achievement more precisely and to analyze the cause of differences before commencement of the Project.

**3. Outline of the Project**

The technical cooperation projects are one of JICA's main types of overseas activities. The result oriented, with Japan and Mongolian pooling know ledges, experiences, and skills to resolve specific issues within a certain timeframe may involve the dispatching of experts from Japan to provide technical support, invitation of personnel from Mongolia for training, or the provisions of necessary equipment. The project

The outline of the project is briefly introduced.

**Objective**

The objective of the project is to strengthen the capacity for Solid Waste Management in Ulaanbaatar City.

**Expected Outputs**

There are 6 expected outputs through the implementation of the project as follows:

Output 1: Development of human resources of Environmental Pollution and Waste Management Department of MUB (EPWMD) for solid waste separation, recycling and treatment policy making and planning.

Output 2: Development of human resources of City Maintenance and Public Utilities Agency (CMPUA) and EPWMD for operation and maintenance of waste collection vehicles and heavy machineries.

Output 3: Development of human resources of CMPUA for appropriate operation of Naranagin Erger Disposal Site (NEBS).

Output 4: Development of human resources of EPWMD and Waste Service Fund (WSF) for financial management of solid waste management.

Output 5: Development of human resources of EPWMD and District Office for promotion of public awareness and participation in solid waste management.

Output 6: Recommendation for appropriate system of waste separation and recycling in Ulaanbaatar City (UBC).

**Target Area**

Ulaanbaatar City in Mongolia (6 Districts: Songinokhairkhan, Khan Uul, Bayangol, Chingeltei, Sukhbaatar, Bayanzurkh)

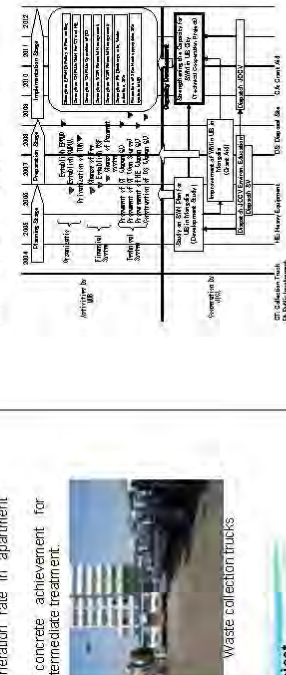
**Target Waste**

Municipal Waste (Hazardous waste are excluded except generated from household)

**Project Implementation Body**

Project Director: GM of MUB  
 Project Manager: Director of EPWMD  
 Counterpart: EPWMD, CMPUA, District Offices  
 Waste Service Funds.

The following figure illustrates activities to improve SWM by MUB and JICA cooperation since the beginning of the development study and role of technical cooperation project.



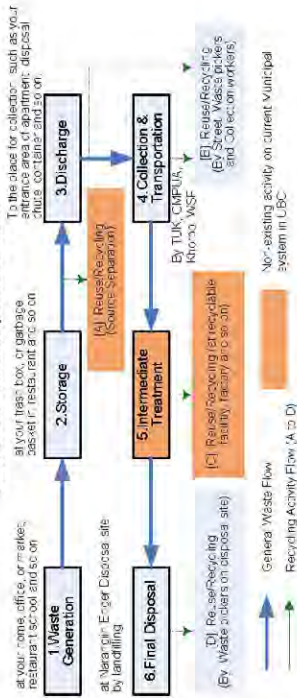
**Schedule of the project**

Calendar Year	2009	2010	2011	2012
1st Year	1	2	3	4
2nd Year	5	6	7	8
3rd Year	9	10	11	12
4th Year	13	14	15	16
5th Year	17	18	19	20
6th Year	21	22	23	24
7th Year	25	26	27	28
8th Year	29	30	31	32
9th Year	33	34	35	36
10th Year	37	38	39	40
11th Year	41	42	43	44
12th Year	45	46	47	48
13th Year	49	50	51	52
14th Year	53	54	55	56
15th Year	57	58	59	60
16th Year	61	62	63	64
17th Year	65	66	67	68
18th Year	69	70	71	72
19th Year	73	74	75	76
20th Year	77	78	79	80
21st Year	81	82	83	84
22nd Year	85	86	87	88
23rd Year	89	90	91	92
24th Year	93	94	95	96
25th Year	97	98	99	100

**Additional Topic: What is Waste?**

Waste is generated everywhere and everyday in our daily life and we are familiar with the issue of waste. Actually, however, we do not know the details, e.g. how our waste is transported and disposed of at the final disposal site, how much waste is generated every day, and so on. In our newsletter, we will introduce Waste Systems in serial form, so that you can have a clearer image of waste systems. There are several steps from waste generation to final disposal as shown in the figure below. And we will try to explain each step one by one according to the flow chart.

**Flow chart of municipal solid waste**



**1. Waste Generation**

Waste is unwanted materials left over from any human activity. In other words, as long as there are human beings, waste is generated. This is the starting point of SWM and it is one of the most important steps in achieving sustainable SWM. Amount of waste generation is increasing along with economic development and materialized societies. Recently in developed countries, they are reviewing their lifestyle based on mass production and mass consumption and are trying to create a society which generates as little waste as possible. On the other hand, the traditional "nomadic" Mongolian lifestyle can be said to be one of the most eco-friendly lifestyles, generating minimal waste that can be degraded easily to the soil. It is difficult to revert to the nomadic life, but it is important to respect your ancestors' way of living.

**2. Storage**

Storage is not so familiar wording to you, but it is the step where waste is generated from human activities and kept in dustbins in your houses, shops or restaurants before being discharged. This is a necessary step to keep public areas clean such as your streets, surrounding of your living premises and so on. Important issue is to keep your waste in your storage facilities as long as possible to prevent the waste being in public areas for too long. Dust chute system is common in your old

apartments. It is convenient for residents as you do not need to store the waste in your houses and you can discharge it whenever you want. But on the other hand, waste is stored a long time in the dust chute and conditions are unsanitary, especially in summer, and fires occur sometimes. Thus, apartments with dust chutes are decreasing in developed countries. In order to keep the waste in your storage facilities and reduce the time it is exposed in public areas, punctual collection of waste is essential.

**[A]. Reuse/Recycling (Source Separation)**

To separate waste at the step of storage in your premises into recyclables and others is called source separation. Separate collection system will be introduced such that Wednesday is the day for collecting recyclables only. This source separation is an effective way for recovering recyclables with additional effort by the residents. It is much more sanitary and safer than waste pickers recovering recyclables at disposal sites.

We have conducted pilot projects in Chingeltei district Khoro no. 3 in 2006 and it proved that this system is applicable to your UB city. This step is one of the main targets to be achieved in the project, thus, we will explain details in due course.

...We will show other steps on next newsletter, so please check it out!

**4. About us and how to contact us**

**About us and organizational structure of the project**

At first, we would like to introduce the Japanese expert team members. The team consists of 7 members. In addition, Mongolian assistants are working for the project at present.

Assignment	Name
Team Leader (SWM) / Financial Management	Mr. Ichiro Koro
Maintenance of Equipment	Mr. Koji Uzuwa
Collection and transportation	Mr. Junji Arai
Landfill Management	Mr. Hiroshi Fujita
Financial Management	Mr. Susumu Shimura
Public Awareness	Mrs. Yuko Aoki
Waste separation and Recycling Coordinator	Mrs. Mie Nagayasu Mr. Shinsuke Oka

Our counterpart organization is Ulaanbaatar City. 10 officers were selected as the counterpart members and are working for the project with us.

Field	Name
1. Policy making and planning	1. EPAMIC (S. Anurav) 2. CWJUA (N. Anurav)
2. Operation and Maintenance of Equipment	1. CWJUA (S. Dandanzan) 2. EPAMIC (T. Enkh-Angbar) 3. District Offices (4)
3. Operation of NEDS	1. CWJUA (V. Gerdasary)
4. Waste Service Fee	2. EPAMIC (H. Gerdasary) 2. District WSE (2)
5. Public awareness raising	1. EPAMIC (E. Badrui) 2. District Offices (4)
6. Waste separation and recycling	1. EPAMIC (O. Dandanzan) 2. CWJUA (E. Dandanzan)

\*1. To be appointed at due date

\*2. To be appointed in case of district WSE exists

As already mentioned, it is necessary to make a broad consensus with all the organizations and individuals concerned in order to improve the solid waste management systems here. To achieve a broad consensus, both the Japanese and Mongolian side agreed to form the Joint Coordinating Committee (JCC).

The members of the JCC are officers in charge of SWM in each organization, and its main roles are to monitor and evaluate the progress of the project. The JCC members are shown in the following table.

**JCC Members**

Organization	Department
Ministry of Finance	Coordinator of Financing and Cooperation
Ministry of Nature, Environment and Tourism	Sustainable Development and Strategy Planning Department
Ministry of Health	Public Health Policy and Implementation Coordinator Department
Municipality of Ulaanbaatar	Environmental Pollution and Waste Management Department
Municipality of Ulaanbaatar	City Maintenance and Public Utility Agency
Capital City's Social Inspection Agency	
JICA Mongolia Office	
JICA Expert Team	
Embassy of Japan in Mongolia	

**How to contact us**

Our office is located in the building of City CMPUA. The phone and fax number are shown below. You can contact us by phone and fax.

In addition, we have a plan to open a web site soon. You will be able to contact us through the internet. We will also inform the progress of the project on the web site, as well as in the news letter. The news letter and some of the documents will be able to be downloaded from the web site. We also have a plan to distribute the news letter by e-mail. We will inform how to subscribe to the news letter by email soon after we decide the details.

On the other hand, it is very important for us to know the opinions and ideas all the citizens and organizations about the current solid waste management systems in Ulaanbaatar. Your opinions and comments on the project are always welcome. We hope that we could actively exchange opinions and comments with you through the news letter and web site.

JICA Expert Team for  
The Strengthening the Capacity for Solid Waste  
Management in Ulaanbaatar City in Mongolia

[Office]  
C/O CMPUA  
Burmend Street 66, Khoro 6  
Chingeltei District, Ulaanbaatar, Mongolia  
TEL: 011-327-28  
FAX: 011-328-128

\* Key Glossary written by the World Bank



J.2 Newsletter No.2



- Content:
1. Public-Opinion Survey
  2. Additional Topic
  3. Important Event and Activity
  4. Our New Website

1. Public Opinion Survey (POS)

It has been three months since our project had launched in October 2009. During this period of time, various activities have been carried out in collaboration with our Mongolian counterparts EPWMD, CMPUA and District Government etc. In this second volume of our newsletter, we especially would like to explain the results of public opinion survey (POS) among those activities.

**Purpose of Survey**  
The purpose of this survey is to understand "people's satisfaction level for urban environment and sanitation, and for solid waste management (SWM) service throughout the UB City". This survey is planned to be conducted three times at the time of the beginning, intermediate, and the end of this project and the result will be used as the criterion on whether or not the project purpose is successfully achieved.

**Outline of Survey**

- Survey Method: Distribution and collection of questionnaire
- Target Area: 2 khoroos, selected respectively from the Ger Khoroos and the Apartment Khoroos in each of district in the UB City, 24 Khoroos in total.
- Object: Households who live in the 6 pilot districts<sup>1</sup> of the Central District of the UB City
- Number of Object: (1) 420 households in Ger Area (6 districts X 2 khoroos X 35 = 420), (2) 420 Households in Apartment Area (same as Ger Area)
- Number of Questions: 13
- The theme of a question: (1) Characteristics of the respondents, (2) Urban environment, and sanitation of the UB City, (3) Problem of SWM in the UB City

**Result of Survey**

1. Sukhbaatar (SBD), Chingeltei (CHD), Serengekhairkhan (SKH), Bayanzurkh (BZD), Bayalgol (BGD), Khan-Duul (KHU)

(1) Characteristics of Respondents

The distribution of respondent by age and sex is shown below. There were 39.3% of males and 58.6% of females. Respondents of 48 years and over accounts for 44.1% and the age groups of 48 years and under are scattered on the average.

Age	Male	Female	(Blank)	Total
18-23	1.5%	2.5%	0.0%	4.0%
24-29	4.5%	6.5%	0.0%	11.0%
30-35	4.6%	8.0%	0.0%	12.6%
36-41	5.3%	8.0%	0.1%	13.4%
42-47	5.0%	8.2%	0.0%	13.2%
48 over	18.6%	25.2%	0.4%	44.1%
(Blank)	0.0%	0.1%	1.6%	1.7%
Total	39.3%	58.6%	2.1%	100.0%

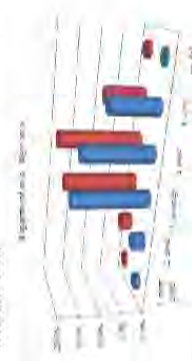
The following table shows the distribution of final academic background of respondents. More than 40% of respondents have the academic background of the university graduation, and more than 70% among them is those who live in the Apartment Area.

Educational Background	Apartment Area	Ger Area	Total
University	31.0%	12.6%	43.6%
Diploma	8.5%	13.3%	21.8%
Secondary School	7.7%	16.7%	24.5%
Half Secondary	1.9%	5.1%	7.0%
Primary or No Education	0.2%	1.0%	1.2%
(Blank)	0.4%	1.6%	1.9%
Total	48.8%	50.2%	100.0%

(2) Urban Environment and Sanitation of the UB City

Q1-1. Are you satisfied with urban environment and sanitary conditions in UB City?

The answer was totaled and analyzed by the residence area. More than 49.6% in the Apartment Area, 40.8% in the Ger Area and 42.1% on average show the satisfaction level more than average for the urban environment and sanitation of the UB city. A big difference is not seen though the resident in Apartment Area shows some high degree of satisfactions overall. It can be said that the public opinion in the UB city is same regardless of the residence area.



The answer to Q1-1 in the Apartment Area was totaled by district. When we see the data of each district that shows the satisfaction level more than average, it is BGD 31.5%, BZD 57.9%, CHD 39.1%, KHU 41.4%, SBD 60.2%, and SKH 32.9%. BZD is 57.9% after 60.2% of highest SBD, and the lowest one is 31.5% of BGD, and 32.9% of SKH comes next.

In the Ger Area, it was BGD 31.8%, BZD 41.4%, CHD 44.0%, KHU 50.1%, SBD 40.8%, and SKH 36.2%. CHD is 44.0% after 50.1% of highest KHU, and the lowest one is 31.8% of BGD, and 36.2% of SKH comes next.

BGD and SKH show the lowest satisfaction level in both case of Apartment and Ger Area.

Q1-2. Which do you think the most serious problem is in whole UB City at present?

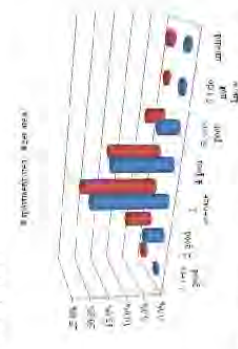
In both Apartment Area and Ger Area, about 80% of the respondents has answered that the most serious problem in the urban environment and sanitation of the UB city is "air pollution", and it is overwhelming other problems such as soil contamination, water pollution, traffic congestions etc. Although there is a big difference with air pollution in percentage, 3.4% of respondent has chosen the "waste problem" as the 2nd serious problem.

(3) Problem of SWM in the UB City

Q2-1. Are you satisfied with SWM services (discharge, collection, transportation and disposal) in UB City?

When the answer to Q2-1 was totaled by residence

area, the respondent of 53.8% in Apartment Area and 58.1% in Ger Area, and 55.9% on average showed the satisfaction level more than average. The high degree of satisfaction was shown here overall compared with the answer of the satisfaction level to the urban environment and sanitation of the UB city in Q1-1.



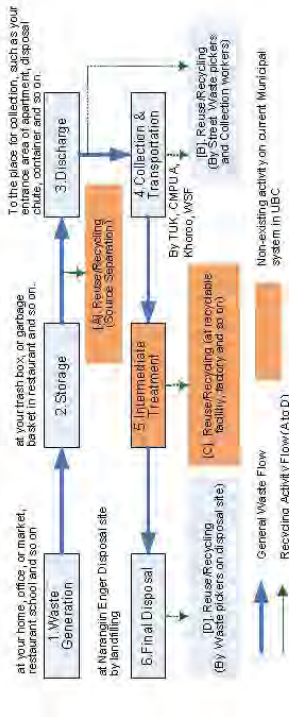
The answer to Q2-1 in the Apartment Area was totaled by district. When we see the data of each district that shows the satisfaction level more than average, it is BGD 55.8%, BZD 62.3%, CHD 59.4%, KHU 46.6%, SBD 66.3%, SKH 50.0%. BZD was 62.3% after 66.3% of highest SBD, and the lowest one is 35.8% of BGD, 48.6% of KHU comes next. In the Ger Area, it was BGD 49.2%, BZD 65.7%, CHD 63.6%, KHU 67.2%, SBD 45%, SKH 58%, BZD was 65.7% after 67.2% of highest KHU, and the lowest one is 45% of SBD, 49.2% of BGD comes next.

In SBD, although the residents in Apartment Area showed the highest degree of satisfaction among the 6 districts, the residents in Ger Area showed the lowest in BZD, both in the Apartment Area and Ger Area showed the high degree of satisfaction, and the low degree was shown in both Areas in BGD.

Q2-2. What do you think the most serious problem is for SWM in UB City at present?

It was "People's waste discharge manners are poor" that the resident had answered as the most serious problem of waste in the UB city. The Apartment Area and Ger Area accounted for 36.9% and 35.9% respectively and 36.1% on average. Following this, it was 19.5% of residents in the Apartment Area, 14.1% in the Ger Area, and 16.8% on average who had answered "There are not enough SMEs to conduct waste separation and recycling activities". It shows the current state of UB City that there are no recycling facilities though residents are enthusiastic about recycling. The resident in Ger Area chose the item "The collection service was not enough" more than the resident in Apartment Area.

Q2-3. Are you satisfied with the collection services in your area?



Flow chart of municipal solid waste

of waste periodically. This system needs to install the container for recyclable waste separately. Moreover, there is a problem with which West Pickers on the street scatters waste while searching for valuables.

On the other hand, in the Ger Area, collection vehicle conducts individual collection, and residents discharge waste accumulated in the Ger Area, the drum with arrival of a collection vehicle.

Although this way of discharging waste is suitable for waste separation at source, in the Ger Area, the greater part of the waste is the ashes burned by the stove, and the quantity of recyclable waste is very limited.

**3. Discharge**

The UB City can be roughly divided into the Apartment Area where the infrastructures such as hot water heating system and sewage were prepared, and the Ger Area without those infrastructures. The Apartment Area consists of three types, apartments built in 50s and 60s, apartments built in 70s and 80s, and apartments built in the latest development rushes. Each has adopted the different ways of waste discharging as follows.



1. Apartments built in 50s and 60s  
A manager, who usually stays nearby each door, keeps the waste put in a plastic bag and he/she brings them to collection area when collection vehicle comes under the bell collection system. This is the most suitable way of discharging to promote the source separation.



2. Apartments built in 70s and 80s  
Most of this type of apartment is equipped with the dust chute and residents discharge waste whenever they like. Although this system is convenient for residents since the dust chute is considered as conducted everyday there could be a sanitary problem, and yet it is very difficult to promote recycling such as source separation in this system.

**3. Important Event and Activity**

- 3R seminar: April
- WEEE survey: on going
- Pilot Project: planning stage

**4. Our New Website**

Our web site is finally published. At present, there is the only English language site, but the Mongolian site will be ready soon. The URL of site is shown below.

We will try to update the web site as frequently as possible in order to show the prompt reports on our survey and provide information on events such as seminars and workshops.

We hope that many of you will check our web site.



3. Apartments built in recent years  
Most of them have the waste discharging point in the site. Residents discharge waste there, and collection vehicle comes for collection.

JICA Expert team for  
The Technical Cooperation Project for  
Strengthening the Capacity for Solid Waste Management in  
Ulaanbaatar City in Mongolia  
[Office] C/O CMPUA  
Burmsted Street-68, Khono 6,  
Chingelai District, Ulaanbaatar, Mongolia  
TEL: 011-327128 FAX: 011-323128  
Website: <http://www.kkcbp/>

In Apartment Area, 86.4% of residents of an area that CMPUA provides with collection service showed the highest degree of satisfaction more than average, and 42.9% of residents of an area that Private Company (except TUK) provides with collection service showed the lowest. In Ger Area, 72.5% of residents of an area that TUK provides with collection service showed the highest degree of satisfaction more than average, and 53.5% of residents of an area that Khono Government provides with collection service showed the lowest.

As a whole, 77.0% of the residents of an area that CMPUA provides collection service showed the highest degree of satisfaction more than average, and the lowest one, when removing the provider that is collecting waste only in one of the two areas in which the respondent of the POS lives, was 66.7% of the residents of an area that TUK provides collection service.

Collection Provider	Apartment	Ger Area	Total
Organization under District Government	82.1%	65.7%	72.1%
Khono Government	-	53.5%	53.5%
CMPUA	86.4%	88.8%	77.0%
TUK	52.5%	72.5%	66.7%
Private Company other than TUK	42.9%	-	42.9%

The collection service is not given in the POS target area.

Q2-5-1 Why aren't you satisfied with waste collection services?

It was "1. Waste collection manner is poor" that most respondents answered as a problem in collection service, and it was 25.6% in the Apartment Area, 19.8% in the Ger Area, and 22.6% on average. If it sees from this result, the residents of an area to whom collection is provided by CMPUA showed the highest degree of satisfaction in Q2-4. It means that such a high degree of satisfaction having been shown is just because they were satisfied with the collection manners of the workers of CMPUA to some extent. "6. Some people do not pay waste collection fee" follows to the next as a problem, and it was 15.9% in the Apartment Area, 26.9% in the Ger Area, 21.5% on average, and especially high ratio was shown in the Ger Area. "3. Waste collection schedule is not fixed" was answered to the third as a problem, and it was 19.7% in the Apartment Area, 22.9% in the Ger Area, and 21.3% on average.

Q2-7. Government is going to introduce separate discharge and collection system in your living area. Do you want to cooperate for separating your waste into "Recyclables and Non-Recyclables" in your house?

The respondent who showed willingness to cooperate was 58.6% in the Apartment Area, 82.7%

turned out to be very high rate.

**(1) Urban Environment and Sanitation in the City**

The degree of satisfaction for the urban environment and sanitation of the UB City was lower than that of the SWM both in the Apartment and Ger Areas. The reason is that the air pollution is recognized by residents as the most serious problem of the UB City.

In November when the survey was conducted, the temperature was starting to get lower and it was about the beginning of winter, there was increasing number of the Ger residents who warms themselves by burning coal. Since the survey was conducted at the time that the central part of the UB City was covered with thick smoke resulting from the air pollution which is considered as a big social problem in recent years, the results of the survey may have been affected somewhat.

**(2) SWM in the City**

It seems that the degree of satisfaction of the residents on the SWM of the UB City is about 10% higher than that of the urban environment and sanitation and residents have not taken it as seriously as the environmental problem. When we look at by district, the residents of BZD showed the highest degree of satisfaction, and on the other hand the BGD showed the lowest degree. In SBD, although the highest degree of satisfaction was shown among those six districts in the Apartment Area, the lowest degree of satisfaction was shown in the Ger Area. Moreover, BGD showed the lowest degree of satisfaction in total as well as that of the urban environment and sanitation.

Regarding the problem on the SWM of the UB City, most residents both in the Apartment and Ger Area answered "people's waste discharge manners is poor" as a problem. Although the degree of satisfaction for waste collection service was comparatively high, most residents answered "collection manner is poor" as a biggest problem. Manners are considered as a serious problem again here.

Because of the fact mentioned above and that more than 85% of respondents show willingness to cooperate when the UB City implements waste separation and recycling, it seems that the consciousness of the UB citizen for environment and SWM are comparatively high.

**2. A Additional Topic: What is Waste?**

Following the last issue, we would like to explain about how the UB City is currently conducting 3 Discharge in the flows mentioned below in this volume.

J.3 Newsletter No.3

**Newsletter Vol. 3**

**Technical Cooperation Project for Strengthening the Capacity for Solid Waste Management in Ulaanbaatar City in Mongolia**

It has been already 8 months since our project has been implemented. In the 3rd volume of our newsletter, we would like to introduce "the pilot project (PP)" for waste separation and recycling" as one of our important project activities.

- Content:
1. Pilot Project for Waste Separation and Recycling
  2. The 1st "3R" Seminar
  3. Important Event and Activity
  4. Our New Mongolian Website

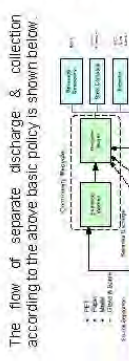
Improved. On the other hand, promotion of "3Rs" is still untouched but important issues to be tackled in near future. This PP aims to support MUB in selecting the most appropriate SWM system by showing several alternatives of 3Rs, taking consideration of severe weather conditions and social conditions of the city.

**1. Pilot Project for Waste Separation & Recycling**

**Background**  
According to the MIP for Solid Waste Management (SWM) in the Municipality of Ulaanbaatar (MUB) which was formulated in 2007, the fundamental goal is: "To establish an environmentally sound SWM system in MUB by the target year of 2020" in which system the concept of "3Rs (Reduce, Reuse and Recycle)" is promoted and the following situation should be established.

- 1) Waste reduction is encouraged at the generation source such as households and business enterprises.
- 2) Waste generated after the attempt of waste reduction is reused or recycled as much as possible.
- 3) Waste is properly collected only after the efforts of waste reduction, reuse or recycling at the generation source, and recycled/treated, then finally disposed of in a proper manner without negative environmental impacts.
- 4) Such a SWM system will be established by requiring the government sector, private sector and general public to bear adequate responsibilities under a transparent and fair rule is achieved.

Since 2007, in the UB city, the development of infrastructure such as procurement of waste collection trucks and construction of new disposal site applying the sanitary land filling system has been achieved, while at the same time the software system such as establishment of WSF and strengthening the organization for SWM has been



**Current Progress of 3 PPs**

**PP1: Public Cooperation PP on Separate Storage and Discharge**

This PP aims to verify the degree of public cooperation on separate storage and discharge while at the same time developing the capacity of C/P in raising public awareness through interacting with residents in the Apartment area.

In selection of the target khoroos for PP, various conditions such as willingness to improve SWM and cooperate for PP by district governor and deputy governor and willingness to compensate additional cost for separate collection by khoroos governor were examined. As a result, four target khoroos: Khoroos #5 and #7 of SBD and Khoroos #1 and #7 of BCD were selected.

At present, we are organizing weekly meeting involving the representative of Apartment Owner's Union (AOU) in each target khoroos. We have decided that first of all we would work on 1) improvement of waste discharging manner by residents, 2) improvement of collection manner by collection service providers, and 3) improvement of waste separation at source to promote community recycling, and then the next step of separate collection will be introduced.

**PP2: Verification PP of Separate Collection System**

In this PP, separate collection area and mixed collection area from the Apartment area will be

selected to compare the cost (cost for separation and for collection) and the benefits (the amount of valuables collected and the amount of sale of valuables) of each collection system, so that people would understand whether or not there is the significance to introduce separate collection for the UB city.

This PP will be implemented after the source separation by residents has been successfully established to some extent in the PP1 of public cooperation on separate storage and discharge.

**PP3: Verification PP of Separation System at the Landfill Site**

This PP aims to compare the cost and benefit of simple hand sorting system which is equipped only with concrete scattering prevention fence, and simple semi-mechanical sorting system which is equipped with hopper and belt conveyor in order for Waste Pickers (WPs) to collect valuables from wastes at the landfill.

There are about 250 WPs collecting valuables now in NEDS for making their own living. They are planned to work for sorting valuables as soon as a sorting yard has been constructed. It can be helpful for WPs to work in a safer and sanitary environment and also for the NEDS itself to do sanitary land filling more efficiently. Aiming at systematization of WPs, the weekly meeting is being held now so that the recyclables sorting can be immediately started after completion of a sorting yard.



**Schedule of Waste Separation & Recycling PP**

Description	2007		2008		2009		2010	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Public Cooperation PP								
Waste Storage and Discharge								
Verification PP of Separate Collection System								
Verification PP of Separation System at the Landfill Site								
Separation System at the Landfill Site								
Public Cooperation PP								
Waste Storage and Discharge								
Verification PP of Separate Collection System								
Verification PP of Separation System at the Landfill Site								
Separation System at the Landfill Site								
Public Cooperation PP								
Waste Storage and Discharge								
Verification PP of Separate Collection System								
Verification PP of Separation System at the Landfill Site								
Separation System at the Landfill Site								

\* For Public Cooperation PP, the meeting will be held weekly.

### 3. The 1st 3R Seminar

"The first 3R seminar" was held in the Ulaanbaatar hotel on April 14 for the following purposes:

- 1) To obtain the understanding and agreement on the contents of the PP from the stakeholders.
- 2) To share the important experiences of the stakeholders to promote the 3Rs activities in order to reduce disposal amount and enhance recycling.
- 3) To exchange opinions among stakeholders in order to promote the 3Rs in UB city.

About 90 persons including representatives of related ministries, EPWMD, CMPUA, WSF and PSD of district government, and AOU's director of each target khoroo for PP, NGO, and the mass media, participated in the seminar.

After presentation of opening remarks from Japanese side (JICA) and Mongolian side (MUB), EPWMD explained the details on PP for waste separation and recycling and continuously the khoroo governor of SBD 7 made a presentation about the experiences and challenges of their community recycling.

In the session of questions and answers for the presentation on the PP, the representative from Gender Centre for Sustainable

Development (NGO) asked: "Is there any countermeasures to the toxic gas derived from combustion of RPPs as they are produced from papers and plastics?" In reply to her questions, JET informed the participants about results of the PP conducted during the Development Study on production of RPF for the heating plant of Nalaikh district. According to the results of PP during Development Study, quality of exhausted gasses were investigated and it was within the permission

level, if RPF has been mixed few percent as replacing with coal. Actually, the RPF increases the efficiency combustion of the fuel. However, the project will not recommend for heating plants to use a fuel consisted only from RPF.

In relation to the waste separation for community recycling, the representative of the Research Institute of Public Sanitation emphasized the necessity of complete separation of wastes before collection and recommended to educate households, children and the public on sorting wastes at the generation sources in order to achieve good results.

In the session of workshop, at first EPWMD explained the current conditions of waste discharging manner and problems in the UB city, then the group discussion by each of the 4 target khoros has been made addressing the issues on how to improve the waste discharging manner and collection manner, and how to promote source separation for community recycling.

All of the AOU representatives took active parts in discussion and exchanged various opinions. After that, the result of the discussion was presented by the representatives of each group. Each khoroo differs in the methods of discharging waste according to whether the apartment has a dust chute or not. Also, the collection method is different according to the collection providers and collection trucks. Moreover, there are khoros in which the source separation has been already implemented to some extent and khoros in which the problem of discharging manner of business entities is more serious than that of apartment residents. Thus, various measures have been discussed based on those current conditions by each khoroo. The contents and priority of PP which

are to be implemented in each target khoroo will be determined respectively based on the result of the discussion and the actual condition of each khoroo. In the last session of questions and answers, various issues and recommendations have been presented by participants.

The representative of AOU of khoroo #1 BZD recommended that the PP should involve UBS Channel #1 and #2, as the announcement of achievements of the PP in the municipal television channels would improve the public awareness as of the strongest means among those mass media in Mongolia. The channels should also broadcast cases of violation of laws or regulations related to waste management or waste discharge. The representative of AOU of khoroo #7 BZD emphasized the importance of competition among the target AOU's. He said: "competition among the AOU's and households is helpful to achieve good results in implementation of the PP. Furthermore, AOU's or households that obtained good results in improvement of residents' discharge manners and implementation of the project activities should be awarded by the MUB".

The JET also made a comment on the frequency of waste collection: "it is possible for the UB city to reduce the collection frequency because the project requesting residents to keep their wastes only for 2 or 3 days and also some of the residents, such as in khoroo # 7 of BZD have already been used to keeping wastes for 2 days. Taking example of the Tokyo Japan, residents are allowed to discharge their kitchen wastes twice in a week while the other recyclable wastes are only collected once in a fortnight. Sorting wastes for decided period of time relates to the improvement of the residents' awareness about SWM".

Many of the participants requested the supply of plastic bags in order for residents to put their separated waste in response, the JET said; "If

we supply the plastic bag for residents, it would increase the amount of plastic bags to be discharged but the objective of our PP is to reduce the amount of waste. Moreover, providing residents with plastic bags is not sustainable option since the fund for financing the supply of plastic bags is difficult to secure. If supply is necessary, the financial source should be secured. One of the possible ways is the savings by collection companies resulted from the reduction of collection frequency which in turn resulted from the decrease in waste amount after introduction of separate discharge and collection".

It seemed that through the discussion in the seminar and workshop a mutual understanding over the PP has been increased while at the same time awareness of the issues related to the waste management has been shared among those participants. It is expected that these experiences would be harnessed to our future PP activities in effective way.

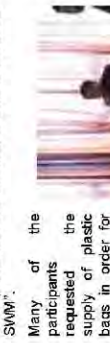
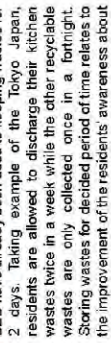
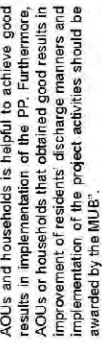
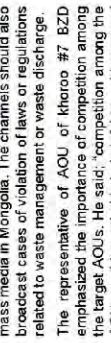
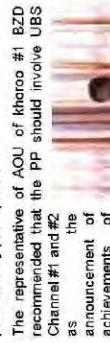
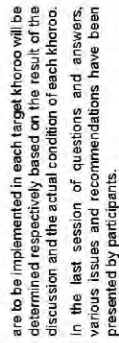
### 4. Important Event and Activity

- AOU meeting at each PP target khoroo: on going.
- Separate collection of waste for trial at BZD1: from June 12.
- WPs meeting at NEDS: on going.
- Time & Motion survey in Ger area: Mid June.

### 5. Our New Mongolian Website

The Mongolian version of our web site has been set up. The URL of site is shown below. We will try to update the web site as frequently as possible in order to show the prompt reports on our survey and provide information on events such as seminars and workshops. We hope that many of you will check our web site.

JICA-Expert Team  
The Technical Cooperation Project for  
Strengthening the Capacity for Solid Waste Management  
in Ulaanbaatar City in Mongolia  
10 floor, UIC CAMPUA,  
Bumibard Street-66, Khoroo 6  
Chingelid District, Ulaanbaatar, Mongolia  
TEL: 011-327128 FAX: 011-323129  
Web site: <http://www.kokusai.or.jp>



1. RPF is 'Reduced Papers & Plastic Fuel'. These waste plastics and papers can be a fuel if they form a certain density and shape for feeding in Power Plant.

J.4 Newsletter No.4

- Comment:
1. Survey Results on WEEE
  2. Progress of Pilot Project on Improvement of Public Cooperation on Waste Discharging Manner and Separate Discharge
  3. Important Events and Activities

This is the 4<sup>th</sup> edition of our newsletter that describes the progress of the project activities which started a year ago. This time we will bring you the update on the implementation of the pilot project (PP) on improving manner and separate discharge in the selected Khoroos, and the results of the survey on the waste of electrical and electronic equipment (WEEE) generated in UB.

**1. Survey on WEEE**

WEEE is the abbreviation for Waste Electrical and Electronic Equipment and the term describes loosely discarded and broken electrical or electronic devices. The processing of WEEEs causes serious health and pollution problems as well as involves significant risk to workers' communities and great care must be taken to avoid unsafe exposure in recycling operations and leaching of material such as heavy metals from landfills and incinerator ashes.

Under these circumstances, the JET investigated the current conditions of WEEEs being recycled and disclosed in UBC from Jan to Feb 2010 in order for the MUB to develop its policy for WEEE.

**Objectives**

- The main objectives of this survey are:
- (1) to understand the current way of discharge, recycle and disposal of WEEEs in UBC and
  - (2) to identify the amount and the flow of WEEEs.

**Target WEEEs and the Scope of the Survey**

Although 5 types of EEEs (TV set, refrigerator, washing machine, PC and mobile phone) were initially selected as target EEEs, the mobile phone was deselected since its imported quantities can not be obtained and it is impossible to clarify waste flow in UB city.

**Current Condition of WEEE Recycling System**

According to the interviews, the methods of WEEE recycling in UBC are almost similar for all types of target WEEEs.

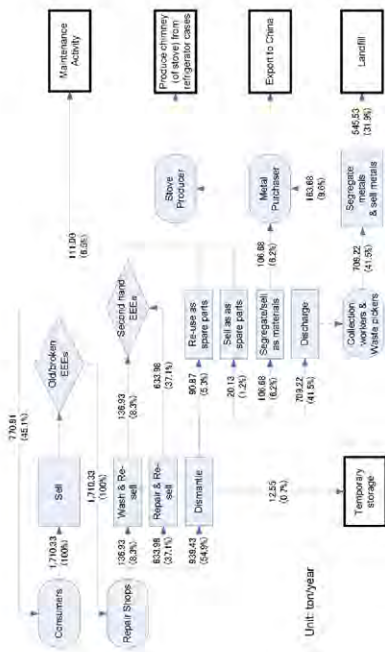
The majority of the most common recyclables are metal-containing parts. Generally, metal containing parts are recycled regardless of their functionality as non-functional ones can be sold as metal after segregation. Among non-metal or mixed small parts, any of the functional ones can be used in maintenance as spare parts.

**WEEE Recycling Processes**

The WEEEs generated in UBC are re-used since most of second hand WEEEs purchased by recyclers are resold and repaired/resold back to consumers. Only those that cannot be repaired are dismantled and some of their parts are recycled. All the metals (copper, iron, aluminum and alloys) segregated from WEEE parts, except iron cases of refrigerators, are exported to China. As iron cases of refrigerators are used as raw material for chimneys of ger stoves, most refrigerator cases are purchased by ger stove producers.

**WEEE Recyclers**

The WEEE recyclers in UBC are repair shops or individual repairmen, collection workers, waste pickers and metal purchasers. The repairmen play the main role in WEEE recycling since they purchase old and broken EEEs from consumers, repair



most of the purchased EEEs, resell them to residents and dismantle other EEEs that are impossible to repair.

**Findings**

According to the above WEEE Recycling Cycle and WEEE Flow 45.1% in the total WEEEs is re-used, 23.0% is recycled (including stored spare parts) and 31.9% is disposed. Re-use rate of each type of WEEEs is usually high (ranging from 66.9% to 80.2%) except PC. As for PC, the indicator is only 28.6% since CRT monitors that occupy the major part in the weights of TV sets, are usually impossible to re-use.



The total disposed amount occupies 31.9% in the total (545.53 tons). As the amount is estimated by weights of the disposed parts, the majority of the total disposed waste has been resold from disposed CRTs of PCs and TV sets. The main reasons for the conclusion are (1) all the CRTs of PC cannot be sold and around 80% of those of TV sets are disposed, and (2) a CRT weights more than 10 kg occupying the majority in the weights of TV sets and PCs, according to survey results. Therefore, the sum of disposed amounts of CRTs from TVs and PCs occupy 94% in the total landfill amount.

**Recommendations**

CRTs contain heavy metals such as mercury that cause serious health problems to human beings, the

major attention should be paid to their disposal. A separate disposal site where hazardous wastes are disposed in safe manner is required to be constructed in order to prevent the negative impacts on surrounding environment. Until such hazardous waste disposal site is ready, these hazardous wastes should be stored in dry places away from the sun light.

There are no manufacturers of the target EEEs in Mongolia; as the result, all of these EEEs are imported from abroad. Therefore, encouraging imports of EEEs that do not contain hazardous substances is needed.

The re-use and the recycle of WEEEs are conducted mainly by individual recyclers. Thus, it is necessary to promote and develop these individuals as formal recyclers by supporting their status such as accommodating low interest rate loans after achieving a complete control on their activities by registering the recyclers, identifying the amounts and the flows of parts dismantled by them and preventing possible illegal dumping.

**2. Public Cooperation PP on Improvement of Waste Discharging Manner and Separate Discharge**

**Purpose of PP**

This PP aims to verify the degree of public cooperation on separate storage and discharge, and at the same time to develop the capacity of C/P in raising public awareness through interaction with the apartment residents.

**Implementation of PP**

The PP has been implemented since April 2010 in 4 target khoroos (SJDW5 and #7, BZDF1 and #7), and it will continue until the last phase of the Project. The PP implementation can be divided into the following

four phases:

- Baseline survey (collection of the data and information in the target khoroods)
- Public education activities
- Monitoring
- Final evaluation

The activities to be implemented during the PP and roles and responsibilities of each organization were detailed out among CJP, JET, district and Khoroo Governments, WSF, AOU and collection providers.

**Collection of Basic Information**

Baseline survey was conducted from May 2010 until early June 2010



Let's separate our waste into two types: Recyclable and Non-recyclable. Please put your waste into the correct bin and put it into a bin. For more information, please contact JICA. For your cooperation!

to identify the current situation of waste management and people's satisfaction level for waste collection services, and to verify the possibilities of introducing waste separation for recycling. The result of the survey can be used for the baseline data and the same survey for the same respondents will be conducted in the end of the PP again to see the progress of the PP.

**Result of the Survey**

More than half of the answers showed "satisfied" with the waste collection service in all the target khoroods, Jijuur who clean out dust chutes and do the waste management of apartments were evaluated "good" by the residents of all target khoroods. The discharge points of the waste for the residents were varied according to the structure of apartments (with dust chute or no etc...) and their numbers. There are more dust chutes in SBD#7 compare to other khoroods. Two to three times per week of the waste discharge is the most common frequency of the waste discharge among all the khoroods. More than half have



answered that they did not separate recyclable waste in all the target khoroods. The recycling of household waste largely depends on Jijuur or waste collection workers. However, most respondents have answered that the waste separation can be done "easy". So, the willingness for waste separation can be high. Most of them answered that they could store the recyclables in their house about two to three days.

Waste Type	Collection Point
Paper	...
Plastic	...
Glass	...
Metal	...
Organic	...

As for the business entities, the respondents of all the target khoroods were satisfied with the current waste collection services. Restaurants and bars were generating kitchen waste mostly, other businesses were discharging paper (cardboard) mainly. As for the current status of recycling, restaurants and bars were recycling glass bottles and pet bottles, while other businesses were not keen to recycle.

**Public education activities**

**AOU meetings**

The weekly meetings were organized by EPWMD and JET inviting WSF, PSD, collection providers, the khoroo governors and the representatives of AOUS in each target khoroo since the mid of April.



The priorities to tackle were to improve waste discharging manners of residents and collection manners of service providers, and to promote community recycling at sources.

**PR tools**

In the AOU meetings, the waste collection time schedule has been fixed based on the result of the time & motion survey and also the waste discharging rules have been discussed and agreed among those AOU directors, JET and EPWMD prepared the following PR tools for the residents and Jijuur through the discussion at AOU meetings.



Common PR tools for all target khoroods were prepared such as brochures, big sacks for Jijuur to storage recyclables, and stickers placed on collection trucks that sound

music with the messages about the proper discharge.

**Progress and monitoring**

**Closure of Dust Chutes**

There are many apartments with dust chutes in UB, anytime, any type of waste without separation and without putting into plastic bags. Dust chutes are not match to today's life styles. There are many cases of blocking up the waste, getting worms and flies, bad odor in summer, and cases of fire too. There are constant complains about them from the residents, and the collection operation is inefficient.



In order to ensure a proper sanitary and efficient waste collection, it is important to have a short time gap between waste collection by collection vehicle and putting out the waste by the residents. It's essential to achieve those two things at once that are 1. collection vehicle comes on time, regularly, and 2. residents put out waste on designated day and time.

Closure of dust chutes has been discussed at the AOU meetings, and based on the decision of AOU leaders, the dust chutes were closed. AOU leaders closed the dust chutes by plastic tapes, ropes and cloth etc. while JET made the notice or mini poster with logos of JICA and Ulaanbaatar city to inform about closure.



It's a great improvement in SBD#7. There was no defined waste collection schedule and the accumulated waste was collected randomly before implementation of the PP. During the pilot project, JET supported making the collection schedule for

WSF and EU (collection services provider), and supported familiarizing the information through the AOU about the fixed waste collection schedule, discharging manner and waste separation of the residents of the apartments.

Once success of the closure of dust chutes was observed at an apartment, other apartments followed the procedure and closed their dust chutes. As a result, collection time was drastically reduced from 2 hours/collection point at maximum to 2 minutes at minimum.

**Recycling amount by Jijuur**

Amount of recyclables collected by Jijuur has been counted to evaluate the progress of waste separation at source. There are three ways to grasp the recycling amount. 1. by the monitoring sheet distributed to selected Jijuur, Jijuur record the amount every time they go and sell recyclable. 2. by estimation on the amount from the data of separate collection on Saturdays at BZD#1, and 3. by estimation from the data of paid amount at the recycling shop at Apt-5a in SBD#7.

In any form of counting, it has been for only 1 month since the first distribution of PR tools to inform the residents about waste discharging manner and waste separation, thus it cannot be observed the remarkable increase of recyclable amount. It's necessary to follow the progress of monitoring.

**3. Important Event and Activity**

- AOU meetings at each PP target khoroo: re-start from October.
- Monitoring of separate collection by Jijuur.
- Monitoring of waste collection by new schedule in SBD7
- Collection of basic information of ChD12 to for Time & Motion survey in Ger area.

JICA Expert Team  
Strengthening the Capacity for Solid Waste Management in Ulaanbaatar City in Mongolia  
[Office] C/O CMPUA  
Bumsend Street-68, Khoroo 6,  
Chingeltei District, Ulaanbaatar, Mongolia  
TEL: 011-327128 FAX: 011-323128  
Website: <http://www.kkcub.mn/>

J.5 Newsletter No.5

**Newsletter Vol. 5**  
**Technical Cooperation Project for Strengthening the Capacity for Solid Waste Management in Ulaanbaatar City in Mongolia**

- Content
1. Mongolia-Japan 3R Public Event
  2. Pilot Project 1 for Waste Separation & Recycling – phase II
  3. Pilot Project 2 for Separate Collection at SBD#7
  4. Pilot Project 3 for Sorting Operation at NEDS
  5. Workshop for Operation & Maintenance of Collection Trucks with TUKs
  6. Future Events and Activities

In the 5th volume of our newsletter, we would like to introduce the current progress in relation to three kinds of our pilot project activities and operation & maintenance of equipment.

**1. Mongolia-Japan 3R Public Event**

"Mongolia-Japan 3 R Public Event" was held at the Japan Center from April 28 to May 1, 2011. The purposes of this event are to enhance the public awareness on the waste issues and promote active participation in our waste separation & recycling pp. Especially for this event, we invited a famous environmental cartoonist Mr. Hiroshi Takatsuki and 6 other volunteers from Japan.



Mr. Takatsuki is a professor of Ishikawa Prefectural University and professor emeritus of Kyoto University. He has been environmental cartoons as a par-name "High Moon" since his early childhood for over sixty years. His cartoons are very adorable and easy to understand so being widely used as an environmental education material by JNPO, the municipality, and researchers not only in Japan, but also in other countries.

During the whole 3-day event, we had various kinds of program activities and in total there were around 260 peoples participated. In the exhibition hall, we displayed original "High Moon" cartoons and some recycled goods

such as shopping bag, coasters made from waste, and also had eco-bag making work shop for school children.

In the opening ceremony on April 30, EPVMD senior officer, the Japanese ambassador and JICA representative in Mongolia made opening remarks. Then, Mr. Takatsuki made a presentation regarding essential waste problems in Japan and a learning program concerning waste reduction. All of the participants were listening attentively to his comprehensible lecture that used many "High Moon" cartoons. Zorig Foundation (Mongolian NGO) also made a presentation on the recycling of used batteries.

In the seminar room, "3R knowledge quiz" was given for 45 students in order to examine the recognition level of 3R of Mongolian citizens. Although the concept of "3R (Reduce, Reuse, Recycle)" has not been well known yet in Mongolia, it seemed that Mongolian citizens became known through this program that the first priority should be



given to "Reduce, and "Reuse" as a second option, then "Recycle" as the last option in sustainable waste management.

The tea ceremony teachers from Kyoto demonstrated manners of the tea ceremony and then served green tea and sweets to the visitors. It seemed that everyone was enchanted by beautiful kimono-wearing teachers, although some of children were not used to the bitter taste of green tea.

On the final day on May 1, the workshop called "Let's draw the cartoon" to reduce waste" was instructed by Mr. Takatsuki and there were more than 50 school children participated. Each group drew up a colorful, unique cartoon while ardently discussing on how to reduce waste. Then, they explained the contents of cartoon in front of other participants to share. We hope that more or less this event gave Mongolian citizens an opportunity to think more about waste issues and 3R

**2. PP1 for Waste Separation & Recycling – phase II**



The PP1 has been implemented in 4 target khoroos; SBD#5, SBD#7, BZD#1 and BZD#7 (in green colored areas on the map) starting from April 2010 and it will continue up to the final year of the technical cooperation project. The second phase of PP1 has

started with the selection of new 4 target khoroos; CHD#4, BZD#15, BGD#3 and KHJUD#2 (in blue colored areas on the map) in November 2010. The following EPVMD officers are respectively responsible for implementation of PP1 in the newly selected khoroos.

KHJUD#2	CHD#4	BZD#15	BGD#3	KHJUD#2
EPVMD officer	Enkh-Amgalan	Batbileg	Odjigal	Ariguan

They have already conducted POS on waste separation & recycling and currently conducting time & motion survey to improve waste collection system as well as organizing periodical ACU meeting at each assigned khoroos.



**3. PP 2 for Separate Collection at SBD#7**  
**Purpose of PP2**  
The purpose of the PP2 is to collect necessary data for formulation of the most suitable collection system for UB city.

**PP Description**

- 1) Target items: RPF<sup>1</sup> materials and valuables discharged separately by selected households.
- 2) Separate collection: every Tuesday, once a week, from apartments to the sorting yard of NEDS.
- 3) Period of separate collection: From May 17 to July 5, 2011
- 4) Data analysis & recommendation: The cost for separate collection, quality of recyclables and the level of public cooperation etc. are to be investigated in order to recommend the most appropriate separating system in UB City.

**Progress of PP2**

**1) Selection of target khoroos:**

The selection has been made among the

1. RPF is "Residue, Pines & Plastic" etc. These waste plastics and papers can be used if they form a certain "residue" and "plastic" for recycling in Power Plant. Soon within 2011, RPF plant will be installed in NEDS by KOICA.

khoroos under the first phase of PP1; SBD#5, SBD#7, BZD#1, BZD#7. Considering several conditions such as 1) the expected generation amount of target items, 2) existence of places for storing target items (i.e., closed DCS, and 3) degree of cooperation by AOUS and collector provider, SBD#7 was selected as a target area.

**2) Arrangement of vehicles & equipments:**  
TsuZuku Yume which provides SBD#7 with usua collection was selected as a separate collection provider. They allocate a conveyor truck for separate collection PR sticker and different music from vehicle.

**3) Public education activities & AOU meetings**  
were held on May 3, 8, 10, 2011, and public meetings on May 15, 2011. Furthermore, the house-to-house visit to the target apartments was conducted from May 17 to May 20.

**4) Distribution of PR tools**  
The following PR tools such as collection schedule table & collection calendar have been prepared and distributed through public meetings and house-to-house visit.

**5) Separate collection**  
Separate collection is currently being conducted and after that data will be combined with the result of the following PP3 or sorting operation.

**4. PP3 for Sorting Operation at NEDS**  
**Purpose of PP3**  
The purpose of the PP3 is to verify what kind of sorting system is suitable for UB City.

**PP Description**

- Type of waste: 1) separated waste collected in SBD#7 under PP2 and 2) mixed waste collected in other khoroos.
- Sorting method: 1) manual sorting and 2) belt conveyor sorting are to be conducted for above 2 types of waste by employing 20 WFPs who are

normally picking valuables at landfill site.

- Place NEDS sorting facility
- Period of sorting operation: From May 17 to July 5, 2011.
- Data analysis & recommendation: Weight and price of sorted recyclables and RPF materials are to be recorded. The 4 types of scenarios are to be compared taking account of working environment, technical feasibility, operation cost, social consideration, and efficiency of separation. The recommendation for the most appropriate sorting system in the UB City will be given to the EP/WMD in the end.
- The data will also be used to examine the feasibility of KICA's RPF plant in the future.

**Progress of PP3**

**1) Construction of sorting facilities**  
The sorting facilities were constructed in NEDS next to the control building in July 2010 and the 20m straight conveyor was installed inside of the building in September, 2010.

**2) Waste pickers (WFP) meeting**  
One of the objectives of operation of sorting facility is to provide employment opportunity to WFPs who are working in the NEDS so that the sanitary land filling will be improved in order to train WFPs to work under rules and conditions. WFP meetings have been held since April, 2010. About 20 WFPs who work at the sorting facility have signed the contract to follow the working requirements.

**3) Sorting operation**  
The manual sorting and belt conveyor sorting of mixed waste have been already conducted but currently those of the separated waste are still being conducted as follows.

	Mixed Waste	Separate Waste
Manual sorting	July 27 to August 2, 2010	May 17 to July 5, 2011
Belt conveyor sorting	April 20 to April 28, 2011	Once in 2 weeks
Manual sorting of mixed waste	Once in 2 weeks	May 17 to July 5, 2011
		Once in 2 weeks

**Manual sorting of mixed waste:**  
The collected waste from mixed collection area was unloaded from the collection vehicle to the manual sorting

ground.  
WFPs sorted the waste into 12 types of materials by hands and then weighed the total amount of each material.  
The necessary information such as WFPs' attendance and their working hours, operation machines, weight and price of sorted recyclables were recorded for later analysis.

**Conveyor sorting of mixed waste:**  
The mixed waste was loaded into the belt conveyor from the collection vehicle and WFPs sorted recyclables and RPF materials out of the conveyor.  
After sorting, 80 - 90% of residues were transported to the landfill site in the end.

All collected data will be incorporated for analysis after the completion of manual and conveyor sorting experiments of the separated waste in July, 2011.

**5. Workshop for Operation & Maintenance of Collection Trucks with TUKs**  
"Workshop for Operation & Maintenance of Collection Trucks with TUKs" was held in the Ulaanbaatar hotel on April 14. One of the expected outcomes of our project is to strengthen the capacity for the operation and maintenance of equipment. Since commencement of the project, various inspections on conditions of waste collection trucks were conducted by JET and various kinds of training in the field were conducted as well.

The purposes of this workshop are to disseminate the findings during the inspections and to recommend for longer use of the equipment under good working conditions in the future.

In total, 36 persons including representatives from all district TUKs, EP/WMD, CMPUA, CWSF participated in the workshop.  
After opening remarks

from both Mongolian and Japanese side, JOCV senior volunteer Mr. Matsuda explained on "Hydraulic system". One of the JET members Mr. Uzawa made a presentation on "Improvement of maintenance of waste collection trucks". After tea break, another meeting room was prepared to make free discussion or the current issue relating to the waste collection trucks. During the management group workshop, the participants agreed on the following issues.

- CMPUA will conduct maintenance services two times a year according to the schedule.
  - Maintenance services will be conducted according to the contract.
  - TUKs agree to submit operation and maintenance report monthly.
  - Utilization contract will be amended and scheduled to be signed.
- We hope this workshop will contribute to improve operation and maintenance of collection trucks and to maintain service level of waste management in UB City in longer term.

**6. Future Events and Activities**

- AOU Meeting at each PP1 target khoroos: on going.
- Separate collection at SBD#7 & sorting operation at NEDS: from May 17 to July 5, 2011.
- Waste amount and composition survey: June 4, 2011 on going.
- Workshop for formulation and implementation of SWM Master Plan based on the experience in UB City to major aims: June 28 - 30, 2011.

JICA Expert Team  
The Technical Cooperation Project for Strengthening the Capacity for Solid Waste Management in Ulaanbaatar City in Mongolia  
[Office] JICA CMPUA  
Bumbeed Street-66, Khoroos 5,  
Chingel District, Ulaanbaatar, Mongolia  
TEL: 011-3271128 FAX: 011-3231128  
Website: <http://www.jica.go.jp/>



J.6 Newsletter No.6

**Newsletter Vol. 6**  
Technical Cooperation Project for Strengthening the Capacity for Solid Waste Management in Ulaanbaatar City in Mongolia

- 1. Results of the Separate Collection in SBD7
- 2. Results of the Sorting Experiment in NEDS
- 3. Interview with Ms. Chantsalunmaa of EPWMD on JICA's Japan-Training
- 4. Workshop on Formulation of MP for Provincial Cities
- 5. Solid Waste Management (SWM) in Local Province
- 6. Practical Training for Electrical System on Collection Trucks

project organized practical training for electric system on collection trucks based on request of engineers and mechanics of CMPUA and TUKs during our cooperative activities for longer use of the equipment under good working conditions in future.

The outputs expected of the Training are:

- Participants learn how to calculate voltage of battery measuring specific gravity of it using hydrometer.
- Participants understand operation and role of relay.
- Participants learn how to read electric circuit diagram.
- Participants learn to properly make electric circuit using relay and fuse according to circuit diagram.



JICA senior volunteer Mr. Matsuda who works on central workshop of CMPUA since Nov 2010 lectured on the training. He has career for 40 years as mechanic in Japan and covered various kinds of vehicle for special use such as fire-fighting, waste collection trucks and so on. We hope participants use what they learned on their daily work. We are planning to have training on next spring so far. Also of course, we would like to frequently hold small scale of trainings according to their request.

JICA Expert Team  
The Technical Cooperation Project for Strengthening the Capacity for Waste Management in Ulaanbaatar City in Mongolia  
(Office) C/O CMPUA  
Bumtsend Steel-68, Khoroog 6  
Chingeltei District, Ulaanbaatar, Mongolia  
TEL: 011-3217128 FAX: 011-3231228  
Website: <http://www.kkcub.mv/>



Every directors and officers in every provincial center has intention to improve SWM in their area, but lack of appropriate improvement plan has made difficult for them to acquire necessary budget. Therefore, plan of improving SWM in Bulgan Provincial center was formulated by JET for officers of NET in Bulgan Provincial center. Under the improvement plan, JET made several recommendations including improvement of final disposal site as follows.

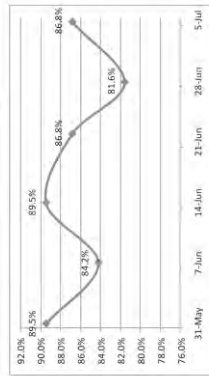


Concept of improvement plan is to utilize existing final disposal site as much as possible and to consider operation and maintenance works as well after improvement work is implemented.

JET and Project Team is willing to contribute to assist these planning and waiting request from other Provincial centers as well.

**6. Practical Training for Electrical System on Collection Trucks**

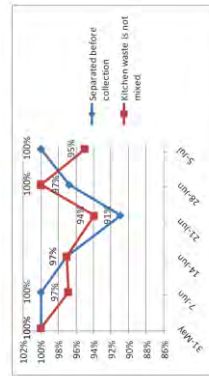
Since commencement of the project, various activities for improvement of maintenance and operation of collection trucks such as investigation of conditions of trucks and field training has been conducted by JET in cooperation with EPWMD, CMPUA and all TUKs. Under such circumstances, our



However, the result shows that the share of the collected entrance was 86.4% on average, so the degree of cooperation by watchmen/AOLs is considered high.

The conditions of waste discharging at the time of collection were evaluated with 2 criteria - the timing of waste separation (whether waste was separated before the arrival of truck or not) and the composition of the separated waste (whether kitchen waste is mixed or not).

The result shows that the both average rates are



quite high (more than 95%) so the degree of cooperation in waste discharging by watchmen is considered very high.



As the DCs in the apartments had been closed, residents discharged their waste at the side of DC trays and watchmen carried waste down to the storage rooms of DCs.



The watchmen played the important role in separation and putting target wastes in front of their entrance before the collection truck comes. The following figure shows that the shares of the entrances covered by the separate collection on each collection day. Some of the watchmen discharged all their waste together with the regular collection as it did not require separation of waste.

**4. Workshop on Formulation of MIP for Provincial Cities**

MONET has ordered every Provincial Center to formulate Master Plan on SWM and allocated certain amount of money to implement the plan. But many Provincial centers has difficulty in formulating MIP since there is no such experience before.

Workshop on formulation of MIP for Provincial centers was held from Jun 28 to 30, 2011 in UBC. 18 Officers and Directors of NET from 10 Provincial Cities (PCs) attended.

This three-day workshop required the participants to do planning practices on Action Plan using PC in day 2nd and day 3rd and all trainees completed this intensive program.

As a result, the trainees obtained the basic knowledge and information required for the formulation of a MSW MIP which was the primary objective of the workshop. In order to determine trainees' understanding, they were asked to prepare the Concept of the MIPs of their own respective cities.

In regard to this, they had to have an understanding of what the MIP SWM/MIP was, and use it as an example to prepare the Concept of the MIPs of their cities by themselves. At the end of the training, the Concepts of 10 cities were presented to confirm their understanding. The participants would be able to formulate their MIPs provided they had a certain amount of expert support.

**5. SWM in Local Province**

Just after the above workshop, PC officials requested JET to give technical assistance on site and MONET has officially requested JET to visit three Provincial centers which are Darkhan, Erdenet and Bulgan.

JET has visited these three centers from 4th to 6th July 2011 and travelling distances are reached to 1,000km.

**3. Interview with Ms. Chantsalnuurmaa of EPWMD on JICA's Japan-Training**

**Please introduce yourself.**

My name is Chantsalnuurmaa. I work as an officer in charge of soil and water pollution, medical and hazardous wastes at Environment Pollution and Waste Management Department of Mayor's Office.

**What kind of international training course organized by JICA did you take part?**

I was enrolled in the training course entitled "Waste Management and 3R (Reduce, Reuse and Recycle) Policies" organized by JICA at "Tokyo International Center" in Tokyo, Japan from June 12 to July 14, 2011.

**Please share with us your thoughts after being enrolled in that training course.**

This training was an international training course, thus all classes were taught in English. I studied with 12 representatives from 7 countries. The main purpose of JICA was to enhance the capacity of government officials of developing countries, to share the Japanese experiences with them and to introduce up-to-date technologies and techniques by visiting the Japanese industrial plants and facilities on-site.

During the training course, we visited waste recycling facilities located nearby Tokyo. Also, we have been introduced to operations of final disposal site and its landfill technology, waste incineration plant and its electricity production, electronic, construction and car waste recycling facilities as well as medical waste treatment facility.

As a result of enrollment in this training course, I have realized the importance of waste recycling for society and economy on a whole as well as its environment friendliness. Also, I have learned that waste is no longer considered as waste, it is resources that can be used, and as like saying "better see it once than hear thousand times" I have observed and learned a lot by participation in the training course.

**What are your plans to realize what you have learned in Japan?**

Of course, there are economic and technical hurdles to implement directly the Japanese experience here in Mongolia. At first, I think it would be worth working on changing the current attitude of people towards waste. Thus, I am planning to work with khoro governments and residents of the district that I am responsible for.

Item	Mix Collection		Separate Collection	
	Hand	Conveyor	Hand	Conveyor
Valuables	9.5%	10.7%	52.0%	47.5%
RPF Total	2.9%	5.8%	26.9%	30.4%
Residue	87.6%	83.4%	21.1%	22.1%
Total	100.0%	100.0%	100.0%	100.0%

The table shows that the biggest difference among 4 types of scenarios is the amount of residue, which shows over 80 % for mix collection waste and 20% for separated collection waste.



The amount of valuables shows about 10% is for mix collection waste and about 50 % is for separate collection waste. The amounts of RPF materials are 2.9%, 5.8%, 26.9%, 30.4% shown in the table from left to right. Therefore, technically speaking, separate collection is more desirable than mix collection and belt conveyor sorting is more desirable than hand sorting in terms of collecting RPF materials.

The following table shows that the cost analysis under 7 hours of sorting operation.

Description (MNT/day)	Mix Collection		Separate Collection	
	Hand	Conveyor	Hand	Conveyor
Sorting	305,083	214,872	274,039	260,432
Income	101,527	89,973	374,334	302,641

In terms of sorting cost, conveyor sorting with mix collection is most economical, but in terms of income from selling valuables, such as PET, glass, can, etc., sorting with separate collection is more desirable.

When it comes to think of the working environment of waste pickers, the separate collection is much better than mix collection in terms of sanitation and safety.

Throughout the PP, the total trip number of the regular mix collection in SBD7 was supposed to be 112 trips if without PP, but actual regular collection was conducted only 101 times (excluding 8 trips of separate collection). Therefore, 3 trips decreased from the "without PP case". One of the reasons is that cardboard was collected and transported separately, compactation efficiency of regular mix collection was improved.

Therefore, it can be said that the separate collection may improve regular waste collection efficiency and may not require additional cost for transportation judging from PP results.

**2. Results of Sorting Experiment in NEDS**

In order to recommend the most appropriate waste separation and recycling system for the UB city, the sorting experiment was conducted in NEDS under the following conditions:

Types of waste: 1) separated waste collected from SBD7, and 2) randomly selected waste collected from regular mix collection.

Sorting method: 1) manual sorting, and 2) belt conveyor sorting for above 2 types of wastes by employing about 20 Wps.

Period of sorting operation:

	Mixed Waste	Separated Waste
Manual sorting	July 27 to August 2, 2010	May 17 to July 5, 2011, Once in 2 weeks
Belt conveyor sorting	April 20 to April 28, 2011	May 17 to July 5, 2011, Once in 2 weeks

The above-mentioned 4 types of scenarios were analyzed and compared in terms of technical feasibility, operation cost, social consideration, and efficiency of separation, and working environment.

The results are to be used to examine the feasibility of KOICA's RPF plant, which had been already constructed in November, 2011.



The following table shows the composition of wastes sorted by each type of scenario.

J.7 Newsletter No.7



Technical Cooperation Project for Strengthening the Capacity for Solid Waste Management in Ulaanbaatar City in Mongolia

Content

1. Additional PR Tools
2. Current Waste Flow in UBC
3. Change of Waste Fee Collection System in Ger Area
4. Introduction of the New JICA SV and JOCV
5. Farewell Greeting from the JICA SV, Mr. Matsuda
6. Greeting from EPWMD
7. Monthly Meeting

This time, we will be sending the last version of our Newsletter. We would like to express our sincere appreciation for all of your collaboration for our project over three years.

1. Additional PR Tools

Through the activities of the PP, various kinds of PR tools were developed to improve waste discharging manner and waste separation at source. However, in order to make it well known to the Mongolian citizens efficiently, we prepared some audio visual tools as follows;

Items	Purposes	Contents
1/3R Promotion program1 (17min.)	Introduction of the waste management of the UBC	Population, waste amount, waste composition, collection system, NEDS, RPF plant, interview with EPWMD and CMPUA
2/3R Promotion program2 (13min.)	Let us reduce waste by separating at generation sources	Waste separation PP, instruction on how to discharge waste for residents and business entities, Promotion of waste reduction and 3R
3/3R Promotion CM1 (25 sec.)	Prohibition of littering of waste	Sending message of prohibition of littering of cigarette bud and banana peel etc. by residents
4/3R Promotion CM2 (43 sec.)	Promotion of waste separation	Sending message of "Waste if mixed, resource if separated"

These programs and commercials have been broadcasted in April 2012, and then the series of these AV tools were compiled into one DVD. Also the 3R promotion booklet was prepared for the students as well as the UB citizens for the educational purpose.



2. Current Waste Flow in UBC

One of the expected outcomes of this project is to revise current Solid Waste Management Master Plan which was formulated in 2006. Since then, Ulaanbaatar City has enjoyed more economic development than expected and more population growth was observed. But these changes caused more waste generation, waste collection and waste disposal amount which MUB has to tackle. It is very important to grasp current situation of SWM with illustration of waste flow.

Under the project, JET and C/P has investigated current SWM situation and waste flow in Winter and Summer in 2010 was developed as follows.

As shown in the waste flow, 1000 ton and 500 ton of waste are generated everyday in winter and summer respectively in UBC. And around 900 ton of wastes are collected, transported and landfilled in Disposal Site.

During the project, capacity development was conducted targeting not only civil servants of city, district, khoroos offices, but also relevant staffs of waste transporting organizations through trainings organized in Mongolia and Japan. In addition to the capacity development, many activities including PR activities on SWM, pilot project on waste separation at generation sources, SWM data creation and data update through numerous surveys were implemented.

One of the major achievements of the project is the technical understanding, knowledge and skills obtained by the officers of city government and district offices on organization of trainings and PR activities, implementation of surveys and policy-oriented decision making processes related to their positions and assignments.

I would like to express my gratitude on behalf of the Mayor's Office and myself to Mr. Toshinori Isogai, the Resident Representative of JICA Mongolia Office, Mr. Ichiro Kono, the chief advisor of the Japanese Experts' team and their staff for the efforts in implementation of this project, and wish them all the best for their future activities.

7. Monthly Meeting

In order to continuously help realize clean environment in UBC, the member of the SWM Study Team which consists of EPWMD, CMPUA and other relevant agencies will hold a monthly meeting with assistance of JICA Volunteers.

Date: 10:00 am on each Wednesday of the last week of the month  
Venue: EPWMD meeting room



JICA Expert Team  
Strengthening the Capacity for Solid Waste Management in Ulaanbaatar City in Mongolia  
[Office] C/O CMPUA  
Bumtsend Street-68, Khoroos 6,  
Chingeltei District, Ulaanbaatar, Mongolia  
TEL: 011-327128 FAX: 011-323128  
Website: <http://www.kkco.jp/>

"My voluntary activities of Mongolization" will be finally over!  
The collection vehicles coming along with the melody of the Oumino Oyako has already spread out over the Ulaanbaatar City. Whenever I had a chance to introduce myself, I used to use this music.

The used collection vehicles were donated by the grass roots aid, new collection vehicles, heavy machines and dump trucks were donated by the grant aid assistance of the Japanese Government. Since those machines have been working harder than me every day, when I started working here, I wished to do my duties on daily maintenance and repairing properly in order for them to work even longer. However, I found some difficulties in finding the proper equipments and tools, which always kept me busy thinking of how to do without these necessary tools.

That is why I always tried hard to "mongolize" something that we already have in Mongolia. In the end, I've done repair works on 23 nits of 15-m3 collection trucks spending 2 days for each truck, while wishing that each 2-day work would help prolong its lifespan.

Through the activities on site with those Mongolian engineers and drivers, I am sure that I could have transferred something non-describable by means of language.

I myself do jogging slowly so I wish that all the vehicles that I repaired runs as long as possible in the Ulaanbaatar City.



6. Greeting from EPWMD

Mr. Ariguan S

(Senior Officer of EPWMD)

Under the technical cooperation by the Government of Japan, we have implemented the Project on Strengthening the Capacity for Solid Waste Management in Ulaanbaatar City in cooperation with JICA for three years since October 2009.



**3. Change of Waste Fee Collection System in Ger Area**

MUB has introduced new waste fee collection system in ger area, which waste collection fee is charged together with electricity bill, in Jul 2011. Before, the fee was collected in following manner.

1. Fee collector rides with waste collection trucks.
2. Trucks go to individual ger and ask residents to pay waste collection fee which is 2500ig/month/household.
3. If residents agree to pay the fee, then waste collector start to collect waste from that ger.

In this system, residents who do not wish to discharge wastes in particular month, it was not required to pay the fee.

When we refer to waste flow in 2010 winter, 230 ton of wastes are stored every day during winter season. Difficulty of waste collection in UBC is that the amount of wastes generated in winter is double the amount in summer which are 1000 ton/day and 500 ton/day respectively.

Previous waste fee collection system has contributed to equal the waste collection amount in winter and summer indirectly. According to the new fee collection system, the residents in ger area should pay the fee compulsory with or without discharging the wastes.

Therefore peoples demand to waste collection company to come and collect waste every month is becoming more and more.

In order to satisfy peoples demand in ger area, collection company should increase the collection capacity to double in winter compare in summer.

MUB and District Government is now trying hard to settle these issues together with collection trucks which are funded by MUB.

But current waste collection fee for ger area might not be enough to cover current waste collection cost since residents in ger area are generating more than triple in winter due to coal ash because of heating.

**4. Introduction of the New JICA SV and JOCV**

**Mr. SAKATA Hironobuchi**

JICA senior volunteer (2012/1/6~2014/1/5)

Technical field: Waste Management

1) Counterpart: Municipality of Ulaanbaatar City Environmental Pollution and Waste Management



Department (EPWMD)

**2) Ambition**

The project by the JET is over in this August leaving much information and valuable proposals. Mongolian people must work hard to realize appropriate waste management without help from the outside from now on.

I would like to cooperate with realization of the appropriate waste management in Mongolia by supporting the administration of the voluntary study team that was established for this purpose. In addition, through one of my hobbies the Kyudo; the Japanese archery, I look forward to exchanging our culture together with Mongolian people.

**MR. KINOSHITA Satoshi**

JICA volunteer (2012/1/6~2014/1/5)

Technical field: Environmental Education

1) Counterpart: Municipality of Ulaanbaatar City Environmental Pollution and Waste Management Department (EPWMD)



**2) Ambition**

Problem of waste can not be easily resolved in a short period of time. So we need to change the consciousness of people little by little through education.

I would like to do two activities for that. One is to get to know citizens about the problem of waste in Ulaanbaatar properly. Another is to think together with the people of Ulaanbaatar city about what we should do in order to solve the problem.

I would like to conduct the activities cooperating with city hall staff, school officials, JICA volunteers, and a variety of people.

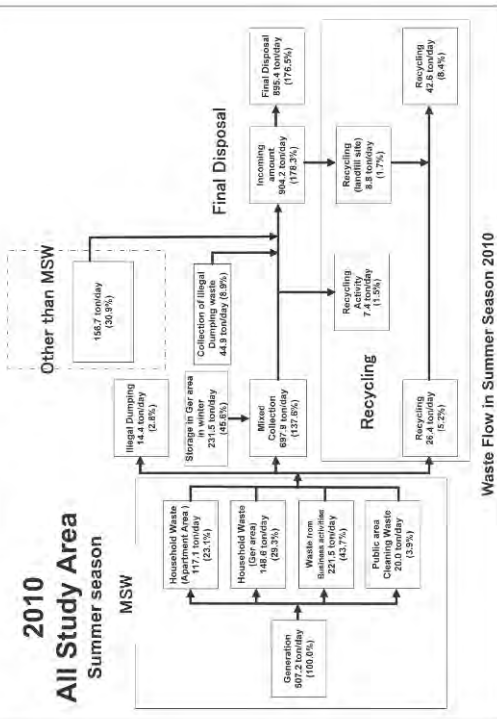
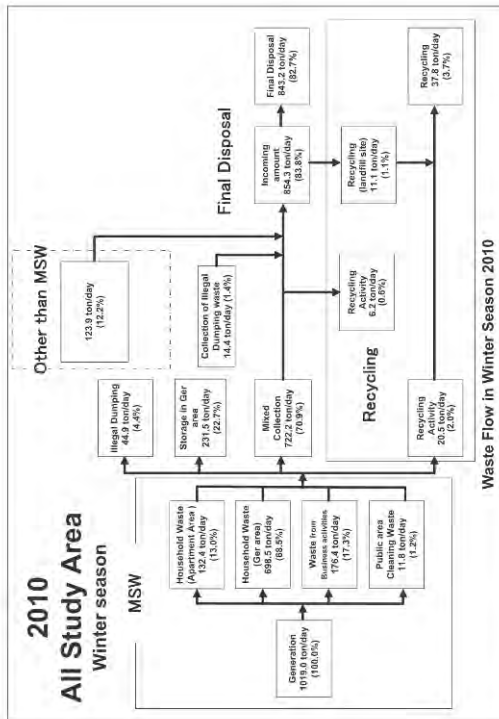
**5. Farewell Greeting from the JICA Senior Volunteer**

**Mr. MATSUDA Kazutoshi**

JICA volunteer (2010/9/29~2012/9/28)

Technical field: Vehicle maintenance.

Counterpart: CMPUA



# *Section K Weekly Meeting*

- K Weekly Meeting.....K-1**
  - K.1 Presentation Materials..... K-1
  - K.2 Meeting Record..... K-29

# K Weekly Meeting

## K.1 Presentation Materials

<p style="text-align: center;"><b>Weekly Meeting (98)</b> <b>Apr 2, 2012</b> <b>JICA Expert Team</b> <b>For Strengthening the Capacity</b> <b>for Solid Waste Management in</b> <b>Ulaanbaatar City</b></p> <p style="text-align: right;">1</p>	<p style="text-align: center;"><b>Agenda</b></p> <ol style="list-style-type: none"> <li>1. Work Progress</li> <li>2. Schedule for This Week</li> <li>3. Subjects to be Discussed</li> <li>4. Material Needed</li> </ol> <p style="text-align: right;">2</p>	<p style="text-align: center;"><b>1. Progress from 26 Mar to 1 Apr 2012</b></p> <ol style="list-style-type: none"> <li>1. Implementation of PP1 Phase II by EPWMD             <ul style="list-style-type: none"> <li>□ Preparation for distribution of 3R booklet and brochure</li> <li>□ Improvement of 3R TV program</li> </ul> </li> <li>2. Improvement of WB Operation             <ul style="list-style-type: none"> <li>□ MUB Web Site?? WB record at web site.</li> </ul> </li> <li>3. Preparation of Revised M/P</li> <li>4. Collection of POS answers in Excel Form</li> <li>5. Japanese Grant Aid Auditing from 27 Mar             <ul style="list-style-type: none"> <li>□ EPWMD, CMPUA, DWSF</li> <li>□ NEDS, UCDS, CWS</li> </ul> </li> <li>6. Interview Survey to SWM organizations for preparation of Action Plan             <ul style="list-style-type: none"> <li>□ SMO, SO, BGD PSD, GHD WSF, BZD NUG</li> </ul> </li> <li>7. Site Visit to TDDS on 27 March.</li> </ol> <p style="text-align: right;">3</p>															
<p style="text-align: center;"><b>2. Schedule from 2 Apr to 8 Apr, 2012</b></p> <ol style="list-style-type: none"> <li>1. Implementation of PP1 Phase II by EPWMD             <ul style="list-style-type: none"> <li>□ AUC meeting for distribution of 3R booklet and brochure</li> <li>□ Preparation for broadcasting 3R TV program</li> </ul> </li> <li>2. Improvement of WB Operation             <ul style="list-style-type: none"> <li>□ MUB Web Site?? WB record at web site.</li> </ul> </li> <li>3. Preparation of Revised M/P</li> <li>4. Analysis of POS answers in Excel Form</li> <li>5. Japanese Grant Aid Auditing up to 6 Apr.             <ul style="list-style-type: none"> <li>□ TUKs, etc.</li> </ul> </li> <li>6. Interview Survey to SWM organizations for preparation of Action Plan             <ul style="list-style-type: none"> <li>□ SMO, TUK</li> </ul> </li> <li>7. Assistance for Landfill Plan in TDDS</li> <li>8. Comparison of Landfill Operation Cost in other Cities</li> <li>9. Compilation of PR(5)</li> </ol> <p style="text-align: right;">4</p>	<p style="text-align: center;"><b>3. Subjects to be Discussed</b></p> <ol style="list-style-type: none"> <li>a. Progress of Work for EPWMD</li> <li>b. Progress of Work for CMPUA</li> <li>c. Waste Fee Collection Rate at Ger Area</li> <li>d. Waste Collection at Ger Area</li> <li>e. Basic Plan for Landfill Operation at TDDS</li> <li>f. Implementation of SWM MP in Aimag Center</li> </ol> <p style="text-align: right;">5</p>	<p style="text-align: center;"><b>a. Progress of Work for EPWMD</b> <b>Mar 26 – Apr 1, 2012</b> <b>By EPWMD staff</b></p> <p style="text-align: center;"><b>TUK report on waste collection at Ger</b></p>															
<p style="text-align: center;"><b>b. Progress of Work for CMPUA</b> <b>Mar 26 – Apr 1, 2012</b> <b>By CMPUA staff</b></p>	<p style="text-align: center;"><b>Content of work conducted last week</b></p> <ol style="list-style-type: none"> <li>1. Regular landfill operations at NEDS and MDDS</li> <li>2. Regular waste collection operations in 15 khoroos of BZD</li> </ol>	<p style="text-align: center;"><b>Weekly Waste Disposal Amount (ton)</b> <b>2012 III/16 – 29</b></p> <table border="1"> <thead> <tr> <th></th> <th>(III/16-22)</th> <th>(III/23-29)</th> </tr> </thead> <tbody> <tr> <td>NEDS / weekly</td> <td>7,476</td> <td></td> </tr> <tr> <td>NEDS / daily average</td> <td>1,068</td> <td></td> </tr> <tr> <td>MDDS / weekly</td> <td>492</td> <td></td> </tr> <tr> <td>MDDS / daily average</td> <td>70</td> <td></td> </tr> </tbody> </table> <p style="text-align: right;">9</p>		(III/16-22)	(III/23-29)	NEDS / weekly	7,476		NEDS / daily average	1,068		MDDS / weekly	492		MDDS / daily average	70	
	(III/16-22)	(III/23-29)															
NEDS / weekly	7,476																
NEDS / daily average	1,068																
MDDS / weekly	492																
MDDS / daily average	70																

### Schedule for next week

- Regular landfill operations at NEDS and MDDS (Solution of problem for electricity supply to WB in MDDS)
- Regular waste collection operations in 15 khoroos of BZD

10

### Waste Fee Collection from Ger Area Households in each district

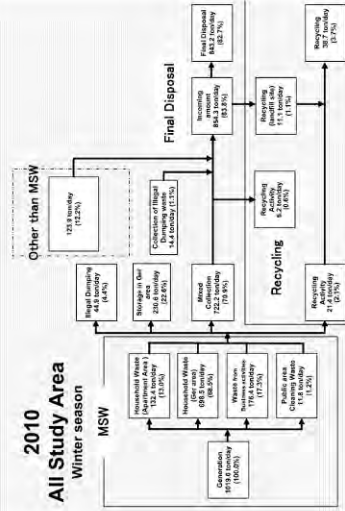
District	Actual Collection Amount in 2011											
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	%	
1. BGD	11,361	2,501	29,938	1,751	90	15,603	15,603	15,603	15,603	15,603	15,603	52
2. SKID	11,361	2,501	29,938	1,751	90	15,603	15,603	15,603	15,603	15,603	15,603	52
3. BZD	20,017	2,501	10,033	13,586	101	24,710	25,246	24,710	24,710	24,710	24,710	29
4. SMD	41,022	2,501	104,458	16,751	201	20,532	41,064	50,138	50,138	50,138	50,138	62
5. SKID	11,361	2,501	49,235	11,238	301	25,807	25,807	25,807	25,807	25,807	25,807	25
6. BZD	11,361	2,501	49,235	11,238	301	25,807	25,807	25,807	25,807	25,807	25,807	25
7. SKID	11,361	2,501	49,235	11,238	301	25,807	25,807	25,807	25,807	25,807	25,807	25
8. NEDS	9,758	2,501	11,832	17,242	101	27,250	4,155	4,155	4,155	4,155	4,155	14
<b>Total</b>	<b>172,226</b>	<b>439,556</b>	<b>179,326.96</b>	<b>382,192.51</b>	<b>235,082.25</b>	<b>231,744.70</b>	<b>287,118.81</b>	<b>287,118.81</b>	<b>287,118.81</b>	<b>287,118.81</b>	<b>287,118.81</b>	<b>167</b>

① : 2010MUB Statistic

### Background

- City Mayor issued ordinance for collecting waste collection fee together with electricity bill sometime June 2011.
- Accordingly power distribution company started to collect waste fee from July 2011.
- Commission for power distribution company is 2.3%
- Previous waste fee collection rate surveyed by JET is 24% for 6 districts during Sep 2008 to Aug 2009

### 2010 All Study Area Winter season



### Factors of the problem

- Increase fee collection rate.
- More pressure on waste collection from Ger residents
- Waste generation in winter and summer is not balance.
- Increase waste collection trucks for winter generation is difficult
- TUK is not willing to increase waste collection in ger area since it is not profitable.

### c. Waste Fee Collection Rate in Ger area after introduction of New Fee Collection System

### e. Ger Area Waste Collection

### Guide Line for Appropriate Waste Collection Fee

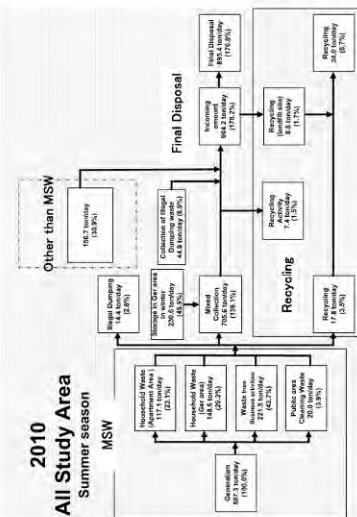
Unit Cost for collecting waste in each area (Tg/ton)

Description	Apartment Area (CT6m3)				Ger (DT60m)			
	SBD	CHD	SKID	BZD	SBD	CHD	SKID	BZD
Apartment Area	20,000	19,700	17,600	21,200	18,600	20,300	20,300	20,300
Ger	26,800	26,200	22,100	29,200	24,000	27,500	27,500	27,500

Waste collection fee which residents are paying (Tg/ton)

Description	Apartment Area				Ger Area			
	SBD	CHD	SKID	BZD	SBD	CHD	SKID	BZD
Apartment Area	53,064	56,096	64,325	57,886	47,673	61,378	61,378	61,378
Ger Area	24,548	22,313	23,328	25,136	25,914	27,954	27,954	27,954

### 2010 All Study Area Summer season



<h3>Waste Fee Collector and Service Provider</h3> <p>Regulation and Waste &amp; Eco-Collection Charge Tables for Khovdoo</p> <table border="1"> <thead> <tr> <th>Area</th> <th>Waste Fee (MNT)</th> <th>Service Fee (MNT)</th> <th>Collection Frequency</th> </tr> </thead> <tbody> <tr> <td>Apartment Area</td> <td>10,000</td> <td>5,000</td> <td>Monthly</td> </tr> <tr> <td>Commercial Area</td> <td>20,000</td> <td>10,000</td> <td>Monthly</td> </tr> <tr> <td>Industrial Area</td> <td>50,000</td> <td>25,000</td> <td>Monthly</td> </tr> <tr> <td>Public Area</td> <td>5,000</td> <td>2,500</td> <td>Quarterly</td> </tr> </tbody> </table> <p><small>Source: Khovdoo (www.khovdoo.mn)</small></p>	Area	Waste Fee (MNT)	Service Fee (MNT)	Collection Frequency	Apartment Area	10,000	5,000	Monthly	Commercial Area	20,000	10,000	Monthly	Industrial Area	50,000	25,000	Monthly	Public Area	5,000	2,500	Quarterly	<h3>Possible solution</h3> <ul style="list-style-type: none"> <li>□ Cross subsidy             <ul style="list-style-type: none"> <li>■ Use profit arising from apartment area for Ger area collection</li> </ul> </li> <li>□ Decrease cost of collection             <ul style="list-style-type: none"> <li>■ Stop door to door collection</li> <li>■ Container with skip loader</li> <li>■ Special collection method for ash</li> </ul> </li> <li>□ Balance waste generation             <ul style="list-style-type: none"> <li>■ Waste separation- ash and others</li> <li>■ Waste reduction- change heating system</li> </ul> </li> </ul>	<h3>Skip Loader</h3> <p>コンテナ車、上げ機、コンテナ車、上げ機、コンテナ車、上げ機</p>
Area	Waste Fee (MNT)	Service Fee (MNT)	Collection Frequency																			
Apartment Area	10,000	5,000	Monthly																			
Commercial Area	20,000	10,000	Monthly																			
Industrial Area	50,000	25,000	Monthly																			
Public Area	5,000	2,500	Quarterly																			
<h3>e. Basic Plan for Future Landfill Operation at TDDS</h3>																						
<h3>Excavate drain along boundary</h3>	<h3>Filling Gully with Wastes</h3>	<h3>Construct Lowest Embankment dam with soil</h3>																				



Construct 1st Embankment Dam with waste covered by soil

Construct 2nd Embankment Dam with waste covered by soil

Construct 3rd Embankment Dam with waste covered by soil

Construct 4th Embankment Dam with waste covered by soil

Construct 5th Embankment Dam with waste covered by soil

### Landfill Volume

EL(m)	Formula	Volume
Prep.	600m x 70m x 5m =	210,000m <sup>3</sup>
Step1	180m x 180m x 1/2 x 5m =	81,000m <sup>3</sup>
Step2	200m x 180m x 1/2 x 5m =	90,000m <sup>3</sup>
Step3	200m x 180m x 1/2 x 5m =	90,000m <sup>3</sup>
Step4	200m x 250m x 1/2 x 5m =	125,000m <sup>3</sup>
Step5	250m x 250m x 1/2 x 5m =	156,250m <sup>3</sup>
Total		752,250m <sup>3</sup>

Waste from Bayanzurkh in 2011: 79,000 ton

### f. Implementation of SWM MP in Aimag Center

### Progress of Formulation of MP and progress of its implementation

No	Aimags	SWP Approval	MP Submission	MP Approval	Budget Unlocked
1	Bayan-Ulgii	O	O	O	O
2	Chovd	O	O	O	O
3	Zavkhan	O	O	O	O
4	Zavkhan	O	O	O	O
5	Govi-Altai	O	O	O	O
6	Govisumber	O	O	O	O
7	Khovdsgol	O	O	O	O
8	Arhangai	O	O	O	O
9	Arhangai	O	O	O	O
10	Bayan	O	O	O	O
11	Sovet	O	O	O	O
12	Darkhan	O	O	O	O
13	Darkhan	O	O	O	O
14	Tov	O	O	O	O
15	Orkhon-Uul	O	O	O	O
16	Uvsv	O	O	O	O
17	Uvsv	O	O	O	O
18	Uvsv	O	O	O	O
19	Uvsv	O	O	O	O
20	Uvsv	O	O	O	O
21	Uvsv	O	O	O	O
22	Uvsv	O	O	O	O
23	Uvsv	O	O	O	O
24	Uvsv	O	O	O	O
25	Uvsv	O	O	O	O
26	Uvsv	O	O	O	O
27	Uvsv	O	O	O	O
28	Uvsv	O	O	O	O
29	Uvsv	O	O	O	O
30	Uvsv	O	O	O	O
31	Uvsv	O	O	O	O
32	Uvsv	O	O	O	O
33	Uvsv	O	O	O	O
34	Uvsv	O	O	O	O
35	Uvsv	O	O	O	O
36	Uvsv	O	O	O	O
37	Uvsv	O	O	O	O
38	Uvsv	O	O	O	O
39	Uvsv	O	O	O	O
40	Uvsv	O	O	O	O
41	Uvsv	O	O	O	O
42	Uvsv	O	O	O	O
43	Uvsv	O	O	O	O
44	Uvsv	O	O	O	O
45	Uvsv	O	O	O	O
46	Uvsv	O	O	O	O
47	Uvsv	O	O	O	O
48	Uvsv	O	O	O	O
49	Uvsv	O	O	O	O
50	Uvsv	O	O	O	O
51	Uvsv	O	O	O	O
52	Uvsv	O	O	O	O
53	Uvsv	O	O	O	O
54	Uvsv	O	O	O	O
55	Uvsv	O	O	O	O
56	Uvsv	O	O	O	O
57	Uvsv	O	O	O	O
58	Uvsv	O	O	O	O
59	Uvsv	O	O	O	O
60	Uvsv	O	O	O	O
61	Uvsv	O	O	O	O
62	Uvsv	O	O	O	O
63	Uvsv	O	O	O	O
64	Uvsv	O	O	O	O
65	Uvsv	O	O	O	O
66	Uvsv	O	O	O	O
67	Uvsv	O	O	O	O
68	Uvsv	O	O	O	O
69	Uvsv	O	O	O	O
70	Uvsv	O	O	O	O
71	Uvsv	O	O	O	O
72	Uvsv	O	O	O	O
73	Uvsv	O	O	O	O
74	Uvsv	O	O	O	O
75	Uvsv	O	O	O	O
76	Uvsv	O	O	O	O
77	Uvsv	O	O	O	O
78	Uvsv	O	O	O	O
79	Uvsv	O	O	O	O
80	Uvsv	O	O	O	O
81	Uvsv	O	O	O	O
82	Uvsv	O	O	O	O
83	Uvsv	O	O	O	O
84	Uvsv	O	O	O	O
85	Uvsv	O	O	O	O
86	Uvsv	O	O	O	O
87	Uvsv	O	O	O	O
88	Uvsv	O	O	O	O
89	Uvsv	O	O	O	O
90	Uvsv	O	O	O	O
91	Uvsv	O	O	O	O
92	Uvsv	O	O	O	O
93	Uvsv	O	O	O	O
94	Uvsv	O	O	O	O
95	Uvsv	O	O	O	O
96	Uvsv	O	O	O	O
97	Uvsv	O	O	O	O
98	Uvsv	O	O	O	O
99	Uvsv	O	O	O	O
100	Uvsv	O	O	O	O

### Request from one of the Aimag Center

- Representative from Govi Sumbre
- Request for Inspection of Improved Landfill Site
- Request for assistance for commencement of pilot project on waste separation at generation sources and education for waste discharge manner
- EPWMD staff with JET

<p><b>Next Weekly Meeting</b></p> <p>□ 9 April 2012 at 8 AM</p>	<p><b>Information</b></p> <p>□ Mr. Kono will leave on 5 April 2012</p>
---	--

<p style="text-align: center;"><b>Weekly Meeting (99)</b> <b>Apr 9, 2012</b> <b>JICA Expert Team</b> <b>For Strengthening the Capacity for Solid Waste Management in Ulaanbaatar City</b></p>	<p style="text-align: center;"><b>Agenda</b></p> <ol style="list-style-type: none"> <li>1. Work Progress</li> <li>2. Schedule for This Week</li> <li>3. Subjects to be Discussed</li> <li>4. Material Needed</li> </ol>	<p style="text-align: center;"><b>1. Progress from 2 to 8 Apr 2012</b></p> <ol style="list-style-type: none"> <li>1. Implementation of PPI Phase II by EPWMD             <ul style="list-style-type: none"> <li><input type="checkbox"/> Preparation for distribution of 3R booklet and brochure</li> <li><input type="checkbox"/> ACU meeting has been held 6<sup>th</sup> (Fri)</li> </ul> </li> <li>2. Improvement of WB Operation             <ul style="list-style-type: none"> <li><input type="checkbox"/> MUB Web Site?? WB record at web site.</li> </ul> </li> <li>3. Preparation of Revised M/P</li> <li>4. Analysis of POS answers in Excel Form</li> <li>5. Japanese Grant Aid Auditing from 27 Mar up to 6<sup>th</sup> April</li> <li>6. Preparation for Action Plan of EPWMD year 2013 to 2016             <ul style="list-style-type: none"> <li><input type="checkbox"/> Discussing with EPWMD and CMPUA</li> </ul> </li> <li>7. To research the solution for radiator issue             <ul style="list-style-type: none"> <li><input type="checkbox"/> Uzuwa and Matsuda are working on this issue.</li> </ul> </li> <li>8. Progress report no.5</li> </ol>															
<p style="text-align: center;"><b>2. Schedule from 9 Apr to 15 Apr, 2012</b></p> <ol style="list-style-type: none"> <li>1. Implementation of PPI Phase II by EPWMD             <ul style="list-style-type: none"> <li><input type="checkbox"/> ACU meeting for distribution of 3R booklet and brochure</li> <li><input type="checkbox"/> ACU meeting for distribution of 3R booklet and brochure</li> <li><input type="checkbox"/> Education material toward schools</li> </ul> </li> <li>2. Improvement of WB Operation             <ul style="list-style-type: none"> <li><input type="checkbox"/> MUB Web Site?? WB record at web site.</li> </ul> </li> <li>3. Analysis of POS answers in Excel Form</li> <li>4. Preparation for Action Plan of EPWMD year 2013 to 2016             <ul style="list-style-type: none"> <li><input type="checkbox"/> Discussing with EPWMD and CMPUA</li> </ul> </li> <li>5. Analysis for proper operation of RPF plant</li> <li>6. Operation &amp; Maintenance of machineries             <ul style="list-style-type: none"> <li><input type="checkbox"/> Maintenance report from TUK to CMPUA, EPWMD</li> </ul> </li> <li>7. Preparation of O&amp;M workshop directing to TUKs on 15<sup>th</sup> April</li> <li>8. Printing Progress report no.5</li> </ol>	<p style="text-align: center;"><b>3. Subjects to be Discussed</b></p> <ol style="list-style-type: none"> <li>a. Progress of Work for EPWMD</li> <li>b. Progress of Work for CMPUA</li> <li>c. Progress of 3R PR tool</li> <li>d. Calculation for Waste Collection Tariff</li> <li>e. Financial Analysis (Income and Expenditure) of Collection Service for Apart and Ger Area</li> <li>f. Proposed A/P of SWM in MUB from 2013 to 2016</li> </ol>	<p style="text-align: center;"><b>a. Progress of Work for EPWMD</b> <b>Apr 2 – 8, , 2012</b> <b>By EPWMD staff</b></p>															
<p style="text-align: center;"><b>b. Progress of Work for CMPUA</b> <b>Apr 2 – 8, , 2012</b> <b>By CMPUA staff</b></p>	<p style="text-align: center;"><b>Content of work conducted last week</b></p> <ol style="list-style-type: none"> <li>1. Regular landfill operations at NEDS and MDDS             <ul style="list-style-type: none"> <li><input type="checkbox"/> Due to oversteering of bulldozers' engines at NEDS, the bulldozers could not operate at the landfill site which caused fire outbreak on 6 April 2012 with the accumulation of waste at the working face.</li> <li><input type="checkbox"/> A new bulldozer operator was hired at MDDS. A previous operator was called back to NEDS.</li> <li><input type="checkbox"/> A medical inspection was conducted by the Department of Children of Ulaanbaatar city Government for the children who is working at NEDS on 5 April 2012.</li> <li><input type="checkbox"/> The students of Ulaanbaatar International School have visited NEDS on 2 April 2012. Their school has sent 10 students of 3<sup>rd</sup> to 5<sup>th</sup> grade to NEDS for the third consequent years.</li> </ul> </li> <li>2. Regular waste collection operations in 15 khoroos of BZD</li> </ol>	<p style="text-align: center;"><b>Weekly Disposal Amount (ton)</b> <b>2012 III/23-IV/5</b></p> <table border="1"> <thead> <tr> <th></th> <th>(III/23-29)</th> <th>(III/30-IV/5)</th> </tr> </thead> <tbody> <tr> <td>NEDS / weekly</td> <td>8,056</td> <td>9,055</td> </tr> <tr> <td>NEDS / daily average</td> <td>1,151</td> <td>1,294</td> </tr> <tr> <td>MDDS / weekly</td> <td>510</td> <td>552</td> </tr> <tr> <td>MDDS / daily average</td> <td>73</td> <td>79</td> </tr> </tbody> </table>		(III/23-29)	(III/30-IV/5)	NEDS / weekly	8,056	9,055	NEDS / daily average	1,151	1,294	MDDS / weekly	510	552	MDDS / daily average	73	79
	(III/23-29)	(III/30-IV/5)															
NEDS / weekly	8,056	9,055															
NEDS / daily average	1,151	1,294															
MDDS / weekly	510	552															
MDDS / daily average	73	79															

### Schedule for next week

- Regular landfill operations at NEDS and MDDS  
\* (Solution of problem for electricity supply to WB in MDDS)
- Regular waste collection operations in 15 khoroods of BZD

10

### AOU meeting

District	Khoroo	Date	Status
KhUD	2	4/6	finished
BZD	15		
ChD	4		

13

### c. Progress of 3R PR tool

### Plan of Distribution of PR materials

No.	Organizations to be distributed	Numbers of org.		Booklet		Brochure		DVD	
		num	total	num	total	num	total		
1	AOU	34	62		4884				0
2	KhUD AOU	10	20	2	1880				0
3	ChD AOU	14	28		1168				0
4	BZD AOU	7	14		1638				0
5	Khoroo	3	100	300	300	900			1
6	School	134	3	300	10	1300			1
7	University	16	30	180	50	300			1
8	Kapargan	100	2	200	10	1000			1
9	TV	30	1	30	2	60			30
10	JICA	3	30	30	30	30			5
11	SPWMS	1	500	1748	1466	1466			27
12	Department of Education	3	10	10	10	10			1
13	Ministry of Education	3	10	10	10	10			1
14							3000		10000

### Background

- City Mayor issued ordinance for collecting waste collection fee together with electricity bill sometime June 2011.
- Accordingly power distribution company started to collect waste fee from July 2011.
- Previous waste fee collection rate surveyed by JET is 24% for 6 districts during Sep 2008 to Aug 2009
- Current waste fee collection rate in Ger Area clime up to 61% in December 2011.
- However, collection service (frequency) has not changed. Consequently huge complains came from Ger area.

### Schedule of Broadcasting


T.V	Time/Program	Date	Type	T.V	Time/Program	Date	Type
	19:30-21:10 News	04/02(Mon)	CM1 (2 ver.)	20:00	News	04/01(Wed)	
	19:30-21:10 News	04/05(Tue)	CM2	20:00	News	04/11(Wed)	CM1
	19:30-21:10 News	04/08(Sat)	CM1 (2 ver.)	20:00	News	04/15(Wed)	CM1 (3 ver.)
	19:30-21:10 News	04/09(Sun)	CM1 (2 ver.)	20:00	News	04/22(Wed)	
	19:30-21:10 News	04/12(Tue)	CM2	20:00	News	04/07(Sat)	
	19:30-21:10 News	04/15(Sun)	CM1 (2 ver.)	20:00	News	04/14(Sat)	CM2
	19:30-21:10 News	04/18(Mon)	CM1 (2 ver.)	20:00	News	04/21(Sat)	
	19:30-21:10 News	04/19(Tue)	CM2	20:00	News	04/28(Sat)	
	19:30-21:10 News	04/22(Sun)	CM1 (2 ver.)				
	19:30-21:10 News	04/23(Mon)	CM1 (2 ver.)				
	19:30-21:10 News	04/26(Thu)	CM2				
	19:30-21:10 News	04/29(Sun)	CM1 (2 ver.)				

\* PR of 3R promotion has been put on the famous magazine "TV 7 days"  
\* Under broadcasting negotiation with "MNB", "NTV" and "TV25"

### d. Ariguun's Report on Calculation for Waste collection Tariff

### Waste Fee Collection from Ger Area Households in each District

District	Total Collection Amount in 2011						Actual Collection Amount in 2011					
	Direct number	Fee	Total Fee	%	7	8	9	10	11	12		
1. KUD	11,928	10,079.76	100,079.76	84%	10,079.76	10,079.76	84%	10,079.76	10,079.76	84%		
2. BZD	46,006	2,500	115,205.10	2.1%	51,235.25	52,335.41	4.5%	61,017.85	60,248.10	5.2%		
3. BBD	20,015	2,500	59,023.35	4.3%	13,268.10	29,368.04	2.1%	29,368.04	26,873.00	1.9%		
4. KBD	18,595	2,500	46,253	4.6%	14,229.50	22,627.10	2.5%	24,829.55	25,846.20	2.5%		
5. ChD	27,152	2,500	47,763	10.5%	10,543.00	30,259.95	37.0%	38,897.55	41,044.00	40.0%		
6. BBD	15,152	2,500	15,650	16%	19,749.54	126,182.41	805%	4,483.10	8,292.50	53%		
7. BBD	15,152	2,500	15,650	16%	19,749.54	126,182.41	805%	4,483.10	8,292.50	53%		
Free Collection Rate considering 20%			23%	4.2%	47%	55%	49%	54%	45%			
Comparing with 2010			19%	31%	38%	44%	49%	49%	49%			
			(@ 2010)MAB	Station								

<p><b>Cost &amp; Income of Waste Collection for Apart and Ger Area (1)</b></p> <p>□ Unit Cost for collecting waste in each area (Tg/ton)</p> <table border="1"> <thead> <tr> <th>Description</th> <th>SBD</th> <th>CHD</th> <th>SKHD</th> <th>BZD</th> <th>BGD</th> <th>KhUD</th> </tr> </thead> <tbody> <tr> <td>Apartment Area (CT8m3)</td> <td>20,000</td> <td>19,700</td> <td>17,600</td> <td>21,200</td> <td>18,600</td> <td>20,300</td> </tr> <tr> <td>Ger Area (DT8ton)</td> <td>26,800</td> <td>26,200</td> <td>22,100</td> <td>29,200</td> <td>24,000</td> <td>27,500</td> </tr> </tbody> </table> <p>□ Waste Generation Rate in 2010: Apartment Area: 294 g/person/day (312w and 276s) Ger Area: 627 g/person/day (1,034w and 220s) □ Number of Family Member of a Household in 2010 Apartment Area: 3.8 person/household Ger Area: 4.1 person/household</p>	Description	SBD	CHD	SKHD	BZD	BGD	KhUD	Apartment Area (CT8m3)	20,000	19,700	17,600	21,200	18,600	20,300	Ger Area (DT8ton)	26,800	26,200	22,100	29,200	24,000	27,500	<p><b>Cost &amp; Income of Waste Collection for Apart and Ger Area (2)</b></p> <p>□ Waste Generation of a Household per Month in 2010</p> <table border="1"> <thead> <tr> <th>Area</th> <th>Description</th> <th>SBD</th> <th>CHD</th> <th>SKHD</th> <th>BZD</th> <th>BGD</th> <th>KhUD</th> </tr> </thead> <tbody> <tr> <td>Apartment Area:</td> <td></td> <td>20,000</td> <td>19,700</td> <td>17,600</td> <td>21,200</td> <td>18,600</td> <td>20,300</td> </tr> <tr> <td>Ger Area:</td> <td></td> <td>26,800</td> <td>26,200</td> <td>22,100</td> <td>29,200</td> <td>24,000</td> <td>27,500</td> </tr> </tbody> </table> <p>Tg/ton: 670 660 590 710 623 680 Tg/HH/month: 1,916 1,873 1,580 2,088 1,716 1,966</p> <p>□ Estimated Income from a Household per Month Apartment Area: 1,692 Tg 2,000Tg x 0.9 (collection rate) x 0.94 (OSNAAG commission) Ger Area: 1,174 Tg 2,500Tg x 0.61 (collection rate) x 0.77 (UBTSTS JSC commission)</p>	Area	Description	SBD	CHD	SKHD	BZD	BGD	KhUD	Apartment Area:		20,000	19,700	17,600	21,200	18,600	20,300	Ger Area:		26,800	26,200	22,100	29,200	24,000	27,500	<p><b>f. Proposed A/P of SWM in MUB from 2013 to 2016</b></p>
Description	SBD	CHD	SKHD	BZD	BGD	KhUD																																									
Apartment Area (CT8m3)	20,000	19,700	17,600	21,200	18,600	20,300																																									
Ger Area (DT8ton)	26,800	26,200	22,100	29,200	24,000	27,500																																									
Area	Description	SBD	CHD	SKHD	BZD	BGD	KhUD																																								
Apartment Area:		20,000	19,700	17,600	21,200	18,600	20,300																																								
Ger Area:		26,800	26,200	22,100	29,200	24,000	27,500																																								
<p><b>f.1 Goal</b></p> <p>The fundamental goal of the A/P for SWM in MUB is:</p> <p>□ "To establish an environmentally sound SWM system in MUB by 2016 through the promotion of 3R (reduce, reuse, recycle)".</p>	<p><b>f.2 Strategies (1)</b></p> <p><b>Strategy 1: Establishment of proper waste management and recycling at generation sources</b></p> <ul style="list-style-type: none"> <li>□ Establishment of discharge rules</li> <li>□ Promotion of 3Rs at generation sources</li> </ul> 	<p><b>f.2 Strategies (2)</b></p> <p><b>Strategy 2: Improvement of collection and transportation system</b></p> <ul style="list-style-type: none"> <li>□ Strengthening of waste collection and transportation capacity</li> <li>□ Improvement of waste collection fee management systems</li> </ul> <p><b>Strategy 3: Improvement of public area cleaning system</b></p> <ul style="list-style-type: none"> <li>□ Strengthening of public area cleansing services</li> <li>□ Elimination of littering</li> </ul>																																													
<p><b>f.2 Strategies (3)</b></p> <p><b>Strategy 4: Promotion of recycling</b></p> <ul style="list-style-type: none"> <li>□ Operation of RPF plant</li> <li>□ Support of recycling industries</li> </ul> <p><b>Strategy 5: Improvement of final disposal system</b></p> <ul style="list-style-type: none"> <li>□ Implementation of sanitary landfill operation</li> <li>□ Construction of a new disposal site (TDDS) for eastern districts</li> </ul>	<p><b>f.2 Strategies (4)</b></p> <p><b>Strategy 6: Establishment of hazardous waste management</b></p> <ul style="list-style-type: none"> <li>□ Improvement of legal background</li> <li>□ Establishment of hazardous industrial waste management</li> </ul> <p><b>Strategy 7: Establishment of construction waste management</b></p> <ul style="list-style-type: none"> <li>□ Improvement of legal background</li> </ul>	<p><b>Information</b></p> <ul style="list-style-type: none"> <li>□ Mr. Kono left on 5 April 2012</li> </ul>																																													



<p><b>Weekly Meeting (100)</b> <b>Apr 17, 2012</b> <b>JICA Expert Team</b> <b>For Strengthening the Capacity for Solid Waste Management in Ulaanbaatar City</b></p> <p style="text-align: right;">1</p>	<p><b>Agenda</b></p> <ol style="list-style-type: none"> <li>1. Work Progress</li> <li>2. Schedule for This Week</li> <li>3. Subjects to be Discussed</li> <li>4. Material Needed</li> </ol> <p style="text-align: right;">2</p>	<p><b>1. Progress from 9 to 15 April 2012</b></p> <ol style="list-style-type: none"> <li>1. Preparation of Revised M/P             <ul style="list-style-type: none"> <li><input type="checkbox"/> To summarize Plan and Achievement for Implementing SWM M/P</li> <li><input type="checkbox"/> Analysis for proper operation of RPF plant</li> </ul> </li> <li>2. Implementation of PP1 Phase II by EPWMD             <ul style="list-style-type: none"> <li><input type="checkbox"/> Distribution of 3R booklet and brochure</li> <li><input type="checkbox"/> AOU meeting for broadcasting 3R TV program</li> <li><input type="checkbox"/> MUB meeting for WB record at CHD #4</li> <li><input type="checkbox"/> MUB Web Site? WB record at web site.</li> </ul> </li> <li>3. Preparation of Analysis of POS answers in Excel Form</li> <li>4. Operation &amp; Maintenance of machineries             <ul style="list-style-type: none"> <li><input type="checkbox"/> Workshop for Analysis of O&amp;M for TUKS held 13<sup>th</sup> (Fri)</li> <li><input type="checkbox"/> To research the solution for radiator issue</li> </ul> </li> <li>5. On-the-site lecture at Choir city 13<sup>th</sup> (Fri)             <ul style="list-style-type: none"> <li><input type="checkbox"/> Odjragal from EPWMD attended and well lectured toward local people</li> </ul> </li> <li>6. Printing Progress report no.5</li> </ol> <p style="text-align: right;">3</p>															
<p><b>2. Schedule from 16 to 22 April 2012</b></p> <ol style="list-style-type: none"> <li>1. Preparation of Revised M/P             <ul style="list-style-type: none"> <li><input type="checkbox"/> To summarize Plan and Achievement for Implementing SWM M/P</li> <li><input type="checkbox"/> Analysis for proper operation of RPF plant</li> </ul> </li> <li>2. Implementation of PP1 Phase II by EPWMD             <ul style="list-style-type: none"> <li><input type="checkbox"/> Distribution of 3R booklet and brochure</li> <li><input type="checkbox"/> AOU meeting at BZD#15</li> <li><input type="checkbox"/> Improvement of WB Operation</li> <li><input type="checkbox"/> MUB Web Site? WB record at web site.</li> </ul> </li> <li>3. Analysis of POS answers in Excel Form</li> <li>4. Operation &amp; Maintenance of machineries             <ul style="list-style-type: none"> <li><input type="checkbox"/> Preparation for Technical Workshop on hydraulic system for TUKS on</li> <li><input type="checkbox"/> To research the solution for radiator issue</li> </ul> </li> <li>5. Printing Progress report no.5</li> </ol> <p style="text-align: right;">4</p>	<p><b>3. Subjects to be Discussed</b></p> <ol style="list-style-type: none"> <li>a. Progress of Work for EPWMD</li> <li>b. Progress of Work for CMPUA</li> <li>c. Progress of 3R PR tool</li> <li>d. Problems of Cross-subsidy by Apart to Ger</li> <li>e. Proposed Operation Plan for RPF Facility and Separate Collection</li> <li>f. Achievement of M/P for Institutional System by March 2012</li> </ol> <p style="text-align: right;">5</p>	<p><b>a. Progress of Work for EPWMD</b> <b>Apr 9 – 15 , 2012</b> <b>By EPWMD staff</b></p>															
<p><b>b. Progress of Work for CMPUA</b> <b>Apr 9 – 15, , 2012</b> <b>By CMPUA staff</b></p>	<p><b>Content of work conducted last week</b></p> <ol style="list-style-type: none"> <li>1. Regular landfill operations at NEDS and MDDS             <ul style="list-style-type: none"> <li>■ Big fire occurred during April 7-10, it was down on April 11 fully.</li> <li>■ New collection trucks of CHD TUK and SHD TUT have started its operations. The registration at NEDS WB is in progress.</li> <li>■ Due to the coolant heating of bulldozer radiators, CMPUA could not conduct landfill operations. The landfill operations became normal only after the removal of the grille.</li> </ul> </li> <li>2. Regular waste collection operations in 15 khoroos of BZD</li> </ol>	<p><b>Weekly Disposal Amount (ton)</b> <b>2012 III/30-IV/12</b></p> <table border="1"> <thead> <tr> <th></th> <th>(III/30-IV/5)</th> <th>(IV/6-12)</th> </tr> </thead> <tbody> <tr> <td>NEDS / weekly</td> <td>9,055</td> <td>8,215</td> </tr> <tr> <td>NEDS / daily average</td> <td>1,294</td> <td>1,174</td> </tr> <tr> <td>MDDS / weekly</td> <td>552</td> <td>436</td> </tr> <tr> <td>MDDS / daily average</td> <td>79</td> <td>62</td> </tr> </tbody> </table>		(III/30-IV/5)	(IV/6-12)	NEDS / weekly	9,055	8,215	NEDS / daily average	1,294	1,174	MDDS / weekly	552	436	MDDS / daily average	79	62
	(III/30-IV/5)	(IV/6-12)															
NEDS / weekly	9,055	8,215															
NEDS / daily average	1,294	1,174															
MDDS / weekly	552	436															
MDDS / daily average	79	62															

### Schedule for next week

- Regular landfill operations at NEDS and MDDS  
\* (Solution of problem for electricity supply to WB in MDDS)
- Regular waste collection operations in 15 khoroods of BZD

10

### AOU meeting

District	Khoroo	Date	Status
KhUD	2	4/6	finished
BZD	15		
ChD	4	4/10	finished

13

### Problems of Cross-subsidy by Apart to Ger (2)

- Apartment area where AOU is collecting waste fee in SkhD causes problems to TUT of SkhD.
- AOU does not pay 94% of waste fee. Instead it pay according to trip base.
- TUT is very afraid of that this kind of manner will spread to the other apartment area if people of apartment area knows about their waste fee subsidizes Ger area collection.
- Other cross-subsidy mechanism shall be examined.

### c. Progress of 3R PR tool

### Schedule of Broadcasting

TV	Time/Program	Date	Type
	21:00 News, before and after	04.09(Mon)	Both version of C.M
	21:00 News, before and after	04.11(Thu)	Both version of C.M
MTV	21:00 News, before and after	04.15(Sun)	Both version of C.M
	21:00 News, before and after	04.16(Mon)	Both version of C.M
	21:00 News, before and after	04.18(Thu)	Both version of C.M
	21:00 News, before and after	04.22(Sun)	Both version of C.M
	21:00 News, before and after	04.23(Mon)	Both version of C.M
	21:00 News, before and after	04.25(Thu)	Both version of C.M
	21:00 News, before and after	04.28(Sun)	Both version of C.M

\* PR of 3R promotion has been put on the famous magazine "TV 7 days"  
\* Under broadcasting negotiation with "MNB" and "TV25"

32

### Problems of Cross-subsidy by Apart to Ger (1)

- As we discussed last WM, cost of Ger area waste collection much more than income (even fee collection rate comes 61%)
- Then, we concluded for the waste collection service of Ger area requires some cross-subsidy mechanism, i.e. surplus of apartment area may use to Ger area.
- However, this explanation may cause problems to the waste collection companies.

### d. Problems of Cross-subsidy by Apart to Ger

### Cost & Income of Waste Collection for Apart and Ger Area

Area	Description	kg/household/month					KUD
		SBD	ChD	SkhD	BZD	Ger	
Apartment (C/Rms)	Tg/ton	20,000	19,700	17,600	21,200	18,600	20,300
Apartment Area:	Tg/HM/month	670	660	590	710	623	680
Ger Area:	Tg/ton	26,000	26,200	22,100	29,200	24,000	27,300
Ger Area:	Tg/HM/month	1,916	1,873	1,580	2,088	1,716	1,966
Estimated Income from a Household per Month							
Apartment Area:		1,692 Tg					
Ger Area:		1,174 Tg					
2,500Tg x 0.61 (collection rate) x 0.94 (AUNAC commission)							
2,500Tg x 0.61 (collection rate) x 0.77 (UBT's TS JSC commission)							

### e. Proposed Operation Plan for RPF Facility and Separate Collection



<p><b>Basic Considerations</b></p> <ul style="list-style-type: none"> <li>□ Capacity of Sorting Plant: 10 ton/hour</li> <li>□ Capacity of RPF Plant: 1 ton/hour ← Critical aspect</li> <li>□ Calculation of Maximum Production of RPF (ton/day): ⇒ From F/S of JICA Study</li> </ul> <p><b>1. Daily operation hours: 5 hours</b>  <b>2. Annual operation days: 300 days</b>  <b>3. RPF production (year and day): Year: 1 x 5 x 300 = 1500 ton/year</b>  <b>Day: 4.1 ton/day &lt;= Target of 2016</b></p>	<p><b>Result of WACS in 2011 (1)</b></p> <table border="1"> <thead> <tr> <th>Category</th> <th>winter</th> <th>summer</th> </tr> </thead> <tbody> <tr> <td>1. Kitchen Waste</td> <td>98.6</td> <td>31.6%</td> </tr> <tr> <td>2. Paper</td> <td>29.0</td> <td>9.3%</td> </tr> <tr> <td>3. Textile</td> <td>4.7</td> <td>1.5%</td> </tr> <tr> <td>4. Plastic (RPF 1)</td> <td>15.6</td> <td>5.0%</td> </tr> <tr> <td>5. Plastic (Yellable)</td> <td>17.5</td> <td>5.6%</td> </tr> <tr> <td>6. Plastic (RPF 2)</td> <td>3.4</td> <td>1.1%</td> </tr> <tr> <td>7. Grass and Wood</td> <td>1.6</td> <td>0.5%</td> </tr> <tr> <td>8. Rubber and Leather</td> <td>0.3</td> <td>0.1%</td> </tr> <tr> <td>9. Metal</td> <td>4.7</td> <td>1.5%</td> </tr> <tr> <td>10. Bottle and Glass</td> <td>107.0</td> <td>34.3%</td> </tr> <tr> <td>11. Ceramic &amp; Stone</td> <td>1.2</td> <td>0.4%</td> </tr> <tr> <td>12. Others</td> <td>28.4</td> <td>9.1%</td> </tr> <tr> <td>Total</td> <td>312.0</td> <td>100.0%</td> </tr> </tbody> </table> <p>unit: kg/person/day          Recyclables &amp; RPF: 145.1          Recyclables: 97.1          RPF: 48.0          Others: 166.9          Total: 312.0</p>	Category	winter	summer	1. Kitchen Waste	98.6	31.6%	2. Paper	29.0	9.3%	3. Textile	4.7	1.5%	4. Plastic (RPF 1)	15.6	5.0%	5. Plastic (Yellable)	17.5	5.6%	6. Plastic (RPF 2)	3.4	1.1%	7. Grass and Wood	1.6	0.5%	8. Rubber and Leather	0.3	0.1%	9. Metal	4.7	1.5%	10. Bottle and Glass	107.0	34.3%	11. Ceramic & Stone	1.2	0.4%	12. Others	28.4	9.1%	Total	312.0	100.0%	<p><b>Result of WACS in 2011 (2)</b></p> <p><b>Recyclable &amp; RPF:</b>          Recyclable: 5, 9, (10 x 0.7)          RPF: 2, 4, 6          Others: 1, 3, 7, 8, (10 x 0.3), 11, 12</p> <p>unit: g/person/day          Recyclable &amp; RPF: 142.1          Recyclables: 97.1          RPF: 48.0          Others: 166.9          Total: 312.0</p>																														
Category	winter	summer																																																																								
1. Kitchen Waste	98.6	31.6%																																																																								
2. Paper	29.0	9.3%																																																																								
3. Textile	4.7	1.5%																																																																								
4. Plastic (RPF 1)	15.6	5.0%																																																																								
5. Plastic (Yellable)	17.5	5.6%																																																																								
6. Plastic (RPF 2)	3.4	1.1%																																																																								
7. Grass and Wood	1.6	0.5%																																																																								
8. Rubber and Leather	0.3	0.1%																																																																								
9. Metal	4.7	1.5%																																																																								
10. Bottle and Glass	107.0	34.3%																																																																								
11. Ceramic & Stone	1.2	0.4%																																																																								
12. Others	28.4	9.1%																																																																								
Total	312.0	100.0%																																																																								
<p><b>Result of Separate Collection Pilot Project (PP) in 2011 (1)</b></p> <table border="1"> <thead> <tr> <th></th> <th>1week</th> <th>Without 9</th> </tr> </thead> <tbody> <tr> <td>1. Pet-bottle container</td> <td>13.6 kg</td> <td>2.3 kg</td> </tr> <tr> <td>2. Colored plastic</td> <td>38.5 kg</td> <td>6.4 kg</td> </tr> <tr> <td>3. Glass Bottle</td> <td>31.9 kg</td> <td>5.3 kg</td> </tr> <tr> <td>4. Iron</td> <td>12.7 kg</td> <td>2.1 kg</td> </tr> <tr> <td>5. Paper</td> <td>366.2 kg</td> <td>61.4 kg</td> </tr> <tr> <td>6. Bone</td> <td>0.0 kg</td> <td>0.0 kg</td> </tr> <tr> <td>7. Plastic Bag</td> <td>10.9 kg</td> <td>1.8 kg</td> </tr> <tr> <td>8. Metal</td> <td>12.7 kg</td> <td>2.1 kg</td> </tr> <tr> <td>9. Cardboard (CB)</td> <td>1,665.0 kg</td> <td>38.4 kg</td> </tr> <tr> <td>10. RPF plastic</td> <td>571.3 kg</td> <td>95.2 kg</td> </tr> <tr> <td>11. RPF paper</td> <td>675.0 kg</td> <td>112.5 kg</td> </tr> <tr> <td>12. Residue</td> <td>938.0 kg</td> <td>156.3 kg</td> </tr> <tr> <td>Total (summed up)</td> <td>4,337.8 kg</td> <td>723.0 kg</td> </tr> </tbody> </table> <p>Recyclables: 1-9, RPF: 10 &amp; 11</p>		1week	Without 9	1. Pet-bottle container	13.6 kg	2.3 kg	2. Colored plastic	38.5 kg	6.4 kg	3. Glass Bottle	31.9 kg	5.3 kg	4. Iron	12.7 kg	2.1 kg	5. Paper	366.2 kg	61.4 kg	6. Bone	0.0 kg	0.0 kg	7. Plastic Bag	10.9 kg	1.8 kg	8. Metal	12.7 kg	2.1 kg	9. Cardboard (CB)	1,665.0 kg	38.4 kg	10. RPF plastic	571.3 kg	95.2 kg	11. RPF paper	675.0 kg	112.5 kg	12. Residue	938.0 kg	156.3 kg	Total (summed up)	4,337.8 kg	723.0 kg	<p><b>Result of Separate Collection Pilot Project (PP) in 2011 (2)</b></p> <p><b>Recyclables: From item 1 to 9</b>  <b>RPF: 10 &amp; 11</b></p> <p><b>With Cardboard</b>          unit: kg/target area/week          Recyclables: 358.9 kg          RPF: 207.7 kg          Residues: 156.3 kg          Total: 723.0 kg</p> <p><b>Without Cardboard</b>          unit: kg/target area/week          Recyclables: 81.4 kg          RPF: 207.7 kg          Residues: 156.3 kg          Total: 445.5 kg</p>	<p><b>Result of Separate Collection Pilot Project (PP) in 2011 (3)</b></p> <table border="1"> <thead> <tr> <th>unit: kg/target area/week</th> <th>A. Planned</th> <th>B. PP Results (with CB)</th> <th>C. Cooperation Rate (B/A)</th> <th>D. PP Results (without CB)</th> <th>E. Cooperation Rate (D/A)</th> </tr> </thead> <tbody> <tr> <td>Recyclables</td> <td>4,299 kg</td> <td>359 kg</td> <td>8.3%</td> <td>81 kg</td> <td>1.9%</td> </tr> <tr> <td>RPF</td> <td>1,734 kg</td> <td>208 kg</td> <td>12.0%</td> <td>208 kg</td> <td>12.0%</td> </tr> <tr> <td>Residue</td> <td>0.0 kg</td> <td>156 kg</td> <td></td> <td>156 kg</td> <td></td> </tr> <tr> <td>Total</td> <td>6,032 kg</td> <td>723 kg</td> <td>12.0%</td> <td>445 kg</td> <td>7.4%</td> </tr> </tbody> </table>	unit: kg/target area/week	A. Planned	B. PP Results (with CB)	C. Cooperation Rate (B/A)	D. PP Results (without CB)	E. Cooperation Rate (D/A)	Recyclables	4,299 kg	359 kg	8.3%	81 kg	1.9%	RPF	1,734 kg	208 kg	12.0%	208 kg	12.0%	Residue	0.0 kg	156 kg		156 kg		Total	6,032 kg	723 kg	12.0%	445 kg	7.4%
	1week	Without 9																																																																								
1. Pet-bottle container	13.6 kg	2.3 kg																																																																								
2. Colored plastic	38.5 kg	6.4 kg																																																																								
3. Glass Bottle	31.9 kg	5.3 kg																																																																								
4. Iron	12.7 kg	2.1 kg																																																																								
5. Paper	366.2 kg	61.4 kg																																																																								
6. Bone	0.0 kg	0.0 kg																																																																								
7. Plastic Bag	10.9 kg	1.8 kg																																																																								
8. Metal	12.7 kg	2.1 kg																																																																								
9. Cardboard (CB)	1,665.0 kg	38.4 kg																																																																								
10. RPF plastic	571.3 kg	95.2 kg																																																																								
11. RPF paper	675.0 kg	112.5 kg																																																																								
12. Residue	938.0 kg	156.3 kg																																																																								
Total (summed up)	4,337.8 kg	723.0 kg																																																																								
unit: kg/target area/week	A. Planned	B. PP Results (with CB)	C. Cooperation Rate (B/A)	D. PP Results (without CB)	E. Cooperation Rate (D/A)																																																																					
Recyclables	4,299 kg	359 kg	8.3%	81 kg	1.9%																																																																					
RPF	1,734 kg	208 kg	12.0%	208 kg	12.0%																																																																					
Residue	0.0 kg	156 kg		156 kg																																																																						
Total	6,032 kg	723 kg	12.0%	445 kg	7.4%																																																																					
<p><b>Operation Plan for RPF Facility and Separate Collection (1)</b></p> <ul style="list-style-type: none"> <li>□ <b>Targets</b></li> <li>1. Population for separate collection area: Increase from 6,000 in 2011 to 160,000 in 2016</li> <li>2. Cooperation rate of people: Increase 12% (Pilot project results) to 60% in 2016</li> <li>3. Separate collection amount: Increase 0.1 ton/day in 2011 to 13.79 ton/day in 2016</li> <li>4. RPF production: Increase 0.03 ton/day in 2011 to 3.96 ton/day in 2016</li> </ul>	<p><b>Operation Plan for RPF Facility and Separate Collection (2)</b></p> <table border="1"> <thead> <tr> <th></th> <th>2011</th> <th>2013</th> <th>2014</th> <th>2015</th> <th>2016</th> </tr> </thead> <tbody> <tr> <td>Population for Separate Collection</td> <td>6,000</td> <td>20,000</td> <td>40,000</td> <td>80,000</td> <td>160,000</td> </tr> <tr> <td>Ideal Separated Amount (t/d)</td> <td>0.86</td> <td>2.87</td> <td>5.75</td> <td>11.49</td> <td>22.98</td> </tr> <tr> <td>Cooperation Rate (%)</td> <td>12%</td> <td>24%</td> <td>36%</td> <td>48%</td> <td>60%</td> </tr> <tr> <td>Actual Separated Amount (t/d)</td> <td>0.10</td> <td>0.69</td> <td>2.07</td> <td>5.52</td> <td>13.79</td> </tr> <tr> <td>RPF Production (t/d)</td> <td>0.03</td> <td>0.20</td> <td>0.59</td> <td>1.58</td> <td>3.96</td> </tr> <tr> <td>Recyclables with CB (t/d)</td> <td>0.05</td> <td>0.34</td> <td>1.03</td> <td>2.74</td> <td>6.85</td> </tr> <tr> <td>Recyclables without CB (t/d)</td> <td>0.01</td> <td>0.08</td> <td>0.23</td> <td>0.62</td> <td>1.55</td> </tr> <tr> <td>Residue (t/d)</td> <td>0.02</td> <td>0.15</td> <td>0.45</td> <td>1.19</td> <td>2.98</td> </tr> </tbody> </table>		2011	2013	2014	2015	2016	Population for Separate Collection	6,000	20,000	40,000	80,000	160,000	Ideal Separated Amount (t/d)	0.86	2.87	5.75	11.49	22.98	Cooperation Rate (%)	12%	24%	36%	48%	60%	Actual Separated Amount (t/d)	0.10	0.69	2.07	5.52	13.79	RPF Production (t/d)	0.03	0.20	0.59	1.58	3.96	Recyclables with CB (t/d)	0.05	0.34	1.03	2.74	6.85	Recyclables without CB (t/d)	0.01	0.08	0.23	0.62	1.55	Residue (t/d)	0.02	0.15	0.45	1.19	2.98	<p><b>Volume Calculation</b></p> <ul style="list-style-type: none"> <li>□ Unit Weight of Waste for RPF (Plastic 75% &amp; Paper 25%): 0.1 ton/m<sup>3</sup></li> <li>□ Unit Weight of RPF (Plastic 75% &amp; Paper 25%): 0.41 - 0.43 ton/m<sup>3</sup></li> <li>□ Day: 40m<sup>3</sup> (4ton) of Waste for RDF becomes 9.5m<sup>3</sup></li> <li>□ Month: 1,200 m<sup>3</sup> (120ton) of Waste for RDF becomes 285m<sup>3</sup></li> <li>□ Year: 14,600 m<sup>3</sup> (1,460ton) of Waste for RDF becomes 3,468m<sup>3</sup></li> <li>□ For Skhubataar Square (39,000m<sup>2</sup>): 38cm of Waste for RDF becomes 9cm</li> </ul>																		
	2011	2013	2014	2015	2016																																																																					
Population for Separate Collection	6,000	20,000	40,000	80,000	160,000																																																																					
Ideal Separated Amount (t/d)	0.86	2.87	5.75	11.49	22.98																																																																					
Cooperation Rate (%)	12%	24%	36%	48%	60%																																																																					
Actual Separated Amount (t/d)	0.10	0.69	2.07	5.52	13.79																																																																					
RPF Production (t/d)	0.03	0.20	0.59	1.58	3.96																																																																					
Recyclables with CB (t/d)	0.05	0.34	1.03	2.74	6.85																																																																					
Recyclables without CB (t/d)	0.01	0.08	0.23	0.62	1.55																																																																					
Residue (t/d)	0.02	0.15	0.45	1.19	2.98																																																																					

<p><b>f. Achievement of M/P for Institutional System by March 2012</b></p>	<p><b>Achievement of M/P for Institutional System by March 2012 (1)</b></p> <p><b>1. M/P: Improvement of SWM Administration System =&gt; ○</b></p> <p>Achievement:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Improvement of SWM Administration System of MUB =&gt; EPWMD (Plan &amp; Control) &amp; CMPUA (Operation)</li> <li><input type="checkbox"/> Improvement of SWM Administration System of District =&gt; District/PSD (Plan &amp; Control) &amp; TUK, etc. (Operation)</li> </ul>	<p><b>Achievement of M/P for Institutional System by March 2012(2)</b></p> <p><b>2. M/P: Capacity Development (CD) of Organization responsible for SWM =&gt; ○</b></p> <p>Achievement:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> CD of EPWMD</li> <li><input type="checkbox"/> CD of CMPUA</li> <li><input type="checkbox"/> CD of PSDs</li> </ul>
<p><b>Achievement of M/P for Institutional System by March 2012 (3)</b></p> <p><b>3. M/P: Promotion of Private Company Entry into SWM Services =&gt; ○</b></p> <p>Achievement:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Entry of Private Companies into Waste Collection Service =&gt; TUK, TsY, etc.</li> <li><input type="checkbox"/> Entry of Private Companies into Hazardous/ Infectious Healthcare Waste Management Service =&gt; Element Co. Ltd.</li> </ul>	<p><b>Achievement of M/P for Institutional System by March 2012 (4)</b></p> <p><b>4. M/P: Establishment of Systematic Monitoring and Information Management System for SWM =&gt; ○</b></p> <p>Achievement:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Guideline on Estimation of Waste Collection Fee for Contractor</li> <li><input type="checkbox"/> Management of Weighbridge Data of NEDS</li> <li><input type="checkbox"/> Environment Monitoring of Disposal Site</li> </ul>	<p><b>Achievement of M/P for Institutional System by March 2012 (5)</b></p> <p><b>5. M/P: Development of Personnel Capacity Development Program =&gt; ○</b></p> <p>Achievement:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Collection System Planning</li> <li><input type="checkbox"/> Management of CMPUA Central Workshop</li> <li><input type="checkbox"/> Final Disposal Site Management</li> <li><input type="checkbox"/> Environmental Education</li> </ul>
<p><b>Achievement of M/P for Institutional System by March 2012 (6)</b></p> <p><b>6. M/P: Improvement of Legal Systems =&gt; ○</b></p> <p>Achievement:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> National Level</li> <li><input type="checkbox"/> City Level</li> </ul>	<p><b>Achievement of M/P for Institutional System by March 2012 (7)</b></p> <p><b>7. M/P: Improvement of Collection and Management of Waste Collection Fee =&gt; △</b></p> <p>Achievement:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Improvement of Waste Collection Fee Management</li> <li><input type="checkbox"/> Improvement of Waste Fee Collection System in Ger Area</li> <li><input type="checkbox"/> Improvement of Financial Management System on Waste Collection Service</li> </ul>	<p><b>Achievement of M/P for Institutional System by March 2012 (8)</b></p> <p><b>1. M/P: Establishment of Hazardous Waste Management =&gt; ○</b></p> <p>Achievement:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Establishment of Hazardous/Infectious Healthcare Waste Management</li> <li><input type="checkbox"/> Improvement of Hazardous Industrial Waste Management</li> <li><input type="checkbox"/> Improvement of Hazardous Household Waste Management</li> </ul>

<p><b>Information</b></p> <ul style="list-style-type: none"><li>□ Mr. Shimura will leave on 18 April 2012</li></ul>	<p><b>Next Weekly Meeting</b></p> <ul style="list-style-type: none"><li>□ 23 April 2012 at 8 AM</li></ul>
---	---