

Questionnaire on personnel in charge of municipal solid waste management in the municipality

1. About You and Your Institution

1.1 About Yourself

1.1.1 What is your name?

Mr. Ms. Dr.

First Name:

Middle Name:

Last name:

1.1.2 Which organization do you belong to?

Name of Organization:

✘ eg: City of ABC

Which department or section?:

✘ eg: Department of Environment and Natural Resources, Section ABC

1.1.3 What is your position in the above organization?

✘ eg: Director, chief, etc.

1.2 About Your Institution

1.2.1 Your institution's responsibilities / duties

1.2.1.1-(1) Does your department/section have responsibility/duty to prepare legislative bills?

- a) No b) Yes

1.2.1.1-(2) If "Yes", please list legislative bills your department/section have prepared. eg: Waste management bill, noise pollution control ordinance, etc.

1.2.1.2-(1) Does your department/section have responsibility/duty to prepare plan(s)?

- a) No b) Yes

1.2.1.2-(2) If "Yes", please list plan(s) your department/section have prepared

※ eg: Municipal waste management plan

1.2.1.3-(1) Does your department / section provide SWM service(s) directly?

- a) No b) Yes

1.2.1.3-(2) If "Yes", please select the types of service(s) your department/section provide directly

- a) Sweeping
- b) Collection service
- c) Transfer station
- d) Transport of waste from the transfer station to a disposal site
- e) Final disposal
- f) Recycling facility(ies)
- g) Others (Please specify:)

※ Multiple answers allowed for questions with checkbox questions (same for all questions here on).

1.2.2 What is the number of staffs in your department?

- a) In administration: staffs
- b) In operation: staffs
- c) Others: staffs (Please specify:)

1.2.3 What is the number of skilled staffs in your department?

- a) Took SWM and/or related course in university/graduate school
 staffs
- b) Participated in SWM and/or related training course

staffs

c) Worked in the SWM sector for 5 years and more

staffs

1.2.4 Does your organization provide opportunities to deepen your knowledge on SWM?

- a) No opportunities b) Yes, but there are no programs c) Yes, there are programs

1.3 Other Institutions related to SWM

Please name the other related institution(s)

Name (Institution 1)

✘ eg: Ministry of Health, Department of ABC

Please list their responsibilities

✘ eg: In charge of medical waste

Name (Institution 2)

✘ eg: Ministry of Health

Please list their responsibilities

✘ eg: Responsible for medical waste

Name (Institution 3)

✘ eg: Ministry of Health

Please list their responsibilities

✘ eg: Responsible for medical waste

Please use the following area if you have more than 3 related institutions.

2 Legal System

2.1 Regulation / ordinance related to SWM

2.1.1(1) Does the municipality have a code/regulation on municipal solid waste management? It may be a part of broader regulation, such as regulation on

environmental protection in general.

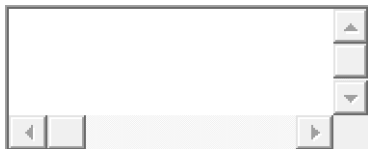
- a) No b) Yes

2.1.1(2) If "Yes", please give us the 1) title 2) year enacted, and 3) summary of the code/regulation

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✘ eg: 1) Code of municipal solid waste management, 2) 2005, 3) define what is municipal waste.

If there are more than one, please use this area

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✘ eg: 1) Regulation on private waste collectors, 2) 2000, 3) defines responsibilities of private waste collectors.

If there are more than two, please use this

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✘ eg: 1) Regulation on industrial waste, 2) 1999, 3) establishes guidelines for how to deal with industrial waste.

If there are more than three, please use this area

If there are more than four, please use this area

If there are more than five, please use this area to list all

3. Involvement of Private Sector Informal Sector and Community

3.1 Private sector involvement

3.1.1 Does the private sector participate in provision of SWM related services in your municipality?

- a) No b) Yes

※ If "Yes", please go to 3.1.2

3.1.2 Which type of services do they participate in?

- a) Sweeping
- b) Collection service
- c) Transfer station

- d) Transport of waste from the transfer station to a disposal site
- e) Final disposal
- f) Recycling facility(ies)
- g) Others (Please specify:)

※ Please select all that apply

3.1.3 Do you have a written contract with the private sector?

- a) No
- b) Yes

3.1.4(1) Do you think that the private sector works well?

- a) No
- b) Yes

※ If "No", please go to 3.1.4(2)

3.1.4(2) If "No", why does NOT the private sector work well?

- a) without contract, we cannot control the private sector
- b) the contract is not clear
- c) not monitored stringently by the authority
- d) the private sector is not paid according to the contract
- e) others (Please specify:)

※ Please select all that apply

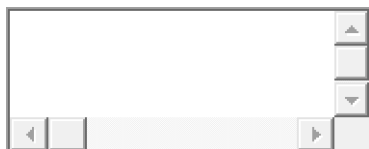
3.2 Informal sector involvement

3.2.1 Is(are) there activity(es) of the informal sector?

- a) No
- b) Yes

※ If "Yes", please go to 3.2.2

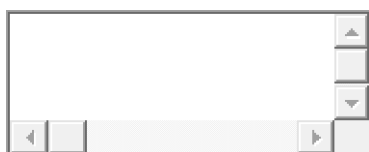
3.2.2 Please specify activity(ies) and approximate number of persons involved in those activities

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※ eg: 300 people in collection of recyclable materials on the street

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※ eg: 150 people in collection of recyclable materials at disposal site

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※ If there are more than three, please list all here

3.2.3 Is there any policy for supporting the informal sector?

a) No b) Yes

※ If "Yes", please go to 3.2.4

3.2.4 What kind of policy do you have for supporting infomral sector?

- a) provision of job opportunities
- b) provision of job training
- c) provision of subsidiary

- d) others (Please specify:)

3.3 Community involvement

3.3.1 Is community informed of how to discharge waste?

- a) No b) Yes

※ If “Yes”, please go to 3.3.2 and 3.3.3

3.3.2 What are they informed about?

- a) collection day and time
- b) separation of waste
- c) others (Please specify:)

3.3.3 How are they informed the above information?

- a) public bulletin
- b) public consultation meeting
- c) flyers and/or brochures
- d) school (in curriculum)
- e) municipality’s web page
- f) official SNSs
- g) others (Please specify:)

4. Municipal Solid Waste Management

4.1 Generation and Characteristics

4.1.1(1) Do you know how much of waste your municipality generates?

- a) No b) Yes

※ If "Yes", please go to 4.1.1(2) and 4.1.1(3)

4.1.1(2) If "Yes", please give us either a) volume (m³) or b) weight (ton)

a) Volume (m³):

※ Please do not forget to indicate unit, such as m³/day or m³/year

b) Weight (ton):

※ Please do not forget to indicate the unit, such as ton/day or ton/year

4.1.1(3) If "Yes", how do you get the data?

- a) weighbridge at disposal site and/or transfer station
- b) estimated by multiplying population and waste generation rate
- c) others (Please specify:)

4.1.2(1) Do you know the waste generation rate in your municipality?

- a) No
- b) Yes (Please give us the waste generation rate:)

※ If "Yes", please go to 4.1.2(2)

4.1.2(2) If "Yes", how do you get the waste generation rate?

- a) from a detailed waste amount survey conducted by professionals such as donor agencies, universities, and consultants (When?:)

※ eg: year 2010)

- b) refer to data in other city in the country

c) refer to data in other city in other country

d) others (Please specify:)

4.1.2(3)) If "Yes", when was the waste generation rate data gathered?

Please specify

※ eg: 2010

4.1.3(1) Do you know composition of the municipal solid waste in your municipality?

a) No b) Yes

※ If "Yes", please fill in the followings

a) food waste: %

b) plastics: %

c) papers: %

d) textile: %

e) wood: %

f) rubber, leather: %

g) metals: %

h) glass: %

i) ceramics: %

j) others: (Please specify:)

k) If only mixed figure is known, specify in the following box

4.1.3(2) If "Yes", how do you get the waste composition data?

- a) from a detailed waste composition survey conducted by professionals such as donor agencies, universities and consultants (When?:)
※ eg: year 2010)
- b) refer to data in other city in the country
- c) refer to data in other city in other country
- d) others (Please specify:)

4.2 Sweeping

4.2.1 Is there sweeping service in your municipality?

- a) No sweeping service provided
- b) Yes, sweeping service in the following area
 - a) city centre
 - b) public areas such as parks and plazas
 - c) residential area
 - d) other areas (Please specify:)

4.3 Collection

4.3.1 Collection amount

Do you know how much of waste collected?

- a) No
- b) Yes

If "Yes", please give us either volume (m³/day or m³/year) or weight (ton/day or ton/year)

※ Please do not forget to include the unit. eg: m³ / day or ton/year

How do you get the data?

- a) weighbridge at disposal site and/or transfer station
- b) estimated by multiplying collection truck's capacity and number of trips
- c) others (Please specify:)

4.3.2 Collection coverage

Can you identify number of residents who have collection service?

- a) No b) Yes

If "Yes", how many are they?

people (Alternatively, you can give us in percentage of coverage :

% ※ eg: 50% of municipal population)

How do you get the data?

- a) collection area map with population data

- b) other way (Please specify:)

4.3.3 Collection frequency

How many times do you collect waste in the city centre?

- a) unknown
- b) once a week
- c) twice a week
- d) three times a week and more

How many times do you collect waste in residential area?

- a) Unknown
- b) once a week
- c) twice a week
- d) three times a week and more

4.3.4 Hauling distance

- a) From city centre to a transfer station: km

※ If you have multiple transfer stations, assume the furthest transfer station

Please give us the coordinate of the said transfer station

(Alternatively, you can paste the web address (url) on googlemap

here:)

✘ eg: 5° 20'59.5"N 3° 56'04.0"W

b) From city centre to a disposal site: km

✘ If you have multiple disposal sites, assume the furthest disposal site

Please give us coordinate of the said disposal site

(Alternatively, you can paste the web address (url) of googlemap

here:)

✘ eg: 5° 20'59.5"N 3° 56'04.0"W

4.3.5 Collection vehicles

a) Please give us the number of "Compactor trucks" you have, according to their capacity.

✘ eg: 3 compactor trucks of 5m³ capacity and 2 compactor trucks of 10m³.

(Please be careful about the unit difference; i.e. ton and m³)

b) Please give us the number of "other waste collection trucks" (other than compactor trucks), according to their capacity

✘ eg: 3 trailer of 5m³ capacity and 2 flatbed trucks of 10m³. (Please be careful about the unit difference; i.e. ton and m³)

4.3.6 Functionality of the collection vehicle

a) What is the percentage of functional compactor trucks?

% (What might be the main cause(s) of the non-functional

compactor truck(s)? Please list:

✘ eg: lack of maintenance and spare parts, accidents, etc.)

b) What is the percentage of functional other waste collection trucks (other than compactor trucks)?

% (What might be the main cause(s) of the non-functional truck(s)?

Please list:

✘ eg: lack of maintenance and spare parts, accidents, etc.)

4.4 Transport

4.4.1 Transfer station

Do you have transfer station(s) in your city?

a) No

b) Yes (If "Yes", how many?: stations)

Please give us the location and operating hours.

✘ eg: location: 5° 20'59.5"N 3° 56'04.0"W (alternatively you can paste googlemap address), operating ours 8:00–17:00

Please use this area for 2nd transfer station

Please use this area for 3rd transfer station

Please use this area for 4th and more transfer station

4.4.2 Transported waste amount

Do you know how much of waste is transported from the transfer station to a dumpsite?

a) No

b) Yes (If "Yes", please give us the figure:

※ eg: 2,000 ton/day or 3,000 m³/day)

How do you know the amount?

- a) weighbridge at the transfer station
- b) weighbridge at the disposal site
- c) estimated by multiplying vehicle's capacity and number of trips
- d) other way (Please specify:)

4.4.3 Transport vehicle

a) What is the number of trailers?

※ eg: 2 3m³ trailers and 5 10m³ trailers

What is the percentage of functional trailers?

% (What might be the main cause(s) of the "non-functional"

trailers? Please list:

※ eg: lack of maintenance and spare parts)

b) What is the number of dump trucks

※ 2 10ton dump trucks & 3 4ton dumptrucks

What is the percentage of functional dumptrucks?

% (What might be the main cause(s) of the "non-functional" dump truck(s)? Please list:

※ eg: lack of maintenance and spare parts, accidents, etc.)

c) What is the number of container trucks?

trucks

What is the percentage of functional container truck?

% (What might be the main cause(s) of the "non-functional" container trucks? Please list:

※ eg: lack of maintenance and spare parts, accidents, etc.)

d) What is the number of other trucks

(Please specify:)

What is the percentage of functional other truck

% (What might be the main cause(s) of the "non-functional" other truck(s)? Please list:

※ eg: lack of maintenance and spare parts, accidents, etc.)

4.5 Disposal

4.5.1 Number of disposal site(s)

How many disposal site are operated for receiving waste generated in your municipality?

disposal site(s)

※ If you have only 1 disposal site, please answer one-set of question in 4.5.2.

If you have more than one, please use 4.5.3 and 4.5.4 as well.

4.5.2 Profile of the disposal site (1)

4.5.2(1) For disposal site 1, please give us the location.

✘ eg: location: 5° 20'59.5"N 3° 56'04.0"W (alternatively you can paste googlemap address)

4.5.2(2) For disposal site 1, please give us the capacity

✘ eg: 300,000 tons

4.5.2(3) For disposal site 1, please give us the operating hours

✘ eg: 24 hours

4.5.2(4) For disposal site 1, do you know how much of waste is disposed of?

a) No

b) Yes (If "Yes", please specify:)

✘ Please do not forget the unit; i.e. 1,500 ton/day)

4.5.2(5) For disposal site 1, how do you know the amount?

- a) Weighbridge data at the transfer station
- b) weighbridge data at the disposal site
- c) Estimated by multiplying vehicle's capacity and number of trips
- d) Other way (Please specify:)

4.5.2(6) For disposal site 1, what facility the disposal site have?

- a) Bottom liner
- b) Leachate collection pipe
- c) Gas removal pipe
- d) Enclosed bund / embankment
- e) Leachate treatment facility
- f) Landfill gas capture facility
- g) Weighbridge
- h) Tire washer
- i) Gate
- j) Fence
- k) Drainage to prevent rainwater from incoming to the waste disposal area

4.5.2(7) For disposal site 1, do you have operation plans?

- a) No
- b) Yes (Please sepcify:)

※ eg: a) Long-term operation plan, and b) daily operation plan)

4.5.2(8) For disposal site 1, what is your operation?

- a) Compaction of waste
- b) Covering waste with soil or other material immediately / or within a week
- c) Intermediate soil cover for area which is not used for several months.

4.5.3 Profile of the disposal site (2)

4.5.3(1) For disposal site 2, please give us the location.



※ eg: location: 5° 20'59.5"N 3° 56'04.0"W (alternatively you can paste googlemap address)

4.5.3(2) For disposal site 2, please give us the capacity

※ eg: 300,000 tons

4.5.3(3) For disposal site 2, please give us the operating hours

※ eg 24 hours

4.5.3(4) For disposal site 2, do you know how much of waste is disposed of?

- a) No
- b) Yes (If "Yes", please specify:)

※ Please do not forget the unit; i.e. 1,500 ton/day)

4.5.3(5) For disposal site 2, how do you know the amount?

- a) Weighbridge data at the transfer station
- b) Weighbridge data at the disposal site
- c) Estimated by multiplying vehicle's capacity and number of trips
- d) Other way (Please specify:)

4.5.3(6) For disposal site 2, what facility the disposal site have?

- a) Bottom liner
- b) Leachate collection pipe
- c) Gas removal pipe
- d) Enclosed bund
- e) Leachate treatment facility
- f) Landfill gas capture facility
- g) Weighbridge

- h) Tire washer
- i) Gate
- j) Fence
- k) Drainage to prevent rainwater from incoming to the waste disposal area

4.5.3(7) For disposal site 2, do you have operation plans?

- a) No
- b) Yes (Please specify:)

※ eg: a) Long-term operation plan, and b) daily operation plan)

4.5.3(8) For disposal site 2, what is your operation?

- a) Compaction of waste
- b) Covering waste with soil or other material
- c) Intermediate soil cover

4.5.4 Profile of the disposal site (3)

4.5.4(1) For disposal site 3, please give us the location.

※ eg: location: 5° 20'59.5"N 3° 56'04.0"W (alternatively you can paste

googlemap address)

4.5.3(2) For disposal site 2, please give us the capacity

※ eg: 300,000 tons

4.5.4(3) For disposal site 3, please give us the operating hours

※ eg: 24 hours

4.5.4(4) For disposal site 3, do you how much of waste is disposed of?

a) No

b) Yes (If "Yes", please specify:)

※ Please do not forget the unit; i.e. 1,500 ton/day)

4.5.3(5) For disposal site 2, how do you know the amount?

a) Weighbridge data at the transfer station

b) Weighbridge data at the disposal site

c) Estimated by multiplying vehicle's capacity and number of trips

d) Other way (Please specify:)

4.5.4(6) For disposal site 3, what facility the disposal site have?

- a) Bottom liner
- b) Leachate collection pipe
- c) Gas removal pipe
- d) Enclosed bund
- e) Leachate treatment facility
- f) Landfill gas capture facility
- g) Weighbridge
- h) Tire washer
- i) Gate
- j) Fence
- k) Drainage to prevent rainwater from incoming to the waste disposal area

4.5.4(7) For disposal site 3, do you have operation plans?

- a) No
- b) Yes (Please specify:

※ eg: a) Long-term operation plan, and b) daily operation plan)

4.5.4(8) For disposal site 3, what is your operation?

- a) Compaction of waste
- b) Covering waste with soil or other material
- c) Intermediate soil cover

4.6 Recycling / Treatment Facility

4.6.1 Recycling/treatment facility(es)

Is(are) there recycling/treatment facility(es) in your municipality?

- a) No b) Yes

※ If "Yes", please go to 4.6.2

4.6.2 Type of recycling/treatment facilities

What type of recycling facility(es) are present in your municipality?

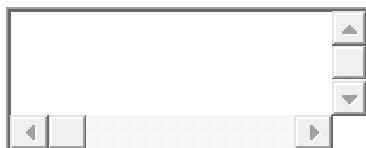
- a) Material Recycling Facility (MRF)
- b) Composting facility
- c) Incineration facility
- e) Bio-gas plant (anaerobic digester)
- f) Others (Please specify:)

※ For each facility you checked above, please give details in the spaces provided below.

For "MRF", please 1) location (or googlemap address), 2) capacity, 3) operating hours, 4) how much waste is put into facility, and 5) how do you know the amount.

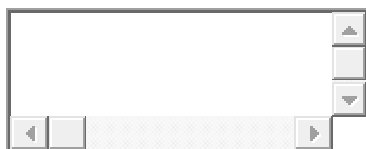
※ 1) location: 5° 20'59.5"N 3° 56'04.0"W, 2) Capacity: 10 ton/day, 3) operation hours: 24hrs, 4) waste amount: 5ton/day, 5) estimated from truck capacity

For "Composting facility", please 1) location (or googlemap address), 2) capacity, 3) operating hours, 4) how much waste is put into facility, and 5) how do you know the amount.



※ 1) location: 5° 20'59.5"N 3° 56'04.0"W, 2) Capacity: 10 ton/day, 3) operation hours: 24hrs, 4) waste amount: 5ton/day, 5) estimated from truck capacity

For "Incineration plant", please 1) location (or googlemap address), 2) capacity, 3) operating hours, 4) how much waste is put into facility, and 5) how do you know the amount.



※ 1) location: 5° 20'59.5"N 3° 56'04.0"W, 2) Capacity: 10 ton/day, 3) operation hours: 24hrs, 4) waste amount: 5ton/day, 5) estimated from truck capacity

For "Bio-gas plant (anaerobic digester)", please 1) location (or googlemap

address), 2) capacity, 3) operating hours, 4) how much waste is put into facility, and 5) how do you know the amount.

※ 1) location: 5° 20'59.5"N 3° 56'04.0"W, 2) Capacity: 10 ton/day, 3) operation hours: 24hrs, 4) waste amount: 5ton/day, 5) estimated from truck capacity

For "Other", please 1) location (or googlemap address), 2) capacity, 3) operating hours, 4) how much waste is put into facility, and 5) how do you know the amount.

※ 1) location: 5° 20'59.5"N 3° 56'04.0"W, 2) Capacity: 10 ton/day, 3) operation hours: 24hrs, 4) waste amount: 5ton/day, 5) estimated from truck capacity

(Please specify:)

4.6.3 Separate collection

Is separate collection practiced?

- a) No
- b) Yes

If "Yes", what is practiced?

- a) municipal market waste
- b) commercial and insitutional waste
- c) household waste
- d) pruned trees and grass
- e) others (Please specify:)

4.6.4 Self-disposal at waste generation source

Can self-disposal activity(es) is(are) found at houses and others?

- a) No
- b) Yes

If "Yes", what are they?

- a) open burning
- b) animal feeding
- c) compsting
- d) recyclable materials to recyclers
- e) others (Please specify:)

5. Financial sustainability

5.1 Revenue and expenditure

5.1.1 Do you know the total revenue and expenditure for the waste services?

A) Revenue

a) No

b) Yes (How much in local currency:

※ Please do not forget to include the currency; i.e. 1,000,000 KSH/year)

B) Expenditure

a) No

b) Yes (How much in local currency?:

※ Please do not forget to indicate the currency; i.e. 1,000,000 KSH/year)

5.1.2 Do you know how much is spent for the waste services?

a) Collection and transportation:

※ Please do not forget to indicate the local currency; i.e: 1,000,000 KSH

b) Sweeping:

※ Please do not forget to indicate the local currency; i.e: 1,000,000 KSH

c) Treatment / Recycling:

※ Please do not forget to indicate the local currency; i.e: 1,000,000 KSH

d) Final disposal:

※ Please do not forget to indicate the local currency; i.e: 1,000,000 KSH

e) others

※ Please specify and indicate local currency

5.1.3 Do you know how much is spent per ton of waste?

- a) No
- b) Yes (Please give us how much:)

5.2 Fees of waste services

5.2.1 Do you charge for waste collection service?

- a) No b) Yes

If "Yes", how do you charge?

- a) Independently charge waste collection service fee
- b) With water supply bill
- c) With electricity bill
- d) With other public service fees

a) How much do you collect for household waste?:

※ Please indicate the unit; i.e. 30KSH/year

b) How much do you charge for commercial waste?:

※ Please indicate the unit; i.e. 100KSH/year

c) How much do you charge for institutional waste?:

※ Please indicate the unit; i.e. 200KSH/year

e) How much do you charge for other waste?

(Please specify:)

※ Please indicate the unit; i.e. 30KSH/year

5.2.2 Do you charge at disposal site / tipping fee?

a) No

b) Yes (How much per ton?: ※ Please indicate currency: i.e. 5KSH/ton)

5.2.3 Do you charge for other waste service?

a) No

b) Yes (Please specify:)

6. Donor Assistance

Do you have assistance from donor(s)?

- a) No b) Yes

If "Yes", please give us 1) name of donor agency, 2) type of assistance, and 3) content of the assistance

※ eg: 1) JICA, 2) capacity development, 3) integrated solid waste management

Please use this area to indicate additional assistance

※ eg: 1) JICA, 2) technical cooperation, 3) development of fee collection system, application of waste tax, etc.

Please use this area to indicate additional assistance

Please use this area to indicate additional assistance

7. Needs for Improvement

7.1 Do you need to improve the SWM system?

- a) No b) Yes

※ If "Yes", please go to 7.2

7.2 There may be group of issues in your municipality surrounding SWM, such as A) legal issues, B) Insitutional issues, C) Technical issues, D) Financial issues, etc. that need to be addressed. Please list the top 3 priority issues and their conent in the order of priority



※ eg; 1) Legal issues for preparation of SWM basic law, 2) Technical issues for final disposal site, 3) Institutional issues,,,,, etc.

8. Any Comments

Please give us any comment you may have