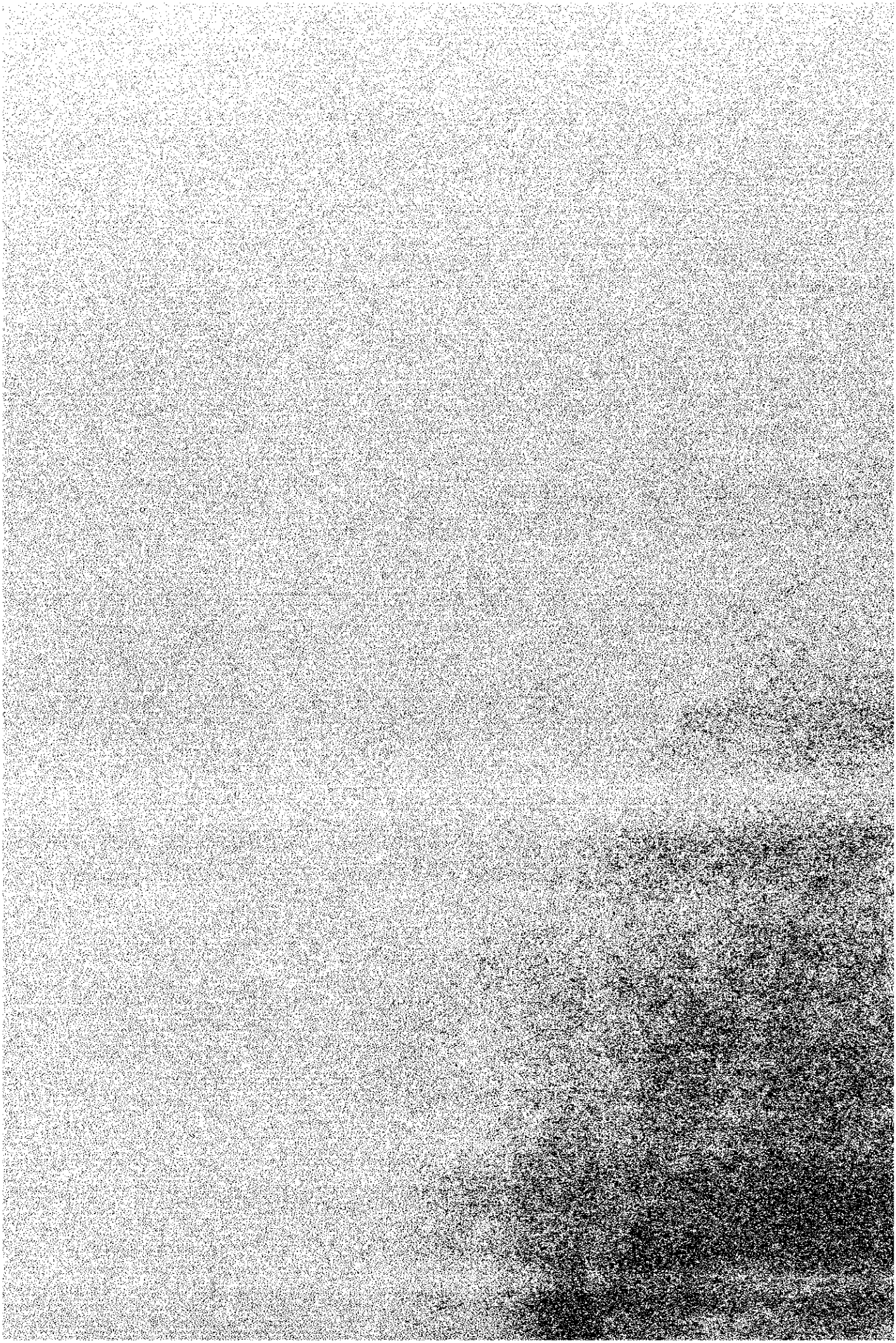
３．質問状



QUESTIONNAIRE

ON

SOLID WASTE MANAGEMENT

FOR

ADANA MERSIN AND SURROUDING AREA

IN

THE REPUBLIC OF TURKEY

1998

JICA

Questionnaire on Solid Waste Management for ADANA MERSIN and SURROUNDING AREA.)

This questionnaire is designed to collect basic information for the analysis of the present situation of your solid waste mamagement,

A1. General data of your City (Municipality)

A1-1 Area (in 1996)

Urban area ..... km^2

Rural area ..... km^2

Total area ..... km^2

A1-2 Temperature

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec.
Max.												
Min.												
Average												

A1-3 Rain

	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1997													
1996													
1995													
1994													
1993													

A1-4 Population (which corresponds to the present jurisdiction)

	1995	1997	*2000	*2005	*2010	*2020
Urban population						
Rural population						
Total population						

*estimate

A1-5 Number of Hospitals and Clinics in 1996

Number of bed	‹10	10-100	›100	Subtotal
Urban area				
Rural area				
Total area				

A1-6 Number of Factories

employee / Industry	‹10	10-100	100-500	›500	Total
1. Agricultural Factory					
2. Dairying.					
3. Food					
4. Leather					
5. Textile					
6. Chemical					
7. Cement & Brick					
8. Iron & Seel					
9. Metal processing					
10.Minning,Metallugical					
11.Construction					
12					
13.					
14.					
15.Others					
Total					

A1-7 Characteristics of Main Factories

Name of Factory	Employee	Product Volume t/y	Solid Waste

A2 Department responsible for public cleansing service in your City (Municipality)

A2-1 Name of the department .....

.....

A2-2 Name, address and telephone/fax number of the head of the Department .....

.....

.....

A2-3 Functions of the Department (In case of the functions contracted out by your Department, Please tick Yes.)

Functions borne by the responsible Department	Yes	No	If no, please specify the responsible department
Domestic waste management			
Commercial waste management			
Industrial waste management			
Street sweeping, grass cutting			
Park cleansing			
Public toilet cleansing			
Cemetary cleansing			
Crematorium service			
Cleansing of vacant lands			
Drain cleansing			
River cleansing			
Removal of dead animals			
Removal of garden waste			
Removal of construction debris			
Removal of abandoned vehicles			
Removal of bulky waste such as refrigerater			
Development/building plan approval(bin center, refuse chutes etc.)			
24 hour emergency work			
Procurement of vehicles			
Maintenance of vehicles			
Recruitment of personnel			
Training of personnel			
Finding loan sources			
Others			

A2-4 Existing law and regulatiom (please tick)

	Yes	No
On littering		
On storage of wastes		
On user charges		
On registration of private contractors		

A3 Revenue of the City(Municipality) and expenditure for the public cleansing service

A3-1 Revenue of the City(Municipality)

(Unit)

Revenue source	1995		1997	
	Budgeted	Actual	Budgeted	Actual
Assesment				
Licence				
Loan				
Grant				
User charge				
Fine				
Others				
Total				

A3-2 Expenditure for the public cleansing service

(Unit)

Expenditure Items	1995		1997	
	Budgeted	Actual	Budgeted	Actual
Remuneration				
Materials and supplies				
Equipment				
Total Expenditure for the public cleansing service				
Total Expenditure of the City (Municipality)				

A4. Personnel for the public service (number of personnel by area and type)

(In the case of the personnel who are involved not only in solid waste management but also in other services,please put their number in paranthesis.)

Type of personnel	Area of work					
	A	CT	SG	FD	O	Total
Administrater						
Health officer						
(Senior)public health officer						
Engineer						
PHO or Technical assistant or technician						
Clerical staff						
Mandator						
Driver						
Labourer						
Total						

A = Administration

CT = Collection and transportation

SG = Street sweeping and grass cutting

FD = Final disposal

O = Others

PHO= Public health overseer

A5 Equipment

A5-1 Machinery used in landfills

Machinery type	No	Dead wt.	cap. m³.t	No.of machinery by condition			No.of machinery by year of parchase			
				Good	Fair	Bad	Before 1984	85-89	90-94	95-
Bulldozers										
Bucket loaders										
Backhoes										
Compactors (No.of axles)										
Agricultural tractors										
Others										

A5-2 Machinery used in collection and transportation

Machinery type	No.	Dead wt.	Cap m³ t	Axle	No.of machinery by condition			No.of machinery by year of parchase			
					Good	Fair	Bad	-84	85-89	90-94	95-
Compactor collector											
Tipping truck with sliding covers											
Open truck with tippingfacility											
Open truck without tippingfacility											
Tilt-frame or hoist truck											
Mechanical sweeper											

A5-3 Typical purchase price of the equipment in the recent years

Equipment type	Purchase price (US$)	Purchase year
Compactor collector		
Tipping truck with sliding covers		
Open truck with tippingfacility		
Open truck without tippingfacility		
Tilt-frame or hoist truck		
Mechanical sweeper		
Bulldozer		
Landfill compactor		
Agricultural tractor		

A5-4 Does the City(M) have its own weighbridge for the public cleansing service ?

Yes ..... No ..... Yes,but out of order .....

If yes,please fill in the following:

Type of weighbridges	Capacity (t)	Year of purchase	Purchase price (US$)	
Fixed				
Portable				
others				

A6 Physical characteristics of the solid waste

A6-1 Existence of data

Yes ..... No .....

A6-2 If yes,please fill in the following

Year of [ ] analysis or [ ] estimation .....

Analyzed or estimated by .....

Component	% by weight
1. Paper	%
2. Plastic and rubber	%
3. Organic or vegetables	%
4. Glass and ceramic	%
5. Metal	%
6. Wood	%
7. Textile	%
8. Others	%
Total	100 %

A7 Chemical component of the solid waste

A7-1 Existence of waste data on a dry basis

Yes ..... No .....

A7-2 If yes,please fill in the following

Year of analysis or estimation

Analyzed or estimated by .....

Component	% by weight	Component	% by weight
1.	%	9.	%
2.	%	10.	%
3.	%	11.	%
4.	%	12.	%
5.	%	13.	%
6.	%	14.	%
7.	%	15.	%
8.	%	16.	%
Total			100 %

A7-3 Existence of Dryer for solid waste to chemically be analysed on the dry basis

Yes ..... No .....

A7-4 If yes,which authority does it belonged to? .....

A7-5 How many m³ of waste can be dried at one time(capacity)?

A7-6 What is heating-source for the drier?

A8 Storage and collection

A8-1 Domestic wastes collection service coverage

Urban population ..... %

Rural population ..... %

A8-2 Commercial wastes collection service coverage

Direct municipal collection ..... %

Private collectors contracted by the City ..... %

Collection arranged by generators ..... %

A8-3 Collection frequency of domestic,institutional and commercial waste

Frequency	Approximate percentage of waste collected	
	Domestic (Urban)	Institutional & commercial
Twice per day or more	%	%
7 times per week	%	%
6 times per week	%	%
3 times per week	%	%
2 times per week	%	%
Once per week	%	%
Irregular	%	%
Total	100 %	100 %

A8-4 Quantity collected by the City or Munucipality

Waste type	Quantity collected			
	(ton per month)		(M^3 per month)	
	Measured	Estimated	Measured	Estimated
Domestic,institutional and commercial waste				
Industrial waste				
Waste from street or park cleansing				
Waste from drain cleansing				
Construction debris				
Bulky waste				
Others:				
Total				

Note: If the breakdown is difficult,please fill-in only total.

A9 Final disposal

A9-1 General information

	Disposal site		
	Site 1	Site 2	Site 3
Name of the site			
Year of start			
Area	ha	ha	ha
Remaining life	yrs	yrs	yrs
Amount disposed of daily	t/d	t/d	t/d
Distance to the site	km	km	km
Disposal method (See foot note)	O,C,S,D	O,C,S,D	O,C,S,D
Existence of animals	Yes, No	Yes, No	Yes, No
Existence of scavengers	Yes, No	Yes, No	Yes, No
Existence of open burning	Yes, No	Yes, No	Yes, No

	Disposal site		
	Site 4	Site 5	Site 6
Name of the site			
Year of start			
Area	ha	ha	ha
Remaining life	yrs	yrs	yrs
Amount disposed of daily	t/d	t/d	t/d
Distance to the site	km	km	km
Disposal method (See foot note)	O,C,S,D	O,C,S,D	O,C,S,D
Existence of animals	Yes, No	Yes, No	Yes, No
Existence of scavengers	Yes, No	Yes, No	Yes, No
Existence of open burning	Yes, No	Yes, No	Yes, No

Note. O =Open dumping
C =Controlled tipping(with seperate cover)
S = Sanitary landfill(with daily cover)
D = Dumping into water body

A9-2 Details

a.Number of Landfill Site according to the distance from collection area(please tick)

Distance (km)	Disposal site			
	Site 1	Site 2	Site 3	Site 4
0 - 5				
5.1 - 10				
10.1- 15				
15.1- 20				
20.1-				
Number of Data				

b.Area of Landfill Site (please tick)

Area (ha)	Disposal site			
	Site 1	Site 2	Site 3	Site 4
0 - 5				
5.1 - 10				
10.1- 20				
20.1-				
Number of Data				

A9-3 Location of the existing waste disposal site(s)(Please tick)

	Disposal site			
	Site 1	Site 2	Site 3	Site 4
River side				
Swamp				
Flat ground				
Mauntain area				
Mine pool				
Sea side				
Others				
Number of Data				

A9-4 Present condition of Landfill Site(please tick)

	Disposal site			
	Site 1	Site 2	Site 3	Site 4
Sanitary Landfill				
Controlled Tipping				
Open Dumping				
Dumping into water				
Number of Data				

A9-5 Aquisition of Cover Material (please tick)

	Disposal site			
	Site 1	Site 2	Site 3	Site 4
In Site				
Outside the Site				
Buy(US$/$m^3$ or t)				
Number of Data				

A9-6 Existing facilities in Landfill Site (please tick)

	Disposal site			
	Site 1	Site 2	Site 3	Site 4
Office in the Site				
Electricity				
Water Supply				
Telephone				
Access Road in Site				
Fence for Boundary				
Bank for Boundary				
Gate				
Notice Board				
Cover Material				
Gas Venting Pipe				
Rain Water Drain				
Leachate Collection Pipe				
Oxidation Pond				
Weighbridge				
Leachate Treatment Facility				
Number of Data				

A10 Problems encountered in the public cleansing services:

What are the main problems of the public cleansing service in the City.

Please tick the appropriate spaces in the following list.

A10-1 Problem of Landfill Site

	Serious	Not so Serious	No Problem
Ground Water Pollution			
Leachate			
Scavenger			
Water Pollution			
Cover Material			
Littering			
Open Dumping			
Odour			
Fly			
Air Pollution			
Bird(Crow etc.)			
Rodent			
Noise			
Rehabilitation			
Others			

A10-2 Problem of Landfill Site

	Serious	Not so Serious	No Problem
Difficulty to acquire			
Obsolute equipment or too frequent breakdown			
Limited cooporation from the public			
Uncontrolled use of packaging materials			
Proliferation of squatter area			
Financial resource shortage			
Lack of enforcement measures			
Shortage of equipment			
Too rapid urbanization which outgrows service delivery capacity			
Development projects without due consideration about the SWM			
Hazardous waste			
Lack of short,medium and long-term plan of the service			
Inappropriate institutional set-up of public cleansing service			
Lack of qualified private contractors			
Lack of trained personnel			
Lack of authority for design-making			
Lack of standardization of equipment			
Limited cooporation from government			
Deficient service coverage			
Difficulty of the control of contracted out service			
Lack of legislation			
Labour conflict			
Deficient service coverage			

B Natural Environment

B1 Amout of groundwater or number of wells and boreholes being used

B2 Location of environmentally vulnerable areas such as mangrove forest,coral reef, wetland, tideland, if any

B3 Species of vuluneable animals and plants in the area,if any

B4 Location of particular areas officially protected such as national parks and natural parks

B5 Distribution of important landscape or scenery for tourim or religeon

C Environmental Pollution

C1 Present air quality

C2 Regulation on emission gas

C3 Present quality of sea water

C4 Regulation on effluent

C5 Present condition of soil contamination

C6 Regulation for prevention of soil contamination

C7 Present condition of noise and vibration

C8 Regulation for prevention of noise and vibration

４．面会者リスト

C5 Present condition of soil contamination

C6 Regulation for prevention of soil contamination

C7 Present condition of noise and vibration

C8 Regulation for prevention of noise and vibration